

Technical Memorandum

**Tri-State Generation and Transmission Association (Tri-State)
*Vollmer-Vollmer Tap Transmission Line Project***

El Paso County, Colorado

Biological Survey Report

Prepared for:



**1100 West 116th Avenue
Westminster, CO 80234**

Prepared by:



**9781 S. Meridian Blvd., Suite 400
Englewood, Colorado 80112**

July 2018

1. Introduction

Tri-State Generation and Transmission Association (Tri-State) is proposing to construct a new 115-kilovolt (kV) transmission line near Falcon, Colorado in El Paso County. This new transmission line “Vollmer-Vollmer Tap Transmission Line (Vollmer Transmission Project)” will establish a new delivery point for the proposed Mountain View Electric Association, Inc. (MVEA) “Vollmer 115/12.5 kV Substation (Vollmer Substation Project)”. Collectively, these two proposed Projects (Projects) are required in order to continue to provide reliable service for future growth and meet the increasing demand for electricity. Tri-State and MVEA are currently working on the permitting and design of the proposed facilities, with a construction completion and target in-service date of mid-2020.

As a result of the activities associated with the proposed Projects, Tri-State intends to pursue and complete requirements associated with the State of Colorado Department of Local Affairs County 1041 Regulation. Therefore, Tri-State retained HDR to perform a biological/ecological environmental review and survey (field investigation) of the proposed Projects, and produce a technical memorandum (tech memo) detailing the results of the survey. Results of the survey will be later used in Tri-State’s County 1041 Permit submittal.

Project Description

The Tri-State Vollmer Transmission Project will tap Tri-State’s existing Black Squirrel-Jackson Fuller 115-kV Transmission Line and travel approximately 1.35 miles west within a 100-foot-wide right-of-way (ROW) corridor (17.68 acres), terminating at the MVEA-Vollmer Substation 5-acre lot (see **Figures 1 and 2**). The Projects are located two miles east of Vollmer Road and one mile north of Woodman Frontage Road, in a developing area of El Paso County, Colorado (Township 12 South, Range 65 West of the 6th P.M., Section 34) [Project area].

The Vollmer substation will be constructed within a five-acre parcel of land needed for the fenced station, staging of equipment and drainage. In addition, a 50-foot-wide road (4.25 acres) will be created for access to the substation. The access road will start at the northern terminus of Mohawk Road and travel approximately 0.66 mile east to the Vollmer Substation Project.

The Vollmer Substation Project will tap into the Tri-State 115 kV transmission line that will enter the southern side of the substation property. The substation will include the following equipment:

- Distribution feeders (10)
- 1200A, 12.5kV distribution breaker (10)
- 115/12.5 transformer (2)
- Circuit switcher (2)
- Disconnect switch (2)
- Equipment enclosure

Environmental Setting

The Project area is located within western Great Plains short-grass prairie grasslands and occurs between approximately 7,000 and 7,030 feet above mean sea level (amsl). The vegetation within the Project area was dominated by grasses composed primarily of blue grama (*Bouteloua gracilis*), western wheatgrass (*Pascopyrum smithii*), little bluestem (*Schizachyrium scoparium*), smooth brome (*Bromus inermis*), prairie threeawn (*Aristida oligantha*), and sand dropseed (*Sporobolus cryptandrus*). Forbs within the Project area included dragon wormwood (*Artemisia dracunculus*), pricklypear cactus (*Opuntia polyacantha*), fringed sage (*Artemisia frigida*), and patches of common rabbitbrush (*Ericameria nauseosus*) and soapweed yucca (*Yucca glauca*). Few trees occur in the Project area, but some landscaped trees do occur on private

property directly adjacent to the Projects. No invasive or noxious plant populations were identified during the site survey warranting specific treatment or other control measures for the spread of non-native plants.

2. Methods

Prior to the site investigation, HDR biologists conducted a desktop review to determine the potential for federal and state listed species to occur within the Project area. An Information for Planning and Consultation (IPaC) report was generated listing the federal species with the potential to occur in the Project area. Using Colorado Natural Heritage Program (CNHP) element occurrence data, the Project area was also analyzed for the presence of state listed “threatened or endangered” species protected by the State of Colorado.

The desktop review utilized publicly available information and State of Colorado proprietary raptor nest data to identify the potential for nesting raptors within the Project area. Other data sources used during the desktop analysis to identify potential aquatic features included aerial imagery, U.S. Geological Service (USGS) topographic maps, National Wetland Inventory, and National Hydrography Dataset.

HDR conducted the site investigation on May 17, 2018, during which a pedestrian survey was conducted of the Vollmer Project substation and within a 150-foot-wide area centered on the Vollmer Project access road and proposed transmission line (survey area). An aquatic resource evaluation was conducted along the survey corridor to determine the frequency and extent of aquatic features, along with a survey for federal and state protected species. However, a formal aquatic resource inventory (formerly known as a “formal wetland and other waters of the United States delineation”) in pursuit of potential consultation with the U.S. Army Corps of Engineers and Section 404 permitting, was not performed.

3. Results

Federal Listed Species (Endangered Species Act)

Based upon an Information for Planning and Consultation (IPaC) report generated on May 29, 2018 (Event Code: 06E24000-2018-E-02854), there are nine federally listed species that could occur within the Project area or be indirectly affected by Project activities (see **Table 1**). The IPaC report found no critical habitat within the Project area for any of the nine species. The six federal species listed below have no potential to occur within the Project area.

- Least tern (*Sternula antillarum*)
- Piping plover (*Charadrius melodus*)
- Whooping crane (*Grus americana*)
- Greenback cutthroat trout (*Oncorhynchus clarkii stomias*)
- Pallid sturgeon (*Scaphirhynchus albus*)
- Western prairie fringed orchid (*Platanthera praeclara*)

The least tern and piping plover are known to nest downstream of the Project area in Bent and Kiowa Counties on sandy shores of reservoirs and gravel pits (CPW 2018). Because no water-related usage will occur, the Project will not affect downstream water quality or result in water depletions. Therefore, the least tern and piping plover will not be affected by Project activities.

Four species either occur upstream from the Project or entirely outside of the Project’s watershed. The Project occurs within the Arkansas River Basin and therefore has no potential to affect the whooping crane, pallid sturgeon, and western prairie fringed orchid, which all occur outside of Colorado (CPW 2018; USFWS 2018a, USFWS 2018b). The whooping crane crosses the Arkansas River Basin in Oklahoma and Kansas during migration but has not been seen in Colorado since 2010 (CPW 2018). The fourth species, the greenback cutthroat trout, is currently only known to occur within Bear Creek, a tributary of Fountain Creek

in Colorado Springs, Colorado. Bear Creek is not hydrologically connected to the Project area and therefore the greenback cutthroat trout will not be affected by Project activities.

The **Preble's meadow jumping mouse** (*Zapus hudsonius preblei* [PMJM]) currently occurs in a few watersheds along Colorado's Front Range and in southeastern Wyoming (USFWS 2016b). This species was not identified by the IPaC report, but is being analyzed due to its known range and critical habitat within 10 miles east of the Project area. Suitable PMJM habitat includes well-developed riparian vegetation with a source of open water, and adjacent upland vegetation (USFWS 2017). Hydrologic regimes that support PMJM habitat range from large perennial rivers such as the South Platte River to small ephemeral drainages, three to ten feet in width (USFWS 2016b). Suitable riparian vegetation typically consists of a multi-storied canopy composed of a combination of grasses, forbs, and low shrub cover. Adjacent uplands used by PMJM range from open grasslands to woodlands dominated by ponderosa pine, Douglas-fir, spruce (*Picea* spp.), or aspen (*Populus tremuloides*), with diverse understories of shrubs, forbs and graminoids (USFWS 2016b). The active period for the PMJM is generally May 1 through October 31, outside of which the species hibernates in underground burrows (USFWS 2016b). There are no suitable drainages or other habitat capable of supporting the PMJM within the Project area, and therefore the species will not occur or be affected by Project activities.

The three remaining species listed by the IPaC report occur in Colorado, but will not occur within the Project area or be affected by Project activities due to a lack of suitable habitat.

North American wolverines (*Gulo luscus*) occur primarily in boreal forests, tundra, and western mountains throughout Alaska, Canada, and the northern United States of Oregon, Idaho, Montana, and Wyoming (USFWS 2016a). There is evidence that a small number of non-breeding, transient individuals occur in Colorado (USFWS 2016a). A remote sensing analysis of North American wolverine denning shows an obligate relationship between denning sites and areas with persisting snow cover into early spring (Copeland et al. 2010). Wolverines typically inhabit areas of sparse human habitation due largely to their high altitude and persistent snow habitat requirements (Copeland et al. 2010). No habitat exists within the Project area capable of supporting the wolverine and therefore, the species will not occur or be affected by Project activities.

Mexican spotted owl habitat in Colorado includes a combination of dense, mixed coniferous forests characterized by: Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and white fir (*Abies concolor*); steep slopes greater than 40 percent slope and often in canyons or rocky outcroppings; and elevations between 6,500 and 9,500 feet amsl (USFWS 2012). None of these habitat conditions occur within the Project area and therefore, the species will not occur or be affected by Project activities.

Ute ladies'-tresses (*Spiranthes diluvialis*) generally occur in early to mid-successional wet areas near springs, lakes, perennial or intermittent streams, riparian edges, gravel bars, old oxbows, and wet meadows up to 7,000 feet elevation (Fertig et al. 2005). The microhabitat often associated with this species is seasonally inundated small areas characterized by wet, shallow wetlands (Fertig et al. 2005). No suitable wetlands occur within the Project area and therefore, the orchid species will not occur or be affected as a result of the Project.

Table 1: Federal Species analyzed for potential Project effects

Common Name	Scientific Name	Listing Status	Habitat	Suitable Habitat within Project Area	Potential to Affect Species
BIRDS					
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Old growth forests of southern Utah, Colorado, Arizona, New Mexico, west Texas, and into the mountains of northern and central Mexico. Mature trees (18-inch diameter or greater), mainly Douglas-fir (USFWS 2012).	No	No
MAMMALS					
North American wolverine	<i>Gulo luscus</i>	Proposed Threatened	Boreal and alpine habitat containing persistent snow late into May (USFWS 2016a).	No	No
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Threatened	Well-developed and multi-storied riparian vegetation with adjacent grassland communities and nearby water. The species' upland habitat extends 330 feet (100 meters) beyond the 100-year flood plain (USFWS 2017 and USFWS 2016b).	No	No
PLANTS					
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	Endemic to moist soils near wet meadows, springs, lakes, and perennial streams on early successional sandy point bars or edges up to 7,000 feet amsl (NRCS 2009).	No	No

Colorado Threatened and Endangered Species

Colorado's threatened and endangered species law (Title 33. Parks and Wildlife. Article 2. Nongame and Endangered Species Conservation. § 33-2-105) identifies species of conservation concern and prohibits the take of these protected state wildlife. The Project area was evaluated for the potential presence of state listed "threatened or endangered" species. Preliminary assessment of the Project area was based on publicly available data from the Colorado Natural Heritage Program (CNHP) element occurrence data, along with a review of USGS 7.5-minute topographic maps and aerial imagery. This preliminary assessment along with the Project survey results were used to identify the state listed species with potential to occur and be affected by the Project.

The burrowing owl (*Athene cunicularia*), a state listed threatened species, has the potential to occur in the Project area due to presence of prairie dog burrows within one-quarter mile north and northwest of the Vollmer substation. The burrowing owl is a seasonal nesting bird on the eastern plains of Colorado and

occurs within shortgrass prairie grasslands (CPW 2018). Suitable habitat includes dry, open areas with short grasses and limited trees (CPW 2018). Burrowing owls nest and live in underground burrows often created by prairie dogs, ground squirrels, and badgers (CPW 2018). However, the Project survey on May 17, 2018 did not detect burrowing owls or prairie dogs within the Project survey area. Should owls be detected before or during any phase of construction or by construction crews, a qualified biologist will conduct a nesting survey and if an active nesting burrow is found, a 150 foot buffer would be implemented around the nest and Tri-State would notify Colorado Parks and Wildlife.

Migratory Bird Treaty Act and Bald and Golden Eagle Act

The Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703–712, protects native bird species from unlawful killing, capturing, or disturbance to nesting birds resulting in nesting failure. The Project area contains suitable habitat for various nesting migratory birds, particularly ground nesting songbirds and raptors. The Project survey on May 17, 2018 detected a nesting pair of red-tailed hawks (*Buteo jamaicensis*) located about 500 feet east of the Vollmer substation in a lone ponderosa pine tree (see **Figure 2**). Recommended measures to limit disturbance to nesting red-tailed hawks include a 1/3 mile (1,750 feet) radius work exclusion zone between February 15 and July 15 (CPW 2008). This nest will be resurveyed prior to spring and summer construction to confirm if the nest is active and if the species occupying the nest has changed since 2018. Should a different species occupy the nest, buffers will be modified accordingly using CPW's [Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors](#).

To ensure compliance with the Migratory Bird Treaty Act, a pre-construction survey for raptor nesting activity is recommended if project activities overlap with the nesting season (February 15 – August 15) for most raptor species that could nest in the area. If during Project activities or a pre-construction nesting survey active migratory birds or raptor nests are observed, it is recommended that seasonal buffers and timing restrictions as outlined in CPW's Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors will be followed. If complete avoidance of a buffer is not feasible, a qualified biological monitor could be used to observe the nest during construction activities to ensure the activity does not disturb nesting activities. The biological monitor will have the authority to halt or modify construction if an activity is likely to result in nest abandonment. Buffers for non-raptor species will be determined according to species, existing disturbance in the area, nature of construction activity and line of sight from project activities.

The Bald and Golden Eagle Protection Act (16 U.S.C. 66A8-668c), prohibits the unlawful killing, capturing, or disturbance to bald and golden eagles, including their parts, nests, or eggs. Bald eagles (*Haliaeetus leucocephalus*) are typically observed near rivers or large lakes but can be found in open dry country, particularly during migration. Bald eagles typically will build nests in large trees near waterbodies or rivers due to their affinity to prey on fish (Wrigley et al. 2012; CPW 2018). The nearest recorded bald eagle nest occurs over 15 miles to the south of the Project area (CPW 2017). Construction is not expected to impact bald eagles because there is no suitable nesting or roosting habitat in the project area.

Golden eagles (*Aquila chrysaetos*) can be found in grasslands in eastern Colorado and other habitats throughout the state including, shrublands, riparian areas, and forest openings. In grasslands, golden eagles build nests on cliffs or in the largest trees of forested stands with an unobstructed view of the surrounding habitat (CPW 2018). The nearest recorded golden eagle nest is located over 15 miles northeast of the Project area (CPW 2017). However, golden eagles could occasionally forage in the Project area due to a high abundance of black-tailed jackrabbits (approximately 20 individuals) observed during the Project survey. Construction of the Projects may result in golden eagles temporarily avoiding the area during project activities.

Aquatic Resource Evaluation

Based upon observations made during the survey, two aquatic features (AF) were identified within the survey area (See **Figures 1 and 2**). Of these two features, one stream feature (AF-01) occurs within the 100-foot-wide construction corridor. The second aquatic feature (AF-02) is an isolated wetland located approximately 25 feet north and outside of the construction corridor. AF-02 is included for consideration and awareness in the event an alignment shift occurs. The recommendations for minimizing impacts to surface waters and wetlands in the project area are outlined in **Table 2**.

Table 2: Aquatic features and recommended avoidance and minimization measures

Feature ID	AF Acres in Construction Corridor ¹	Cowardin Class ²	Temporary Impacts (acre)	Construction Approach ³
AF-01	0.08	R4SB7	0.08	Wetland mats for vehicle access when wet
AF-02	0.00	PEM	None	Avoidance

Notes:
 1. Project area where impacts could occur within the 100-foot-wide corridor centered on the transmission centerline within which construction activities will occur
 2. PEM-Palustrine Emergent; R4SB7-Intermittent Stream (vegetated bottom)
 3. Foot-access will not result in impacts to the aquatic features

Aquatic feature 01 may be temporarily impacted by construction activities associated with the construction of the transmission line. However, impacts to aquatic features will not exceed 0.1 acre at any single-and-complete aquatic feature crossing. Therefore, as long as construction activities comply with the NWP 12 general conditions, a Pre-construction Notification is not required by the U.S. Army Corps of Engineers (USACE).

The general conditions of NWP-12 that would require a Pre-Construction Notification include:

- The activity involves mechanized land clearing in a forested wetland
- A section 10 permit is required
- The utility line is placed within a jurisdictional aquatic feature and it runs parallel to or along a stream bed that is within that jurisdictional feature
- The activity results in the loss of greater than 0.1 acre of waters of the United States (WOUS)
- Permanent access roads are constructed in WOUS for a distance of more than 500 feet
- Permanent access roads are constructed in WOUS with impervious materials.

Project adherence with the following impact minimization and conservation measures will satisfy the general conditions in NWP-12 and avoid consultation with the USACE:

- Construction wetland matting may be used for heavy equipment and vehicle traffic within the boundaries of the identified aquatic features during construction activities associated with pole installation, stringing wiring, or other project activity if the area is wet at the time construction occurs.
- Construction activities are kept within the 100-foot-wide construction corridor, established roads, or designated access routes
- Affected aquatic features are returned to their original topography and grade within 30 days after construction activities and will be re-seeded using a native seed mix approved by El Paso County.
- Temporary and permanent impacts to any one of the two aquatic features are kept under 0.1 acre.

4. Summary and Recommendations

As a result of the site investigation on May 17, 2018, one active red-tailed hawk nest was identified and mapped, along with two aquatic features. The project area contains suitable habitat for other migratory birds that may nest in the project area in the spring and summer months. HDR recommends a pre-construction survey is conducted prior to construction activities in 2019 to ensure compliance with the Migratory Bird Treaty Act. The project will not result in impacts to state or federally listed, or candidate species and is not expected to impact bald or golden eagles.

Two aquatic features were identified and mapped along the Project transmission line corridor. With the implementation of the recommended impact minimization and conservation measures stipulated in this report and depicted in **Figures 1 and 2**, submittal of a NWP-12 Pre-Construction Notification Report or further consultation with the USACE is not required.

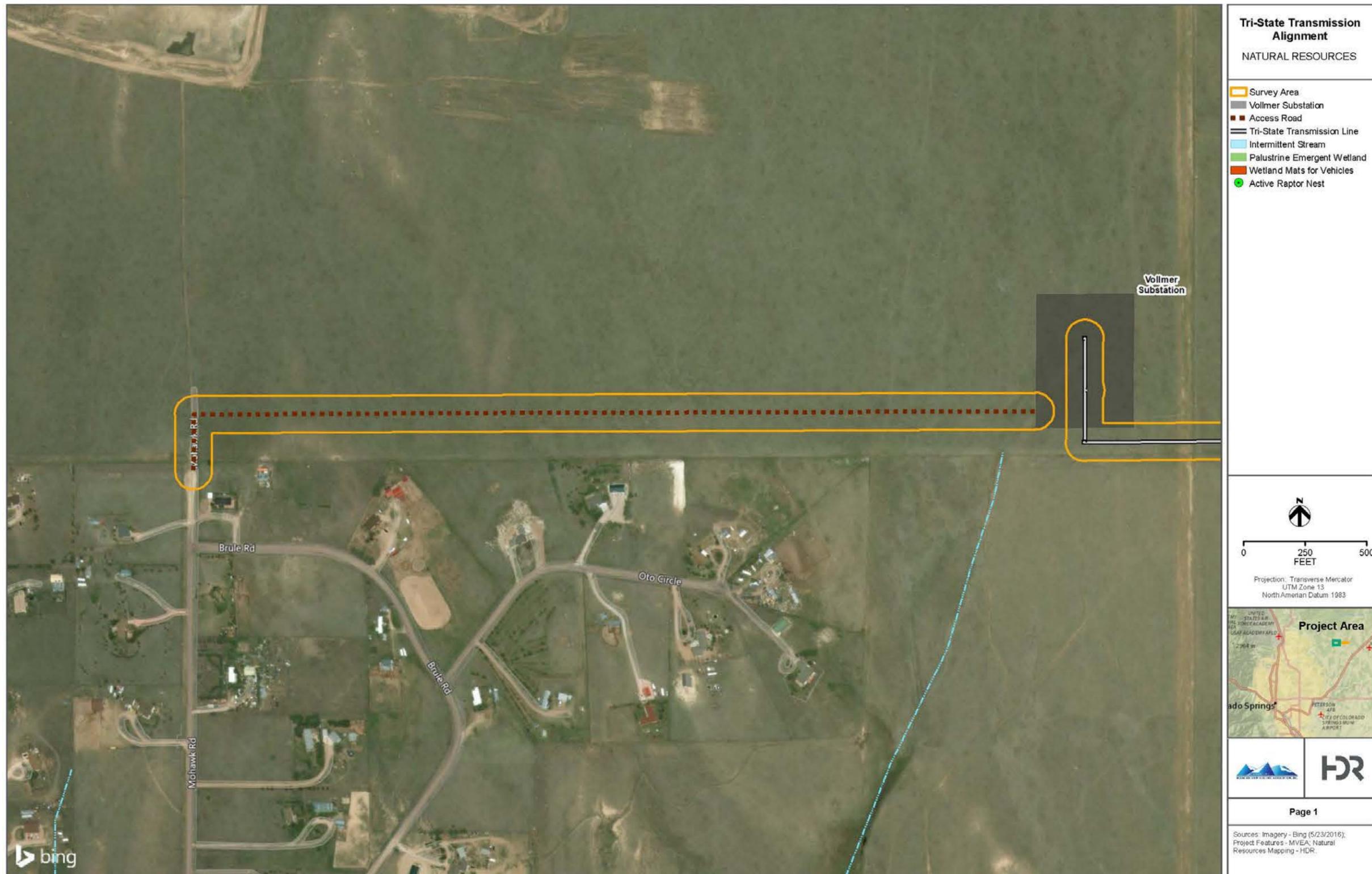


Figure 1 – Vollmer Project Area



Figure 2 – Tri-State Transmission Line Project Area

References

- Copeland et al. 2010 Copeland, J.P., K.S. McKelvey, K.B. Aubry, A. Landa, J. Persson, R.M. Inman, J. Krebs, E. Lofroth, H. Golden, J.R. Squires, A. Magoun, M.K. Schwartz, J. Wilmot, C.L. Copeland, R.E. Yates, I. Kojola, and R. May. 2010. The bioclimatic envelope of the wolverine (*Gulo gulo*): *Do climatic constraints limit its geographic distribution?*. Canadian Journal of Zoology 88: 233-246. Available online: <https://www.fs.fed.us/rm/pubs_other/rmrs_2010_copeland_j001.pdf>. Accessed June 11, 2018.
- CPW 2008 Colorado Parks and Wildlife (CPW). 2008. Recommended Buffer Zones and Seasonal Restrictions. Available online: <<https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/RaptorBufferGuidelines2008.pdf>>. Accessed June 15, 2018.
- CPW 2017 CPW. 2017. CPW Raptor Nest Spatial Dataset for Colorado. Data obtained with use-permission from CPW in September 2017.
- CPW 2018 CPW. 2018. Threatened & Endangered Species Profiles. Available online: <<http://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx>>. Accessed June 11, 2018.
- Fertig et al. 2005 Fertig, Walter, Rick Black, and Paige Wolken. 2005. Rangewide Status Review of Ute Ladies'-Tresses (*Spirantes diluvialis*). Available online: <<https://efotg.sc.egov.usda.gov/references/public/WY/UtesRangewideStatusReview2005byFertig.pdf>>. Accessed June 11, 2018.
- NRCS 2009 U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2009. Plant Guide: Ute Ladies' Tresses. Prepared by Loren St. John, USDA NRCS Plant Materials Center, Aberdeen, ID. (Published October 2009; edited September 11, 2009). Available online: <https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/idpmcpg9318.pdf>. Accessed June 11, 2018.
- USFWS 2012 USFWS. 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. Available online: <https://ecos.fws.gov/docs/recovery_plan/MSO_Recovery_Plan_First_Revision_Dec2012.pdf>. Accessed June 11, 2018.
- USFWS 2016a USFWS. 2016. Endangered Species (Mountain-Prairie Region): Wolverine (*Gulo gulo*). Available online: <<https://www.fws.gov/mountain-prairie/es/wolverine.php>>. Accessed June 11, 2018.
- USFWS 2016b USFWS. 2016. Preble's Meadow Jumping Mouse Recovery Plan, Colorado [draft] (January 12, 2016). Region 6, Lakewood, Colorado. Available online: <<https://www.fws.gov/mountain-prairie/es/species/mammals/preble/PreblesMeadowJumpingMouseRecoveryPlan.pdf>>. Access June 15, 2018.
- USFWS 2017 USFWS. 2017. Endangered Species Profile: Preble's Meadow jumping mouse (*Zapus hudsonius preblei*). Available online: <<https://www.fws.gov/mountain-prairie/es/preblesMeadowJumpingMouse.php>>. Accessed June 15, 2018.
- USFWS 2018a USFWS. 2018. Species Fact Sheet: Pallid Sturgeon (*Scaphirhynchus albus*). Available online: <https://www.fws.gov/midwest/endangered/fishes/pallidsturgeon/pallid_fc.html>. Accessed June 11, 2018.
- USFWS 2018b USFWS. 2018. Species Profile: Western Prairie Fringed Orchid (*Platanthera praeclara*). Available online: <<https://www.fws.gov/midwest/endangered/plants/pdf/prairiefringedorchids.pdf>>. Accessed June 11, 2018.
- Wrigley et al. 2012 Wrigley, M.J., M. White, B. Elliott, M. Comer, R.E. Torretta, P. Gaines, S. Olson, K. Meyer, M. Painter, J. Windorski, F. Quesada, and M. Welker. 2012. Threatened, endangered, and Forest Service sensitive species on the Pike and San Isabel National Forests (updated June 2012). Unpubl. Rpt. U.S. Department of Agriculture, Forest Service. Pike and San Isabel National Forests and Comanche and Cimarron National Grasslands. Salida, Colorado. 115pp + appendices. Available online: <https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_032420.pdf>. Accessed June 11, 2018.

