



NATURAL RESOURCES REPORT

Trinity Ranch
El Paso County, Colorado

July 31, 2026

Include EPC file
number

Prepared for:

20165 Howle Street LLC.
8576 VIA GWYNN WAY
FAIR OAKS, CA 95628-3848

Kimley»Horn

© KIMLEY-HORN & ASSOCIATES, INC.

2 N Nevada Ave, Ste 900,
Colorado Springs, CO 80903

TABLE OF CONTENTS

1.0	INTRODUCTION	3
1.1	PURPOSE	3
1.2	PROJECT DESCRIPTION.....	3
2.0	METHODOLOGY.....	4
3.0	EXISTING CONDITIONS	5
3.1	HISTORIC USE	5
3.2	SOILS	5
3.3	LAND COVER AND NATURAL COMMUNITIES.....	5
3.4	NOXIOUS WEEDS.....	7
3.5	WILDLIFE UTILIZATION AND PROTECTED WILDLIFE SPECIES	8
3.6	WILDFIRE HAZARD	10
3.7	FEMA FLOOD HAZARD	11
4.0	SUMMARY OF IMPACTS	11
4.1	LAND COVER AND NATURAL COMMUNITIES.....	11
4.2	NOXIOUS WEEDS.....	11
4.3	WILDLIFE	11
4.4	WILDFIRE.....	13
5.0	RECOMMENDATIONS.....	13
5.1	CLEAN WATER ACT.....	13
5.2	ENDANGERED SPECIES ACT.....	14
5.3	MIGRATORY BIRD TREATY ACT AND BALD AND GOLDEN EAGLE PROTECTION ACT	14
5.4	COLORADO NOXIOUS WEED ACT.....	14
5.5	NON-STATUTORY CONSIDERATIONS	14

LIST OF TABLES

TABLE 1	NRCS SOILS WITHIN THE PROJECT SITE.....	3
TABLE 2	POTENTIALLY IMPACTED VEGETATION COMMUNITIES WITHIN THE PROJECT SITE.....	5
TABLE 3	CPW SAM WILDLIFE POTENTIAL FOR OCCURRENCE.....	7
TABLE 4	SPECIES OBSERVED WITHIN THE PROJECT SITE.....	9
TABLE 5	LISTED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROJECT SITE.....	10

APPENDICES

APPENDIX A	VICINITY MAP
APPENDIX B	SITE PLAN
APPENDIX C	SOIL REPORT
APPENDIX D	COLORADO STATE NOXIOUS WEED LIST
APPENDIX E	RECOMMENDED BUFFER ZONES AND RESTRICTIONS FOR COLORADO RAPTORS (2020)
APPENDIX F	RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS (2021)
APPENDIX G	USDA WILDFIRE HAZARD POTENTIAL MAP
APPENDIX H	USDA WILDFIRE BURN POTENTIAL MAP
APPENDIX I	FEMA MAP

1.0 INTRODUCTION

1.1 PURPOSE

The following technical memorandum summarizes a review of readily available documentation, and the results of a site visit conducted at the project site. The purpose of this Natural Resources Report is to characterize the existing conditions of the project site in accordance with El Paso County standards and relative to existing environmental conditions including historical use, soils, land cover and natural communities, noxious weeds, wildlife utilization and protected species, wildfire hazards, and flood hazards. The primary reason for this documentation is to provide available, complete information of the anticipated effects of the proposed development and determine if a land development proposal may affect to any significant degree the quality of the environment in El Paso County. The scope of this assessment includes reviewing readily available natural resource documentation, existing permits, listed species information, historic aerials, historic resources, and existing Geographic Information System (GIS) databases regarding known occurrences of listed species on and near the project site.

1.2 PROJECT DESCRIPTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) is pleased to provide this Natural Resources Report to 20165 Howle Street LLC for the approximately 137.9-acre Trinity Ranch (Project) project site, bounded by agricultural and rural residential land to the north, west, and east, and CO-94 to the south, in El Paso County, Colorado. A Project Location Map is attached as Appendix A. The project site consists of vacant, undeveloped grassland (Parcel ID 3400000455). All sides of the project site are surrounded by agricultural and rural residential land. Project development will consist of approximately thirty-five (35) total lots. Filing No. 1 consists of seventeen (17) 2.5-acre lots. Filing No. 2 is consists of eighteen (18), 2.5-acre lots. The remaining acreage along HWY 94 has already been rezoned as commercial vegetation within the site is characterized primarily by prairie grasses. The site plan is provided in Appendix B. The project site is located in Section 9, Township 14 South, Range 63 West of the 6th PM, County of El Paso, State of Colorado.

I'm not sure what is meant by this sentence. Identify how many commercial lots and clarify this sentence.

2.0 METHODOLOGY

The methodology for this assessment included an initial desktop review to identify potential wetland and upland habitats, key habitats or resources for protected flora and fauna, known local species occurrences, mapped cultural or historic resources, and hazardous areas. The desktop review utilized the following resources:

- Colorado Natural Heritage Program (CNHP) Colorado's Conservation Data Explorer (CODEX) (<https://codex.cnhp.colostate.edu/content/map>)
- Various Geographic Information System (GIS) data layers from the U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS)
- USFWS Information for Planning and Conservation (IPaC) data [(<https://ecos.fws.gov/ipac/>)]
- U.S. Department of Agriculture (USDA) / Natural Resources Conservation Service (NRCS) Soil Survey of El Paso County, Colorado
- USFWS National Wetlands Inventory (NWI) Maps (Web-based maps available from <http://www.fws.gov/wetlands/Data/mapper.html>)
- CNHP Natural Plant Communities; NatureServe Explorer (<https://cnhp.colostate.edu/ourdata//trackinglist/>, <https://explorer.natureserve.org/>)
- USGS Quadrangle Maps (<https://topobuilder.nationalmap.gov/>)
- Colorado Department of Natural Resources (DNR) (<https://dnr.colorado.gov/>)
- Colorado Division of Water Resources (DWR) (<https://dwr.colorado.gov/>)
- U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/)
- State Historic Preservation Officer (SHPO), Colorado Natural Heritage Program (CNHP) (<https://cnhp.colostate.edu>)
- Colorado Wildfire Risk Assessment Portal (<https://co-pub.coloradoforestatlas.org/#/>)
- Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Maps (FIRM; Web-based maps available from <http://msc.fema.gov/>)
- El Paso County Land Development Code

3.0 EXISTING CONDITIONS

3.1 HISTORIC USE

A review of readily available historic aerals of the project site is included as a part of this investigation. A historic aerial from 1985 depicts the site as an undisturbed fallow and/or grassland. Little change occurred throughout the site from the earliest aerial to today.

3.2 SOILS

The USDA / NRCS *Soil Survey of El Paso County, Colorado*, documents four (4) soil classifications within the project site. Appendix C shows the mapped soils within the project site and Table 1 provides details of each soil classification.

Table 1 – NRCS Soils Within the Project Site						
Soil ID ¹	Soil Name	Occurrence	Characteristics	Drainage Class	Groundwater Depth	Hydric, Hydric Inclusions, or Non-hydric ²
8	Blakeland loamy sand, 1 to 9 percent slopes	Flats, hills	Rapid permeability	Somewhat excessively drained	>80 inches	Non-hydric
95	Truckton loamy sand, 1 to 9 percent slopes	Interfluves, fan remnants	Moderately rapid permeability	Well drained	>80 inches	Non-hydric
96	Truckton sand loam, 0 to 3 percent slopes	Fan remnants, interfluves	Moderately rapid permeability	Well drained	>80 inches	Non-hydric
97	Truckton sandy loams, 3 to 9 percent slopes	Backslopes of hillslopes, sideslopes of interfluves	Moderately rapid permeability	Well drained	>80 inches	Non-hydric
1: Reference: Soil Survey of El Paso County - https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx						
2: Reference: Soil Series - https://soilseries.sc.egov.usda.gov						

3.3 LAND COVER AND NATURAL COMMUNITIES

The project site is located within the Foothill Grasslands Ecoregion (26j) occurring within east-central Colorado characterized by dissected and irregular plains between 5900-7000 feet above MSL (Chapman, et al. 2006). Natural vegetation in this ecoregion includes yellow Indiangrass (*Sorghastrum nutans*), big and little bluestem (*Andropogon gerardii* and *Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), fescues (*Festuca spp.*), wheatgrass (*Pascopyrum spp.*), and sideoats grama (*Bouteloua curtipendula*) within the foothill prairies and ponderosa pine (*Pinus ponderosa*), mountain mahogany (*Cercocarpus ledifolius*), and Gambel oak (*Quercus gambelii*) within the pine woodlands. Land uses include grassland,

rangeland, and scattered woodland and cropland with currently increasing urban and residential development.

The project site is within the Rocky Mountain Range and Forest Land Resource Region (LRR) and Southern Rocky Mountain Foothills Major Land Resource Area (MLRA) (NRCS 2006). This LRR is characterized by rugged mountains with some broad valleys and high plateaus. This MLRA includes the Southern Rocky Mountains and Wyoming Basin Provinces as well as sections of the Great Plains Province. The climate of this MLRA consists of an average annual precipitation of 12 to 15 inches, increasing with elevation. Most of the land in this region is privately owned grasslands and forests, with some federally owned grasslands (NRCS 2006).

The USFWS National Wetland Inventory (NWI) and the USGS National Hydrography Dataset (NHD) databases were reviewed and no potential wetlands and surface waters within the project site were documented.

Using data derived from the Colorado Natural Heritage Program (CNHP), potential impacts to significant natural communities within the project site were reviewed and described below in Table 2.

Table 2 – Potentially Impacted Vegetation Communities within the Project Site			
Plant Community Type	Status	Presence and Location	Probability of Impacts
<i>Bouteloua gracilis</i> – <i>Bouteloua dactyloides</i> Grassland (Short Grass Prairie)	G4, S2	Occurs in the central and southern Great Plains on flat to rolling uplands. Surface soil may be sandy loam, loam, silt loam, or loamy clay. Characterized by a moderate to dense sod of short grasses with scattered mid grasses and forbs such as hairy grama (<i>Bouteloua hirsute</i>), sedge (<i>Carex spp.</i>), little bluestem (<i>Schizachyrium scoparium</i>), and prairie coneflower (<i>Ratibida columnifera</i>).	Likely. Community type covers the uplands within throughout the majority of the site.
<i>Carex nebrascensis</i> Wet Meadow	G5, S5	Occurs along alluvial terraces of backwater channels and other perennially wet floodplain swales and irrigation ditches. Characterized by coyote willow (<i>Salix exigua</i>), plains cottonwood (<i>Populus deltoides</i>), Russian olive (<i>Elaeagnus angustifolia</i>), Nebraska sedge (<i>Carex nebrascensis</i>), Canada wild rye (<i>Elymus canadensis</i>), western wheatgrass (<i>Pasopyrum smithii</i>), narrowleaf cattail (<i>Typha angustifolia</i>) and smooth brome (<i>Bromus inermis</i>).	Not likely. Impacts in the riparian corridor along the western portion of the property are minimal.
Legend: 1G=Global; S=State 1=Critically Imperiled; 2=Imperiled; 3=Rare or Uncommon; 4=Widespread, Abundant, and Apparently Secure; 5=Demonstrably Widespread, Abundant, Secure			

3.4 NOXIOUS WEEDS

Scattered concentrations of noxious weeds were found in portions of the project site. The project site is relatively undisturbed, however, it has been historically used for grazing; which is likely the source of noxious weeds within the project site.

Weed management is best achieved by employing aggressive control early on and persistent control efforts over several growing seasons. This includes direct treatments, prevention through best management practices, monitoring of treatment efficacy, and subsequent detection efforts. Weed management methods such as preventative, cultural, mechanical, biological, and chemical treatment are effective means of noxious weed control and should be considered post-construction. These methods are discussed below and recommended for the project site, where applicable.

To meet the requirements of the Colorado Noxious Weed Act weed management goals, management techniques for noxious weeds will be implemented for species listed on the CDA State Weed List included in Appendix D:

- List A – designated for statewide eradication
- List B – managed to prevent further spread and, for selected species, designated for eradication in large areas
- List C – of more localized concern, but for which the State will provide education, research, and biological control assistance to jurisdictions that choose to manage the species

Chemical Treatment and Timing: Spot spray or broadcast spray with selective broadleaf herbicides such as aminopyralid, chlorsulfuron, 2,4-D, dicamba, or triclopyr. Non-selective herbicides, such as glyphosate, can also be used as a spot treatment. Great care must be taken to avoid non-target species when using glyphosate. Herbicide application rates must not exceed the rates recommended on the manufacturer's label. Adherence to state and federal laws must also be a priority. In addition, only aquatic herbicides approved to be used in water shall be used where wetlands, waters of the US, and groundwater table are present. Treat weed-infested areas at least twice per year.

The first treatment should coincide with initial weed germination in the spring. Plants are most susceptible during this stage, requiring a smaller dose of herbicide and reducing the amount of chemicals released into the environment. A second treatment mid-summer will target any early season germinators missed during the first treatment, as well as late season germinators.

Mechanical Treatment and Timing: Hand pulling, chopping, mowing, and seed head collection are all effective mechanical treatments. Though labor intensive, mechanical treatments limit the number of viable seeds entering the seed bank. These efforts can be paired with chemical treatments for a multi-faceted approach to noxious weed control. Annual weeds with shallow root systems can be successfully eradicated if hand pulled early in its life cycle. Other rhizomatous perennial species are best targeted with seed head collection prior to seed maturation in mid-summer.

Cultural Treatment and Timing: Planting and/or maintaining a robust native plant community is the most effective means of noxious weed and invasive plant control. A healthy native plant community will out-compete noxious weeds for water, nutrients, and sunlight. A self-sustaining native plant community, however, is typically the end stage in restoration timeline and requires several seasons of chemical and mechanical control prior to reaching this objective. Each plant community should be visited at a minimum of once a year during the growing season to monitor for the presence of new populations of noxious weeds and other factors that may lead to the spread of noxious weeds such as flooding and erosional events.

3.5 WILDLIFE UTILIZATION AND PROTECTED WILDLIFE SPECIES

CPW's Species Activity Mapping (SAM) data reported the potential for 55 species including the state and federally threatened Preble's meadow jumping mouse (*Zapus hudsonius preblei*) state threatened burrowing owl (*Athene cunicularia*), the state special concern mountain plover (*Charadrius montanus*) black-tailed prairie dog (*Cynomys ludovicianus*), and the federally protected golden eagle (*Aquila chrysaetos*) to occur within the project site. These species are listed below in Table 3 along with their type of occurrence and federal and/or state status.

Table 3 – CPW SAM Wildlife Potential for Occurrence (CPW 2023)			
Common Name	Scientific Name	Type of Occurrence	Status
<i>Avian</i>			
Brewer's sparrow	<i>Spizella breweri</i>	Breeding range	S4B, MBTA
Burrowing owl	<i>Athene cunicularia</i>	Breeding range	ST, MBTA
Cassin sparrow	<i>Peucaea cassinii</i>	Breeding range	MBTA
Golden eagle	<i>Aquila chrysaetos</i>	Breeding range	BGEPA, MBTA, S3S4B
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Breeding range	S3S4B, MBTA
Lark bunting	<i>Calamospiza melanocorys</i>	Breeding range	S4, MBTA
Lazuli bunting	<i>Passerina amoena</i>	Breeding range	S5B, MBTA
Lesser sandhill crane	<i>Grus canadensis canadensis</i>	Overall range	-
Mountain plover	<i>Charadrius montanus</i>	Breeding Range	SC, MBTA

Table 3 – CPW SAM Wildlife Potential for Occurrence (CPW 2023)

Common Name	Scientific Name	Type of Occurrence	Status
Northern harrier	<i>Circus hudsonius</i>	Breeding range	S3B, MBTA
Prairie falcon	<i>Falco mexicanus</i>	Breeding range	S4B, S4N, MBTA
Rufous hummingbird	<i>Selasphorus rufus</i>	Migration range	MBTA
Swainson's hawk	<i>Buteo swainsoni</i>	Overall range	S5B, MBTA
Scaled quail	<i>Callipepla squamata</i>	Overall range	n/a
Mammalian			
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	Overall range Colony potential occurrence	SC, S3
Big brown bat	<i>Eptesicus fuscus</i>	Overall range	-
Hoary bat	<i>Lasiurus cinereus</i>	Overall range	S3S4B
Little brown myotis	<i>Myotis lucifugus</i>	Overall range	-
Mule deer	<i>Odocoileus hemionus</i>	Overall range Concentration area	S4
Olive-backed pocket mouse	<i>Perognathus fasciatus</i>	Overall range	S3
Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	Overall range	-
Pronghorn	<i>Antilocapra americana</i>	Overall range Concentration area	S4
Red bat	<i>Lasiurus borealis</i>	Overall range	-
Silver-haired bat	<i>Lasionycteris noctivagans</i>	Overall range	S3S4
White-tailed deer	<i>Odocoileus virginianus</i>	Overall range	S5
White-tailed jackrabbit	<i>Lepus townsendii</i>	Overall range	S4
Insects			
American bumble bee	<i>Bombus pensylvanicus</i>	Overall range	S2S3
Yellow bumble bee	<i>Bombus fervidus</i>	Overall range	S3S4
Western bumble bee	<i>Bombus occidentalis</i>	Overall range	S3S4
Moss's elfin	<i>Callophrys mossii schryveri</i>	Overall range	S2S3
Monarch butterfly	<i>Danus plexippus</i>	Overall range	S5, C
Dot-winged baskettail	<i>Epitheca petechialis</i>	Overall range	S5
Rita dotted-blue	<i>Euphilotes rita coloradoensis</i>	Overall range	S2
Buckmoth	<i>Hemileuca grotei diana</i>	Overall range	S2
Simius roadside skipper	<i>Notamblyscirtes simius</i>	Overall range	S3
Cross-line skipper	<i>Polites origenes</i>	Overall range	S3
Reptilian and Amphibian			
Bullsnake	<i>Pituophis catenifer sayi</i>	Overall range	S5
Coachwhip	<i>Masticophis flagellum</i>	Overall range	S5
Common lesser earless lizard	<i>Holbrookia maculate</i>	Overall range	S5
Hernandez's short-horned lizard	<i>Phrynosoma hernandesi</i>	Overall range	-
Many-lined skink	<i>Plestiodon multivirgatus</i>	Overall range	S4
Milksnake	<i>Lampropeltis elapsoides</i>	Overall range	S5
North American racer	<i>Coluber constrictor</i>	Overall range	-
Ornate box turtle	<i>Terrapene ornata ornata</i>	Overall range	S5
Painted turtle	<i>Chrysemys picta</i>	Overall range	S5
Plains garter snake	<i>Thamnophis radix</i>	Overall range	S5
Plains hog-nosed snake	<i>Heterodon nasicus</i>	Overall range	S4

Table 3 – CPW SAM Wildlife Potential for Occurrence (CPW 2023)			
Common Name	Scientific Name	Type of Occurrence	Status
Plateau fence lizard	<i>Sceloporus tristichus</i>	Overall range	S3
Prairie lizard	<i>Sceloporus consobrinus</i>	Overall range	S5
Prairie rattlesnake	<i>Crotalus viridis</i>	Overall range	S5
Six-lined racerunner	<i>Aspidoscelis sexlineata</i>	Overall range	S5
Smooth Greensnake	<i>Opheodrys vernalis</i>	Overall range	-
Terrestrial gartersnake	<i>Thamnophis elegans</i>	Overall range	S5
Variable skink	<i>Plestiodon multivirgatus</i>	Overall range	S3
Western rattlesnake	<i>Crotalus oreganus</i>	Overall range	SNR
Legend: FE - Federally Endangered; FT - Federally Threatened; C - Candidate for Listing; SE - State Endangered; ST - State Threatened SC – State Species of Concern, BGEPA – Bald and Golden Eagle Protection Act, N/A - Not Listed 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; R - Reported			

A database review of potential protected species occurring within the project site and immediate vicinity was conducted. Results of the database reviews are summarized below.

CPW's 2024 Raptor Nest Database documented no raptor nests within the project site. The nearest documented raptor nest is one (1) active great horned owl (*Bubo virginianus*) nest that occurs 3 miles to the northeast. According to CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (2020) attached as Appendix E, there are no surface occupancy is restrictions or human encroachment activity are restrictions associated with active great horned owl nests.

3.6 WILDFIRE HAZARD

Wildfire risks and adequate fire protection was reviewed for the proposed development pursuant with El Paso County Development Standards for fire protection and wildfire mitigation. The project site is located in the Ellicott Fire Protection District located at 75 North Ellicott Highway, 3.75 miles from the project site. Within this district, Fire Station 1 is located at the same address.

The United States Department of Agriculture (USDA) and United States Forest Service (USFS) wildfire risk to communities online geospatial database was used to evaluate wildfire hazard for the Trinity Ranch project site. This tool provides access to nationwide data to be used by the public and state and local planners. According to the wildfire risk to communities geospatial maps, the wildfire risk for the project site is documented as entirely "High Risk" as shown in the Wildfire Risk Map attached as Appendix G The burn probability for the project site is rated "Moderate to High" as shown in the Burn Probability Map attached as Appendix H.

3.7 FEMA FLOOD HAZARD

The project site is covered by FEMA FIRM panels (08041C0805G); dated December 7, 2018. The FEMA FIRM panels indicate the project site is within Flood Zones X, located outside of the 100-year and 50-year flood plains. A FEMA flood hazard map is included within the Database Review Map attached as Appendix I.

4.0 SUMMARY OF IMPACTS

4.1 LAND COVER AND NATURAL COMMUNITIES

The project site is within the foothill grasslands ecoregion and contains primarily a shortgrass prairie natural community. While impacts are not expected to cause a substantial loss to this ecoregion or natural community, the shortgrass prairie community is a state-sensitive vegetation community according to CNHP (CNHP 2019). There are no drainage features documented within the project site.

4.2 NOXIOUS WEEDS

Noxious weeds are present on the Project site in scattered 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. 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.

4.3 WILDLIFE

While impacts to wildlife habitats are unavoidable, designated open space will aid in conserving the foothill grassland ecosystem wetland drainages. Implementation of a stormwater management plan will assist in protecting water quality in downstream reaches, which will provide additional benefits to aquatic species including amphibians and 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.

State Listed Species

- Breeding range for burrowing owl were documented 3 miles from the project site by CPW's SAM Data and CNHP's Species Range Maps. This species was not observed during field reconnaissance on May 7, 2026. No burrowing owls or evidence of habitation were observed during the site visit on May 7, 2026. Should habitat impacts be proposed, potential impacts to burrowing owl habitat should be investigated and further coordination with USFWS is recommended to determine potential survey, mitigation, or monitoring requirements.
- Black-tailed prairie dogs, a State of Colorado Species of Special Concern, are considered a keystone species due to the large number of wildlife species that utilize prairie dog colonies for survival. Several likely-active black-tailed prairie dog colonies or burrows were observed within the project site. Impacts to this species are therefore plausible. In Colorado, it is unlawful to capture, transport and relocate black-tailed prairie dogs without a permit from Colorado Parks and Wildlife. There is a \$40 fee for permits. No permit is required for prairie dogs that are euthanized on site and donated to a wildlife rehabilitation facility, but a report form must be submitted within 5 business days of the donation.

Federally Listed Species

- The USFWS IPaC identified six (6) species with the potential to occur within the project site: Preble's meadow jumping mouse, eastern black rail, piping plover, monarch butterfly, Suckley's cuckoo bumble bee and Ute ladies'-tresses. These species were not observed during field reconnaissance on May 7, 2026.
- The monarch butterfly and the Suckley's cuckoo bumble bee are listed as proposed threatened and proposed endangered species and as such no further action is required regarding these two species at this time.
- No viable habitat exists within the project site for eastern black rail or piping plover. As such no further action is required regarding these species at this time.
- Should habitat impacts be proposed, potential impacts to Preble's meadow jumping mouse or Ute ladies'-tresses habitat should be investigated and further coordination with USFWS is recommended to determine potential survey, mitigation, or monitoring requirements. This coordination will likely also be required by El Paso County.

Federally Protected Species

- The golden eagle is protected under the BGEPA. The BGEPA provides protection by prohibiting activities that “disturb” an eagle. No eagles were observed within the project site during field reconnaissance on May 7, 2026.
- The USFWS IPaC Official Migratory Bird List identified 16 species on the USFWS Birds of Conservation Concern (BCC) and CPW CODEX list that have the potential to occur within or around the project site including the eastern black rail, burrowing owl, sandhill crane, mountain plover, golden eagle, grasshopper sparrow, lark bunting, northern harrier, prairie falcon, lazuli bunting, Cassin's sparrow, thick-billed longspur, rufous hummingbird, piping plover, Swainson's hawk.
- Pre-construction migratory bird nest surveys are recommended if disturbance activities begin during the nesting season (December 15 through August 31). Surveys should be completed immediately prior to construction, within two (2) weeks if possible.

4.4 WILDFIRE

According to USDA and USFS wildfire risk to community mapping, the wildfire risk for the project site is documented as entirely “Low Risk” attached as Appendix G. The burn probability for the project site is rated “Moderate”, shown in the burn probability map attached as Appendix H. The Trinity Ranch project site is located within the Ellicott Fire Protection District located at 75 North Ellicott Highway, 3.75 miles from the project site. Wildfire risk and burn probability are not expected to change with development of the project site.

5.0 RECOMMENDATIONS

5.1 CLEAN WATER ACT

The Clean Water Act (CWA) Section 404 permitting program prohibits the discharge of dredge or fill material into WOTUS without a permit. Wetlands and surface waters within the project site are potentially jurisdictional to USACE, and thus could require permitting with USACE depending on the results of a jurisdictional determination. If deemed jurisdictional, impacts less than 0.5 acres to WOTUS typically qualify for a nationwide permit, whereas impacts greater than 0.5 acres would require an Individual Permit. It is recommended that the Applicant determine the need for Section 404 permits through coordination with USACE 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). No listed species were observed within the project site. No impacts to any federally listed species are anticipated and further coordination is not needed at this time.

5.3 MIGRATORY BIRD TREATY ACT AND BALD AND GOLDEN EAGLE PROTECTION ACT

The MBTA was implemented in 1918 to provide protection to birds, including raptors, known to be endemic to the United States, Canada, Mexico, Japan, and Russia during migration. The MBTA prohibits the taking, killing, capturing, selling, trading, and transporting of protected species. The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are additionally protected under the Bald and Golden Eagle Protection Act (BGEPA). It is recommended that vegetation clearing/grubbing of the site occur outside of the nesting season (March 15th to July 31st) to avoid disturbing nesting migratory birds. If activities are to occur within the nesting season, a migratory bird nesting survey is recommended.

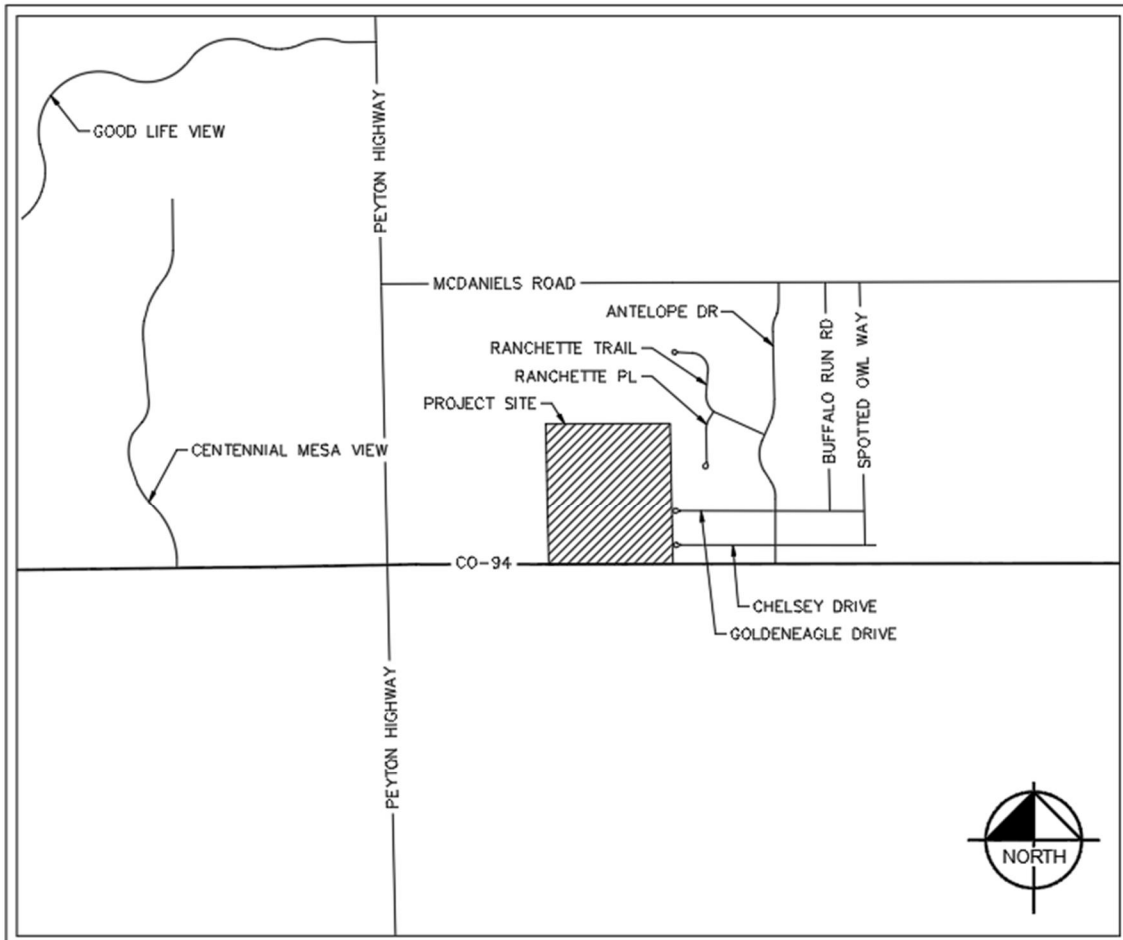
5.4 COLORADO NOXIOUS WEED ACT

A Noxious Weed Management Plan will be prepared for the Project detailing recommendations for identifying and controlling the spread of noxious weeds prior to, during, and/or post-construction.

5.5 NON-STATUTORY CONSIDERATIONS

Additional potential wildlife such as big game species or migratory birds may occur within the project site, however, there are no big game migratory routes throughout the project site and the project site has little canopy cover for nesting birds. Coordination with CPW would provide further appropriate impact mitigation measures for potential wildlife during and after construction.

APPENDIX A
VICINITY MAP



VICINITY MAP
SCALE 1" = 2000'

APPENDIX B

SITE MAP

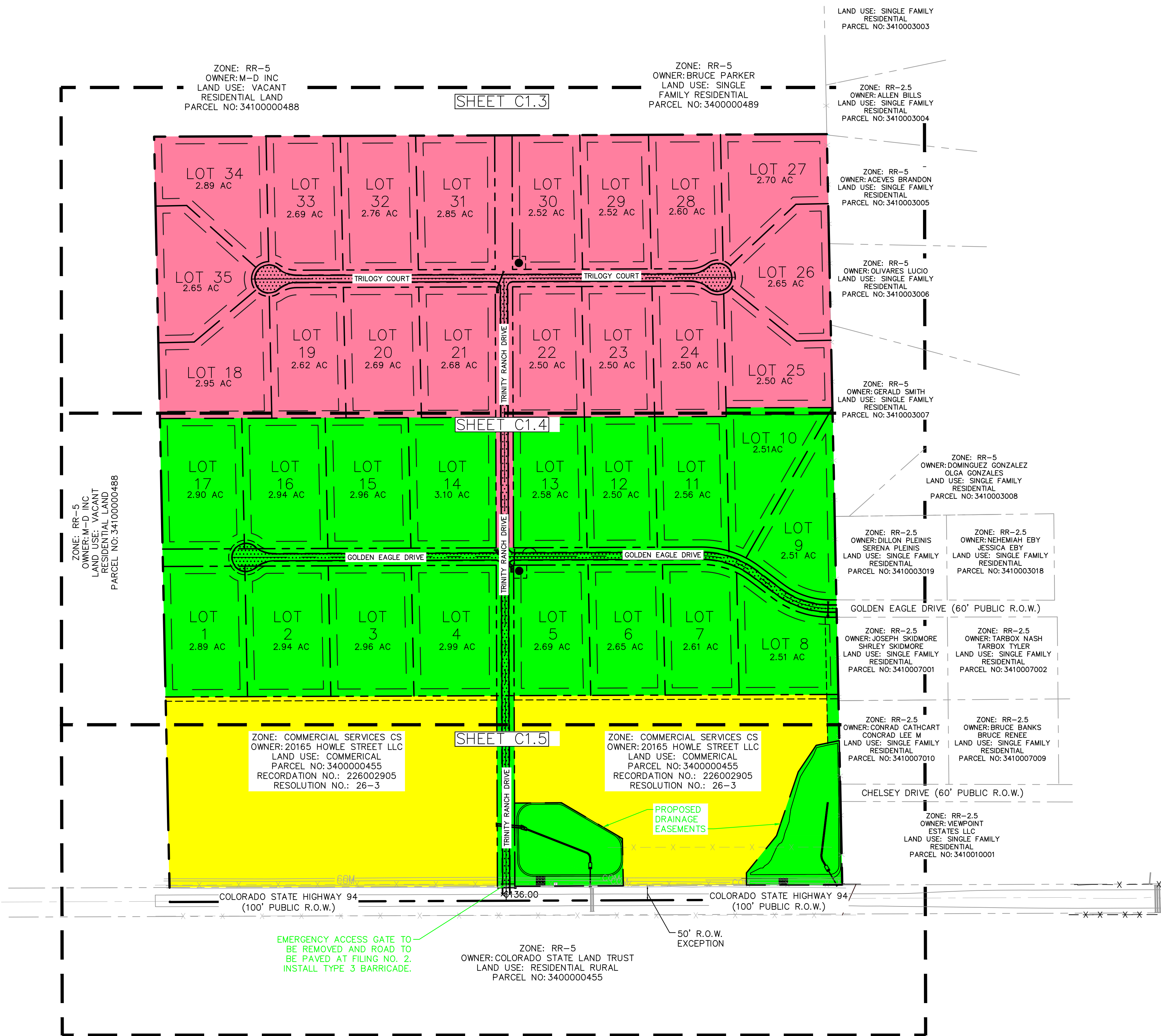
K:\COS_Civil\096726003_Trinity Ranch\CADD\PlanSheets\Preliminary Plan\PP_SP.dwg Schwenke, DJ 7/28/2026 5:01 PM



Know what's below.
Call before you dig.



CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES



Kimley»Horn

2026 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: DJS
DRAWN BY: MEO
CHECKED BY: KRK
DATE: 7/28/26

TRINITY RANCH
EL PASO COUNTY, COLORADO
PRELIMINARY PLAN
OVERALL SITE PLAN

PRELIMINARY
FOR REVIEW ONLY
NOT FOR
CONSTRUCTION
Kimley»Horn
Kimley-Horn and Associates, Inc.

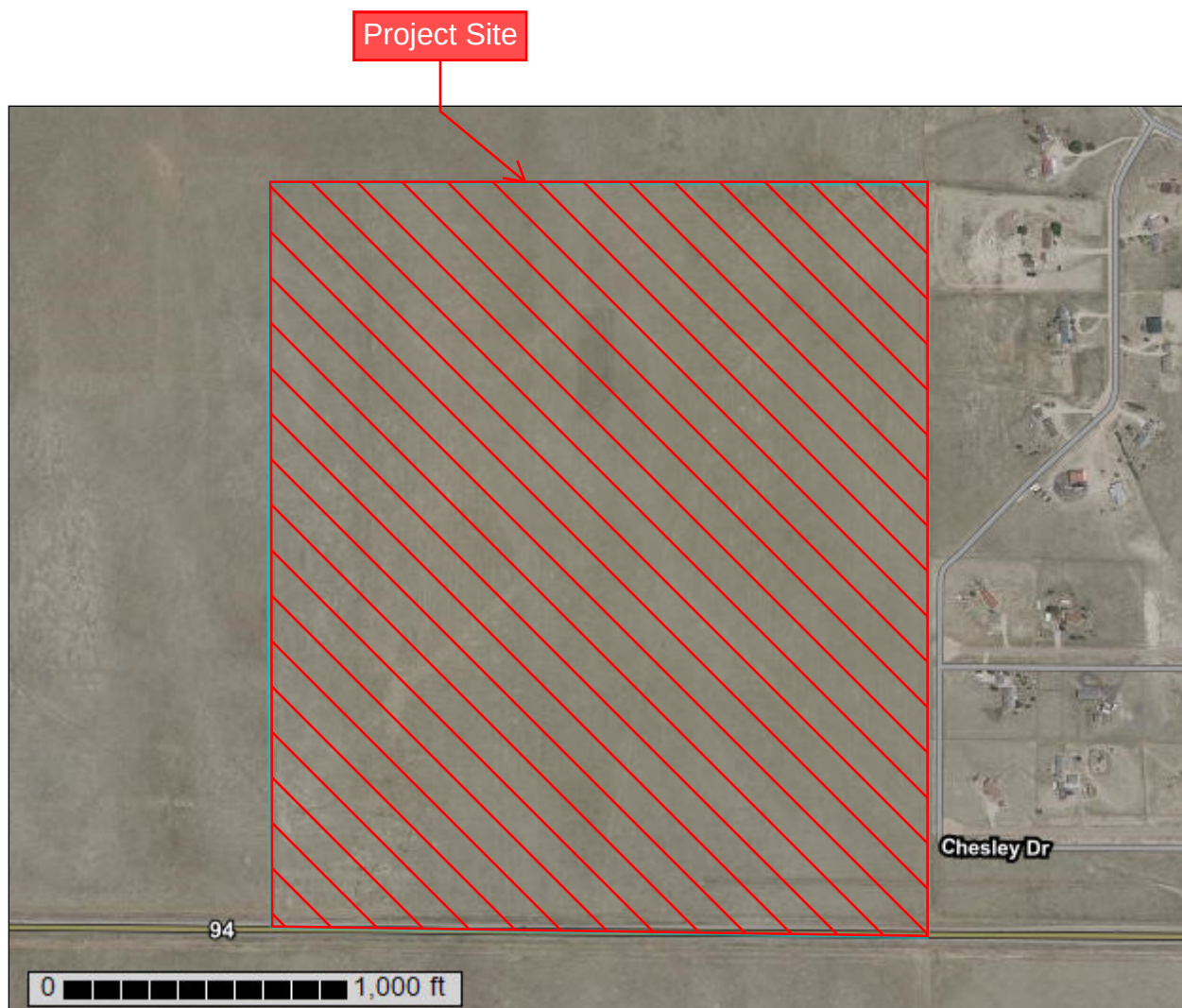
PROJECT NO.
096726003

SHEET

1.2

APPENDIX C
SOILS REPORT

Custom Soil Resource Report for El Paso County Area, Colorado



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
El Paso County Area, Colorado.....	13
8—Blakeland loamy sand, 1 to 9 percent slopes.....	13
95—Truckton loamy sand, 1 to 9 percent slopes.....	14
96—Truckton sandy loam, 0 to 3 percent slopes.....	16
97—Truckton sandy loam, 3 to 9 percent slopes.....	18
Soil Information for All Uses	20
Soil Properties and Qualities.....	20
Soil Qualities and Features.....	20
Hydrologic Soil Group.....	20
References	25

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 27, 2024—Jul 28, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	17.6	12.4%
95	Truckton loamy sand, 1 to 9 percent slopes	22.7	16.1%
96	Truckton sandy loam, 0 to 3 percent slopes	35.0	24.8%
97	Truckton sandy loam, 3 to 9 percent slopes	65.9	46.7%
Totals for Area of Interest		141.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Landscape: Uplands
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landscape: Uplands
Landform: Flats, Hills
Landform position (three-dimensional): Side slope, tal
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits
derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95
to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent

Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

95—Truckton loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2yvrn

Landscape: Uplifted piedmonts

Elevation: 5,800 to 7,100 feet

Mean annual precipitation: 12 to 19 inches

Mean annual air temperature: 46 to 50 degrees F

Frost-free period: 90 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Truckton and similar soils: 87 percent

Minor components: 13 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landscape: Uplifted piedmonts

Landform: Interfluves, Fan remnants

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind re-worked alluvium derived from arkose

Typical profile

A - 0 to 4 inches: loamy sand

Bt1 - 4 to 12 inches: sandy loam

Bt2 - 12 to 19 inches: sandy loam

C - 19 to 80 inches: sandy loam

Properties and qualities

Slope: 1 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Blakeland

Percent of map unit: 5 percent
Landscape: Uplifted piedmonts
Landform: Interfluves, Low hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Bresser

Percent of map unit: 5 percent
Landscape: Uplifted piedmonts
Landform: Interfluves, Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Urban land

Percent of map unit: 2 percent
Landscape: Uplifted piedmonts
Anthropogenic features: Streets, parking lots, sidewalks, buildings, etc. of urban land, urban or suburban anthroscape
Hydric soil rating: No

Ellicott, occasionally flooded

Percent of map unit: 1 percent
Landscape: Uplifted piedmonts
Landform: Flood plains, Drainageways
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: R067BY031CO - Sandy Bottomland
Hydric soil rating: No

96—Truckton sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2yvr
Landscape: Uplifted piedmonts
Elevation: 5,400 to 7,000 feet
Mean annual precipitation: 14 to 23 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 90 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Truckton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landscape: Uplifted piedmonts
Landform: Fan remnants, Interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind re-worked alluvium derived from arkose

Typical profile

A - 0 to 4 inches: sandy loam
Bt1 - 4 to 12 inches: sandy loam
Bt2 - 12 to 19 inches: sandy loam
C - 19 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Blakeland

Percent of map unit: 5 percent
Landscape: Uplifted piedmonts
Landform: Low hills, Interfluves
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Bresser

Percent of map unit: 5 percent
Landscape: Uplifted piedmonts
Landform: Terraces, Interfluves
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Pleasant, frequently ponded

Percent of map unit: 2 percent
Landscape: Uplifted piedmonts
Landform: Closed depressions
Down-slope shape: Concave, linear
Across-slope shape: Concave
Ecological site: R067BY010CO - Closed Depression
Hydric soil rating: Yes

Urban land

Percent of map unit: 2 percent
Landscape: Uplifted piedmonts
Anthropogenic features: Streets, parking lots, sidewalks, buildings, etc. of urban land, urban or suburban anthroscape
Hydric soil rating: No

Ellicott, occasionally flooded

Percent of map unit: 1 percent
Landscape: Uplifted piedmonts
Landform: Drainageways, Flood plains
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: R067BY031CO - Sandy Bottomland
Hydric soil rating: No

97—Truckton sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2x0j2

Landscape: Uplifted piedmonts

Elevation: 5,300 to 6,850 feet

Mean annual precipitation: 14 to 19 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 85 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Truckton and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landscape: Uplifted piedmonts

Landform: Backslopes of hillslopes, Sideslopes of interfluves

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Re-worked alluvium derived from arkose

Typical profile

A - 0 to 4 inches: sandy loam

Bt1 - 4 to 12 inches: sandy loam

Bt2 - 12 to 19 inches: sandy loam

C - 19 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6e

Custom Soil Resource Report

Hydrologic Soil Group: A

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Blakeland

Percent of map unit: 8 percent

Landscape: Uplifted piedmonts

Landform: Shoulders and backslopes of hillslopes, Sideslopes and crests of interfluves

Landform position (two-dimensional): Shoulder, backslope, summit

Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Bresser

Percent of map unit: 7 percent

Landscape: Uplifted piedmonts

Landform: Toeslopes or footslopes of low hills, Baseslopes of interfluves

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

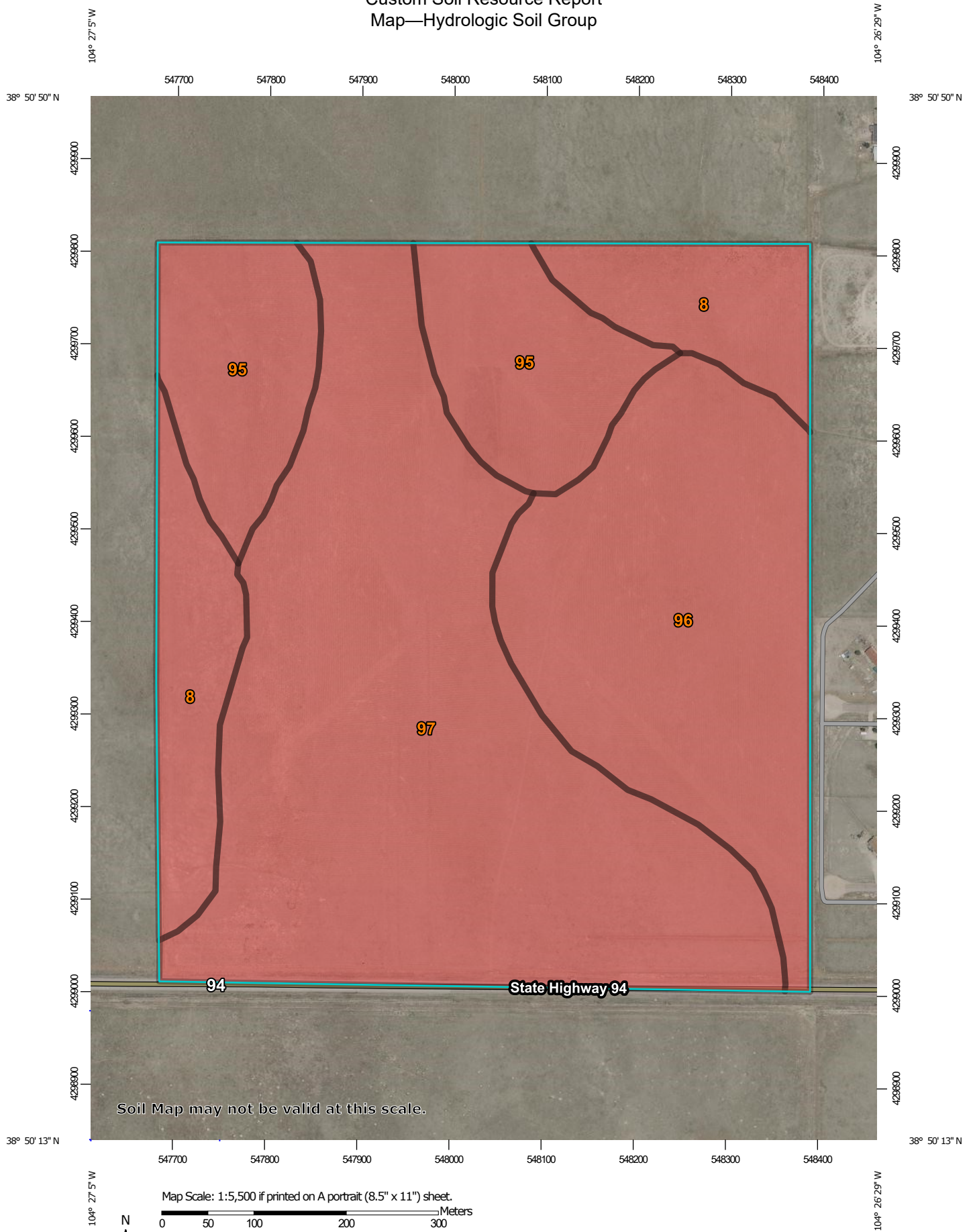
Custom Soil Resource Report

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 27, 2024—Jul 28, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	17.6	12.4%
95	Truckton loamy sand, 1 to 9 percent slopes	A	22.7	16.1%
96	Truckton sandy loam, 0 to 3 percent slopes	A	35.0	24.8%
97	Truckton sandy loam, 3 to 9 percent slopes	A	65.9	46.7%
Totals for Area of Interest			141.1	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX D
COLORADO STATE NOXIOUS WEED LIST

List A Species (26)

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

List B Species (38)

Common	Scientific
Jointed goatgrass	(<i>Aegilops cylindrica</i>)
Mayweed chamomile	(<i>Anthemis cotula</i>)
Absinth wormwood	(<i>Artemisia absinthium</i>)
Plumeless thistle	(<i>Carduus acanthoides</i>)
Musk thistle	(<i>Carduus nutans</i>)
Wild caraway	(<i>Carum carvi</i>)
Diffuse knapweed	(<i>Centaurea diffusa</i>)
Spotted knapweed	(<i>Centaurea stoebe</i> ssp. <i>micranthos</i>)
Spotted x diffuse knapweed hybrid	(<i>Centaurea x psammogena</i>)
Canada thistle	(<i>Cirsium arvense</i>)
Bull thistle	(<i>Cirsium vulgare</i>)
Chinese clematis	(<i>Clematis orientalis</i>)
Houndstongue	(<i>Cynoglossum officinale</i>)
Yellow nutsedge	(<i>Cyperus esculentus</i>)
Common teasel	(<i>Dipsacus fullonum</i>)
Cutleaf teasel	(<i>Dipsacus laciniatus</i>)
Russian-olive	(<i>Elaeagnus angustifolia</i>)
Leafy spurge	(<i>Euphorbia esula</i>)

List B Species Continued (38)

Common	Scientific
Dame's rocket	(<i>Hesperis matronalis</i>)
Black henbane	(<i>Hyoscyamus niger</i>)
Hoary cress	(<i>Lepidium draba</i>)
Perennial pepperweed	(<i>Lepidium latifolium</i>)
Oxeye daisy	(<i>Leucanthemum vulgare</i>)
Dalmatian toadflax, broad-leaved	(<i>Linaria dalmatica</i>)
Dalmatian toadflax, narrow-leaved	(<i>Linaria genistifolia</i>)
Yellow x Dalmatian toadflax hybrid	(<i>Linaria vulgaris</i> x <i>L. dalmatica</i>)
Yellow toadflax	(<i>Linaria vulgaris</i>)
Eurasian watermilfoil	(<i>Myriophyllum spicatum</i>)
Scotch thistle	(<i>O. tauricum</i>)
Scotch thistle	(<i>Onopordum acanthium</i>)
Sulfur cinquefoil	(<i>Potentilla recta</i>)
Russian knapweed	(<i>Rhaponticum repens</i>)
Bouncingbet	(<i>Saponaria officinalis</i>)
Salt cedar	(<i>T. chinensis</i>)
Salt cedar	(<i>Tamarix. ramosissima</i>)
Common tansy	(<i>Tanacetum vulgare</i>)
Scentless chamomile	(<i>Tripleurospermum inodorum</i>)
Moth mullein	(<i>Verbascum blattaria</i>)

List C Species (18)

Common	Scientific
Velvetleaf	(<i>Abutilon theophrasti</i>)
Tree of Heaven	(<i>Ailanthus altissima</i>)
Common burdock	(<i>Arctium minus</i>)
Downy brome, cheatgrass	(<i>Bromus tectorum</i>)
Chicory	(<i>Cichorium intybus</i>)
Poison hemlock	(<i>Conium maculatum</i>)
Field bindweed	(<i>Convolvulus arvensis</i>)
Quackgrass	(<i>Elymus repens</i>)
Redstem filaree	(<i>Erodium cicutarium</i>)
Halogeton	(<i>Halogeton glomeratus</i>)
Common St. Johnswort	(<i>Hypericum perforatum</i>)
Wild proso millet	(<i>Panicum miliaceum</i>)
Bulbous bluegrass	(<i>Poa bulbosa</i>)
Perennial sowthistle	(<i>Sonchus arvensis</i>)
Johnsongrass	(<i>Sorghum halepense</i>)
Puncturevine	(<i>Tribulus terrestris</i>)
Siberian elm	(<i>Ulmus pumila</i>)
Common mullein	(<i>Verbascum thapsus</i>)

Watch List Species (19)

These species are not regulated by the Noxious Weed Act/Rule.

Common	Scientific
Garlic mustard	<i>(Alliaria petiolata)</i>
Common bugloss	<i>(Anchusa officinalis)</i>
Tall Oatgrass	<i>(Arrhenatherum elatius)</i>
Onionweed	<i>(Asphodelus fistulosus)</i>
Hoary alyssum	<i>(Berteroa incana L.)</i>
Caucasian bluestem	<i>(Bothriochloa bladhii)</i>
Yellow bluestem	<i>(Bothriochloa ischaemum)</i>
White bryony	<i>(Bryonia alba)</i>
Scotch broom	<i>(Cytisus scoparius)</i>
Baby's breath	<i>(Gypsophila paniculata)</i>
Meadow hawkweed	<i>(Hieracium caespitosum)</i>
Perennial Sweet Pea	<i>(Lathyrus latifolius)</i>
Garden loosestrife	<i>(Lysimachia vulgaris)</i>
Common reed	<i>(Phragmites australis)</i>
Yellow mignonette	<i>(Reseda lutea)</i>
Himalayan blackberry	<i>(Rubus armeniacus)</i>
Swainsonpea	<i>(Sphaerophysa salsula)</i>
Ventenata grass	<i>(Ventenata dubia)</i>
Syrian beancaper	<i>(Zygophyllum fabago)</i>

APPENDIX E

RECOMMENDED BUFFER ZONES AND RESTRICTIONS FOR COLORADO RAPTORS



COLORADO

Parks and Wildlife

Department of Natural Resources

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS (2020)

OVERVIEW

Colorado Parks and Wildlife (CPW) is routinely asked for recommendations on ways to avoid and minimize disturbance to nesting, wintering, and resident raptors in Colorado. These guidelines were originally developed by Colorado Division of Wildlife in 2002 and updated in 2008. We recently (2020) undertook a periodic review of our guidelines to ensure that they are the most up to date based on the best available science and professional judgement. Further revisions of this document may become necessary as additional information is published or becomes available.

Background on Disturbance

The term "disturbance" is ambiguous and experts disagree on what actually constitutes a disturbance. Reactions may be as subtle as elevated pulse rate or as obvious as vigorous defense or abandonment of a nest site. Impacts of disturbance may not be immediately evident. A pair of raptors may respond to human intrusion by defending the nest, but well after the disturbance has passed, the male may remain in the vicinity for protection rather than forage to feed the nestlings. Golden eagles rarely defend their nests, but merely fly a half mile or more away and perch and watch. Chilling and overheating of eggs or chicks and starvation of nestlings can result from human activities that appeared not to have caused an immediate response.

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, Ferruginous Hawks and Golden Eagles respond to human activities at greater distances than do Ospreys and American Kestrels. Some individuals within a species also habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals can become sensitized to repeated encroachment and react at greater distances. The tolerance of a particular pair may change when a mate is replaced with a less tolerant individual and this may cause the pair to react to activities that were previously ignored. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch. Recognizing that there is individual variability, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. Also, in order to allow for individual variability and renesting pairs, CPW recommends seasonal restrictions continue to be implemented until the chicks have fledged. Other factors such as intervening terrain, vegetation screens, and the existing cumulative impacts of activities should also be considered.

A 'holistic' approach is recommended when protecting raptor habitats. While it is important for land managers to focus on protecting nest sites, attention should also focus on defining important foraging areas that support the pair's nesting effort. Hunting habitats of many raptor species are extensive and may necessitate interagency cooperation to assure continued nest occupancy. Unfortunately, basic knowledge of habitat use for individual nesting pairs is often lacking.

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS

CPW recommends consultation with local CPW staff early in the planning phase of project proposals in order to assess and develop site-specific recommendations based on pre-existing conditions (e.g. existing development, topography, vegetation, and line-of-sight to nest). CPW maintains a leadership role with respect to raptor management in Colorado; however it is important to keep in mind that the primary authority for the regulation of take and the ultimate jurisdiction for most of these species rests with the U. S. Fish and Wildlife Service (USFWS) under the Migratory Bird Treaty Act (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Therefore, CPW also recommends early consultation with the U.S. Fish and Wildlife Service to comply with the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and the 2016 U.S. Fish and Wildlife Service Eagle Permits Rules as applicable (USFWS 2016).

BALD EAGLE

Nest Site: No Surface Occupancy (NSO) beyond that which historically occurred, within ¼ mile (1320 feet, 400 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of active nest sites from December 1 through July 31. The majority of bald eagle chicks in Colorado have fledged by July 31; however, for late-nesting or potential re-nesting bald eagles, CPW recommends seasonal restrictions beyond July 31 if chicks are still present in the nest. CPW's recommended buffer is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

If surface occupancy cannot be avoided within ¼ mile of the nest AND the nest is located within a Highly Developed Area, then the recommended NSO extends ⅓ mile (660 feet, 200 meters) from the nest site. No permitted, authorized, or human encroachment activities within ¼ mile radius of active nests from December 1 through July 31. This buffer recommendation matches the USFWS 2007 Guidelines in the instances where eagles have demonstrated the ability to tolerate previous levels of human encroachment and surface occupancy.

Winter Night Roost and/or Communal Roost: No permitted, authorized, or human encroachment activities within ¼ mile (1320 feet, 400 meters) radius of an active night and/or communal roost from November 15 through March 15 if there is no direct line of sight between the roost and the activity. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of an active night or communal roost from November 15 through March 15 if there is a direct line of sight between the roost and the activity.

If an active winter night roost is located within a Highly Developed Area, then no permitted, authorized, or human encroachment activities within ⅓ mile (660 feet, 200 meters) radius from November 15 through March 15 if there is no direct line of sight between the roost and the activity. No permitted, authorized, or human encroachment activities within ¼ mile (1320 feet, 400 meters) radius from November 15 through March 15 if there is a direct line of sight between the roost and the activity. Note: Communal roosts are relatively rare in Colorado and have disproportionately high biological value. Therefore a reduced buffer within a Highly Developed Area does not apply to communal roosts.

If periodic visits (such as oil well maintenance work) to preexisting facilities are required within the buffer zones described above, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

GOLDEN EAGLE

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ¼ mile (1320 feet, 400 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of active nests from December 15 through July 15.

FERRUGINOUS HAWK

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ½ mile (2640 feet, 800 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of active nests from February 1 through July 15. This species is especially prone to nest abandonment during incubation if disturbed.

RED-TAILED HAWK

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ⅓ mile radius of active nests. No permitted, authorized, or human encroachment activities within ⅓ mile radius of active nests from February 15 through July 15. Some individuals of this species have adapted to urbanization and may exhibit a high tolerance to human habitation and activities within 100 yards of their nest. Development that encroaches on rural nest sites is more likely to cause abandonment.

SWAINSON'S HAWK

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ¼ mile (1320 feet, 400 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ¼ mile (1320 feet, 400 meters) radius of active nests from April 1 through July 31. Some members of this species have adapted to urbanization and may tolerate human habitation to within 100 yards of their nest.

PEREGRINE FALCON

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ½ mile (2640 feet, 800 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) mile of the nest cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to ½ mile (2640 feet, 800 meters) along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a ½ mile (2640 feet, 800 meters) buffer around the cliff complex.

PRAIRIE FALCON

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ½ mile (2640 feet, 800 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of active nests from March 15 through July 15.

NORTHERN GOSHAWK

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ½ mile (2640 feet, 800 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800 meters) radius of active nests from March 1 through September 15.

OSPREY

Nest Site: No surface occupancy (beyond that which historically occurred in the area) within ¼ mile (1320 feet, 400 meters) radius of active nests. No permitted, authorized, or human encroachment activities within ¼ mile

(1320 feet, 400 meters) radius of active nests from March 15 through August 15. Some osprey populations have habituated and are tolerant to human activity in the immediate vicinity of their nests.

MEXICAN SPOTTED OWL

No surface occupancy (beyond that which historically occurred in the area) within USFWS designated Critical Habitat and within Protected Activity Center (PAC). No permitted, authorized, or human encroachment activities within ½ mile (2640 feet, 800m) buffer of Protected Activity Center from March 1 through August 31.

BURROWING OWL

Nest Site: No permitted, authorized, or human encroachment activities within ⅛ mile (660 feet, 200 meters) of the nest site during the nesting season March 15 through August 31. For large industrial disturbances (drilling rig, residential construction, etc.), no permitted, authorized, or human encroachment activities within ¼ mile (1320 feet, 400 meters) of the nest site during the nesting season March 15 through August 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore, it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied. More detailed recommendations are available in a document entitled “Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls,” which is available from the CPW.

DEFINITIONS

Active nest – Any nest that is frequented or occupied by a raptor during the breeding season, or which has been occupied in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest site may be active even if a particular structure is not occupied in a given year.

Winter night roost and/or communal roost – Areas where bald eagles and sometimes golden eagles perch overnight or gather to perch or forage. Individuals, pairs, and groups of eagles demonstrate site fidelity to winter night roosts and communal roosts throughout the winter season and year after year. Communal roost sites have more than 15 eagles for the majority of the roosting season and are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. Winter night roost and communal roosts may also serve a social purpose for pair bond formation and communication among eagles.

Permitted, authorized, or human encroachment activities- Any activity that brings humans in the area. Examples include construction activities, oil and gas development and production, driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Surface Occupancy – Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, solar developments, roads, tracks, trails, etc.

Highly Developed Area – An area where existing density from the cumulative development of oil and gas facilities, home sites, subdivisions, commercial buildings, malls, apartment complexes, gravel pit operations, etc. exceed 10 or more daily occupied facilities within a ¼ mile (1320 feet, 400 meters) radius of the nest. Determination of whether or not a nest site is within a highly developed area will be done in consultation with CPW.

Mexican Spotted Owl Critical Habitat – Critical habitat is defined as areas of land and water with physical and biological features that are essential to the conservation of a threatened or endangered species, and that may require special management considerations or protection. Defined by U.S. FWS Final Rule 2004.

Mexican Spotted Owl Protected Activity Center (PAC) – An area established around an owl nest (or sometimes roost) site, for the purpose of protecting that area. Management of these areas is largely restricted to managing for forest-health objectives.

CONTACT

For further information contact:

Liza Rossi
Bird Conservation Coordinator
Colorado Parks and Wildlife
925 Weiss Drive
Steamboat Springs, CO 80487
Phone: 970-871-2861
Email: liza.rossi@state.co.us

REFERENCES

- Bechard, M.J., and J.K. Schmutz. 1995. Ferruginous Hawk (*Buteo regalis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/172>
- Buehler, D.A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/506>
- Call, M. 1979. Habitat management guides for birds of prey. Technical Note No.338, U.S. Bureau of Land Management, Denver Service Center, Denver, CO. 69pp. Energy Research and Development Administration (ERDA). 1977. EIA for CUI Venture application for geothermal loan guarantee (Beryl and Lund, Utah). EIA/GE/77-8. Washington, D.C. 109pp.
- England, A.S., M.J. Bechard, and C.S. Houston. 1997. Swainson's Hawk (*Buteo swainsoni*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/265>
- Greater Yellowstone Bald Eagle Working Group. 1996. Greater Yellowstone bald eagle management plan: 1995 update. Greater Yellowstone Bald Eagle Working Group, Wyoming Game & Fish Dept., Lander WY 82520. 47pp.
- Grier, J.W., F.J. Gramlich, J. Mattisson, J.E. Mathisen, J.V. Kussman, J.B. Elder, and N.F. Green. 1983. The bald eagle in the northern United States. Bird Cons. 144-66.

- Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. Burrowing Owl (*Athene cunicularia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/061>
- Holmes, Tamara L. 1993. Behavioral responses of grassland raptors to human disturbance. MS Thesis. Colorado State University, Fort Collins. 62pp.
- Holthuijzen, A.M.A., W.G. Eastland, A.R. Ansell, M.N. Kochert, R.D. Williams, and L.S. Young. 1990. Effects of blasting on behavior and productivity of nesting prairie falcons. Wildl. Soc. Bull. 18:270-281.
- Kochert, M. N., K. Steenhof, C. L. McIntyre, and E. H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/684>
- Martin, D.J. 1973. Selected aspects of burrowing owl ecology and behavior. Condor 75:446-456.
- Northern States Bald Eagle Recovery Team. 1983. Northern States Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service. 75pp.
- Olendorff, R. R., and W.D. Zeedyk. 1978. Land management for the conservation of endangered birds. Pages 419-428 in S.A. Temple, ed. *Endangered birds*. University of Wisconsin Press, Madison, Wisconsin.
- Poole, A.F., R.O. Bierregaard, and M.S. Martell. 2002. Osprey (*Pandion haliaetus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/683>
- Preston, C.R., and R.D. Beane. 1993. Red-tailed Hawk (*Buteo jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>
- Reynolds, R., R.T. Graham, H.M. Reiser. 1992. Management recommendations for the northern goshawk in the southwestern United States. Gen. Tech. Rep. RM-217. Fort Collins, CO. U.S. Dept. of Agri., Forest Service, Rocky Mountain Forest and Range Experiment Station. 90pp.
- Richardson, C.T. and C.K. Miller. 1997. Recommendations for protecting raptors from human disturbance: a review. Wildl. Soc. Bull. 25(3):634-638.
- Rocky Mountain/Southwest Peregrine Falcon Recovery Team. 1984. American peregrine falcon Rocky /Southwest population recovery plan. U.S. Fish and Wildlife Serv. 105pp.
- Squires, J.R., S.H. Anderson, and R. Oakleaf. 1993. Home range size and habitat-use patterns of nesting prairie falcons near oil developments in northeastern Wyoming. J. Field Ornithol. 64:1-10.

- Steenhof, Karen. 1998. Prairie Falcon (*Falco mexicanus*), The Birds of North America Online Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/346>
- Squires, J.R., and R.T. Reynolds. 1997. Northern Goshawk (*Accipiter gentilis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/298>
- Suter, G.W. and J.L. Joness. 1981. Criteria for Golden Eagle, Ferruginous Hawk, and Prairie Falcon nest site protection. J. Raptor Res. 15(1):12-18.
- Swenson, J.E. 1979. Factors affecting status and reproduction of ospreys in Yellowstone National Park. J. Wildl. Manage. 43:595-601.
- Thomsen, L. 1971. Behavior and ecology of burrowing owls on the Oakland Municipal Airport. Condor 73:177-192.
- U.S. Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Mexican Spotted Owl. 50 CFR Part 17. Federal Register Vol. 69, No. 168 August 31, 2004.
- U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. <http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>
- U.S. Fish and Wildlife Service. 2012. Final Recovery Plan for the Mexican Spotted Owl (*Strix occidentalis lucida*), First Revision. U.S. Fish and Wildlife Service, Albuquerque, New Mexico, USA. 413 pp.
- U.S. Fish and Wildlife Service. 2016. Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests. 50 CFR Parts 13 and 22. Federal Register Vol. 81 No. 242, December 16, 2016.
- White, C.M., N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/660>

[illegible]

[illegible]

Species and Use	Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Mexican Spotted Owl													
Critical Habitat and Protected Activity Center (PAC) - No Surface Occupancy													
Critical Habitat and Protected Activity Center (PAC) - No Human Encroachment	½ Mile												
		= time period for which seasonal restrictions are in place.											

APPENDIX F
RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING
BURROWING OWLS



COLORADO

Parks and Wildlife

Department of Natural Resources

RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

Western Burrowing Owls (*Athene cunicularia hypugaea*) are commonly found in prairie dog towns throughout Colorado. Burrowing owls require prairie dog or other suitable burrows (e.g. badger, Wyoming ground squirrel) for nesting and roosting. Western burrowing owls breed throughout the western United States, southern Canada, and northern Mexico and winter in the southern United States and throughout Mexico. Colorado's burrowing owls are mostly migratory but overwintering owls have been documented.

Federal and state laws prohibit the harming or killing of burrowing owls and the destruction of active nests. It is quite possible to inadvertently kill burrowing owls during prairie dog poisoning projects, removal of prairie dogs, destruction of burrows and prairie dogs using a concussive device, or during earth moving for construction. Because burrowing owls often hide in burrows when alarmed, it is not practical to haze the birds away from prairie dog towns prior to prairie dog poisoning/removal, burrow destruction, or construction activity. Because of this, Colorado Parks and Wildlife (CPW) recommends surveying prairie dog towns for burrowing owl presence before potentially harmful activities are initiated.

The following guidelines are intended as advice on how to determine if burrowing owls are present in a prairie dog town, and what to do if burrowing owls are detected. These guidelines do not guarantee that burrowing owls will be detected if they are present. However, adherence to these guidelines will greatly increase the likelihood of detection.

Seasonal Timing

Burrowing owls typically arrive on breeding grounds in Colorado in late March or early April, with nesting beginning a few weeks later. Active nesting has been recorded and may be expected from late March through early August. Adults and young may remain at prairie dog towns until migrating to wintering grounds in late summer or early autumn.

Surveys should be conducted during times when burrowing owls may be present on prairie dog towns. Although nesting most commonly occurs March 15th through August 31st, burrowing owls may be present at burrows several months after young have fledged. Therefore, CPW recommends that targeted surveys should be conducted for any activities resulting in ground disturbing destruction or poisoning of burrows between March 15th and October 31st. Note, there is a small chance to encounter burrowing owls in Colorado during the winter. Although CPW does not necessarily recommend surveys between November 1 and March 14, if burrowing owls are known to be present in an area in the winter, CPW's recommendations apply.

Daily Timing

Burrowing owls may be active throughout the day and night; however, peaks in activity in the morning and evening make these the best times for conducting surveys (Conway and Simon 2003). Surveys should be

conducted in the early morning (1/2 hour before sunrise until 10:00 am or until the temperature reaches 80 degrees F, whichever is earlier) and early evening (2 hours before sunset until 1/2 hour after sunset).

Number and locations of survey points

Burrowing owls are most frequently located visually; thus, obtaining a clear view of the entire prairie dog town is necessary. For small prairie dog towns that can be adequately viewed in their entirety from a single location, only one survey point is necessary. The survey point should be selected to provide unobstructed views (with binoculars if necessary) of the entire prairie dog town (burrow mounds and open areas between) and all nearby structures that may provide perches (e.g., fences, utility poles, etc.). For prairie dog towns that cannot be entirely viewed from a single location because of terrain or size, enough survey points should be established to provide unobstructed views of the entire prairie dog town and nearby structures that may provide perches. Survey locations should be separated by approximately 800 meters (1/2 mile), or as necessary to provide adequate visual coverage of the entire prairie dog town.

Number of surveys to conduct

Detection of burrowing owls can be highly variable and multiple visits to each site should be conducted to maximize the likelihood of detecting owls if they are present. At least three surveys should be conducted at each survey point. Surveys should be separated by approximately one week.

Conducting the survey

- **Avoid flushing owls prior to initiating survey:** Burrowing owls are very likely to either flush or hide in a burrow if approached at distances closer than 200 m, especially if observers are on foot or ATVs (versus within a vehicle). Therefore, the first survey point should be located outside the prairie dog colony, with observers surveying ahead of their route if it is necessary to enter the colony. If observers must exit their vehicle, they should keep a low profile and recognize that flush distance may increase for observers on foot.
- **Weather Considerations:** Because poor weather conditions may impact the ability to detect burrowing owls, surveys should only be conducted on days with little or no wind (less than 12 mph) and no precipitation or fog.
- **Passive surveys:** Most burrowing owls are detected visually. At each survey location, the observer should *visually* scan the area with binoculars and then spotting scope, if possible, to detect any owls that are present. Some burrowing owls may be detected by their call, so observers should also *listen* for burrowing owls while conducting the survey.

Burrowing owls are frequently detected soon after initiating a survey (Conway and Simon 2003). However, some burrowing owls may not be detected immediately because they are inconspicuous, are inside of burrows, or are not present on the site when the survey is initiated. We recommend that surveys be conducted for at least 10 minutes at each survey location.

- **Call-broadcast surveys:** To increase the likelihood of detecting burrowing owls, if present, we recommend incorporating call-broadcast methods into burrowing owl surveys. Conway and Simon (2003) detected 22% more burrowing owls at point-count locations by broadcasting the primary male (*coo-coo*) and alarm (*quick-quick-quick*) calls during surveys. Although call-broadcast may increase the probability of detecting burrowing owls, most owls will still be detected visually.

We recommend the following 10-minute timeline for incorporating call-broadcast methods (Conway and Simon 2003, C. Conway pers. comm.). The observer should scan the area for burrowing owls during the entire survey period. If the intent is to document which burrows are used for nesting, the initial silent period may need to be lengthened so that observers have the opportunity to note as many owl spatial locations as possible before playing calls (owls may move in response to calls).

- 3 minutes of silence
- 30 seconds call-broadcast of primary call (*coo-coo*)
- 30 seconds silence
- 30 seconds call-broadcast of primary call (*coo-coo*)
- 30 seconds silence
- 30 seconds call-broadcast of alarm call (*quick-quick-quick*)
- 30 seconds silence
- 4 minutes of silence

Calls can be broadcast from cell phone or mp3 player attached to amplified speakers. Calls should be broadcast loudly, but without distortion. Recordings of this survey sequence (mp3) are available for download at: <https://cpw.state.co.us/conservation/Pages/CON-Energy-Land.aspx>

Note: The mp3 download includes a 6-minute survey sequence (3 passive (silent) minutes followed by 3 minutes of calls) and should then be followed by 4 additional minutes of passive survey.

- **Burrow Searches:** If owls are detected in the area, surveyors should search areas that the owls are using to document the nest burrows as well as other actively used burrows. Nest burrows generally have dung lining the entrance of the burrow, with prey remains and collected materials outside the entrance. Nest burrows may have whitewash and regurgitated pellets visible, or they may be visible at a more prominent perch location nearby. Also, note that if owls flush from the nest burrow, they may return to the general area, but often will not return to the specific nest burrow when an observer is present. Example photos of nest burrows are available at: <https://cpw.state.co.us/conservation/Pages/CON-Energy-Land.aspx>

Identification

Adult burrowing owls are small, approximately 9-11 inches. They are brown with white spotting and white barring on the chest. They have long legs in comparison to other owls and are frequently seen perching on prairie dog mounds or other suitable perches (e.g., fence posts, utility poles) near prairie dog towns. Juvenile burrowing owls are similar to adults but have a white/buff colored chest that lacks barring.

General information about burrowing owls is available from the Colorado Parks and Wildlife website:

<https://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx>

Additional identification tips and information are available from the Cornell Lab of Ornithology and the U.S. Geological Survey Patuxent Wildlife Research Center websites below:

https://www.allaboutbirds.org/guide/Burrowing_Owl/overview

<http://www.mbr-pwrc.usgs.gov/id/framlst/i3780id.html>

What To Do If Burrowing Owls Are Present

If burrowing owls are confirmed to be nesting in a prairie dog town (or other suitable burrow), there are two options before proceeding with planned activities:

1. Wait to initiate activities until after October 31st or until it can be confirmed that the owls have left the prairie dog town. Although burrowing owls may not be actively nesting during this entire period, they may be present at burrows several months after young have fledged.
2. If burrowing owls are nesting at the site and waiting to initiate activities is not possible, carefully monitor the activities of the owls, noting and marking which burrows they are using in order to document the nesting burrow. This is not easy to accomplish and will require considerable time, as the owls may use several burrows in a prairie dog town, and their activity footprint spreads as juvenile owls age and begin to use areas farther from the nest. When all active burrowing owl burrows have been located and marked, surface activity can proceed in areas greater than 660 feet (200 meters) from the nest burrow. Activity closer than 660 feet may endanger the owls. If possible, avoid the satellite use burrows as well. If the actual nest burrow cannot be determined, then buffer the entire group of burrows in use. **NOTE: For large industrial disturbances (e.g. drilling rigs, residential construction, etc.), CPW recommends a larger buffer of ¼ mile (1320 feet, 400 meters) from the nest burrow.** CPW recommends no surface disturbance within nesting buffers from March 15th through August 31st.
3. If the planned activity includes active poisoning or killing of prairie dogs (or ground squirrels) or ground-disturbing destruction of burrows, CPW recommends delaying activities until after it can be confirmed that the owls have left the prairie dog colony. CPW recommends surveys of prairie dog towns March 15th through October 31st to confirm absence of burrowing owls.

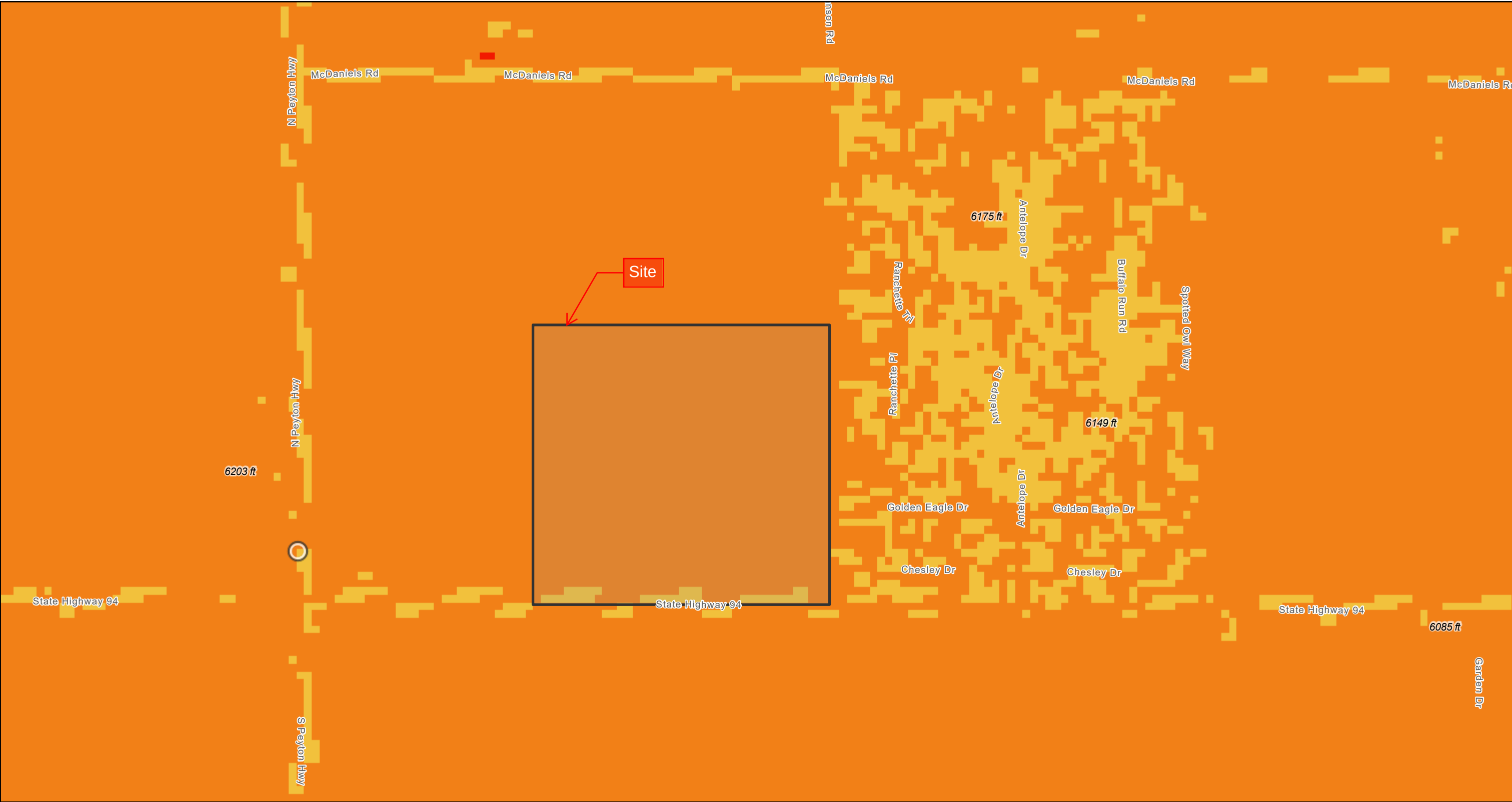
Reference

Conway, C. J. and J. C. Simon. 2003. Comparison of detection probability associated with Burrowing Owl survey methods. *Journal of Wildlife Management* 67:501-511.

revised 04/06/2021

APPENDIX G
USDA WILDFIRE HAZARD POTENTIAL MAP

USDA Wildfire Hazard Potential Map

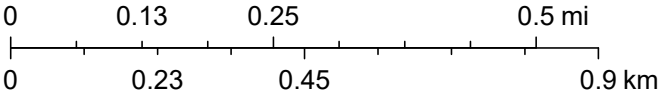


7/6/2026, 1:32:26 PM

Risk to Potential Structures (Risk to Homes)

- 40th to 70th
- 70th to 90th
- 90th to 95th
- World_Hillshade

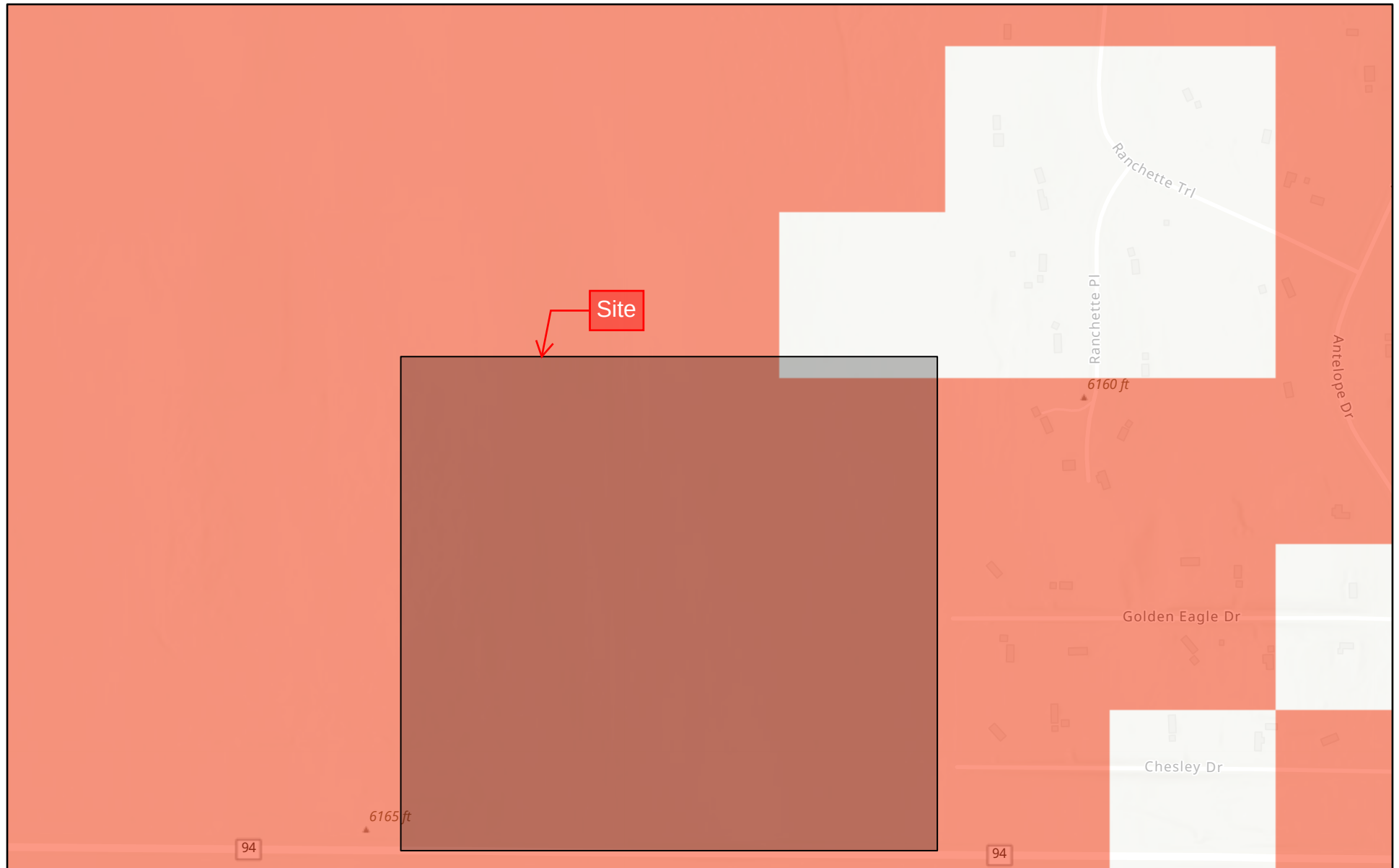
1:14,844



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Funding for this project provided by USDA Forest Service, Fire and Aviation Management. Funding also provided by USDA Forest Service, Fire Modeling

APPENDIX H
USDA WILDFIRE BURN POTENTIAL MAP

USDA Wildfire Burn Potential Map



7/6/2026

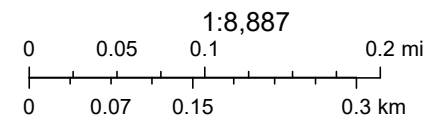
Probabilistic Wildfire Risk Burn Probability (Image Service)

0



1-in-464 to 1-in-215

World_Hillshade



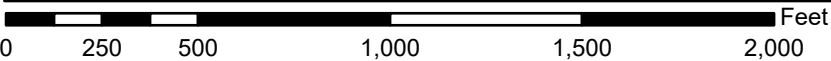
USDA Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory.

APPENDIX I
FEEMA MAP

National Flood Hazard Layer FIRMMette



104°27'3"W 38°50'44"N



1:6,000

104°26'26"W 38°50'16"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/6/2026 at 6:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.