



July 10, 2017

Ms. Kari Parsons
El Paso County Planning and Development
2880 International Circle
Colorado Springs, CO 80910

**RE: Response to El Paso County Comments on the Impact Identification Report
The Retreat at Timber Ridge Residential Development
El Paso County, Colorado**

Dear Ms. Parsons:

On behalf of Arroya Investments, LLC ("Applicant"), CORE Consultants, Inc. (CORE) is submitting this letter in response to El Paso County (EPC) comments on the Impact Identification Report originally submitted on March 31, 2017 for the proposed The Retreat at Timber Ridge Residential Development Project ("Project"). The Project is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle, on portions of Sections 21, 22, 27, and 28 in Township 12 South, Range 65 West in El Paso County, Colorado (**Attachment I: Site Location Map**). The Project would consist of the construction of single family residential homes, permanent access roads, open spaces and trails, and associated facilities. EPC highlighted five areas of concern in the original submittal, as detailed below:

- 1) EPC requested a letter be issued from the USACE regarding the status of wetlands on-site. Additionally, EPC would like the wetlands in the northern portion of the Project to be preserved in a dedicated tract.
- 2) EPC highlighted "Sand Creek presented as a steeply incised and eroded channel throughout the majority of the southern portion of the Project."
- 3) EPC highlighted "Applicant has elected to defer to the County to submit a request for concurrence from the USFWS that the Project is Not likely to Adversely Affect the federally threatened PMJM."
- 4) EPC highlighted "CORE will conduct a formal wetland delineation during the growing season."
- 5) EPC highlighted the recommendation in the attached Class I Cultural Resources Report, "It is recommended prior to ground disturbing activities associated with this project that an intensive cultural resource inventory be conducted."

RESPONSE TO COMMENTS

In response to comments #1 and #4, CORE performed a routine wetland delineation of the Project on May 15 and 16, 2017 (**Attachment II: Wetland Delineation Report**). Potentially jurisdictional aquatic features were delineated on-site. Observations of hydric soils, wetland vegetation, and hydrology aided in CORE's determination of the potential regulatory status of Waters of the U.S. (WOUS), within the

Project. Based on the routine wetland delineation and document review, CORE identified 10 potentially jurisdictional wetlands, four jurisdictional (JD) channels, and five isolated wetlands on the Project (**Attachment II**).

It is anticipated that permanent impacts to WOUS would result from development of the Project. When impacts to jurisdictional wetlands exceed 0.1 acre, compensatory mitigation is required at a 1:1 ratio pursuant to Section 404 of the Clean Water Act. (CWA). Further, projects that result in the loss of greater than 300 linear feet of jurisdictional channels and/or 0.5 acres of jurisdictional wetlands and/or streambed require an Individual Permit (IP) pursuant to Section 404 of the CWA. It is anticipated that development of the Project would result in the permanent loss of jurisdictional aquatic features in excess of 300 linear feet and 0.5 acre. As such, CORE requested a site visit with the Albuquerque District of the U.S. Army Corps of Engineers (USACE) to confirm the wetland delineation conducted by CORE on May 15 and 16, 2017, review potential impacts to WOUS resulting from development of the Project, and identify and discuss potential areas for wetland mitigation within the Project (**Attachment III: Preliminary Impacts to WOUS**). At the June 29, 2017 site visit with USACE personnel, the USACE advised CORE to submit a request for a Determination of Department of the Army Permit Requirements as a means for formalizing the USACE's preliminary jurisdictional determination (pre-JD) and acknowledgement of CORE's wetland delineation (**Attachment IV: Request for Determination of Department of the Army Permit Requirements**). Additionally, CORE and the USACE identified multiple sites within the Project that would satisfy the conditions required for the successful establishment of mitigation wetlands. Following the site visit, it was determined that CORE would request a Determination of Department of the Army Permit Requirements (**Attachment IV**) in which the USACE would state that the Project would require an Individual Permit and confirm that the agency agrees with the wetland delineation of the Project performed by CORE.

In addition, the wetlands located north of Arroya Road would be preserved as open space; those wetlands are identified as Tract B in the Preliminary Development Plan.

In response to comment #2, the Applicant has prepared a drainage report that addresses stormwater management that would prevent additional erosion and incision throughout Sand Creek. The proposed stormwater detention facilities would function to detain stormwater runoff from the development and release flows at historic rates into Sand Creek, thereby reducing erosion and incision of Sand Creek over time. Please see drainage report for additional detail.

In response to comment #3, the Applicant has corresponded with the USFWS regarding the Project's potential to impact federally threatened and endangered species (TES; **Attachment V: USFWS Correspondence**). In their response, the USFWS determined that "it seems unlikely that the Project will result in take of listed species, but the Project may have minor adverse impacts to listed species that may occur in or near the Project area." Since the USFWS will not provide site-specific conservation recommendations, they provide a list of localized conservation recommendations that could be utilized prior to, during, and post-construction (**Attachment V**). The Applicant has committed to following the local conservation recommendations set forth by the USFWS to the greatest extent possible.

Colorado Parks and Wildlife (CPW) provided general conservation recommendations that would conserve Project habitat that could potentially support deer, elk, pronghorn, turkey, black bear, mountain lion, coyote, fox, raptors, songbirds, and numerous small mammals (**Attachment VI: CPW**

Correspondence). The Applicant has committed to following these recommendations to the greatest extent possible. CORE has outlined recommendations that would comply with those CPW recommendations. CORE's recommendations include:

- Perform raptor nest surveys prior to the start of construction to identify active raptor nest locations. If construction is to occur during the raptor nesting season (February 1 through July 15), CORE recommends that surveys be conducted prior to construction activities and buffers be established around active raptor nests, in accordance with the guidance in *CPW Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008). It is recommended that construction activities be performed outside of the raptor nesting season.
- Conduct breeding bird surveys prior to the start of construction but during the breeding bird season to identify active breeding bird nests. If construction is to occur during the breeding bird season (March 15 through July 31), CORE recommends that surveys be conducted prior to any grading or grubbing activities that would impact ground-nesting or tree-nesting migratory bird species. Any active nests identified during surveys should be flagged and avoided until a qualified biologist determines the nest is no longer active. Doing so would satisfy provisions listed under the MBTA (16 U.S.C. §§ 703–712). It is recommended that construction activities be performed outside the breeding bird nesting season.
- Perform noxious weed surveys and subsequent treatments prior to ground disturbing activities per the *El Paso County Weed Management Plan* (El Paso County 2014). All disturbed areas would be re-vegetated with a native seed mix at the completion of construction. The site should be monitored for a period of at least two growing seasons to prevent the establishment of noxious weeds in disturbed areas (**Attachment VII: Noxious Weed Management Plan**).
- Drainages should be crossed at areas that would result in the lowest impact to riparian habitat. Specifically, drainages would be crossed perpendicular to the flow of the stream and at locations that would cause the least erosion of banks and sedimentation; crossings should avoid mature trees that may provide suitable nest habitat to the greatest extent possible.
- Grounds should be surveyed for active fox dens prior to ground disturbance. Should an active fox den be identified, the path of construction would be modified to avoid disturbance of the active den.

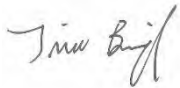
In response to comment #5, CORE notes that consultation with the State Historic Preservation Office (SHPO) would determine if the Project requires a Class III pedestrian survey. On-site discussions with the USACE have confirmed that a Class III pedestrian survey should occur only if initial consultation with SHPO indicates as much. As such, the Applicant would submit a Class III Cultural Resources report at a later date if required, as determined within the forthcoming Section 404 permitting process.

CONCLUSIONS

CORE respectfully requests your review of the above responses to El Paso County comments to the original Impact Identification Report submitted on March 31, 2017. If you should have any questions or require additional information, please feel free to contact our office directly at 303.703.4444, or at brazil@corecivil.com.

Sincerely,

CORE Consultants, Inc.



Tina Brazil

Environmental Consultant

REFERENCES

Chapman, S.S., Griffith, G.E., Omernik, J.M., Price, A.B., Freeouf, J., and Schrupp, D.L., 2006, Ecoregions of Colorado. Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000).
ftp://ftp.epa.gov/wed/ecoregions/co/co_front.pdf

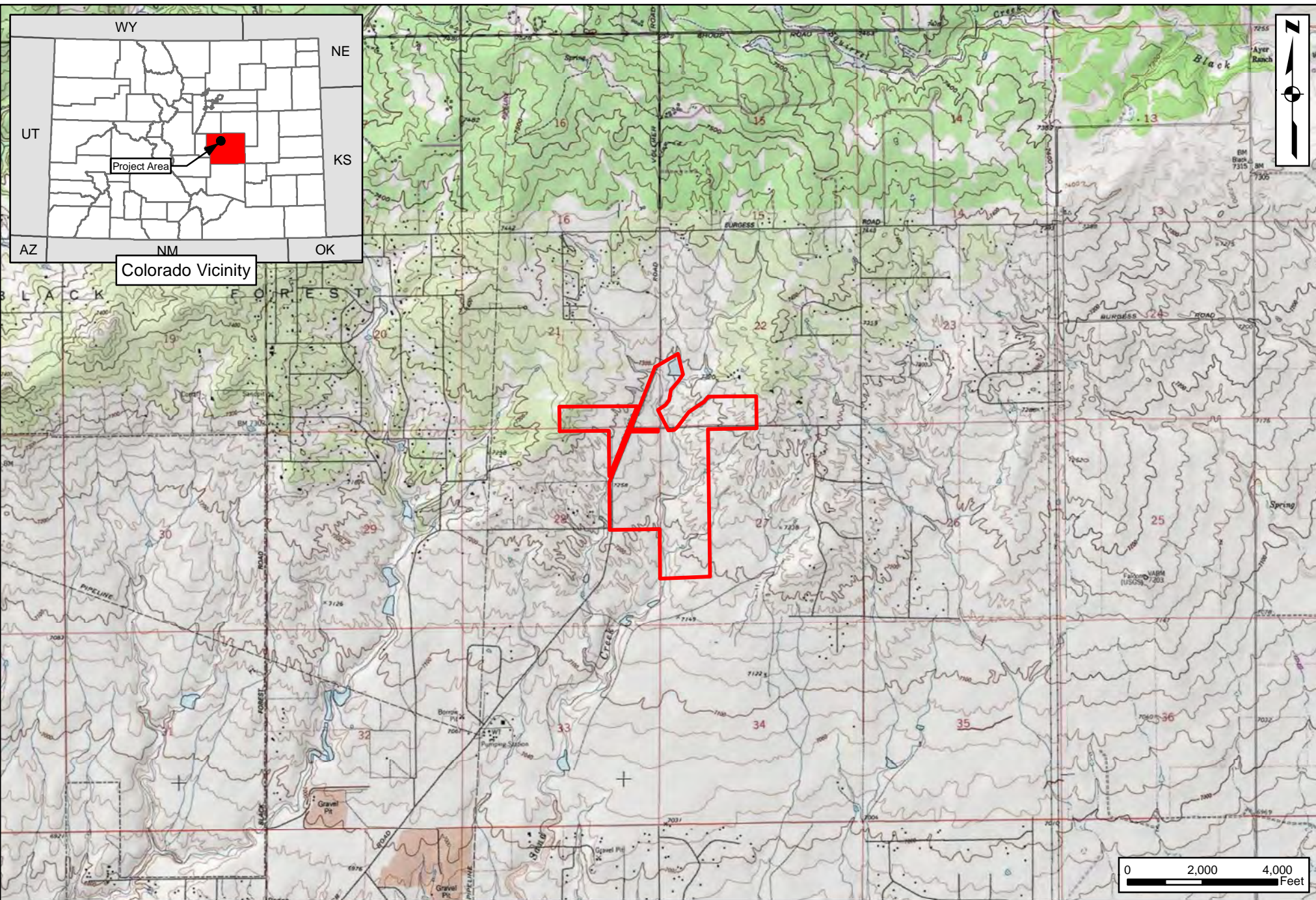
Colorado Parks and Wildlife (CPW). 2008. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors. Available online at
<https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/RaptorBufferGuidelines2008.pdf>.

El Paso County. Noxious Weed Management Plan. 2014. Available online at
<http://adm.elpasoco.com/Environmental%20Division/Forestry%20and%20Noxious%20Weeds/Documents/14-097.pdf>

U.S. Geological Survey (USGS). 7.5-Minute Topographic Maps. 1994. Falcon NW Quadrangle – Colorado.

ATTACHMENTS

- I. *SITE LOCATION MAP*
- II. *WETLAND DELINEATION REPORT*
- III. *PRELIMINARY IMPACTS TO WOUS*
- IV. *REQUEST FOR DEPARTMENT OF THE ARMY PERMIT REQUIREMENTS*
- V. *USFWS CORRESPONDENCE*
- VI. *CPW CORRESPONDENCE*
- VII. *NOXIOUS WEED MANAGEMENT PLAN*



 Project Boundary

Reference:
USGS 7.5 Minute
Topographic Quadrangle
Falcon NW, CO Quad

Retreat at Timber Ridge

Site Location Map
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059



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WETLAND DELINEATION REPORT

***The Retreat at Timber Ridge Residential Development Project
El Paso County, Colorado
Project No. 16-059***

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July 10, 2017

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- FIGURE 2. NATIONAL WETLAND INVENTORY MAP
- FIGURE 3. FEMA FLOOD INSURANCE RATE MAP
- FIGURE 4. SOIL COMPLEXES MAP
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APPENDIX II: PHOTOGRAPHIC LOG

APPENDIX III: WETLAND DELINEATION DATA FORMS

EXECUTIVE SUMMARY

CORE Consultants, Inc. (CORE) was retained by Arroya Investments, LLC (Client) to perform a wetland delineation for the proposed Retreat at Timber Ridge Residential Development Project (Project) in El Paso County, Colorado. The Project is located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane and is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle. It encompasses approximately 295 acres on Sections 17, 21, 22, and 28 in Township 12 South, Range 65 West. The Project would consist of the construction of single family residential homes, permanent access roads, open space and trails, and associated facilities.

This Executive Summary is intended to be taken in context with the following report and is not designed to be used as a separate document. The following summarizes the results of the wetland delineation.

This document is an assessment of the potential regulatory status of wetlands, significant bodies of water, watercourses, and/or floodplains located within the Project, based on Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. The wetland delineation was performed in accordance with the US Army Corps of Engineers (USACE) Great Plains Regional Supplement (Version 2.0) and the 1987 USACE Wetland Delineation Manual.

CORE conducted a site visit to assess the presence of wetlands, watercourses or other similar features within the Project on May 15 and 16, 2017. Potentially jurisdictional aquatic features were delineated on-site. Observations of hydric soils, wetland vegetation, and hydrology aided in CORE's determination of the potential regulatory status of Waters of the U.S., including wetlands, within the Project.

Based on the field reconnaissance and document review, it is the opinion of CORE that the main channel of Sand Creek and associated wetlands exhibit characteristics of Waters of the U.S. per Section 404 of the CWA. Therefore, a USACE permit would be required for the discharge of dredged or fill material into this channel and associated wetlands. Permanent impacts to jurisdictional waters could result from the development of the Project and, depending on the extent of permanent impacts, could be permitted under a Nationwide Permit or Section 404 Individual Permit.

I.0 INTRODUCTION

CORE Consultants, Inc. (CORE) was retained by Arroya Investments, LLC (Arroya) to perform a routine wetland delineation of the proposed Timber Ridge Residential Development Project (Project) located in El Paso County, Colorado. This report presents the results of the wetland delineation for the Project.

The Project encompasses approximately 295 acres located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane, northeast of the Woodmen Road and Black Forest Road intersection. The Project is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle, on portions of Sections 21, 22, 27, and 28 in Township 12 South, Range 65 West (**Attachment I: Site Location Map**). The approximate coordinates of the Project center are latitude 38.980576° N and longitude -104.663569° W (WGS 84 datum). Project elevation ranges from approximately 7,150 feet above mean sea level (AMSL) to 7,400 feet AMSL.

It is anticipated that Project impacts to Waters of the U.S. (WOUS) would result from development of the Project. As such, Project construction would require permitting under Section 404 of the Clean Water Act (CWA).

2.0 SITE DESCRIPTION

The Project lies within the Fountain watershed, referenced as 8-digit Hydrologic Unit Code (HUC) 11020003. The main channel of Sand Creek and multiple unnamed tributaries drain the Project in a southerly direction. Land use in the region is typified by rangeland grazing with increasing urban and residential development. Topography of the Project consists of rolling foothill grasslands within the southern portion of the Project transitioning into pine-oak woodlands within the northern portion of the Project (Chapman et al. 2006). Scattered, shallow ridges and dense stands of ponderosa pine (*Pinus ponderosa*) are located across the northern portion of the Project and coincide with the southern boundary of Black Forest.

Dominant species within the foothills grasslands include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switch grass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*). Scattered pine-oak communities are located across higher elevation areas of the foothills grasslands. Ponderosa pine and Gambel oak (*Quercus gambelii*) dominate the canopy and understory of the pine-oak woodlands. Mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), western serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*) are also found scattered throughout the understory.

3.0 METHODS

The purpose of the wetland delineation was to survey and delineate the boundaries of potentially jurisdictional aquatic features within the Project, as defined under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act.

Prior to the field survey, a preliminary desktop analysis was performed to evaluate overall water resource characteristics of the Project and determine the presence of potentially jurisdictional watercourses. Spatial data and aerial imagery sources reviewed included:

- National Hydrography Dataset (NHD);
- USGS topographic maps;
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps;
- Natural Resource Conservation Service (NRCS) soil survey maps; and,
- Flood Emergency Management Agency (FEMA) floodplain maps.

Watercourses and other aquatic features identified in the preliminary desktop analysis were inspected in the field to assess their jurisdictional potential. A site visit and wetland delineation were conducted on May 15 and 16, 2017. The wetland delineation was performed in accordance with the Western Mountains, Valleys, and Coasts Regional Supplement (Version 2.0) (USACE 2010) to the 1987 USACE Wetland Delineation Manual (USACE 1987).

The determination of a wetland depends on the presence or absence of three parameters: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology during the wettest season. Vegetation, soils, and hydrology were analyzed for the determination of the presence of wetlands, watercourses, and other special aquatic features. A wetland boundary delineation was conducted along potential Waters of the U.S. (WOUS), within the Project. Boundaries were mapped using a Trimble Geo 6X global positioning system (GPS) unit with sub-foot accuracy. Photographs were recorded depicting field conditions at the time of the site visit (**Appendix II: Photographic Log**). Results of the field assessment and descriptions of observed features are detailed below (**Appendix III: Wetland Delineation Data Forms**).

4.0 BACKGROUND DOCUMENTATION REVIEW

Aerial photographs, NWI maps, USGS Topographic maps, FEMA flood insurance rate maps (FIRM), and county Soil Survey maps were utilized to document Project background information. A discussion of each evaluation process follows.

4.1 Aerial Photograph Review Results

Aerial photographs dated 1999, 2003, 2004, 2005, 2006, 2008, 2011, 2013, 2015, and 2016 were obtained from the U.S. Department of Agriculture (USDA) Farm Service Agency (USDA 2016). Aerial photograph interpretation was conducted to identify potential wetlands, watercourses, and other notable landscape features within the property. Aerial imagery indicated the presence of a defined bed and bank along Sand Creek within the Project; incision and erosion of the channel appears greatest along the southern portion of the drainage within the Project. The review of aerial imagery indicated the potential presence of large wet meadow complexes north of Arroyo Lane within the Project. An interpretation of vegetation color associated with Sand Creek would indicate the presence of wetland vegetation within and along the drainage corridor.

4.2 National Wetlands Inventory Map Review

A review of NWI maps (USFWS 2017) was conducted to determine the potential presence, location, size, and type of wetlands located within the Project. The USFWS generates NWI maps through aerial photograph interpretation. NWI maps may not accurately depict the extent or existence of wetland systems in a specific area, nor do maps consistently and accurately identify wetland type. As such, the maps were utilized for preliminary analysis only. Field reconnaissance was conducted to determine the true extent and type of wetlands located within the Project.

NWI data indicated the presence of two potential wetlands in the Project classified as palustrine, unconsolidated bottom, semipermanently flooded wetlands (**Figure 2: National Wetland Inventory Map**):

NWI-identified wetlands were inspected in the field and were confirmed with field observations; NWI wetlands presented as manmade stock ponds in the field. The remainder of wetlands identified on the Project were not identified by the NWI database.

4.3 USGS Topographic Map Review

The USGS 7.5-Minute Topographic Map – Falcon North West quadrangle (USGS 1965, Revised 1994) – indicates that elevations within the Project range between approximately 7,150 and 7,400 feet AMSL (**Figure 1**). The property is generally flat with rolling hills and swales; higher elevations are located across the northern portion of the Project and gradually lessen towards the southern portion of the Project. No manmade facilities are depicted on the topographic map apart from Vollmer Road bisecting the Project.

4.4 FEMA FIRM Floodplain Review

A review of FEMA FIRM floodplain maps (FEMA 1997) was conducted to determine the existence, location, and extent of floodplains located within the Project. The FIRM maps depict floodplain areas along rivers and tributaries. The maps record the following data: 100-year (1% chance of annual flooding; Zone A) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood (Base Flood Elevations), and the risk premium zones developed from topographical information across a floodplain. FEMA generates FIRM floodplain maps for flood insurance purposes.

A review of the Counties' FEMA FIRM panels (1997) indicate the Project is located within the boundary of FIRM panel 08041C0535G, El Paso County (**Figure 3: FEMA Flood Insurance Rate Map**). The Sand Creek drainage is located within a Zone A floodplain, which indicates areas at a 1% risk of inundation during annual flooding. The remainder of the Project is located within Zone X flood zones, which consist of areas of minimal flood risk “outside the 1% and 0.2% annual-chance floodplains” (FEMA 1997).

4.5 County Soil Survey Map Review

The Counties' Soil Survey indicated the Project is composed of two soil series:), Kettle gravelly loamy sand (3 to 8 percent slopes and 8 to 40 percent slopes), and Pring coarse sandy loams (3 to 8 percent slopes) (Natural Resources Conservation Service [NRCS 2017]) (**Figure 4: Soil Complexes Map**). All soil series comprising the Project are classified as hydric soils in El Paso County by the (NRCS 2014).

5.0 RESULTS

5.1 Watercourses Including Jurisdictional Channels

The desktop review and field reconnaissance indicated that the main channel of Sand Creek and its unnamed tributaries drain the Project in a southerly direction. (**Figure 5: Wetland Location Map**). The Sand Creek drainage corridor within the Project is largely undisturbed; a culvert maintains hydrologic connectivity across Arroya Lane.

Sand Creek north of Arroya Lane presented as a multi-channel network of headwaters that converged at the main channel north of Arroya Lane. Defined bed and banks were observed across

the main channel of Sand Creek and its unnamed tributary headwaters in this portion of the Project. Stream channels containing wetlands (SCCW) were present north of Arroya Lane (SCCW 1, SCCW 2; **Figure 5**). An expansive wet-meadow wetland complex abutted the channelized headwaters and main channel as a result of topography and the presence of a large stock pond and outflow structure (Wetland 1, **Figure 5**). Specifically, the headwater complex west of the large stock pond presented as a wide, undefined wet-meadow complex with dense willow stands (*Salix boothii*, *Salix exigua*), and monotypic stands of Nebraska sedge (*Carex nebrascensis*).

The main channel of Sand Creek south of Arroya Lane presented as a well-defined SCCW for much of its stretch within the Project. The northern portion of Sand Creek south of Arroya Lane presented as a narrow (1-2-foot-wide) channel with multiple ponded areas and abutting wetlands (SCCW 3, Wetland 3; **Figure 5**); surface water was present throughout this stretch of the channel. The central portion of the Sand Creek channel transitioned to a wide, sandy drainage that largely mirrored the extent of the floodplain (Jurisdictional [JD] channel A; **Figure 5**).

Potentially jurisdictional channels were present within the western and eastern tributary. JD channel B (western tributary) presented as a well-defined, eroded channel that extended to an existing two-track road and fence line. JD C (eastern tributary) was observed along a short stretch between the western portion of the tributary identified as part of SCCW 5, and the eastern portion of the tributary identified as SCCW 4. JD C presented as a weakly defined channel with upland vegetation and sparse wetland vegetation observed in the field.

South of SCCW 5, a narrow sandy channel is present for a short stretch (JD D) prior to the reappearance of a well-established stream-wetland complex (Wetland 4, SCCW 6; **Figure 5**). Highly incised and eroded banks were present from the headcut of SCCW 6 to the southern boundary of the Project; however, braided streams and extensive abutting wetland complexes were present throughout this southern portion of the Project. Surface water was present throughout SCCW 6 and multiple, natural ponded areas are located recurrently throughout the channel in this stretch of the drainage.

5.2 Wetlands

Wetlands were observed at 14 locations within the Project including four isolated wetlands; JD channels were observed at four locations within the Project (**Table 5-1: Wetlands and JD Channels in Project**). All observed wetlands (excluding isolated wetlands) and JD channels were determined potentially jurisdictional. Soils, hydrologic indicators, and vegetation were examined on site to determine the presence or absence of wetlands.

Potentially jurisdictional wetlands were observed within the Sand Creek headwaters complex north of Arroya Lane (**Figure 5**). Field indicators included a defined bed and bank and dense, often monotypic hydrophytic vegetation within the channels. Wetland 1 consisted of a large, manmade stock pond with wetlands, and was characterized as palustrine unconsolidated bottom, permanently flooded (PUBh). Large stands of Booth's willow were present along the northern edge of Wetland 1, and narrow-leaved cattail (*Typha angustifolia*) stands were observed throughout shallow areas of Wetland 1. Approximately 20% wetland vegetative cover was observed across Wetland 1. An outflow or breach of the southwest corner has created a narrow channel (SCCW 1) that converges with Wetland 2 (**Figure 5**). SCCW 1 presented as riverine, lower perennial, unconsolidated bottom, semipermanently flooded (R2UBF). Wetland 2 is characterized as palustrine, emergent, persistent, and seasonally flooded (PEMIC) and presented as a wide, undefined wet meadow-

headwater complex; surface water and/or saturation was present throughout Wetland 2 and dense monotypic stands of Booth's willow were present in the northern half of Wetland 2. Dense herbaceous cover of hydrophytic vegetation was observed throughout the southern half of Wetland 2 (**Appendix II**). A culvert maintains hydrologic connectivity between SCCW 2 and SCCW 3 north and south of Arroya Lane. Field indicators included surface water and dense hydrophytic vegetation lining the channels. Field sampling indicated the presence of hydric soils and hydrologic indicators within the boundaries of SCCW 2 (immediately outside of the Project). SCCW 2 was characterized as riverine, intermittent, stream bed, intermittently flooded (R4SBJ); surface water was present in portions of the channel. Field sampling within SCCW 3 indicated the presence of anoxic soil conditions; surface water and/or saturation was observed throughout SCCW 3 (**Appendix II**). SCCW 3 was characterized as R2UBF. A depressional wetland (Wetland 3) was observed outside of the stream channel abutting SCCW 3, south of Arroya Lane (**Figure 5, Table 5-1**).

The drainage transitioned from SCCW to short stretches of dry channel within the central portion of the Project, in the vicinity of the western and eastern tributary. Incision and erosion of the main channel of Sand Creek increased at this location; large contiguous zones of upland vegetation were observed within the ordinary high water mark (OHWM). Well defined dry channels were observed within the western tributary (JD channel B), across a short stretch of the main channel of Sand Creek (JD channel A, JD channel D), and across a short stretch of the eastern tributary (JD channel C) (**Figure 5, Table 5-1**). SCCW 4 was observed upstream of JD channel C within the eastern tributary and was characterized as PEM1C; it is likely that the in-channel wetlands at SCCW 4 exist as a result of seepage from the stock pond (Pond I). Although a berm exists across the channel upstream of SCCW 4, saturation was observed at the berm and it was determined that hydrologic connectivity is maintained between SCCW 4 and Pond I. Pond I was characterized as LIUB3Hh (lacustrine, limnetic, unconsolidated bottom, mud, permanently flooded, diked/impounded).

The main channel of Sand Creek transitioned between a dry channel and SCCW 5 for approximately 800 feet within the vicinity of the western and eastern tributary (**Figure 5**). A small depressional wetland (Wetland 4) was observed abutting JD channel D and was characterized as PEM1C. A well-defined headcut was observed at the downstream edge of JD channel D, at which point a well-defined SCCW (SCCW 6) is present to the southern boundary of the Project (**Appendix II**). SCCW 6 was characterized as R2UBF throughout its stretch in the southern portion of the Project; flowing water and ponded areas were present at the time of the field visit. Field indicators of SCCW 6 included hydric soils, surface water and/or saturation, and dense stands of hydrophytic vegetation within and adjacent to the braided channels of Sand Creek (**Figure 5, Appendix III**).

A minor, isolated swale was located to the northwest of the intersection of Vollmer Road and Arroya Lane. Culverts are located under the Vollmer Road and Arroya Lane crossings, which have likely resulted in the extension of the reach of the swale downstream. Small areas of isolated wetlands were observed on the western side of the culvert (Isolated Wetland 2), eastern side of the culvert (Isolated Wetland 3), and southern side of Arroya Lane (Isolated Wetland 4) (**Figure 5**). Wetlands were not observed downstream of Isolated Wetland 4: the swale transitions to uplands approximately 900 feet downstream of the culvert crossing.

Table 5-1. Wetlands and JD Channels in Project

Wetland ID	Latitude	Longitude	Wetland Type
Wetland 1	38.988244 ° N	-104.661990° W	PUBH (palustrine, unconsolidated bottom, permanently flooded)
SCCW 1	38.987976° N	-104.662788° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)
Wetland 2	38.987135° N	-104.663555° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
SCCW 2	38.987510° N	-104.661942° W	R4SBJ (Riverine, intermittent, stream bed, intermittently flooded)
SCCW 3	38.982892° N	-104.662175° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)
Wetland 3	38.982246° N	-104.661788° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
Isolated Wetland 1	38.980263° N	-104.661558° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
JD Channel A	38.979594° N	-104.661871° W	NA-Ordinary High Water Mark (OHWM)
Pond 1	38.980948° N	-104.659111° W	L1UB3Hh (lacustrine, limnetic, unconsolidated bottom, mud, permanently flooded, diked/impounded)
SCCW 4	38.980312° N	-104.659737° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
SCCW 5	38.979186° N	-104.661799° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
Wetland 4	38.978915° N	-104.662309° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
JD Channel B	38.979668° N	-104.663490° W	NA-Ordinary High Water Mark (OHWM)
JD Channel C	38.979266° N	-104.661274° W	NA-Ordinary High Water Mark (OHWM)
JD channel D	38.978781° N	-104.662588° W	NA-Ordinary High Water Mark (OHWM)
SCCW 6	38.977475° N	-104.663490° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)
Isolated Wetland 2	38.984138 ° N	-104.666265 ° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
Isolated Wetland 3	38.984016° N	-104.665910° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)
Isolated Wetland 4	38.983738° N	-104.665633° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)

5.3 Soils

As described above, the dominant soil associations located within the Project include Kettle gravelly loamy sand (3 to 8 percent slopes and 8 to 40 percent slopes), and Pring coarse sandy loams (3 to 8

percent slopes) (NRCS 2017) (**Figure 4**). All soil series within the Project are listed as hydric within El Paso County (NRCS 2014). Project totals for each soil series/complex are as follows:

- Kettle gravelly loamy sand (3 to 8 percent slopes and 8 to 40 percent slopes) makes up 5% of the Project;
- Pring coarse sandy loams (3 to 8 percent slopes) makes up 95% of the Project and is dominant across the Sand Creek drainage.

Six soil samples were taken at sample points within the Project (**Figure 5**). All Sample Points were located within the Pring coarse sandy loam complex. Sample Point 1 consisted of loams, loamy sands, and silty clays; the soil profile of Sample Point 1 contained distinct layers of starkly different soil textures. Positive soil indicators at Sample Point 1 included a depleted matrix (F3) and loamy gleyed matrix (F2) (**Appendix III**). The gleyed matrix is likely a result of anoxic conditions since Sample Point 1 was well within the wetland boundary. Sample Point 2 consisted of sandy loams; no hydric soil indicators were observed at Sample Point 2 (**Appendix III**). Soils at Sample Point 2 were uniform from the surface to 18 inches at depth. Sample Point 3 consisted of sand grains of varying colors from the surface to 18 inches depth; no hydric soil indicators were observed at Sample Point 3 (**Appendix III**). The soil profile at Sample Point 4 comprised three distinct layers consisting of sandy loams, loamy sands, and sandy loams. Groundwater was present at 8 inches depth; hydrogen sulfide odor (A4) was observed. The soil profile at Sample Point 5 comprised three distinct layers consisting of loamy sands; different chromas and values were observed within each layer. The water table was observed at 8 inches depth, and a gley value and chroma were recorded at the time of sampling. Since the gley soil color was not observed within six inches of the surface, a sandy gleyed matrix was not indicated positive. However, sandy redox (S5) and hydrogen sulfide odor (A4) indicators were observed (**Appendix III**). The soil profile at Sample Point 6 consisted of three distinct layers of sandy clay loams, sandy loams, and sandy clay loams. Redox features were distinct within each layer and hydric soil indicator – depleted matrix (F3) was recorded.

5.4 Hydrology

Hydrology across the Project is provided by normal precipitation and runoff events. Hydrology of the main channel of Sand Creek and its tributaries is largely undisturbed, but may be influenced at some locations by stock pond seepage. Hydrology of abutting and the isolated wetlands is provided by intermittent to seasonal inundation from runoff.

The hydrology of Sand Creek and its unnamed tributaries north of Arroya Lane is provided intermittently by year-round precipitation events. A large, manmade stock pond (Wetland 1) is located across the main channel of Sand Creek within the northern portion of the Project. SCCW 1 is likely a result of the outfall structure since the NHD database does not identify SCCW 1 as a known tributary. The hydrology of Wetland 2 is also likely largely influenced by the outfall of Wetland 1; SCCW 1 drains to Wetland 2 and provides year-round inundation. Saturation was observed across Wetland 2 at the time of the site visit. Surface water was not present within SCCW 2; however, field sampling indicated the presence of highly distinct oxidized rhizospheres on living roots (C3). Hydrology of SCCW 2 was characterized as intermittent since surface water was not observed during the growing season at the time of the site visit.

The main channel of Sand Creek south of Arroya Lane presented as perennial throughout most of its stretch within the Project. Surface water was present within SCCW 3 at the time of the field visit;

the absence of vegetation across the channel would suggest inundation occurs throughout most of the year. Oxidized rhizospheres (C3) were observed at Sample Point 1 within SCCW 3. SCCW 4 and SCCW 5 presented as seasonally flooded emergent wetlands. The hydrology of SCCW 4 is likely additionally provided, in part, by seepage of the stock pond upstream of the channel (Pond 1). Saturation was observed immediately downstream of the berm at the upstream boundary of SCCW 4. Since saturation was observed at this location and hydrologic connectivity is maintained through the berm, it was determined that a significant nexus exists between SCCW 4 and Pond 1. As such, Pond 1 was determined jurisdictional. Positive hydrologic indicators at Sample Point 4 within SCCW 5 included a high water table (A2), saturation (A3), and hydrogen sulfide odor (C1) (**Appendix III**).

The main channel of Sand Creek downstream of SCCW 5 transitions to a dry channel (JD Channel D) for approximately 250 feet. A seasonally inundated depressional wetland (Wetland 4) was observed abutting the northern edge of JD Channel D. Hydrology of Wetland 4 is likely provided by seasonal inundation and a high water table as evidenced by the high water table at Sample Point 4. SCCW 6 was characterized as a lower perennial stream channel containing wetlands. A strong headcut is located at the upstream edge of SCCW 6, and flowing water was present throughout its stretch within the Project (**Appendix II**). The low-flow channel resulted in multiple ponded areas and braided channels within this portion of the drainage. Positive hydrology indicators observed at Sample Point 5 within SCCW 6 included oxidized rhizospheres on living roots (C3) and the presence of the water table at 18 inches depth and saturation present at 17 inches depth within the sampling pit (**Appendix III**).

5.5 Vegetation

Wetland plant indicator status was determined following the Western Mountains, Valleys, and Coasts National Wetland Plant List (Lichvar et al. 2016). Upland areas were dominated by pine-oak woodlands and foothills grasslands native and noxious species including ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), eastern cottonwood (*Populus deltoides*), wild rose (*Rosa woodsii*), yellow sweet clover (*Melilotus officinalis*), harebell (*Campanula rapunculoides*), curly dock (*Rumex crispus*), soapweed yucca (*Yucca glauca*), common mullein (*Verbascum thapsus*), knapweeds (*Centaurea* spp.), willows (*Salix* spp.), crested wheatgrass (*Agropyron cristatum*), squirrel tail (*Elymus elymoides*), blue grama (*Bouteloua gracilis*), and fescue (*Festuca* sp.).

Monotypic stands of hydrophytic vegetation were present within a well-defined wetland boundary at most wetland locations throughout the Project. Cottonwoods, aspens, and dense stands of willows lined a well-developed riparian corridor throughout much of the main channel of Sand Creek (**Appendix II**).

Wetland vegetation at Wetland 1 and Wetland 2 was dominated by Booth's willow, Nebraska sedge, and Baltic rush (*Juncus arcticus*). Narrow-leaved cattail was present along the edges of Wetland 1. Nebraska sedge lined the channel bed within SCCW 2; Baltic rush was observed within and adjacent to SCCW 2 immediately outside of the wetland/upland boundary.

Wetland vegetation within the main channel of Sand Creek south of Arroya Lane was dominated by Nebraska sedge, Baltic rush, and narrow-leaved cattail within ponded areas (**Appendix II**). Baltic rush was observed both within and immediately outside of the wetland/upland boundary. The western and eastern tributaries were dominated by Nebraska sedge, Baltic rush, and clustered field sedge (*Carex praegracilis*).

6.0 CONCLUSIONS AND RECOMMENDATIONS

In summary, the Project is located within the Fountain watershed. The main channel of Sand Creek, and associated headwater complex and tributaries drain the Project in a southerly direction. A well-defined bed and bank were observed along the main channel of Sand Creek throughout its stretch within the Project; wetlands are present within and abutting the stream channel throughout much of the drainage. Wetlands were observed within the Sand Creek headwater complex north of Arroya Lane, and an expansive wet meadow is situated adjacent to and maintains hydrologic connectivity with the main channel of Sand Creek. Accordingly, impacts to this channel and abutting or adjacent wetlands would require permitting through the USACE under Section 404 of the CWA, pending final Project design.

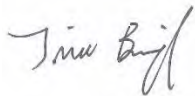
The USACE typically has jurisdiction over navigable or traditionally navigable waters, relatively permanent waters, and wetlands that abut such waters, and determines jurisdiction over other waters based predominantly on their significant nexus to navigable or traditionally navigable waters (i.e. WOUS). A permit under Section 404 of the Clean Water Act is required for the discharge of dredged or fill material into WOUS and mitigation may be required pending Project impacts.

While the USACE regulates only those activities resulting in a discharge of dredge or fill material into waters of the U.S., the Colorado Department of Public Health and Environment (CDPHE) has the authority to regulate activities resulting in a discharge of pollutants into state waters. The CDPHE conducts Section 401 certification reviews of projects in Colorado requiring a Section 404 permit from the USACE. The purpose of review for certification is to determine whether a proposed discharge will comply with Colorado water quality standards.

Should impacts to WOUS result in the loss of greater than 0.5 acre and/or 300 linear feet of stream bed, the Project would be permitted under an Individual Permit (IP). A Pre-Construction Notification is not required for activities permitted under an IP. Rather, IPs require a 30-day public notice period, and a separate 401 Water Quality Certification through CDPHE.

Should you have any questions regarding this report or any other matter, please feel free to contact us at (303) 703-4444.

Sincerely,
CORE Consultants, Inc.

A handwritten signature in black ink, appearing to read 'Tina Brazil', is written over a light blue circular stamp.

Tina Brazil
Environmental Consultant

REFERENCES

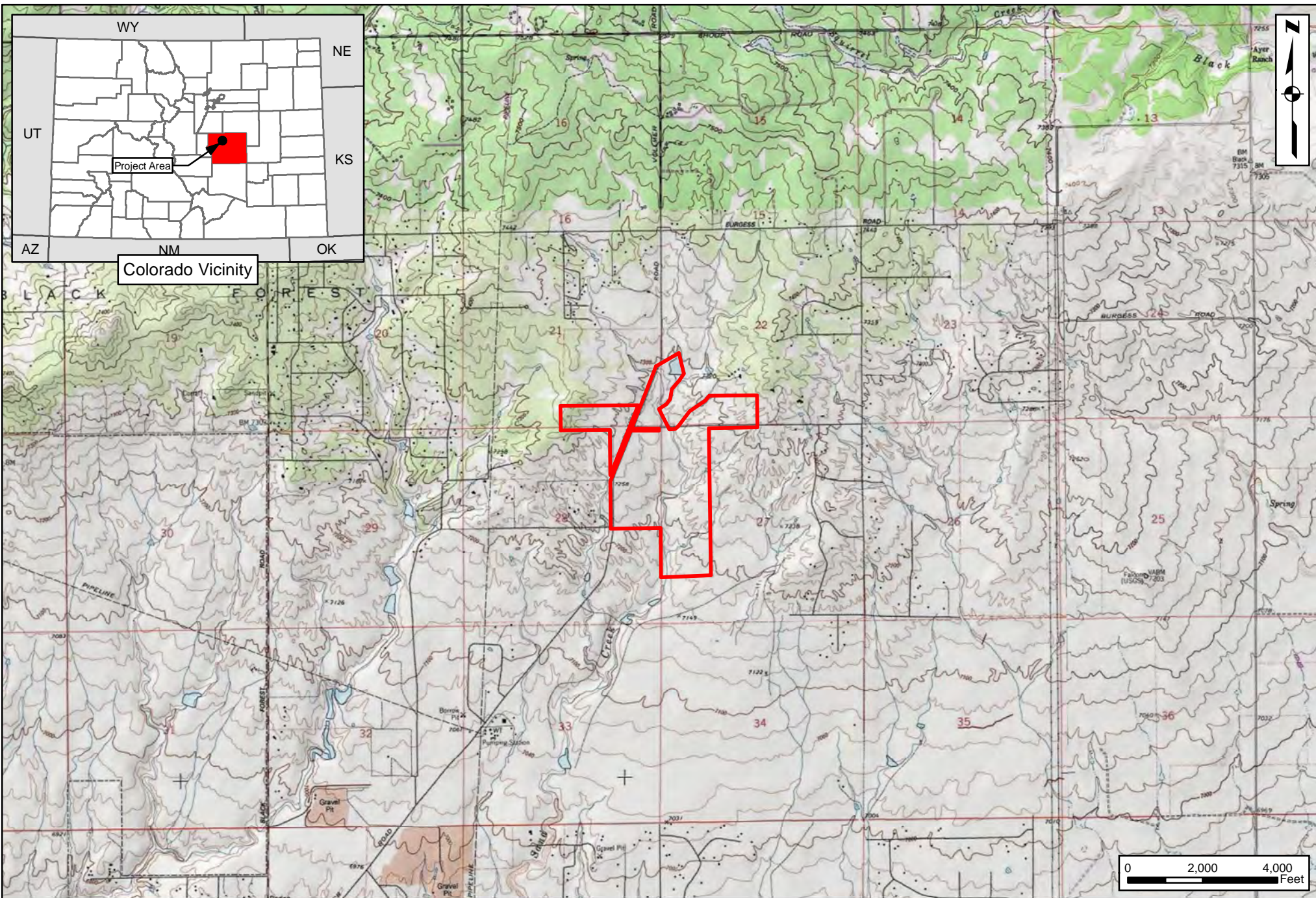
- Chapman, S.S., G.E. Griffith, J.M. Omernik, A.B. Price, J. Freeouf, and D.L. Schrupp. 2006. Ecoregions of Colorado (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,950,000).
- Federal Emergency Management Agency. 1997. El Paso County, Colorado FEMA Flood Insurance Rate Maps. Panel 08041C0535G.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Update of Wetland Ratings. Phytoneuron 2016-30: 1-17.
- Natural Resources Conservation Service. 2014. List of Hydric Soils. Available online at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>.
- _____. 2017. Official Soil Series Descriptions. Available online at: <https://soilseries.sc.egov.usda.gov/osdname.aspx>
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts Regional Supplement (Version 2).
- _____. 1987. Wetlands Delineation Manual.
- U.S. Department of Agriculture. 2010. Farm Service Agency – National Agricultural Imagery Program.
- U.S. Fish and Wildlife Service. 2017. National Wetland Inventory. Available online at <http://www.fws.gov/wetlands/>.
- U.S. Geological Survey 7.5-Minute Topographic Maps. 1994. Sable Quadrangle – Colorado.



APPENDIX I

FIGURES

- FIGURE 1. SITE LOCATION MAP
- FIGURE 2. NATIONAL WETLAND INVENTORY MAP
- FIGURE 3. FEMA FLOOD INSURANCE RATE MAP
- FIGURE 4. SOIL COMPLEXES MAP
- FIGURE 5. WETLAND LOCATION MAP



 Project Boundary

Reference:
USGS 7.5 Minute
Topographic Quadrangle
Falcon NW, CO Quad

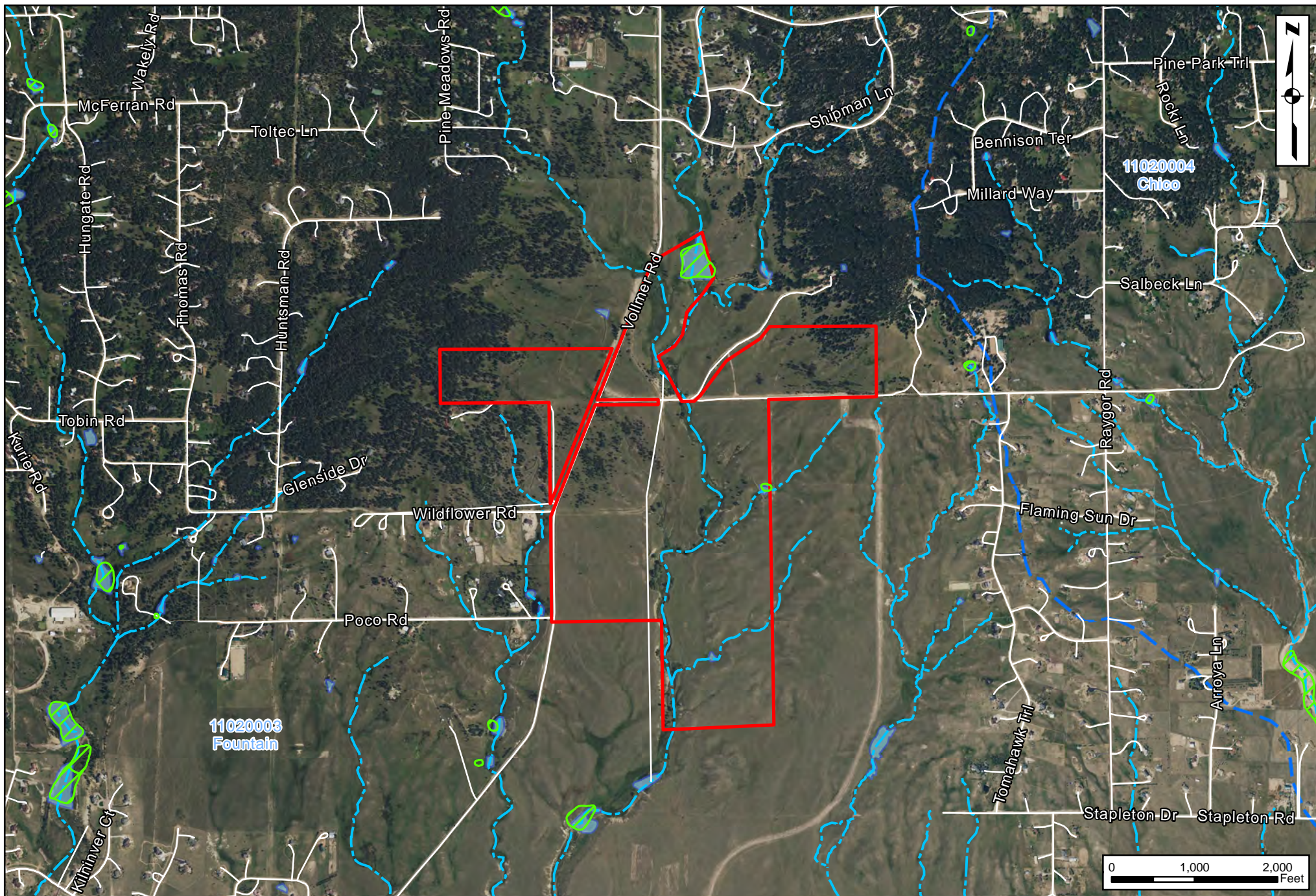
Retreat at Timber Ridge

Site Location Map
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059



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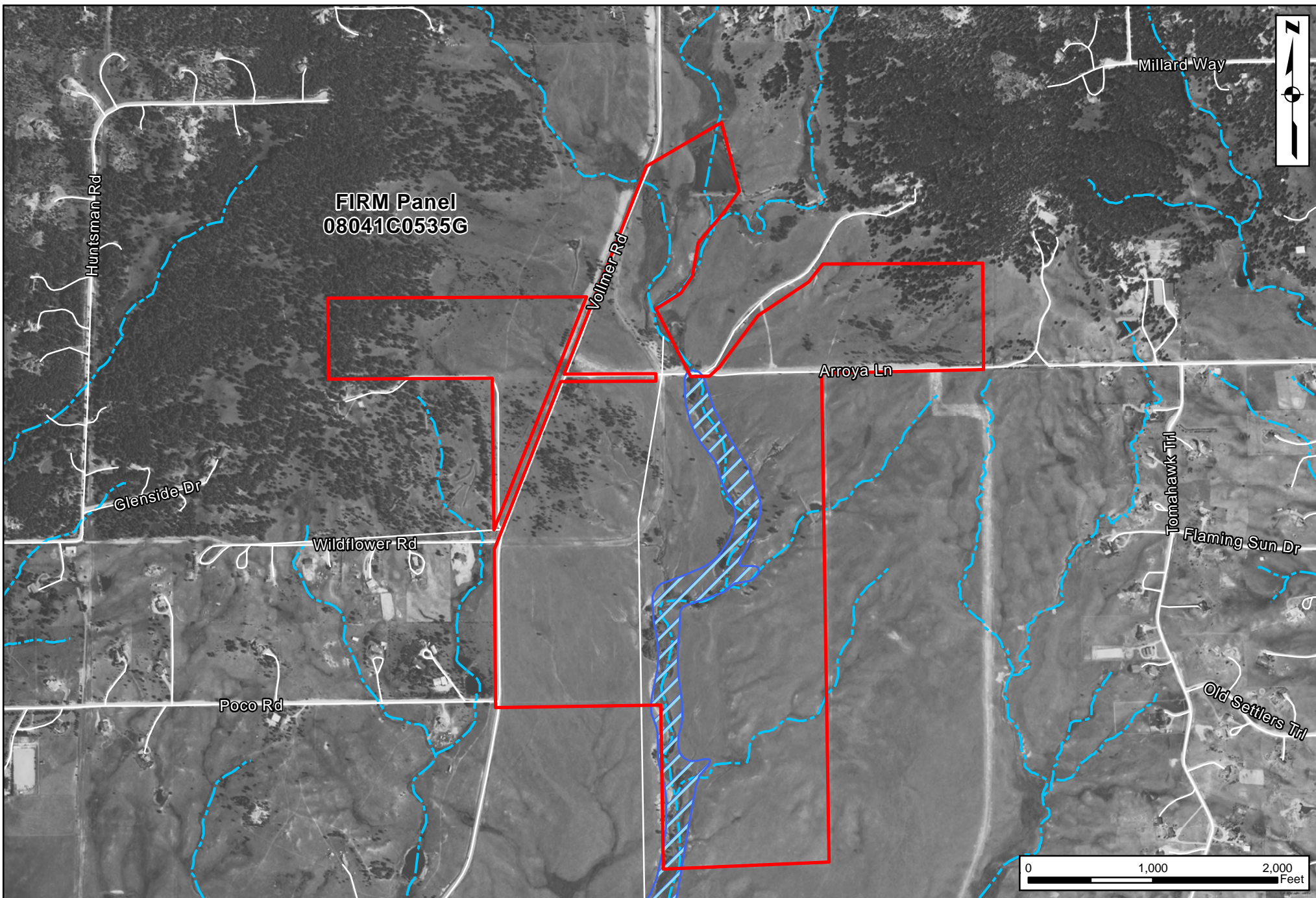
- Project Boundary
- NHD Watercourse
- NHD Waterbody
- NWI Wetland
- USGS Watershed




The Retreat at Timber Ridge
National Wetland Inventory Map
 El Paso County, Colorado

Date: 4/3/2017
 CORE Project #: 16-059



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 Littleton, CO 80120



-  Project Boundary
-  NHD Watercourse
-  Zone A: 100-year floodplain

The Retreat at Timber Ridge

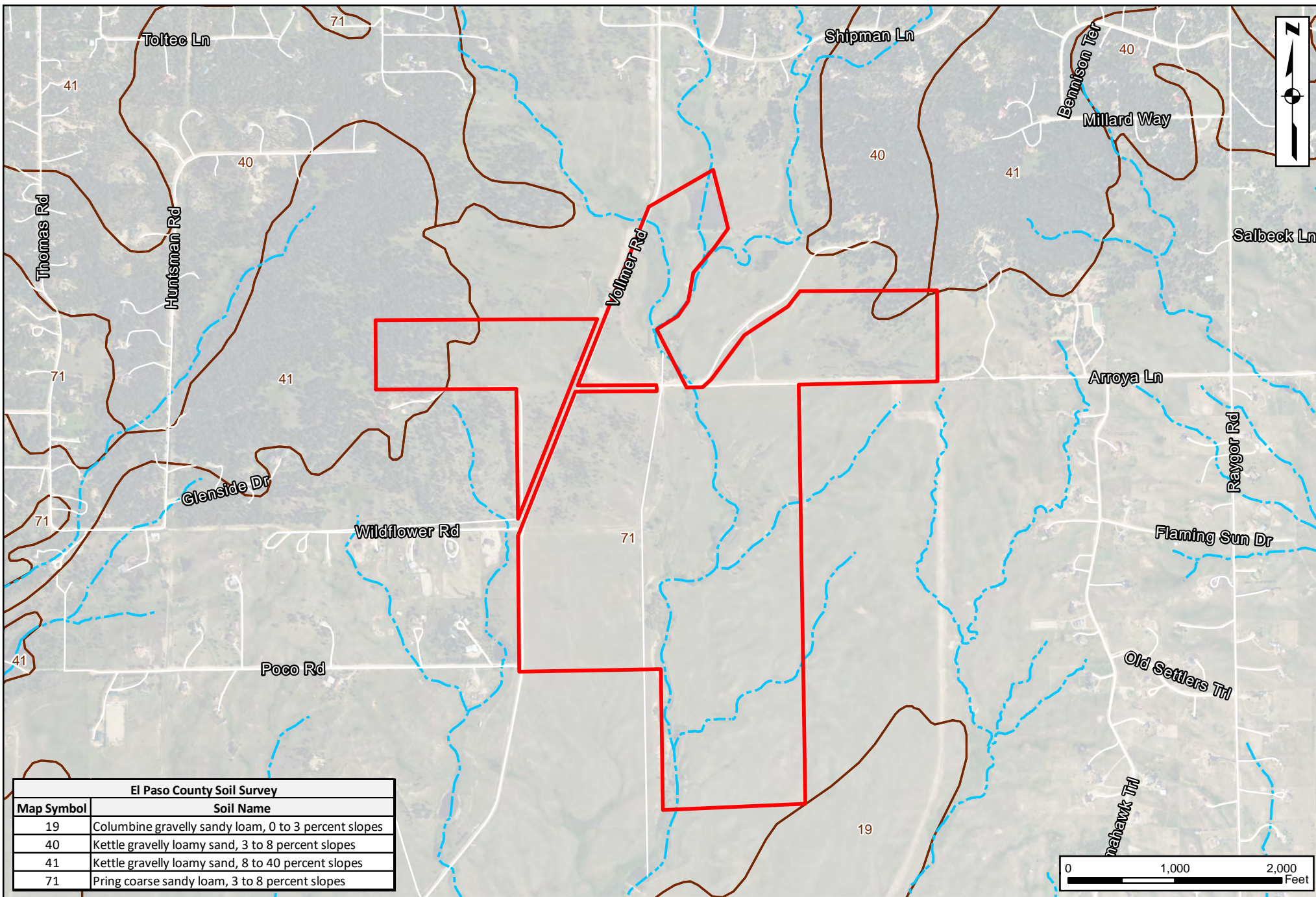
FEMA FIRM Panel
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059






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El Paso County Soil Survey	
Map Symbol	Soil Name
19	Columbine gravelly sandy loam, 0 to 3 percent slopes
40	Kettle gravelly loamy sand, 3 to 8 percent slopes
41	Kettle gravelly loamy sand, 8 to 40 percent slopes
71	Pring coarse sandy loam, 3 to 8 percent slopes

-  Project Boundary
-  NHD Watercourse
-  Soil

The Retreat at Timber Ridge
County Soil Survey Map
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059

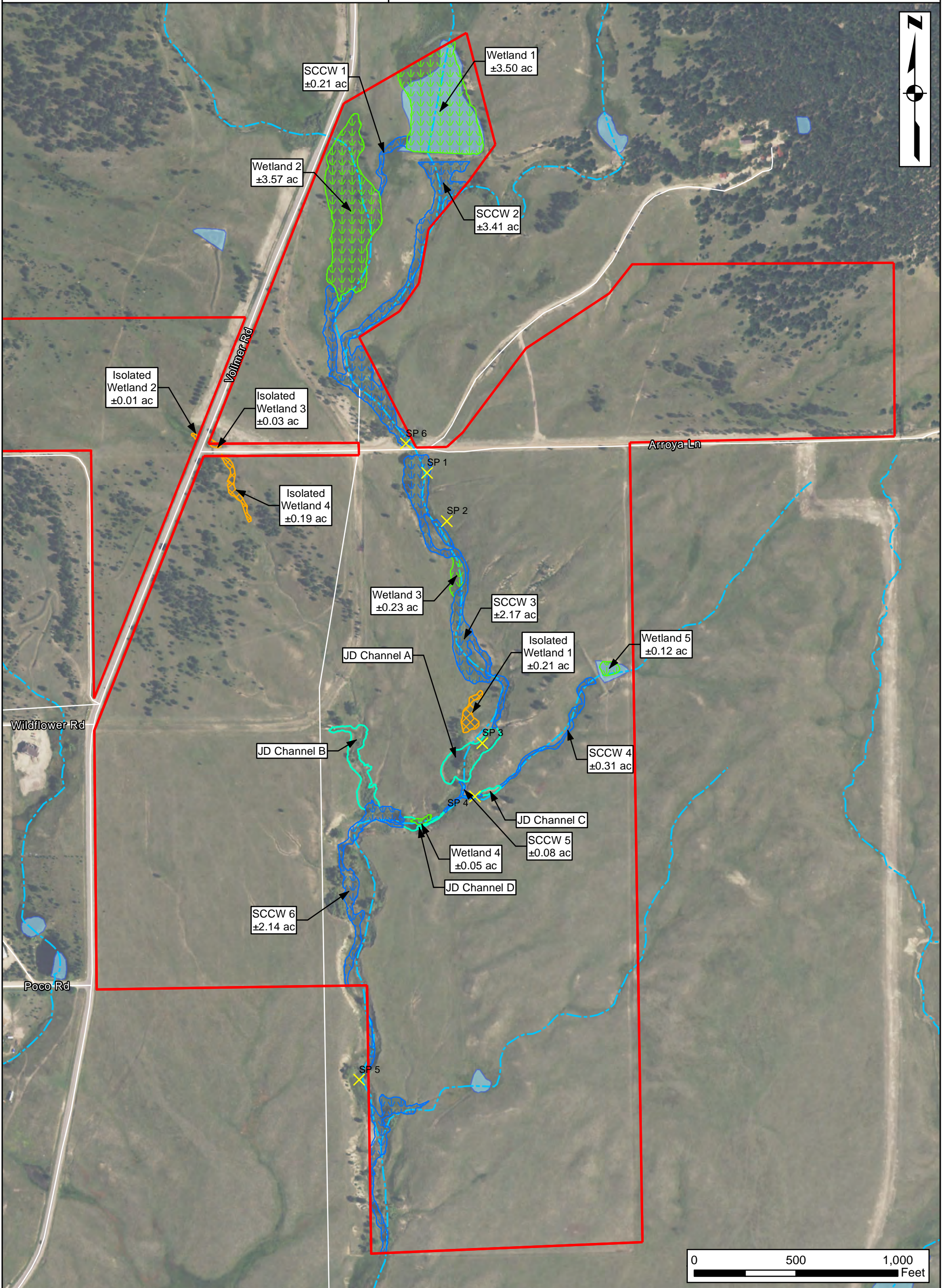


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Trails at Timber Ridge

Wetland Location Map

El Paso County, Colorado



- Project Boundary
- NHD Watercourse
- NHD Waterbody
- Sample Point
- JD Channel (OHWM)
- Stream Channel Containing Wetlands
- Wetland
- Pond
- Isolated Wetland



APPENDIX II

PHOTOGRAPHIC LOG



South of Aroya Lane, looking north at SCCW 3



SCCW 3, facing north



Eastern tributary, facing east



Western tributary, facing west



Southern portion of Sand Creek main channel, facing south at SCCW 6



Immediately north of Arroya Lane, facing north at SCCW 2



Wetland 2 (wet meadow) looking southwest



North edge of Wetland I, looking south



APPENDIX III

WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: El Paso County Sampling Date: 05/15/2017
 Applicant/Owner: Arroya Investments LLC State: CO Sampling Point: 1
 Investigator(s): Tina Brazil Section, Township, Range: Section 27, 12 S, 65 W
 Landform (hillslope, terrace, etc.): toe of bank Local relief (concave, convex, none): concave Slope (%): 4
 Subregion (LRR): C7 Lat: 38.98357 Long: -104.66225 Datum: NAD83
 Soil Map Unit Name: Pring coarse sandy loam NWI classification: nr
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15' x 15'</u>)				Prevalence Index worksheet:	
1. <u>Salix boothii</u>	<u>7</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>96</u>	x 2 = <u>192</u>
4. _____	_____	_____	_____	FAC species <u>0</u>	x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>5</u>	x 4 = <u>20</u>
= Total Cover				UPL species <u>3</u>	x 5 = <u>15</u>
Herb Stratum (Plot size: <u>5' x 5'</u>)				Column Totals:	<u>104</u> (A) <u>227</u> (B)
1. <u>Juncus arcticus</u>	<u>89</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Prevalence Index = B/A = <u>2.18</u>	
2. <u>Ambrosia psilostachya</u>	<u>2</u>		<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	+ 1 - Rapid Test for Hydrophytic Vegetation	
4. <u>Taraxacum officinale</u>	<u>2</u>		<u>FACU</u>	+ 2 - Dominance Test is >50%	
5. <u>Centaurea diffusa</u>	<u>1</u>		<u>UPL</u>	+ 3 - Prevalence Index is ≤3.0 ¹	
6. <u>Verbascum thapsus</u>	<u>1</u>		<u>FACU</u>	= 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
7. <u>Bouteloua gracilis</u>	<u>2</u>		<u>UPL</u>	= 5 - Wetland Non-Vascular Plants ¹	
8. _____	_____	_____	_____	= Problematic Hydrophytic Vegetation ¹ (Explain)	
9. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
11. _____	_____	_____	_____	Remarks:	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum _____					

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-4	5YR 3/1	100					L	
4-8	5YR 3/1						LS	sand grains multiple colors
8-18	6.5Y 3.5/N	90	2.5YR 4/8	9	C	PL	Si Cl	

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

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

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: El Paso County Sampling Date: 05/15/2017
 Applicant/Owner: Arroyo State: CO Sampling Point: 2
 Investigator(s): TJB Section, Township, Range: 27, 12S, 65W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR): G Lat: 38.98295 Long: 104.66189 Datum: WGS84
 Soil Map Unit Name: Pring coarse sandy loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
= Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>47</u></td> <td>x 4 = <u>188</u></td> </tr> <tr> <td>UPL species <u>3</u></td> <td>x 5 = <u>15</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>283</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.14</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>47</u>	x 4 = <u>188</u>	UPL species <u>3</u>	x 5 = <u>15</u>	Column Totals: <u>90</u> (A)	<u>283</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>40</u>	x 2 = <u>80</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>47</u>	x 4 = <u>188</u>																	
UPL species <u>3</u>	x 5 = <u>15</u>																	
Column Totals: <u>90</u> (A)	<u>283</u> (B)																	
= Total Cover																		
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____																		
= Total Cover																		
Herb Stratum (Plot size: <u>5x5</u>) 1. <u>Juncus arcticus</u> <u>40</u> <input checked="" type="checkbox"/> <u>FACW</u> 2. <u>Verbascum thapsus</u> <u>2</u> <input type="checkbox"/> <u>FACU</u> 3. <u>Campanula rapunculoides</u> <u>1</u> <input type="checkbox"/> <u>UPL</u> 4. <u>Poa secunda</u> <u>45</u> <input checked="" type="checkbox"/> <u>FACU</u> 5. <u>Centaurea diffusa</u> <u>2</u> <input type="checkbox"/> <u>UPL</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____																		
= Total Cover																		
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____																		
= Total Cover																		
% Bare Ground in Herb Stratum <u>0</u>																		
Remarks:																		

Hydrophytic Vegetation Present? Yes ☐ No ☒

Sampling Point:

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Secondary Indicators (2 or more required)

- Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
- Water Table Present? Yes ☐ No ☒ Depth (inches): _____
- Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Western Mountains, Valleys, and Coast – Version 2.0

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: El Paso County Sampling Date: 05/15/2017
 Applicant/Owner: Arroya Investments, LLC State: CO Sampling Point: 3
 Investigator(s): Tina Brazil Section, Township, Range: 27, 12S, 65W
 Landform (hillslope, terrace, etc.): in-channel Local relief (concave, convex, none): convex Slope (%): 1
 Subregion (LRR): G Lat: 38.98000 Long: -104.66126 Datum: WGS 84
 Soil Map Unit Name: Pring coarse sandy loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: <u>Vegetation present but outside of definitive wetland margin/ boundary</u>					

VEGETATION – Use scientific names of plants.

















Tree Stratum (Plot size: <u>30'x30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus tremuloides</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
4. _____				
Sapling/Shrub Stratum (Plot size: <u>15'x15'</u>)				Prevalence Index worksheet:
1. <u>Salix boothii</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Total % Cover of:
2. _____				OBL species <u>0</u> x 1 = <u>0</u>
3. _____				FACW species <u>106</u> x 2 = <u>212</u>
4. _____				FAC species <u>0</u> x 3 = <u>0</u>
5. _____				FACU species <u>10</u> x 4 = <u>40</u>
Herb Stratum (Plot size: <u>5'x5'</u>)				UPL species <u>0</u> x 5 = <u>0</u>
1. <u>Juncus arcticus</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Column Totals: <u>116</u> (A) <u>252</u> (B)
2. <u>Ambrosia psilostachya</u>	<u>5</u>		<u>FACU</u>	Prevalence Index = B/A = <u>2.17</u>
3. <u>Salix boothii</u>	<u>6</u>		<u>FACW</u>	
4. _____				Hydrophytic Vegetation Indicators:
5. _____				<u>-</u> 1 - Rapid Test for Hydrophytic Vegetation
6. _____				<u>+</u> 2 - Dominance Test is >50%
7. _____				<u>+</u> 3 - Prevalence Index is ≤3.0 ¹
8. _____				<u>-</u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9. _____				<u>-</u> 5 - Wetland Non-Vascular Plants ¹
10. _____				<u>-</u> Problematic Hydrophytic Vegetation ¹ (Explain)
11. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u> </u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____				
2. _____				
% Bare Ground in Herb Stratum <u>19</u>				
Remarks:				

Sampling Point:

3

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | | |
|---|-----------------------------------|---|--|
|  | Histosol (A1) |  | Sandy Redox (S5) |
|  | Histic Epipedon (A2) |  | Stripped Matrix (S6) |
|  | Black Histic (A3) |  | Loamy Mucky Mineral (F1) (except MLRA 1) |
|  | Hydrogen Sulfide (A4) |  | Loamy Gleyed Matrix (F2) |
|  | Depleted Below Dark Surface (A11) |  | Depleted Matrix (F3) |
|  | Thick Dark Surface (A12) |  | Redox Dark Surface (F6) |
|  | Sandy Mucky Mineral (S1) |  | Depleted Dark Surface (F7) |
|  | Sandy Gleyed Matrix (S4) |  | Redox Depressions (F8) |

- ___ 2 cm Muck (A10)
 ___ Red Parent Material (TF2)
 ___ Very Shallow Dark Surface (TF12)
 ___ Other (Explain in Remarks)

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

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, |
| <input type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A, and 4B) | 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes No Depth (inches):

Water Table Present? Yes No Depth (inches):

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: El Paso County Sampling Date: 05/15/2017
 Applicant/Owner: Arroya Investments State: CO Sampling Point: 4
 Investigator(s): Tina Brazil Section, Township, Range: 27, 12 S, 65 W
 Landform (hillslope, terrace, etc.): in channel Local relief (concave, convex, none): concave Slope (%): 2.5
 Subregion (LRR): G Lat: 38.97922 Long: -104.66146 Datum: NAD 84
 Soil Map Unit Name: PRM coarse sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
= Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15' x 15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>34</u></td> <td>x 1 = <u>34</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>4</u></td> <td>x 5 = <u>20</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>162</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.8</u>	Total % Cover of:	Multiply by:	OBL species <u>34</u>	x 1 = <u>34</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>4</u>	x 5 = <u>20</u>	Column Totals: <u>90</u> (A)	<u>162</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>34</u>	x 1 = <u>34</u>																	
FACW species <u>50</u>	x 2 = <u>100</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>4</u>	x 5 = <u>20</u>																	
Column Totals: <u>90</u> (A)	<u>162</u> (B)																	
1. <u>Salix exigua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. _____																		
3. _____																		
4. _____																		
= Total Cover																		
Herb Stratum (Plot size: <u>5' x 5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input checked="" type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input checked="" type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. <u>Juncus arcticus</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Carex nebrascensis</u>	<u>34</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
3. <u>Verbascum thapsus</u>	<u>2</u>		<u>FACU</u>															
4. <u>Gutierrezia sp.</u>	<u>4</u>		<u>UPL</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>80</u> = Total Cover																		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
1. _____																		
2. _____																		
= Total Cover																		
% Bare Ground in Herb Stratum _____																		
Remarks:																		

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/1	100					SL	
2-6	10YR 4/1	100					LS	
6-8+	10YR 4/1	99	5YR 5/8	1	CS	PL	SL	Hits water

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

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

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☒ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Redox features do not qualify for indicator status

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☒ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 8

Saturation Present? Yes ☒ No ☐ Depth (inches): 7

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: El Paso County Sampling Date: 05/16/2017
 Applicant/Owner: Arroya Investments State: CO Sampling Point: 5
 Investigator(s): TB Section, Township, Range: 29 126 65W
 Landform (hillslope, terrace, etc.): terrace of channel Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): G Lat: 38.97539 Long: -104.66347 Datum: WGS 84
 Soil Map Unit Name: Pink coarse sandy loam NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☒ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30x30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
1. <u>Populus deltoides</u>	<u>2</u>		<u>FAC</u>															
2. _____																		
3. _____																		
<u>2</u> = Total Cover				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>78</u></td> <td>x 2 = <u>156</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>212</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.36</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>78</u>	x 2 = <u>156</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>90</u> (A)	<u>212</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>78</u>	x 2 = <u>156</u>																	
FAC species <u>2</u>	x 3 = <u>6</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>90</u> (A)	<u>212</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15x15</u>)																		
1. <u>Salix boothii</u>	<u>3</u>		<u>FACW</u>															
2. <u>Salix exigua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. _____																		
4. _____																		
5. _____																		
<u>13</u> = Total Cover																		
Herb Stratum (Plot size: <u>5x5</u>)																		
1. <u>Juncus arcticus</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>unkn. forb</u>	<u>3</u>		<u>UPL</u>															
3. <u>Salix exigua</u>	<u>5</u>		<u>FACW</u>															
4. <u>unkn. forb</u>	<u>4</u>		<u>UPL</u>															
5. <u>Melilotus trifolium</u>	<u>3</u>		<u>UPL</u>															
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
<u>75</u> = Total Cover																		
Woody Vine Stratum (Plot size: _____)																		
1. _____																		
2. _____																		
_____ = Total Cover																		
% Bare Ground in Herb Stratum <u>25</u>																		
Hydrophytic Vegetation Indicators: + 1 - Rapid Test for Hydrophytic Vegetation + 2 - Dominance Test is >50% + 3 - Prevalence Index is ≤3.0 ¹ = 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) = 5 - Wetland Non-Vascular Plants ¹ = Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: <u>Bare ground includes areas w/ bryophyte coverage</u>																		

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-2	10YR 3/2	100	6LY 12/4				LS	
2-18	7.5YR 4/2	95	7.5YR 5/8	5	CS	PL	LS	
8-18 ⁺	6LY 12.5/N	100					LS	Hits water table

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

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

Indicators for Problematic Hydric Soils³:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Histosol (A1) | <input checked="" type="checkbox"/> Sandy Redox (S5) |
| <input checked="" type="checkbox"/> Histic Epipedon (A2) | <input checked="" type="checkbox"/> Stripped Matrix (S6) |
| <input checked="" type="checkbox"/> Black Histic (A3) | <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) | <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) | <input checked="" type="checkbox"/> Depleted Dark Surface (F7) |
| <input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4) | <input checked="" type="checkbox"/> Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input checked="" type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input checked="" type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input checked="" type="checkbox"/> Iron Deposits (B5) | <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input checked="" type="checkbox"/> Surface Soil Cracks (B6) | <input checked="" type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

- Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
- Water Table Present? Yes ☒ No ☐ Depth (inches): 18
- Saturation Present? Yes ☒ No ☐ Depth (inches): 17
- (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Timber Ridge City/County: GL Paso County Sampling Date: 05/16/2017
 Applicant/Owner: Arroyo Investments State: CO Sampling Point: 6
 Investigator(s): TB Section, Township, Range: 22 12S 65W
 Landform (hillslope, terrace, etc.): hillslope/bank Local relief (concave, convex, none): concave Slope (%): 2.5
 Subregion (LRR): G Lat: 38.98399 Long: -104.66256 Datum: NAD84
 Soil Map Unit Name: Pring coarse sandy loam NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____				Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
				OBL species <u>65</u>	x 1 = <u>65</u>
				FACW species <u>25</u>	x 2 = <u>50</u>
				FAC species <u>0</u>	x 3 = <u>0</u>
				FACU species <u>10</u>	x 4 = <u>40</u>
				UPL species <u>5</u>	x 5 = <u>25</u>
				Column Totals: <u>105</u> (A)	<u>180</u> (B)
				Prevalence Index = B/A = <u>1.71</u>	
				Hydrophytic Vegetation Indicators:	
				+ 1 - Rapid Test for Hydrophytic Vegetation	
				+ 2 - Dominance Test is >50%	
				+ 3 - Prevalence Index is ≤3.0 ¹	
				- 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				- 5 - Wetland Non-Vascular Plants ¹	
				- Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:					

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6	7.5 YR 3/1	98	7.5 YR 5/8	2	C	PL	SCL	
6-8	7.5 YR 3.5/2	99	7.5 YR 5/8	2	C	PL	SL	
8-18+	7.5 YR 3/1		7.5 YR 5/8	4	C	PL	SCL	

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

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

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Depleted matrix very apparent, large concentrations of redox features present and distinct.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

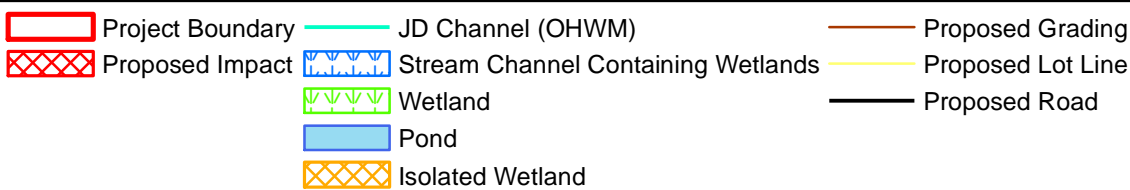
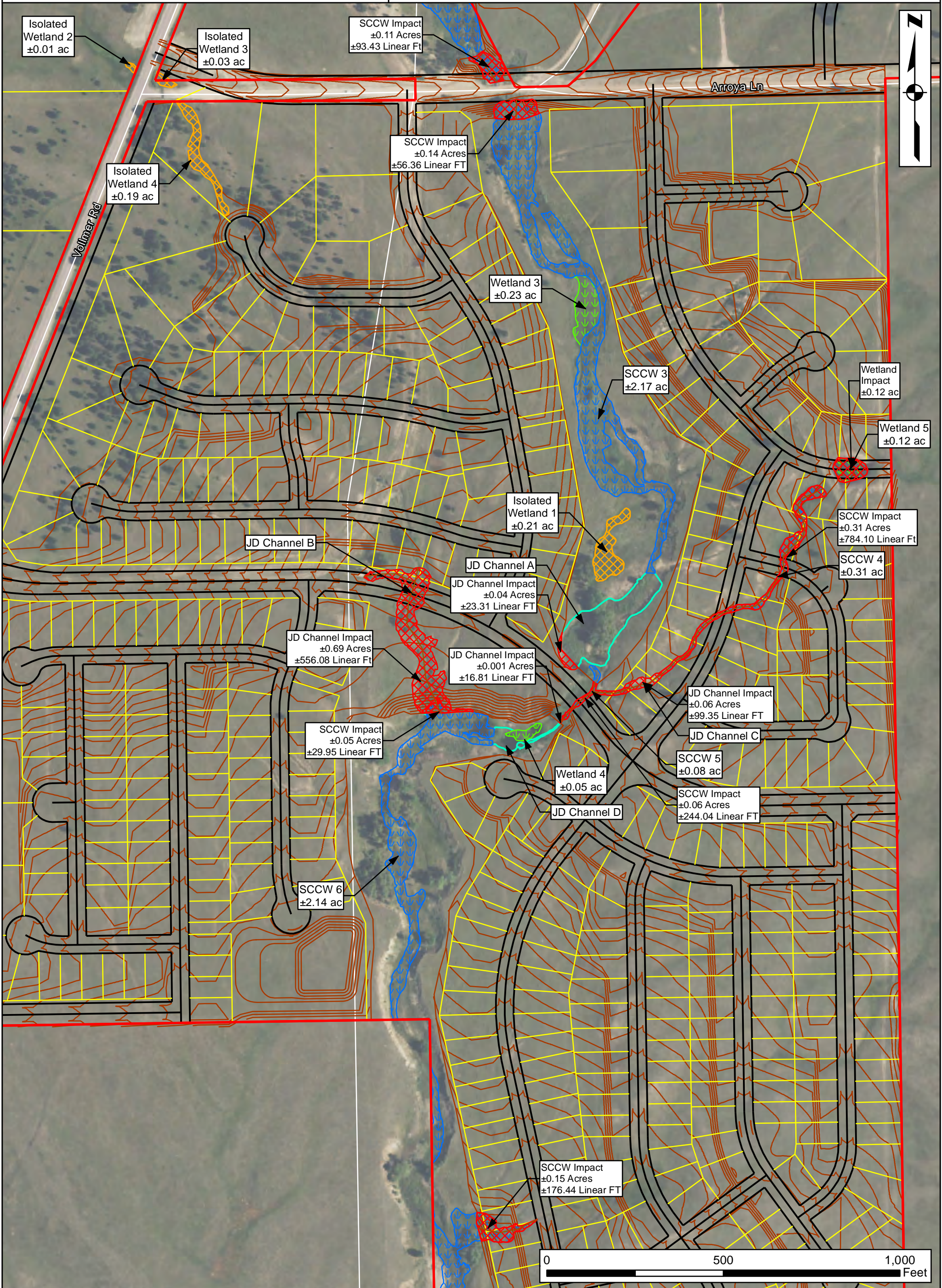
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Trails at Timber Ridge

Wetland Impact Map

El Paso County, Colorado





July 7, 2017

Mr. Joseph Martinez
U.S. Army Corps of Engineers
Albuquerque District – Southern Colorado Regulatory Office
200 South Santa Fe Avenue, Suite 301
Pueblo, Co 81003

**RE: Request for Determination of Department of the Army Permit Requirements
The Retreat at Timber Ridge Residential Development
El Paso County, Colorado**

Dear Mr. Martinez:

On behalf of Arroya Investments, LLC (“Client”), CORE Consultants, Inc. (CORE, “Agent”) is requesting a letter of determination for a Department of the Army permit requirements for impacts to Waters of the U.S. (WOUS) resulting from development of the Retreat at Timber Ridge Residential Development Project (Project) in El Paso County, Colorado. The following information pertains to a site visit on June 29, 2017 during which the Project was reviewed on-site by U.S. Army Corps of Engineers (USACE) personnel Joshua Carpenter and Joseph Martinez, and CORE biologists Dan Maynard and Tina Brazil. It is anticipated that Project impacts to WOUS would exceed 0.5 acre of jurisdictional wetlands and streams, and 300 linear-feet of jurisdictional stream channels, and that development would require issuance of an Individual Permit (IP) by the USACE. As such, the purpose of the site visit was to confirm the routine wetland delineation conducted by CORE on May 15 and 16, 2017, review potential impacts to WOUS, and identify and discuss potential areas for wetland mitigation within the Project.

PROJECT LOCATION

The Project encompasses approximately 295 acres located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane, northeast of the Woodmen Road and Black Forest Road intersection. The Project is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle, on portions of Sections 21, 22, 27, and 28 in Township 12 South, Range 65 West (**Attachment I: Site Location Map**). The approximate coordinates of the Project center are latitude 38.980576° N and longitude -104.663569° W (WGS 84 datum). Project elevation ranges from approximately 7,150 feet above mean sea level (AMSL) to 7,400 feet AMSL.

PROJECT WOUS

CORE performed a routine wetland delineation of the Project on May 15 and 16, 2017. Potentially jurisdictional aquatic features were delineated on-site. Observations of hydric soils, wetland vegetation, and hydrology aided in CORE’s determination of the potential regulatory status of WOUS, including wetlands, within the Project. Based on the routine wetland delineation and document review, CORE identified 10 potentially jurisdictional wetlands on the Project, four jurisdictional (JD) channels, and five isolated wetlands on the Project (**Table I. Potential WOUS and Isolated Wetlands on the Project**). During the site visit on June 29, 2017, USACE personnel requested that two changes be made to CORE’s original

wetland delineation. The review of on-site conditions determined that the previously identified isolated Pond 1 would be considered a WOUS. A berm separates Pond 1 from SCCW 4. However, a review of the site hydrology on June 29 indicated that hydrologic connectivity is maintained between the pond and downstream wetlands. Both a high-water table and seepage from Pond 1 could contribute to the wetland hydrology conditions within SCCW 4 (**Attachment 2: Wetland Location Map**). Since it is not possible to monitor hydrologic conditions of SCCW 4 for a time period that would determine the exact source of wetland hydrology, the USACE requested that CORE assume that pond seepage, at least in part, provides wetland hydrology to SCCW 4. As such, it was determined that Pond 1 maintains hydrologic connectivity to SCCW 4. Pond 1 was characterized as lacustrine, limnetic, unconsolidated bottom, mud, permanently flooded and diked/impounded (LIUB3Hh). With the addition of Pond 1 as a jurisdictional wetland, 11 total jurisdictional wetlands and four isolated wetlands were identified on the Project. The addition of Pond 1 as a jurisdictional wetland would potentially increase Project impacts by 0.12 acre.

The review of JD Channel B resulted in a reduction to the northern extent of the jurisdictional portion of the channel. The USACE determined that, based on the distribution of channel vegetation and the erosional nature of the channel, the jurisdictional stretch of channel would be reduced by 340 linear feet, thereby reducing linear feet of impacts by 340 feet (**Attachment 2**).

CORE prepared a preliminary impacts figure from the initial site development plan; total permanent impacts will likely change prior to construction (**Attachment 3: Preliminary Impacts to WOUS**). The figure represents a conservative estimate (i.e. more impacts are included in the estimate than what the actual impacts are likely to include) of permanent impacts for the purpose of identifying the appropriate USACE Section 404 permitting process. Potential permanent impacts resulting from development of the Project would total 0.94 acre of jurisdictional wetlands and 2,081 linear feet of jurisdictional stream channel. As such, development of the Project would necessitate an IP from the Albuquerque District of the USACE. Additionally, on-site wetland mitigation would be required at a 1:1 ratio to offset permanent loss of jurisdictional wetlands resulting from development of the Project.

Table I. Potential WOUS¹ and Isolated Wetlands on the Project

Wetland ID	Latitude	Longitude	Wetland Type	Potential Impacts
Wetland 1	38.988244 ° N	-104.661990° W	PUBH (palustrine, unconsolidated bottom, permanently flooded)	NO
SCCW 1	38.987976° N	-104.662788° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)	NO
Wetland 2	38.987135° N	-104.663555° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NO
SCCW 2	38.987510° N	-104.661942° W	R4SBJ (Riverine, intermittent, stream bed, intermittently flooded)	YES – 0.14 acre; 56.36 linear feet
SCCW 3	38.982892° N	-104.662175° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)	NO
Wetland 3	38.982246° N	-104.661788° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NO
Isolated Wetland 1	38.980263° N	-104.661558° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NA
JD Channel A	38.979594° N	-104.661871° W	NA-Ordinary High-Water Mark (OHWM)	0.04 acre; 23.32 linear feet
Pond 1	38.980948° N	-104.659111° W	LIUB3Hh (lacustrine, limnetic, unconsolidated bottom, mud, permanently flooded, diked/impounded)	0.12 acre; 75 linear feet
SCCW 4	38.980312° N	-104.659737° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	0.31 acre; 784.1 linear feet
SCCW 5	38.979186° N	-104.661799° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	0.06 acre; 244.04 linear feet
Wetland 4	38.978915° N	-104.662309° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NO
JD Channel B	38.979668° N	-104.663490° W	NA-Ordinary High-Water Mark (OHWM)	0.69 acre; 556.08 linear feet
JD Channel C	38.979266° N	-104.661274° W	NA-Ordinary High-Water Mark (OHWM)	0.06 acre; 99.35 linear feet
JD channel D	38.978781° N	-104.662588° W	NA-Ordinary High-Water Mark (OHWM)	NO

Table I, cont. Potential WOUS¹ and Isolated Wetlands on the Project

Wetland ID	Latitude	Longitude	Wetland Type	Potential Impacts
SCCW 6	38.977475° N	-104.663490° W	R2UBF (riverine, lower perennial, unconsolidated bottom, semipermanently flooded)	0.15 acre; 176.44 linear feet
Isolated Wetland 2	38.984138° N	-104.666265° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NA
Isolated Wetland 3	38.984016° N	-104.665910° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NA
Isolated Wetland 4	38.983738° N	-104.665633° W	PEMIC (palustrine, emergent, persistent, seasonally flooded)	NA

¹ Only the USACE can determine jurisdiction under Section 404 of the Clean Water Act

MITIGATION

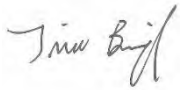
Since the permanent loss of jurisdictional wetlands resulting from development of the Project would exceed 0.1 acre, the Client would be required to mitigate for wetland impacts at a 1:1 ratio. An additional site visit objective was to identify and confirm potential Project locations that would support the establishment of new wetlands to offset wetland losses resulting from development of the Project. CORE identified multiple in-channel locations adjacent to the main channel of Sand Creek, and areas adjacent to SCCW 1 and Wetland 2 that could be graded to establish new emergent wetlands. Specifically, shallow banks within the central portion of the Project adjacent to the main channel of Sand Creek could attain wetland hydrology through grading. Grading would create depressional topography that would inundate soils at this location. Similarly, grading adjacent to existing emergent wetlands within SCCW 1 and Wetland 2 would create additional depressional topography that would inundate soils at this location. SCCW 1 and Wetland 2 receive hydrology, in part, from the outflow of Wetland 1. Grading would result in the additional areas of inundation adjacent to existing wetlands. It is anticipated that wetland vegetation from existing wetlands would establish within the required monitoring period following Project completion. Specific details of on-site compensatory mitigation would be detailed in a Conceptual Mitigation Plan as part of the IP application.

CONCLUSIONS

CORE respectfully requests your review of the above information in order to issue a letter of your determination of Project permit requirements pursuant to Section 404 of the Clean Water Act. If you should have any questions or require additional information, please feel free to contact our office directly at 303.703.4444, or at brazil@corecivil.com.

Sincerely,

CORE Consultants, Inc.



Tina Brazil

Environmental Consultant

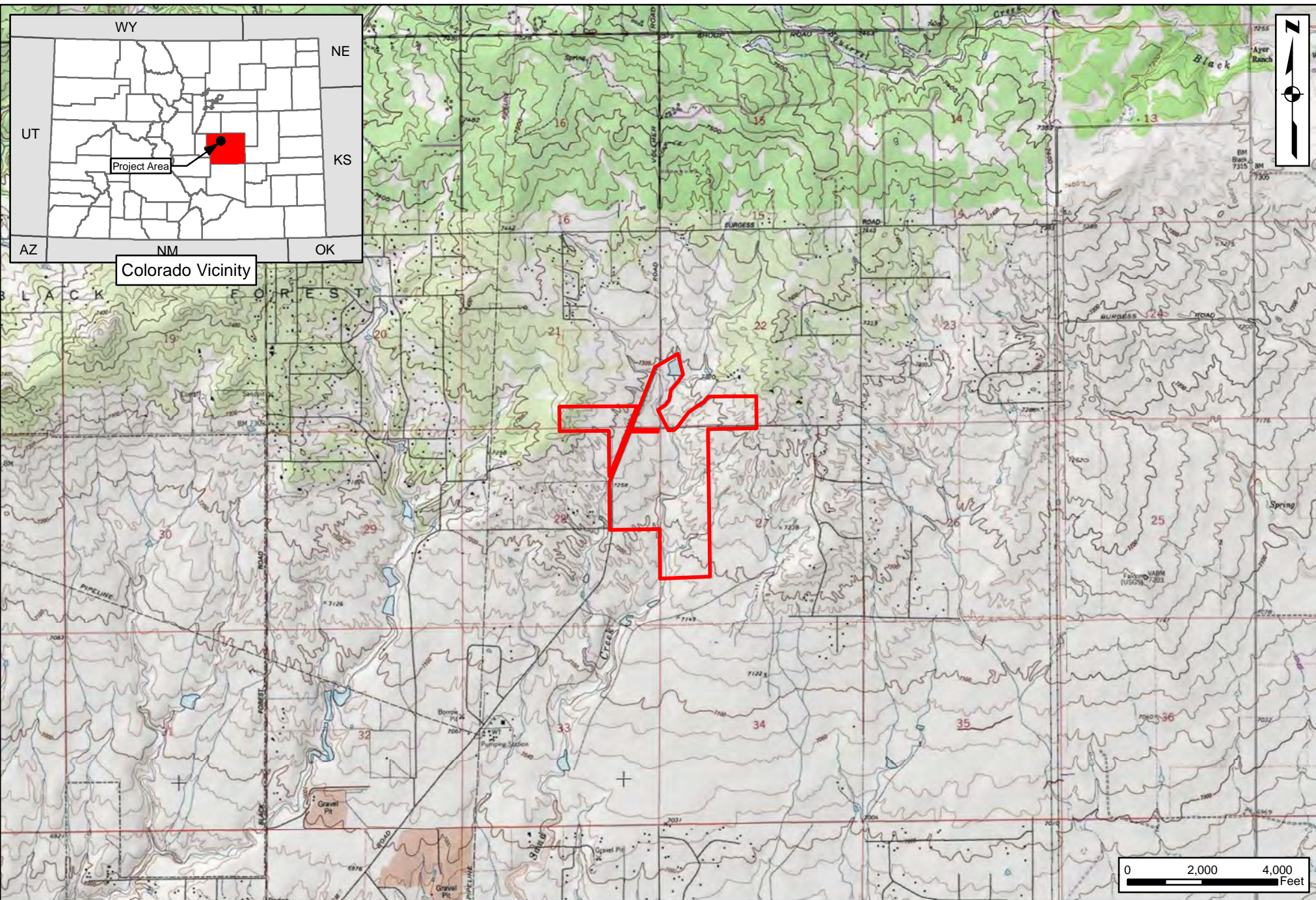
REFERENCES

Chapman, S.S., Griffith, G.E., Omernik, J.M., Price, A.B., Freeouf, J., and Schrupp, D.L., 2006, Ecoregions of Colorado. Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000).
ftp://ftp.epa.gov/wed/ecoregions/co/co_front.pdf

U.S. Geological Survey (USGS). 7.5-Minute Topographic Maps. 1994. Falcon NW Quadrangle – Colorado.

ATTACHMENTS

- I. *SITE LOCATION MAP*
- II. *WETLAND LOCATION MAP*
- III. *PRELIMINARY IMPACTS TO WOUS*



 Project Boundary

Reference:
USGS 7.5 Minute
Topographic Quadrangle
Falcon NW, CO Quad

Retreat at Timber Ridge

Site Location Map

El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059

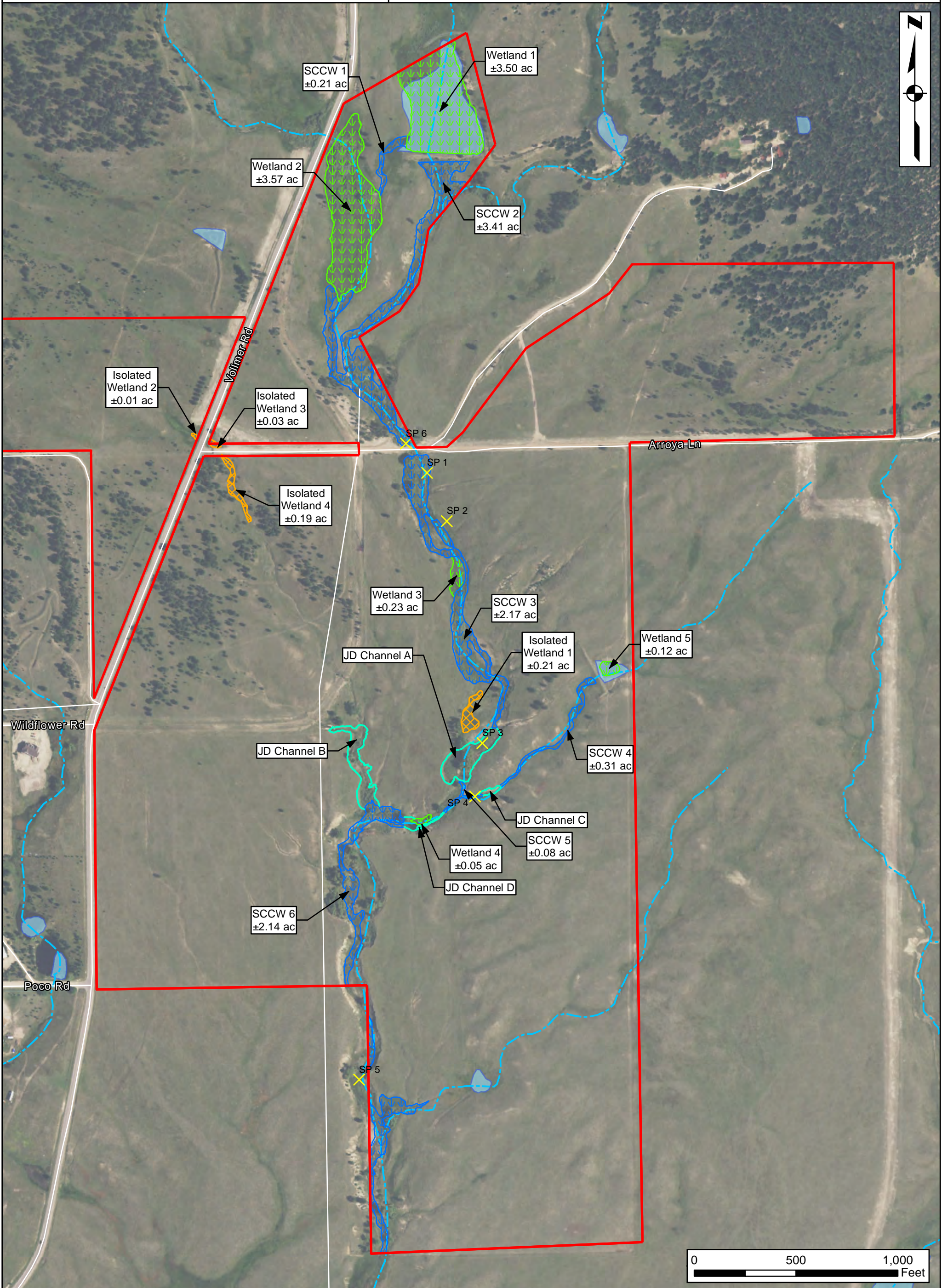


CIVIL ENGINEERING
DEVELOPMENT CONSULTING
LAND SURVEYING
303.703.4444
1950 W. Litchton Blvd., Ste. 109
Littleton, CO 80120

Trails at Timber Ridge

Wetland Location Map

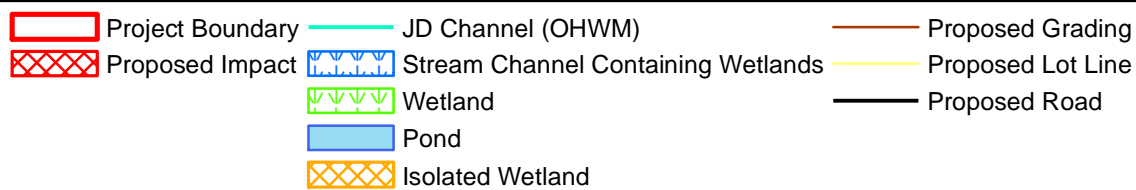
El Paso County, Colorado



- | | |
|------------------|------------------------------------|
| Project Boundary | JD Channel (OHWM) |
| NHD Watercourse | Stream Channel Containing Wetlands |
| NHD Waterbody | Wetland |
| Sample Point | Pond |
| | Isolated Wetland |



El Paso County, Colorado



Date: 7/6/2017
CORE Project #: 16-059



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Colorado Ecological Services Field Office
P.O. BOX 25486, Denver Federal Center, Mail Stop 65412
Denver, Colorado 80225-0486



IN REPLY REFER TO
TAILS: 06E24000-2017-TA-0805

Mr. John Maynard.
NES Inc.
619 North Cascade Avenue
Colorado Springs, CO 80903

MAY 15 2017

Dear Mr. Maynard:

Thank you for your letter of April 26, 2017 requesting review from the U.S. Fish and Wildlife Service (Service) regarding the Retreat at Timber Ridge PUD project located in El Paso County, Colorado.

We appreciate the inclusion of an assessment of the proposed project and we interpret your letter to be for technical assistance regarding the likelihood of the described project resulting in effects to threatened or endangered species ("listed species"). Section 9 of the Endangered Species Act as amended (16 USC 1531 et seq.) prohibits any action that would likely result in "take" of a listed species (take is defined by the Act as to harass, harm, pursue, hunt, shoot, wound kill, trap, capture, or collect or attempt to engage in any such conduct of listed species). Based on the information presented in your assessment, and the Service's understanding of the nature of the project, local conditions, and current information of listed species and their habitat, it seems unlikely that the project will result in take of listed species, but the project may have minor adverse impacts to listed species that may occur in or near the project area.

While we would like to provide you site-specific technical assistance on developing conservation recommendations that will avoid or minimize potential impacts, we're not able to provide that level of assistance at this time. The Service appreciates your request for assistance, so to provide you information at the earliest planning stages as possible, we have attached a list of locally developed recommendations for the species that may occur in or near the project area. The Service recommends that wherever possible, these measures be incorporated into project planning and implementation. The intent of these recommendations is to increase compatibility between species' conservation and the proposed project.

The Service appreciates your request and encourages you to contact us again if the scope of the project changes or new information indicates that the project may result in take of listed species.

Sincerely,

Drue L. DeBerry
Colorado and Nebraska Field Offices Supervisor



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Colorado Ecological Services Field Office
P.O. BOX 25486, Denver Federal Center, Mail Stop 65412
Denver, Colorado 80225-0486

Attachment – Conservation Recommendations

Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*), **Ute Ladies'-tresses Orchid** (*Spiranthes diluvialis*), **Colorado butterfly plant** (*Oenothera coloradensis*)

PRE-CONSTRUCTION DESIGN:

1. Design the project to avoid and minimize the permanent and temporary impacts to riparian and adjacent upland habitats.
 - a. Before construction, identify and prioritize riparian and adjacent upland habitats within the project area. Design the project so that it avoids these habitats whenever possible.
 - b. Minimize the amount of concrete, riprap, bridge footings, and other “hard,” impermeable engineering features within the stream channel and riparian or adjacent upland habitats.
 - c. Use bioengineering techniques to stabilize stream banks.
 - d. Minimize the number and footprint of access routes, staging areas, and work areas.
 - e. Locate access routes, staging areas, and work areas within previously disturbed or modified non-habitat areas.
 - f. Maintain habitat connectivity under bridges or through culverts by installing ledges or dry culverts adjacent to the culverts with water flow.
 - g. Avoid fragmenting linear riparian corridors.
2. Install limits of work fencing (e.g., orange barrier netting or silt fencing), signage, or other visible markers to delineate access routes and the project area from habitats. Use this fencing to enforce no-entry zones.
3. Hold a preconstruction briefing for onsite personnel to explain the limits of work and other conservation measures.
4. Follow regional storm water guidelines and design best management practices (BMPs) to control contamination, erosion, and sedimentation, such as silt fences, silt basins, gravel bags, and other controls needed to stabilize soils in denuded or graded areas, during and after construction.

5. Locate utilities along existing road corridors, and if possible, within the roadway or road shoulder.

a. Bury overhead utilities whenever possible.

b. Directionally bore utilities and pipes underneath habitats.

6. Develop and implement a habitat restoration plan that addresses site preparation, planting techniques, control of non-native weeds, native seed mixtures, and post-construction monitoring.

PROJECT IMPLEMENTATION:

7. Contact the Service immediately by telephone at (303) 236-4773 if a Preble's is found alive, dead, injured, or hibernating within the project area. Please also contact the Service if any other listed species are found within the project area.

8. To the maximum extent practicable, limit disturbing (e.g., crushing, trampling) or removing (e.g., cutting, clearing) all vegetation, such as willows, trees, shrubs, and grasses within riparian and adjacent upland habitats.

a. Restrict the temporary or permanent removal of vegetation to the footprint of the project area.

b. Minimize the use of heavy machinery and use smaller equipment when possible.

c. Soil compaction: Temporarily line access routes with geotextiles or other materials, especially in wet, unstable soils to protect roots and the seed bank.

9. Use the attached table to track the acres or square feet of riparian and upland habitats temporarily or permanently affected by the response activities.

a. Temporary Impacts: Native vegetation and habitats will reestablish following rehabilitation (e.g., access route that is rehabilitated with native, weed-free seeds and plants).

b. Permanent Impacts: Riparian or upland habitats will not return as a result of project activities (e.g., road surface, concrete footings)

10. Track the volumes of any water from onsite sources stored or used for dust abatement, soil compaction, concrete mixing, or other activities.

11. Locate, store, stage, operate, and refuel equipment outside of riparian or adjacent upland habitats.

a. Operate equipment from previously disturbed or modified roadbeds or road shoulders above the riparian habitats.

b. Limit the number of entrance and exit points leading into the project area.

- c. Stockpile topsoil and debris outside the riparian corridor and protect from stream flows or runoff.
- 12. During the Preble's active season (May 1 through November 1), work only during daylight hours to avoid disrupting Preble's nocturnal activities.
- 13. Promptly remove waste to minimize site disturbance and avoid attracting predators.
- 14. Cover exposed holes or piles of loose dirt with boards, tarps, or other materials to prevent entrapment.
- 15. Use best management practices (BMPs) to limit construction-related disturbance, such as soil compaction, erosion, and sedimentation, and to prevent the spread of invasive weeds;
 - a. Soil compaction: Establish one access route for workers, vehicles, and machinery, preferably along a previously disturbed surface or route.
 - b. Soil compaction: Temporarily line access routes with geotextiles or other materials, especially in wet, unstable soils.
 - c. Weed control: Wash and inspect vehicles and equipment before entering or leaving the project area so that they are free of noxious weed seeds and plant parts.
 - d. Weed control: Use only weed free certified materials, including gravel, sand, top soil, seed, and mulch.
- 16. Complete construction before beginning restoration or enhancement activities.

POST-CONSTRUCTION:

- 17. Upon project completion, revegetate all disturbed areas with native shrubs, trees, and grasses.
 - a. Rip compacted access routes prior to replanting with native vegetation.
 - b. Fill and reseed with weed free material and native seed mixtures.
 - c. Consult the Service before finalizing a seed and plant list.
- 18. Bury riprap, then plant with native riparian vegetation.
- 19. Rehabilitate adjacent habitats impacted by floodwaters to restore connectivity and prevent future impacts from erosion or sedimentation.
- 20. Consider monitoring the revegetated areas for success. The Service can help establish success criteria during the consultation process.



COLORADO

Parks and Wildlife

Department of Natural Resources

Southeast Region, Area 14
4255 Sinton Road
Colorado Springs, CO 80907
P 719.227.5200 | F 719.227.5223

May 4, 2017

El Paso County
ATTN: Kari Parsons
2880 International Circle,
Colorado Springs, CO 80132

Re: Timber Ridge -Rezone Property to PUD; Preliminary Plan (PUD173)

Dear Kari Parsons,

Colorado Parks and Wildlife (CPW) has reviewed the plans for the retreat at Timber Ridge near on Vollmer Road and Poco Road. The area included within the Development boundaries will sustain numerous wildlife species including deer, elk, pronghorn, turkey, black bear, mountain lion, coyote, fox, raptors, songbirds, and numerous small mammals. CPW makes the following recommendations.

CPW recommends consultation with the Army Corps of Engineers to ensure compliance with the Clean Water Act due to the identification of possible jurisdictional wetlands on the site. CPW will comment on specific plans for wetland-related issues as part of that 404 permitting process but there are some general recommendations to be considered during the development of the wetland mitigation plan prepared as part of section 404 permitting.

We would request that all areas of disturbance and exposed soils above the ordinary high water mark be re-vegetated with a native seed mix. This will contribute to the replacement of lost riparian vegetation values and minimize establishment of noxious weeds. The placement of willow sprigs or bare root stock should also be considered along the banks, especially in those areas which have been disturbed. We recommend planting of vegetation along the bank to help reduce and control erosion and contribute to bank stability over the long term. The site should be monitored for a period of at least two growing seasons. Any stands of noxious weeds that become established should be controlled with appropriate mechanical and/or chemical methods suitable for the proposed location. CPW recommends using a clean fill material, if needed, that would be conducive to growing native vegetation that will help stabilize the banks. Non-native vegetation can overrun native vegetation and can become problematic. A seed mixture of native grasses is also recommended to provide a good support system in the soil.

CPW further recommends crossing riparian corridors and streams at a perpendicular angle, in order to reduce impacts to natural resources, as well as spanning the corridors with structures



located outside the riparian and stream zone. CPW recommends avoiding treed areas of cottonwood and willow, as these areas provide bird and wildlife habitat. During construction, stream crossing by construction vehicles should be avoided. CPW requests that any new service roads that are proposed for construction in conjunction with the project avoid crossing creeks or stream beds to avoid impacts to wildlife and habitat. If any new access or maintenance roads will be constructed that cross stream habitat, CPW would like to be consulted on best management practices and options for construction to minimize impacts. A construction design for any new or reconstructed riparian crossing that actively minimizes barriers to fish passage at all water levels and mitigates any existing barriers where possible would minimize the negative impact of the project on native fish species.

CPW recommends the following Best Management Practices when working in or near aquatic habitats.

- Drainages should be crossed perpendicular to the flow of the stream
- Use existing road crossings and existing stream crossings for vehicles and other construction equipment instead of building new roads and stream crossings
- The width of construction should be minimized within the 100-year floodplain,
- Stream bank, wetland restoration/improvement should be performed, where necessary
- Vehicle and equipment crossing of creeks/streams should be made in locations that will cause the least erosion of banks and sedimentation.

As for more general construction protocols, CPW recommends low speeds for construction vehicles to avoid wildlife collisions. Where new roads are required, CPW recommends that these single-purpose roads are gated to reduce traffic disruptions to wildlife. If any temporary (e.g., construction) or permanent fencing is proposed, CPW recommends that it is the wildlife-friendly fencing that allows young to cross, and does not include high-tensile hogwire.

CPW recommends the development and implementation of a noxious weed control plan for the site. All disturbed soils should be monitored for noxious weeds and noxious weeds should be actively controlled until native plant revegetation and reclamation is achieved. Care should be taken to avoid the spread of noxious weeds, and all construction equipment should be cleaned prior to leaving the site. A noxious weed management plan should be developed prior to any disturbance of the site. CPW recommends that all landscaping in the developed area should be comprised of native species. Using native species with high food and cover values in an open space area is beneficial to wildlife. This can encourage wildlife to concentrate in areas that minimize human conflicts and optimize wildlife watching opportunities. Native plant species can also provide an aesthetically pleasing landscape that requires little maintenance, and are frequently more drought-tolerant than non-native species

CPW recommends a 100 foot buffer zone be permanently placed around the creeks and ponds. If a trail is constructed near the creek or ponds, it should be a minimum of 100 feet

from the edge. This buffer zone will offer wildlife utilizing the creek and ponds less disturbance by development and decrease the likelihood of human and wildlife encounters. The existing native riparian vegetation around the creeks, the ponds and in the drainage ways should be kept intact for wildlife habitat and to increase ground stabilization.

Trails would provide excellent opportunities for wildlife viewing. However, if trails are placed too close to areas utilized by wildlife it creates disturbances resulting in reduced wildlife viewing opportunities. CPW recommends constructing trails on the outer edges of open space areas. This minimizes wildlife disturbance and creates increased wildlife viewing opportunities. Trails near creeks and drainage areas should cross perpendicular rather than run parallel to these critical wildlife habitat areas. Crossings should occur in areas that have the least usage by wildlife in order to have minimal impacts on wildlife.

There is suitable habitat for nesting raptors and migratory birds along the trail route. CPW recommends the use of pre-construction surveys to identify raptor nests within the project area and implement appropriate restrictions. CPW recommends adherence to the recommended buffer distances and timing stipulations identified in the attached document "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors".

Care should be taken to avoid the destruction of active dens and nests while constructing structures, ponds, and trails. Possible dens or nests should be monitored for species activity. CPW would be concerned if trees and snags were removed for the development. The main concern with removal of trees is that these trees may be currently occupied or historic nest sites. Please take care to avoid removal of trees with occupied nests. For raptors, an active nest is any nest that is frequented or occupied by a raptor during the breeding season or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years; therefore, a nest may be active even if it is not occupied in a given year. Removal or relocation of any active raptor or migratory bird nest will require consultation with CPW and US Fish and Wildlife Service prior to disturbance. Both active and potential nest sites, winter night roosts should be considered when evaluating disturbance during construction.

US Fish and Wildlife Service should be consulted on any Federally-listed Endangered and Threatened Species that might be present at the location. CPW recommends consultation with the U.S. Fish and Wildlife Service when permitting any permanent or temporary activity within known or potentially occupied Preble's meadow jumping mouse habitat.

Fences can cause many problems for wildlife, including death, entanglements, and barriers to movements. CPW recommends the developers consult our publication *Hanophy, Wendy* "Fencing with Wildlife in mind." *CPW.state.co.us. 2009* when considering the design of fences within the development. The publication is available on our website and we would be happy to provide a link to the PDF specifically. The use of privacy fencing, chain link fencing, and other exclusionary fencing should be at least 6 feet high and should be restricted to the immediate area surrounding the buildings or within the designated building envelope and

should not be used as a method to designate boundaries of larger lot sizes (> 1 acre). Fencing outside the immediate building envelope or area surrounding the buildings on larger lots within the known range of elk, deer and pronghorn should be a maximum top height of 42" with at least 12" spacing between the top two wires or rails and a bottom wire or rail at least 16" above the ground to allow passage of juvenile animals and pronghorn antelope. It is also recommended that the top and bottom wires be a twisted barbles type or smooth wire or rail construction. Construction of ornamental wrought iron fencing with closely spaced vertical bars (<12") and sharp projections extending beyond the top horizontal bar should be strongly discouraged in areas where deer, elk, and black bear are known to occur. This type of fencing typically ensnares deer and elk by the hips when trying to squeeze through and impales animals attempting to go over the top. It should be noted that it is very distressing to find wildlife in or impaled on fences.

Due to the potential presence of black bears in the Development, CPW recommends several measures to reduce the potential for human bear conflicts. First, we recommend that the owner invests in bear-proof trash containers. Trash containers should be stored in the garage or in a solid locked storage shed until the morning of trash collection during those months when bears are most active (April - November). Another possible alternative would be the use of a centralized and securely fenced trash collection site with the use of bear proof dumpsters that employees, customers, and the trash service provider would have access to. This would eliminate the need for individual trash cans. Second, residents and food vendors should also keep their barbecues and any food locked away in the garage or a secure building. Finally, we would recommend that the use of bird feeders and hummingbird feeders be discouraged, during the months mentioned above, since they also attract black bears. However, if feeders are used, they should be placed so they are inaccessible to black bears, raccoons, skunks, deer and other wildlife species that might cause damage or threaten human safety. A copy of a brochure entitled, "living with wildlife in bear country" is available for reference upon request from CPW.

The following is a list of general recommendations the CPW would like to be taken into consideration with the residential side of this development in order to avoid nuisance conflicts with wildlife. Many times these conditions can be enforced through the local Homeowner's Association or through covenants.

Pets should not be allowed to roam free and fences should be installed to decrease or eliminate this problem. Dogs and cats chase or prey on various wildlife species. One benefit to keeping animals under control is that they are less likely to bother other people, be in roadways or become prey for mountain lions, coyotes, foxes or owls.

Trash should be kept indoors until the morning of trash pickup. The CPW recommends using bear resistant trash containers. Bears, skunks, raccoons, and neighborhood dogs are attracted to garbage and do become habituated.

Feeding of all wildlife should be prohibited, with the exception of songbirds. The use of bird feeders, suet feeders, and hummingbird feeders are discouraged. However, if feeders are

used, they should be placed so they are inaccessible to bears, raccoons or skunks and other wildlife species that might cause damage or threaten human safety. It is illegal to feed big game including deer, elk, antelope, moose, bear and lion.

Pets should be fed inside or if pets are fed outside, feeding should occur only for a specified period of time and food bowls returned afterwards to a secure site for storage. Pet food left outside attracts various wildlife species which in turn attracts predators.

When landscaping lots, it is strongly recommended that native vegetation be used that wildlife is less likely to be attracted to. Planting of trees and shrubs that are attractive to native ungulates should incorporate the use of materials that will prevent access and damage (fencing, tree guards, trunk guards, etc.).

It is strongly encouraged that dog kennels have a top enclosure, regardless of the height of the kennel.

CPW appreciates being given the opportunity to comment. Please feel free to contact District Wildlife Manager Benjamin Meier at 719-227-5231 or Benjamin.meier@state.co.us should you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank McGee".

Frank McGee

Area Wildlife Manager

Cc: SE Region Files

Area 14 Files

Benjamin Meier, DWM



NOXIOUS WEED MANAGEMENT PLAN

THE RETREAT AT TIMBER RIDGE RESIDENTIAL DEVELOPMENT PROJECT El Paso County, CO Project No. 16-059

PREPARED FOR:

Arroya Investments LLC
P.O. Box 50223
Colorado Springs, CO 80949
Phone: 719-491-3150
Contact: Peter Martz

PREPARED BY:

CORE Consultants, Inc.
1950 W. Littleton Boulevard, Suite 109
Littleton, CO 80120
Phone: 303-703-4444
Contact: Tina Brazil
CORE Project Number: 16-059

July 7, 2017

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APPENDICES

APPENDIX I: SITE LOCATION MAP

APPENDIX II: COLORADO STATE NOXIOUS WEED LIST

EXECUTIVE SUMMARY

CORE Consultants, Inc. (CORE) was retained by Arroya Investments, LLC (Client) to prepare a Noxious Weed Management Plan (Plan) for the proposed Retreat at Timber Ridge Residential Development Project (Project) in El Paso County, Colorado. The Project is located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane and encompasses approximately 295 acres on Sections 17, 21, 22, and 28 in Township 12 South, Range 65 West. The Project would consist of the construction of single family residential homes, permanent access roads, open space and trails, and associated facilities.

This Plan is a Project-specific document that has been designed to set forth Project level regulations to prevent and control the spread of noxious weeds within the Project and vicinity. Noxious weeds are defined as those non-native plants that aggressively invade and are detrimental to native vegetation communities and ecosystems. The *Colorado State Noxious Weed Act* (Colorado Revised Statute 35-5.5-103) developed a list of plants considered noxious in the state of Colorado that should be targeted for control by various methods dependent on list category (A, B, C). El Paso County Environmental Services requested submittal of a Project-specific Noxious Weed Management Plan since the Project is located adjacent to an area known to contain noxious weed populations. The Plan should tier to the requirements set forth by the El Paso County (County) Noxious Weed Management Plan (2003, updated 2014) which contains guidelines for control and treatment of noxious weeds found in the County. The County requires that commercial or industrial projects that include ground disturbing activities submit a project-specific noxious weed management plan. This Plan provides methods to prevent and control the spread of noxious weeds at pre-construction, construction, and post-construction phases of the Project.

1.0 INTRODUCTION

Arroya Investments, LLC (Client) retained CORE Consultants, Inc. (CORE) to prepare a Noxious Weed Management Plan for the proposed Retreat at Timber Ridge Residential Development Project (Project) located in El Paso County, Colorado. The Project is located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane and is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle (**Appendix I: Site Location Map**).

The Project lies within the Fountain watershed, referenced as 8-digit Hydrologic Unit Code (HUC) 11020003. The main channel of Sand Creek and multiple unnamed tributaries drain the Project in a southerly direction. Land use in the region is typified by rangeland grazing with increasing urban and residential development. Topography of the Project consists of rolling foothill grasslands within the southern portion of the Project transitioning into pine-oak woodlands within the northern portion of the Project (Chapman et al. 2006). Scattered, shallow ridges and dense stands of ponderosa pine (*Pinus ponderosa*) are located across the northern portion of the Project and coincide with the southern boundary of Black Forest.

Dominant species within the foothills grasslands include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switch grass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*). Scattered pine-oak communities are located across higher elevation areas of the foothills grasslands. Ponderosa pine and Gambel oak (*Quercus gambelii*) dominate the canopy and understory of the pine-oak woodlands. Mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), western serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*) are also found scattered throughout the understory.

2.0 NOXIOUS WEED MANAGEMENT

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

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

The Act was amended in 2002 to require counties to establish individual management plans relevant to local municipalities. El Paso County developed the *El Paso County Noxious Weed Management Plan* in 2003

(updated 2014) to identify county-level noxious weed management practices that would preserve the economic and environmental value of County lands (EPC, 2014). The Town of Monument tiers to the El Paso County requirements for noxious weed management practices.

Disturbed areas are vulnerable to infestation from noxious weeds due to the aggressive nature by which noxious weeds can spread. Construction activities including clearing, grading, and excavation promote the establishment of noxious weed species before native vegetation can reestablish within the cleared area. As such, the *EPC Noxious Weed Management Plan* requires integrated management plans for any activities requiring dirt moving activities within the County (EPC, 2014). Project-specific integrated management plans should include methods to prevent, control, and monitor the spread of noxious weeds and should take into account the multiple methods by which noxious weeds germinate. Annuals typically reproduce through seed which can easily attach to equipment during construction activities. Perennials often propagate through an extensive root system. Ground disturbing activities have the potential to redistribute root sections that could quickly propagate in other areas. Because of the multiple methods by which noxious weeds spread and propagate, integrated management plans should outline education and native revegetation methods in addition to chemical control methods (EPC, 2014).

3.0 NOXIOUS WEED MANAGEMENT PLAN

3.1 Purpose and Goals

Construction of the Project would occur over six to eight months. Upon completion of construction, the development would be utilized as a residential space with open trails as proposed. It is anticipated that ground disturbance would occur throughout much of the site for development of access roads and residential lots. As such, this integrated management plan includes pre-construction, construction, and maintenance methods to prevent, control, and monitor the spread of identified noxious weed populations within the Project. It would become the responsibility of the Home Owner's Association (HOA) to manage and treat persistent noxious weed populations within the Project, if any. However, it is assumed that regular landscaping of public areas on the site would include noxious weed control. Integrated management methods should include the following:

- Surveys to inventory and map established noxious weed populations;
- Sharing of data with the County to aid in County level inventory;
- Chemical treatment of all identified noxious weed populations;
- Periodic post-construction treatment as needed and as determined by the property management entity.

Management methods identified within this Plan will comply with *Chapter 6: General Development Standards of the EPC Land Development Code* (EPC, 2015), the *EPC Noxious Weed Management Plan* (EPC, 2014) and the Act (Colorado Revised Statutes 35-5.5-103). Biological control methods are not included due to the prohibition of their use on plants targeted for eradication (Colorado Weed Management Association, 2015). Noxious weed species targeted would be those identified in the Act, with special consideration for those species listed in the *EPC Noxious Weeds and Control Methods* (EPC, 2008).

3.2 Regulated Species

The Act identifies three levels of priority for control of noxious weeds throughout the State of Colorado (State). The Colorado Weed Management Association (CWMA) maintains an updated list of noxious weeds known to occur in the State. CWMA also maintains a “watch list” of noxious weeds that occur in proximity to State borders and/or those species with a distribution that is not yet understood. Refer to **Appendix II: Colorado State Noxious Weed List** (CWMA, 2015). List A noxious weeds are those species targeted for eradication. List A noxious weed populations are typically isolated in nature or rare throughout much of the State (*Colorado Revised Statutes 35-5.5-103*). Eradication and reporting of List A populations is required by law (Colorado Department of Agriculture [CDA], 2006). List B species are discretely distributed throughout the State and must be eradicated, contained, or suppressed (*Colorado Revised Statutes 35-5.5-103*). The County requires control of all List B noxious weed populations located within the Project area (EPC, 2014). List C noxious weed populations are widespread and well established. The County requires control of List C species through education of the public and/or chemical control (**Appendix II**).

3.3 Pre-Construction

Pre-construction noxious weed management protocols would include prevention and treatment. Prevention and treatment would be accomplished through surveys of construction easements, followed by primary chemical treatment.

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

List A species must be eradicated by law (USDA, 2006). Should surveyors identify List A species, a plant sample would be collected for positive identification through the EPC Environmental Division. Upon positive confirmation of a List A species, hand pulling of the population would be performed to remove the mechanism for creation of a seed-bank. Chemical treatment would be applied to the area and would be selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC, 2008). List B and List C species would be chemically treated with an herbicide selected in compliance with the *EPC Noxious Weeds and Control Methods*. Herbicide selection may vary depending upon time of year and life cycle of the plant. All herbicide application would occur a minimum of two weeks prior to scheduled ground disturbing activities. The herbicide applicator would treat noxious weed populations with County recommended chemicals (**Appendix II**).

3.4 Construction

Construction phase noxious weed management protocols would include prevention and maintenance. Contractors would prevent the spread of noxious weeds through the use of clean equipment and through treatment of all noxious weed populations prior to ground disturbing

activities. Heavy equipment used on the site would be washed and sprayed before mobilization on the Project. Doing so would ensure that soils and seeds are not transported from other sites. Noxious weed treatment would occur to areas slated for ground disturbance prior to construction. Doing so would ensure that active noxious weed populations would become inactive prior to construction.

It is anticipated that top-soil could be salvaged from the site. Salvaged top-soil piles would be maintained and protected from erosion and/or noxious weed establishment during construction through Best Management Practices (BMPs) identified in the Project Grading, Erosion, and Sediment Control (GESC) Plan. Native-site top-soil would be used during reestablishment of native seed mixes post-construction.

3.5 Post-Construction

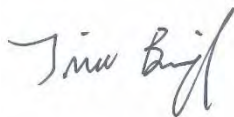
Post-construction noxious weed management protocols would be limited to maintenance treatment, as needed. It is anticipated that the HOA would monitor and treat noxious weed populations on a seasonal basis. Typically, an HOA would contract a licensed and certified herbicide applicator to conduct yearly treatments for noxious weeds throughout the development.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This Project Noxious Weed Management Plan was written to comply with guidelines in the Colorado Noxious Weed Act (Colorado Revised Statutes 35-5.5-103) and the EPC Noxious Weed Management Plan. CORE recommends that the Client survey for and treat any noxious weed populations located on the Project. The property management entity would be responsible for maintaining a weed-free property following construction. Typically, chemical treatment would be applied between late spring and early fall depending on the recommended treatment protocols for each noxious weed species.

Should you have any questions regarding this or any other matter, please feel free to contact our office at (303) 703-4444.

Sincerely,
CORE Consultants, Inc.



Tina Brazil
Environmental Consultant



Chris Haas
Vice President

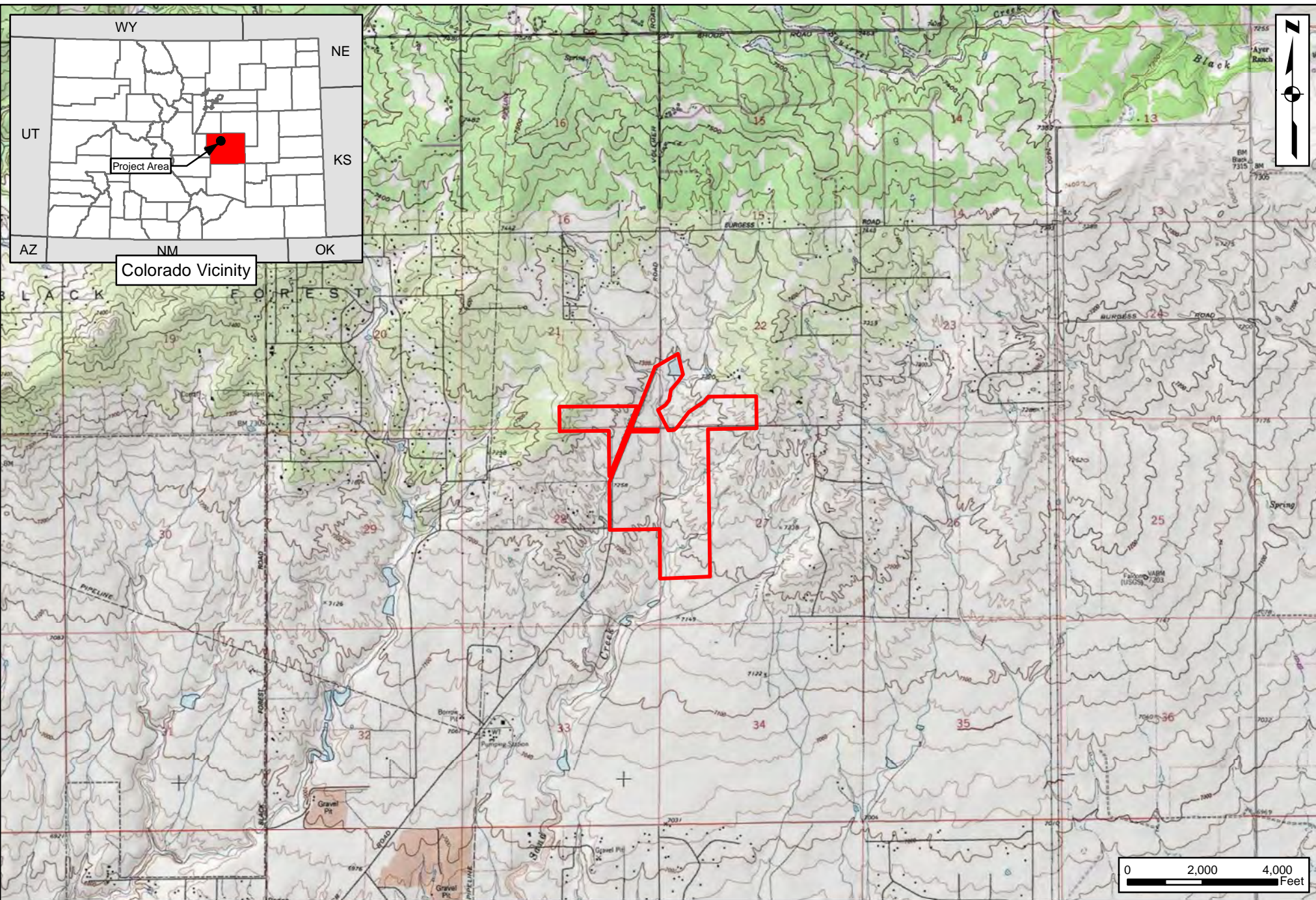
REFERENCES

- Colorado Department of Agriculture. (2006). 8 CCR 1206-2 – Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act.
- Colorado Weed Management Association. (CWMA). 2015. Colorado State Noxious Weed List
- EPC. El Paso County Noxious Weeds and Control Methods. (2008).
- ____. El Paso County Noxious Weed Management Plan. (2014).
- ____. Land Development Code. (2015).
- Mack, R. N., Simberloff, D., Mark Lonsdale, W., Evans, H., Clout, M., & Bazzaz, F. A. (2000). Biotic invasions: causes, epidemiology, global consequences, and control. Ecological applications, 10(3), 689-710.
- Sheley, R., Manoukian, M., & Marks, G. (1996). Preventing Noxious Weed Invasion. Rangelands, 18, 100-101.
- State of Colorado. (2003). Colorado Revised Statutes, Title 35 Agriculture, Article 5.5 Colorado Noxious Weed Act.
- U.S. Department of Agriculture (USDA). 2001. Effective Aerial Reseeding Methods: Market Search Report.
- Westbrooks, R. G. (1998). Invasive plants: changing the landscape of America. US Government Documents (Utah Regional Depository), 490.



APPENDIX I

SITE LOCATION MAP



 Project Boundary

Reference:
USGS 7.5 Minute
Topographic Quadrangle
Falcon NW, CO Quad

Retreat at Timber Ridge

Site Location Map
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059



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APPENDIX II

COLORADO STATE NOXIOUS WEED LIST



COMMON NAME	SCIENTIFIC NAME	LIST
African rue	<i>Peganum harmala</i>	A
camelthorn	<i>Alhagi pseudalhagi</i>	A
Cypress spurge	<i>Euphorbia cyparissias</i>	A
Dyer's woad	<i>Isatis tinctoria</i>	A
elongated mustard	<i>Brassica elongata</i>	A
flowering rush	<i>Butomus umbellatus</i>	A
giant reed	<i>Arundo donax</i>	A
giant salvinia	<i>Salvinia molesta</i>	A
hairy willow-herb	<i>Epilobium hirsutum</i>	A
hydrilla	<i>Hydrilla verticillata</i>	A
Japanese, giant and bohemian knotweed	<i>Polygonum cuspidatum</i> , <i>P. sachalinense</i> and <i>P. bohemicum</i>	A
meadow knapweed	<i>Centaurea pratensis</i>	A
Mediterranean sage	<i>Salvia aethiopis</i>	A
medusahead	<i>Taeniatherum caput-medusae</i>	A
myrtle spurge	<i>Euphorbia myrsinites</i>	A
orange hawkweed	<i>Hieracium aurantiacum</i>	A
parrot feather	<i>Myriophyllum aquaticum</i>	A
purple loosestrife	<i>Lythrum salicaria</i>	A
rush skeletonweed	<i>Chondrilla juncea</i>	A
squarrose knapweed	<i>Centaurea virgata</i>	A
tansy ragwort	<i>Senecio jacobaea</i>	A
yellow starthistle	<i>Centaurea solstitialis</i>	A
absinth wormwood	<i>Artemisia absinthium</i>	B
black henbane	<i>Hyoscyamus niger</i>	B
bouncingbet	<i>Saponaria officinalis</i>	B
bull thistle	<i>Cirsium vulgare</i>	B
Canada thistle	<i>Cirsium arvense</i>	B
Chinese clematis	<i>Clematis orientalis</i>	B
common tansy	<i>Tanacetum vulgare</i>	B
common teasel	<i>Dipsacus fullonum</i>	B
corn chamomile	<i>Anthemis arvensis</i>	B
cutleaf teasel	<i>Dipsacus laciniatus</i>	B
dalmatian toadflax (broad leaved)	<i>Linaria dalmatica</i>	B
dalmatian toadflax (narrow leaved)	<i>Linaria genistifolia</i>	B
dame's rocket	<i>Hesperis matronalis</i>	B



diffuse knapweed	<i>Centaurea diffusa</i>	B
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	B
hoary cress	<i>Cardaria draba</i>	B
houndstongue	<i>Cynoglossum officinale</i>	B
jointed goatgrass	<i>Aegilops cylindrica</i>	B
leafy spurge	<i>Euphorbia esula</i>	B
mayweed chamomile	<i>Anthemis cotula</i>	B
moth mullein	<i>Verbascum blattaria</i>	B
musk thistle	<i>Carduus nutans</i>	B
oxeye daisy	<i>Leucanthemum vulgare</i>	B
perennial pepperweed	<i>Lepidium latifolium</i>	B
plumeless thistle	<i>Carduus acanthoides</i>	B
Russian knapweed	<i>Acroptilon repens</i>	B
Russian-olive	<i>Eleagnus angustifolia</i>	B
salt cedar	<i>Tamarix chinensis, T. parviflora, and T. ramosissima</i>	B
scentless chamomile	<i>Tripleurospermum perforatum</i>	B
scotch thistle	<i>Onopordum acanthium and O. tauricum</i>	B
sulfur cinquefoil	<i>Potentilla recta</i>	B
wild caraway	<i>Carum carvi</i>	B
yellow nutsedge	<i>Cyperus esculentus</i>	B
yellow toadflax	<i>Linaria vulgaris</i>	B
bulbous bluegrass	<i>Poa bulbosa</i>	C
chicory	<i>Cichorium intybus</i>	C
common burdock	<i>Arctium minus</i>	C
common mullein	<i>Verbascum thapsus</i>	C
common St. Johnswort	<i>Hypericum perforatum</i>	C
downy brome	<i>Bromus tectorum</i>	C
field bindweed	<i>Convolvulus arvensis</i>	C
halogeton	<i>Halogeton glomeratus</i>	C
johnsongrass	<i>Sorghum halepense</i>	C
perennial sowthistle	<i>Sonchus arvensis</i>	C
poison hemlock	<i>Conium maculatum</i>	C
puncturevine	<i>Tribulus terrestris</i>	C
quackgrass	<i>Elymus repens</i>	C
redstem filaree	<i>Erodium cicutarium</i>	C
velvetleaf	<i>Abutilon theophrasti</i>	C
wild proso millet	<i>Panicum miliaceum</i>	C



Asian mustard	<i>Brassica tournefortii</i>	WATCH
baby's breath	<i>Gypsophila paniculata</i>	WATCH
bathurst burr	<i>Xanthium spinosum</i>	WATCH
Brazilian egeria	<i>Egeria densa</i>	WATCH
common bugloss	<i>Anchusa officinalis</i>	WATCH
common reed	<i>Phragmites australis</i>	WATCH
garden loosestrife	<i>Lysimachia vulgaris</i>	WATCH
garlic mustard	<i>Alliaria petiolata</i>	WATCH
Himalayan blackberry	<i>Rubus armeniacus</i>	WATCH
Japanese blood grass	<i>Imperata cylindrica</i>	WATCH
meadow hawkweed	<i>Hieracium caespitosum</i>	WATCH
onionweed	<i>Asphodelus fistulosus</i>	WATCH
purple pampas grass	<i>Cortaderia jubata</i>	WATCH
scotch broom	<i>Cytisus scoparius</i>	WATCH
sericea lespedeza	<i>Lespedeza cuneata</i>	WATCH
Swainson pea	<i>Sphaerophysa salsula</i>	WATCH
Syrian beancaper	<i>Zygophyllum fabago</i>	WATCH
water hyacinth	<i>Eichhornia crassipes</i>	WATCH
water lettuce	<i>Pistia stratiotes</i>	WATCH
white bryony	<i>Bryonia alba</i>	WATCH
woolly distaff thistle	<i>Carthamus lanatus</i>	WATCH
yellow flag iris	<i>Iris pseudacorus</i>	WATCH
yellow floatingheart	<i>Nymphoides peltata</i>	WATCH
yellowtuft	<i>Alyssum, A. corsicum</i>	WATCH



March 31, 2017

Peter Martz

Arroya Investments, LLC
P.O. Box 50223
Colorado Springs, CO 80949
CORE Consultants Project Number 16-059

**Re: Impact Identification Report
The Retreat at Timber Ridge Residential Development Project
El Paso County, Colorado**

Dear Mr. Martz:

CORE Consultants, Inc. (CORE) presents this memo summarizing an impact identification report of the proposed The Retreat at Timber Ridge Residential Development Project (Project) in El Paso County, Colorado. The memo tiers to the requirements set-forth in the Wildlife Impact Identification Report Checklist created by El Paso County. The report is required as part of a County submittal application for a Planned Unit Development (PUD). The Project is located adjacent to and surrounding the intersection of Vollmer Road and Arroya Lane and is on the U.S. Geological Survey (USGS) Falcon North West 7.5-minute quadrangle, on portions of Sections 21, 22, 27, and 28 in Township 12 South, Range 65 West (**Attachment I: Site Location Map**). The Project would consist of the construction of single family residential homes, permanent access roads, open spaces and trails, and associated facilities.

CORE completed a desktop review and subsequent site reconnaissance of the Project for the following natural resources and potential biological constraints:

- Significant topographic features;
- Potentially jurisdictional water features and floodplains;
- Potential for occurrence of federally-listed threatened and endangered species (TES) and their associated habitats;
- Federally-designated Critical Habitat for TES; and
- Potential for occurrence of state threatened (ST), state endangered (SE), state species of concern (SC), and their associated habitats, and big game migratory routes and species specific concentration areas.
- Potential geologic hazards
- Potential wildfire hazards

Publicly-available data sources reviewed via desktop included the U.S. Fish and Wildlife Service's (USFWS) Information Planning and Conservation (IPaC) System, the USFWS Critical Habitat Portal, species profiles and spatial data from Colorado Parks and Wildlife (CPW), the USFWS National Wetland Inventory (NWI), the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), USGS aerial imagery, El Paso County Wildfire Hazard Map, and El

Paso County Soil Survey data (NRCS 1981). A site reconnaissance was conducted on December 15, 2016 to field-verify results of the desktop review.

ENVIRONMENTAL SETTING

The Project lies within the Fountain watershed, referenced as 8-digit Hydrologic Unit Code (HUC) 11020003. Topography of the Project consists of rolling foothill grasslands within the southern portion of the Project transitioning into pine-oak woodlands within the northern portion of the Project (Chapman et al. 2006). Scattered, shallow ridges and dense stands of ponderosa pine (*Pinus ponderosa*) are located across the northern portion of the Project and coincide with the southern boundary of Black Forest. Sand Creek and multiple unnamed tributaries drain the Project in a southerly direction; the confluence of two unnamed tributaries converge at the main channel of Sand Creek within the northern portion of the Project. Project elevations range between approximately 7,150 and 7,400 feet above mean sea level (AMSL). Land use in the region is typified by rangeland grazing with increasing urban and residential development.

Dominant species within the foothills grasslands include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switch grass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*). Scattered pine-oak communities are located across higher elevation areas of the foothills grasslands. Ponderosa pine and Gambel oak (*Quercus gambelii*) dominate the canopy and understory of the pine-oak woodlands. Mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), western serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*) are also found scattered throughout the understory.

Wetlands and Waters of the U.S.

The USFWS NWI and USGS NHD datasets were reviewed for the presence of potentially jurisdictional Waters of the U.S. (WOUS) within the Project. Aerial imagery was reviewed to locate water features not included within the NWI and NHD datasets. Spatial data indicates that the main channel of Sand Creek and unnamed tributaries drain the Project in a southerly direction (**Attachment II: National Wetland Inventory Map**). NWI maps depict two palustrine, unconsolidated bottom, semipermanently flooded wetlands (PUBF) within the Project (**Attachment II**). NHD datasets depict three NHD waterbodies characterized as lakes/ponds, two of which coincide with the NWI identified wetlands (**Attachment II**). Aerial imagery interpretation indicates that the main channel of Sand Creek is perennial throughout much of its stretch within the Project; erosion and incision of the main channel is apparent throughout the southern portion of the main channel. Aerial interpretation of the northern portion of the Project indicates channelization of the unnamed tributaries and main channel of Sand Creek, and that extensive emergent wetlands are likely present within and adjacent to the channels. A site reconnaissance and a routine wetland delineation were deemed necessary to confirm desktop findings.

FEMA Zone-A Floodplains

The Project is located within the boundaries of FEMA FIRM panel 08041 C0535F El Paso County (FEMA 1997). Zone-A floodplains are mapped within and adjacent to the main channel of Sand Creek, south of Arroya Lane (**Attachment III: FEMA FIRM Panel**). Zone-A floodplains (also referred to as 100-year floodplains) are defined as those areas subject to an annual 1% chance of flooding.

Federal TES

The USFWS IPaC database (USFWS 2017a) was used to determine the likelihood of occurrence for federally listed TES within the Project. The IPaC query listed four species, including one bird, one flowering plant, one mammal, and one fish, as having the potential to occur within the Project. An additional five species were listed

to be considered under a conditional effects analysis; i.e., an additional five species would be considered if the Project would affect water within the South Platte River watershed (Table I).

Table I. TES LIKELIHOOD OF OCCURRENCE WITHIN THE PROJECT (USFWS 2017a)

COMMON NAME	SCIENTIFIC NAME	STATUS	LIKELIHOOD OF OCCURENCE
Complete Effects Analysis			
Greenback cutthroat trout	<i>Oncorhynchus clarkii stomias</i>	FT	Unlikely; historically occupied steep, cold, high mountain streams and rivers in the South Platte and Arkansas River watersheds (Young 2009). A single, genetically pure population remains in Bear Creek, El Paso County (Martin et al. 2015).
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT	Unlikely; requires mixed-conifer stands and narrow canyons (Gutiérrez et al. 1995). Designated critical habitat is > 10 miles from Project; lack of habitat connectivity.
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	FT, ST	Low potential: see discussion below.
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	Unlikely: see discussion below
Conditional Effects Analysis			
Least tern	<i>Sternula antillarum</i> (interior population)	FE	Project is located outside of species' range; Project would not affect water within the S. Platte River watershed. Therefore, impacts to this species would not occur.
Pallid sturgeon	<i>Scaphirynchus albus</i> (entire population)	FE	Project is located outside of species' range; Project would not affect water within the S. Platte River watershed. Therefore, impacts to this species would not occur.
Piping plover	<i>Charadrius melodus</i> (except Great Lakes watershed)	FT	Project is located outside of species' range; Project would not affect water within the S. Platte River watershed. Therefore, impacts to this species would not occur.
Western prairie fringed orchid	<i>Platanthera praeclara</i>	FT	Project is located outside of species' range; Project would not affect water within the S. Platte River watershed. Therefore, impacts to this species would not occur.
Whooping crane	<i>Grus americana</i>	FE	Project is located outside of species' range; Project would not affect water within the S. Platte River watershed. Therefore, impacts to this species would not occur.

FE=Federally Endangered; FT=Federally Threatened; ST=State Threatened

Preble's Meadow Jumping Mouse

Preble's meadow jumping mouse (*Zapus hudsonius preblei*; PMJM) is a federally threatened species and is a state threatened species in Colorado. PMJM occur along the Front Range of the Rocky Mountains throughout several counties in Wyoming and Colorado. Preferred habitat includes well developed riparian corridors with gentle slopes and adjacent grasslands that allow for movement in and out of the stream channel. Their population has declined due to habitat fragmentation and degradation resulting from urban development in

riparian areas (USFWS 2004). Critical habitat was designated for PMJM across its range in 2003 (68 FR 37275). USFWS designated critical habitat zones are those areas that scientifically and biologically support reproduction, foraging, hibernation, rearing young, and dispersal. CPW designated PMJM occupied ranges are those areas within one mile of CPW known occurrences (CPW 2014). The closest USFWS critical habitat and CPW occupied range is located approximately six and four miles, respectively, northwest along the Black Squirrel Creek drainage.

The USFWS has determined block clearance zones as those areas where PMJM is unlikely to occur as a result of habitat fragmentation or consistently negative trapping results. The majority of the Project is located within the USFWS PMJM Block Clearance Zone for the Colorado Springs Area (USFWS 2010). The northern portion of the Project is not included within the Colorado Springs block clearance zone; however, Sand Creek and its unnamed tributaries are intermittent at this location. A site reconnaissance was deemed necessary to more accurately assess the potential for the presence of PMJM habitat within the Project.

Ute Ladies'-tresses Orchid

Ute ladies'-tresses orchid (ULTO) is a perennial orchid listed as federally threatened. This forb has ivory flower clusters arranged in a spike growing approximately 8-20 inches tall. ULTO is known to occur in parts of Colorado, Wyoming, Idaho, Montana, Nebraska, Utah, and Washington. The plant typically occurs within features associated with major river floodplains including riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows associated with perennial streams; it is found under 6,500 feet AMSL in Colorado (USFWS 2014). Surveys have indicated that the species may also inhabit groundwater-fed springs or sub-irrigated meadows, seeps, and human-influenced riparian habitats that receive reliable and stable spring inundation (Fertig et al. 2005; NRCS 2009). Soils in areas of suitable habitat have a high micronutrient and organic matter content and display gley features when sampled (NRCS 2009).

A review of spatial data and aerial imagery indicates that the Project is not located at elevations appropriate to sustain ULTO within Colorado. It is not anticipated that Project development would impact ULTO or its associated habitat.

Migratory Birds

The USFWS IPaC database (USFWS 2017a) was used to determine the potential for occurrence of migratory birds within the Project that are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. §§ 703–712). The IPaC query listed 24 migratory bird species, including 16 potential breeding species, seven potential year-round resident species, and one potential wintering species. Breeding migratory birds, and the parts, nests, or eggs of such a bird receive statutory protection under the MBTA, and disturbing such species (defined at 16 U.S.C. §§ 703–712) is prohibited.

CPW Species Activity Mapping: El Paso County

The CPW SAM spatial data were reviewed to determine the potential for the occurrence of general wildlife, including big game species. The review indicated that there is potential for the occurrence of five mammals and 13 reptiles (Table 2).

Table 2. General Wildlife Potential for Occurrence (CPW 2017)

COMMON NAME	SCIENTIFIC NAME	TYPE OF OCCURENCE (CPW 2017)
Mammals		
Abert's squirrel	<i>Sciurus aberti</i>	Overall range (north of Wildflower Road)
Black bear	<i>Ursus americanus</i>	Fall concentration area
Mountain lion	<i>Puma concolor</i>	Peripheral range
Mule deer	<i>Odocoileus hemionus</i>	Overall range
Pronghorn antelope	<i>Antilocapra americana</i>	Overall range (south of Wildflower Road)
Reptiles		
Bullsnake	<i>Pituophis catenifer sayi</i>	Overall range
Common lesser earless lizard	<i>Holbrookia maculata</i>	Overall range
Hernandez's short-horned lizard	<i>Phrynosoma hernandesi hernandesi</i>	Overall range
Many-lined skink	<i>Plestiodon multivirgatus</i>	Overall range
Milk snake	<i>Lampropeltis triangulum</i>	Overall range
Ornate box turtle	<i>Terrapene ornata ornata</i>	Overall range
Painted turtle	<i>Chrysemys picta</i>	Overall range
Plains garter snake	<i>Thamnophis radix</i>	Overall range
Prairie lizard	<i>Sclerophorus undulatus</i>	Overall range
Prairie rattlesnake	<i>Crotalus viridis</i>	Overall range
Six-lined racerunner	<i>Aspidoscelis sexlineata</i>	Overall range
Smooth green snake	<i>Opheodrys vernalis</i>	Overall range
Terrestrial garter snake	<i>Thamnophis elegans</i>	Overall range

General wildlife do not receive statutory protection, and the Project area does not intersect with big game migratory routes. The closest migratory route is utilized by elk (*Cervus canadensis*) and is located approximately 11 miles north of the Project. The Project does intersect with a seasonal fall concentration area for black bears (*Ursus americanus*), as well as the peripheral range for mountain lion (*Puma concolor*) in the northern, small forested portions of the Project. Development of residential property has the potential to attract black bear, since trash would be readily available for forage. A site reconnaissance would determine the potential for occurrence of specific general wildlife species.

Geologic Hazards Review

The El Paso County Soil Survey data were reviewed to determine the potential for the presence of geologic hazards within the Project. The NRCS provides information on soils properties that would influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Quantitative soil ratings are assigned to each major soil group and include 'Not limited', 'Somewhat limited', and 'Very limited'. 'Not limited' indicates that the soil type has properties that are very favorable for the specified type of construction. 'Somewhat limited' indicates that the soil type has properties that are moderately favorable for the specified type of construction. These

limitations can generally be overcome through planning and design considerations. 'Very limited' indicates that the soil type has properties that cannot generally be overcome through design and planning considerations (NRCS 2017). County soil survey data indicate that the Project is composed of Columbine gravelly sandy loams (0 to 3 percent slopes), Kettle gravelly loamy sand (3 to 8 percent slopes and 8 to 40 percent slopes), and Pring coarse sandy loams (3 to 8 percent slopes) (NRCS 2017) (**Attachment IV: County Soil Survey Map**). The review of data indicated that the Project soils are rated 'Not limited' for the construction of dwellings with or without basements, with the exception of Kettle gravelly sandy loams (8 to 40 percent slopes). This soil series comprises a small, forested area of the northwestern corner of the Project, west of Vollmer Road (**Attachment IV**). The current Project concept does not include lots west of Vollmer Road.

Wildfire Hazards Review

El Paso County *Wildfire Hazards Based on CVCP Indicators Map* was reviewed to determine the potential wildfire hazard levels within the Project. The County assigns a rating of 'High Hazard' or 'No Hazard' based on type of vegetation cover. Forested areas are considered 'High Hazard' and grass/shrub areas are considered 'Low Hazard'. A review of the map indicated that the majority of the Project is considered 'Low Hazard' for wildfire threat (El Paso County 2007). A 'High Hazard' and 'Low Hazard' rating is interspersed across the northern portion of the Project since this area represents the transition zone between the foothill-grasslands and the pine-oak woodlands (El Paso County 2007).

SITE RECONNAISSANCE

A site reconnaissance of the Project was conducted on December 15, 2016. The site visit confirmed the majority of the initial results of the desktop review.

Vegetation

Dominant vegetation consisted of plants typical of the foothill grasslands and pine-oak woodlands; vegetation was relatively undisturbed. Native species observed included blue grama (*Bouteloua gracilis*), needle-and-thread (*Hesperotipa comata*), yellow Indiagrass, fringed sage (*Artemisia frigida*), blackbent (*Agrostis gigantea*), and buckwheats (*Polygonum* spp.). Shrubby and tree species observed included peach leaf willow (*Salix amygdaloides*), coyote willow (*Salix exigua*), narrowleaf cottonwood (*Populus angustifolia*), and ponderosa pine. Noxious weed species observed included common mullein (*Verbascum thapsus*), and diffuse knapweed (*Centaurea diffusa*). El Paso County requires that noxious weed populations be treated prior to construction on projects requiring ground disturbance (El Paso County 2014).

PMJM

The site reconnaissance confirmed the initial results of the desktop review regarding the low potential for the presence of PMJM within or in the vicinity of the Project. Sand Creek presented as a steeply incised and eroded channel throughout the majority of the southern portion of the Project. Short stretches of the southernmost portion of the channel are widely eroded such that some disperse, riparian vegetation has established within the banks adjacent to the channel within the area of incision. Short stretches of Sand Creek north and south of Arroya Lane presented as a perennial stream with gently sloping banks and well developed riparian canopy coverage. However, these stretches are located within the USFWS PMJM block clearance zone for the Colorado Springs area (USFWS 2010), with the exception of a short stretch (approximately 600 linear feet) of channel immediately north of the Colorado Springs block clearance zone. A narrowly defined perennial channel was present at this location that developed as a result of the outlet of the southwest corner of the large pond located in the northern portion of the Project, north of Arroya Lane. The perennial channel was situated adjacent to well established native uplands and a well-developed riparian corridor with gently

sloping banks along an unnamed tributary of Sand Creek (**Attachment V: Habitat Assessment Map**). Since the channel provides a perennial water source and there were well-developed riparian corridors, moist meadows, and native upland grasses in the near vicinity, this small portion of the Project may constitute potentially suitable habitat for PMJM.

Although some potentially suitable habitat is present, it is CORE's opinion that the Project would not impact PMJM or its associated habitat. Sand Creek and its unnamed tributaries are not included in designated Critical Habitat for PMJM, nor in CPW's PMJM occupied range (USFWS 2017b, CPW 2014). Further, portions of the main channel of Sand Creek that presented as characteristically suitable PMJM habitat adjacent to Arroya Lane are minimal and are located within the USFWS PMJM block clearance zone for the Colorado Springs Area (USFWS 2010). Nonetheless, presence or absence of PMJM can only be determined through trapping surveys. As such, the Applicant has elected to defer to the County to submit a request for concurrence from the USFWS that the Project is Not Likely to Adversely Affect the federally threatened PMJM.

Migratory Birds

Suitable substrates for nesting raptors were present in the form of mature narrowleaf cottonwoods and ponderosa pines, widely distributed adjacent to and within the Sand Creek channel and across the northern portion of the Project. Raptor nests were observed within the southern portion of the Project along Sand Creek (**Attachment V**). There is potential for additional raptor nests to be built during the breeding season (February 1 through July 15) Project.

CPW Species Activity Mapping

The site reconnaissance determined a high probability for several general wildlife species identified during the desktop review of CPW SAM data (CPW 2017). Abert's squirrel, black bear, and mountain lion have some potential to occur within the forested areas in the northern portion of the Project. Development of the Project has the potential to attract black bears, since trash would be readily available for forage. Mule deer have the potential to occur within the forested areas in the northern portion of the Project. There is potential for pronghorn to occur within the southern portion of the Project; however, development has greatly fragmented suitable habitat in the Project vicinity. As such, development may create a barrier through which pronghorn cannot disperse from habitat further east of the Project. The Project provides suitable habitat for general reptile species identified during the desktop review of CPW SAM data. There is the potential for occurrence of other general wildlife including avian and amphibian species. CPW SAM data does not include amphibians (CPW 2017).

WOUS

The site reconnaissance determined a high likelihood for the presence of potentially-jurisdictional WOUS, including wetlands, within the Project. The site reconnaissance confirmed the presence of a defined bed and bank along the entire stretch of Sand Creek and select tributaries within the Project (**Attachment VI: Maximum Extent of Wetlands Map**). Portions of Sand Creek exhibited characteristics of a perennial stream with fringe wetlands, while other portions exhibited characteristics of an intermittent stream channel (**Attachment VII: Photographic Log**). The extent of in-channel wetlands varied along Sand Creek within the Project. Wetland vegetation narrowly edged the perennial stretches of stream channel where channel incision was greatest. The stretch of Sand Creek immediately south of Arroya was characterized by a broader, more gently sloping channel and more extensive abutting and in channel wetland complexes (**Attachment VII**). Sand Creek tributaries south of Arroya Lane presented as intermittent stream channels containing wetlands and some sandy washes characterized as jurisdictional channels.

Sand Creek and its tributaries north of Arroya Lane presented as perennial stream channels containing

wetlands, intermittent stream channels containing wetlands, and abutting wetlands. The large stock pond in the northern portion of the site has altered the hydrology of the drainage; outflow at the southwestern corner of the pond has created a narrowly defined perennial channel containing wetlands with adjacent wet meadows. CORE delineated the maximum extent of WOUS within the Project. The top of bank was delineated where wetlands were observed within the channel, and maximum extent of abutting wetlands were included when observed outside of the top of bank. CORE will conduct a formal wetland delineation during the growing season.

CULTURAL RESOURCES

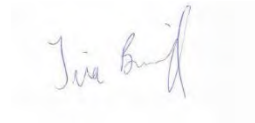
CORE contracted Cultural Resource Analysts, Inc. (CRA) to conduct a desktop records review and assessment of cultural resources within and a one mile buffer of the Project (**Attachment VIII: Class I Cultural Resources Review**). An official file search was conducted using the records housed with the Colorado Historical Society's Office of Archaeology and Historic Preservation (OAHP). The file search listed one previous investigation near the Project that occurred in 2002; this review indicated that no cultural resource sites have been previously identified within or near the current project area. No Class III pedestrian surveys have been conducted within or adjacent to the Project; a future survey could be required by the USACE as part of the Section 404 permitting process.

CONCLUSIONS

The site reconnaissance indicated some biological constraints within the Project. There is potential for the presence of potentially suitable, albeit minimal, PMJM habitat within the northern portion of the Project. Since this short stretch of the Sand creek drainage would be preserved for open space, it is unlikely that Project development would impact PMJM or its habitat. As such, the Applicant will defer to the County to submit a request for concurrence from the USFWS that the Project is Not Likely to Adversely Affect the federally threatened PMJM. Residential development has the potential to attract black bears. Appropriately containing trash would mitigate this potential constraint. Suitable nesting raptor substrates were present within the Project in the form of mature cottonwoods and pine trees widely distributed along the Sand Creek drainage, and dense stands of mature pine trees across the northern portion of the Project. The IPaC query determined the potential for the presence of multiple migratory breeding bird species within the Project. Nesting raptors and nesting migratory avian species are protected under the MBTA (16 U.S.C. §§ 703–712). WOUS are likely present within and adjacent to Sand Creek and its unnamed tributaries within the Project. Impacts to jurisdictional waters would trigger permitting under Section 404 of the Clean Water Act (CWA). The records review and assessment of cultural resources did not indicate the presence of cultural resource sites within the Project. There is potential that the USACE, through consultation with the OAHP, could require a Class III pedestrian survey for cultural resources within the Project. Noxious weed populations were detected during the survey. Coordination with El Paso County would determine required and appropriate noxious weed treatment for the Project site prior to construction.

If you have any questions, concerns or require additional information, please feel free to contact me at 303.703.4444 or by email at brazil@corecivil.com.

Sincerely,
CORE Consultants, Inc.

A handwritten signature in blue ink that reads 'Tina Brazil'.

Tina Brazil
Environmental Consultant

LIST OF ATTACHMENTS

ATTACHMENT I:	<i>SITE LOCATION MAP</i>
ATTACHMENT II:	<i>NATIONAL WETLAND INVENTORY MAP</i>
ATTACHMENT III:	<i>FEMA FIRM PANEL</i>
ATTACHMENT IV:	<i>COUNTY SOIL SURVEY MAP</i>
ATTACHMENT V:	<i>HABITAT ASSESSMENT MAP</i>
ATTACHMENT VI:	<i>MAXIMUM EXTENT OF WETLANDS MAP</i>
ATTACHMENT VII:	<i>PHOTOGRAPHIC LOG</i>
ATTACHMENT VIII:	<i>CLASS I CULTURAL RESOURCES REVIEW</i>

REFERENCES

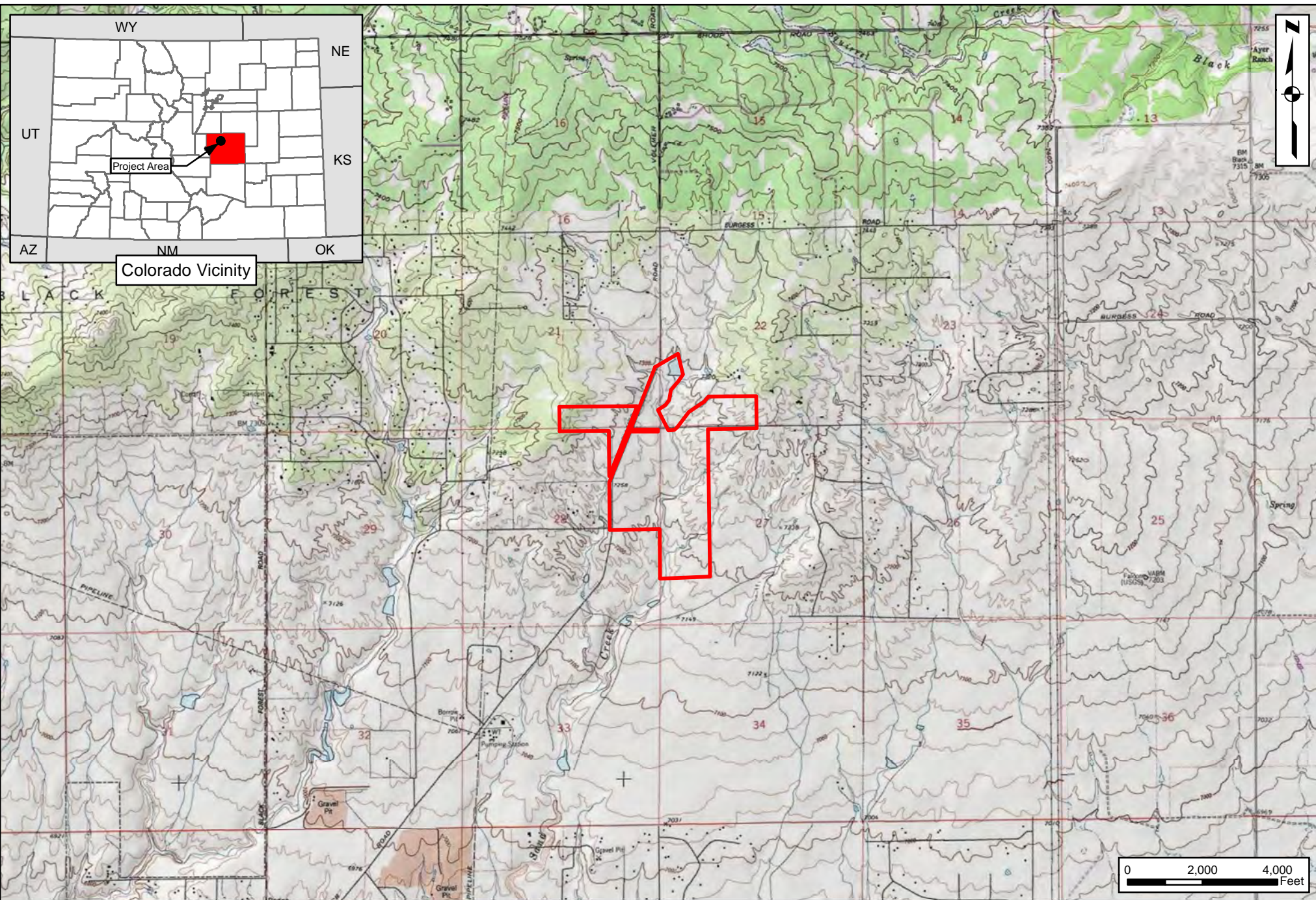
- Chapman, S.S., G.E. Griffith, J.M. Omernik, A.B. Price, J. Freeouf, and D.L. Schrupp. 2006. Ecoregions of Colorado (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,950,000).
- _____. 2017. Colorado Parks and Wildlife (CPW). CPW Species Activity Mapping Data. Updated February 2017. Available for download at:
<https://www.arcgis.com/home/item.html?id=190573c5aba643a0bc058e6f7f0510b7>
- _____. 2014. CPW PMJM Occupied Range. Spatial Data. Available for download at
<http://www.arcgis.com/home/item.html?id=dac6d46d709945f3ad8d03afd70b58b1>.
- El Paso County. Noxious Weed Management Plan. 2014. Available online at
<http://adm.elpasoco.com/Environmental%20Division/Forestry%20and%20Noxious%20Weeds/Documents/14-097.pdf>
- _____. 2007. Wildfire Hazards Based on CVCP Indicators. Available online at
<http://adm.elpasoco.com/Development%20Services/Documents/All%20Maps/FireHazards.pdf>
- Federal Emergency Management Agency. 1997. El Paso County, Colorado FEMA Flood Insurance Rate Maps. Map 08041C0535F.
- Fertig, W., R. Black, and P. Wolken. 2005. Rangewide Status Review of Ute's Ladies'-Tresses (*Spiranthes diluvialis*). Available online at https://www.fws.gov/mountain-prairie/species/plants/uteladiestress/spdi_status%20review_fertig2005.pdf.
- Gutiérrez, R.J., A.B. Franklin and W.S. Lahaye. 1995. Spotted Owl (*Strix occidentalis*), The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York, NY, USA. Available online at <http://bna.birds.cornell.edu/bna/species/179>.
- Martin, A., J. Metcalf, C. Kennedy, and K. Rigers. 2015. Comparison Between Modern and Historical Distribution and Diversity of Cutthroat Trout in Colorado. Abstract from American Fisheries Society 145th Annual Meeting.
- Natural Resources Conservation Service (NRCS). 2017. Building Site Development: Dwellings and Small Commerical Buildings Report. Available online at:
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
- _____. 2009. Ute Ladies'-Tresses (*Spiranthes diluvialis*) Plant Guide. Available online at
https://plants.usda.gov/plantguide/pdf/pg_spdi6.pdf
- _____. 1981. El Paso County Soil Survey.
- U.S. Fish and Wildlife Service. 2017a. Information for Planning and Conservation Online System. Available online at <https://ecos.fws.gov/ipac/>.

-
- _____. 2017b. Critical Habitat Portal. Available online at http://ecos.fws.gov/tess_public/profile/speciesProfile?spcode=E00F. Accessed December 2016.
- _____. 2014. Species Profile for Ute ladies'-tresses (*Spiranthes diluvialis*). Available online at <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=Q2WA>.
- _____. 2010. Preble's Meadow Jumping Mouse Block Clearance Map for the Colorado Springs Area. Available online at https://www.fws.gov/mountain-prairie/species/mammals/preble/BLOCK_CLEARANCE/11-23-2010_USFWS_Prebles_Block_Clearance_Map_for_the_Denver_Metro_Area.pdf.
- _____. 2004. Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) Survey Guidelines. Available online at <http://www.fws.gov/mountainprairie/species/mammals/preble/CONSULTANTS/pmjm2004guidelines.pdf>.
- Young, M.K. 2009. Greenback Cutthroat Trout (*Oncorhynchus clarkii stomias*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. [Online.] Available at <http://www.fs.fed.us/r2/projects/scp/assessments/greenbackcutthroattrout.pdf>. Accessed January 2016.



ATTACHMENT I

SITE LOCATION MAP



 Project Boundary

Reference:
USGS 7.5 Minute
Topographic Quadrangle
Falcon NW, CO Quad

Retreat at Timber Ridge

Site Location Map

El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059

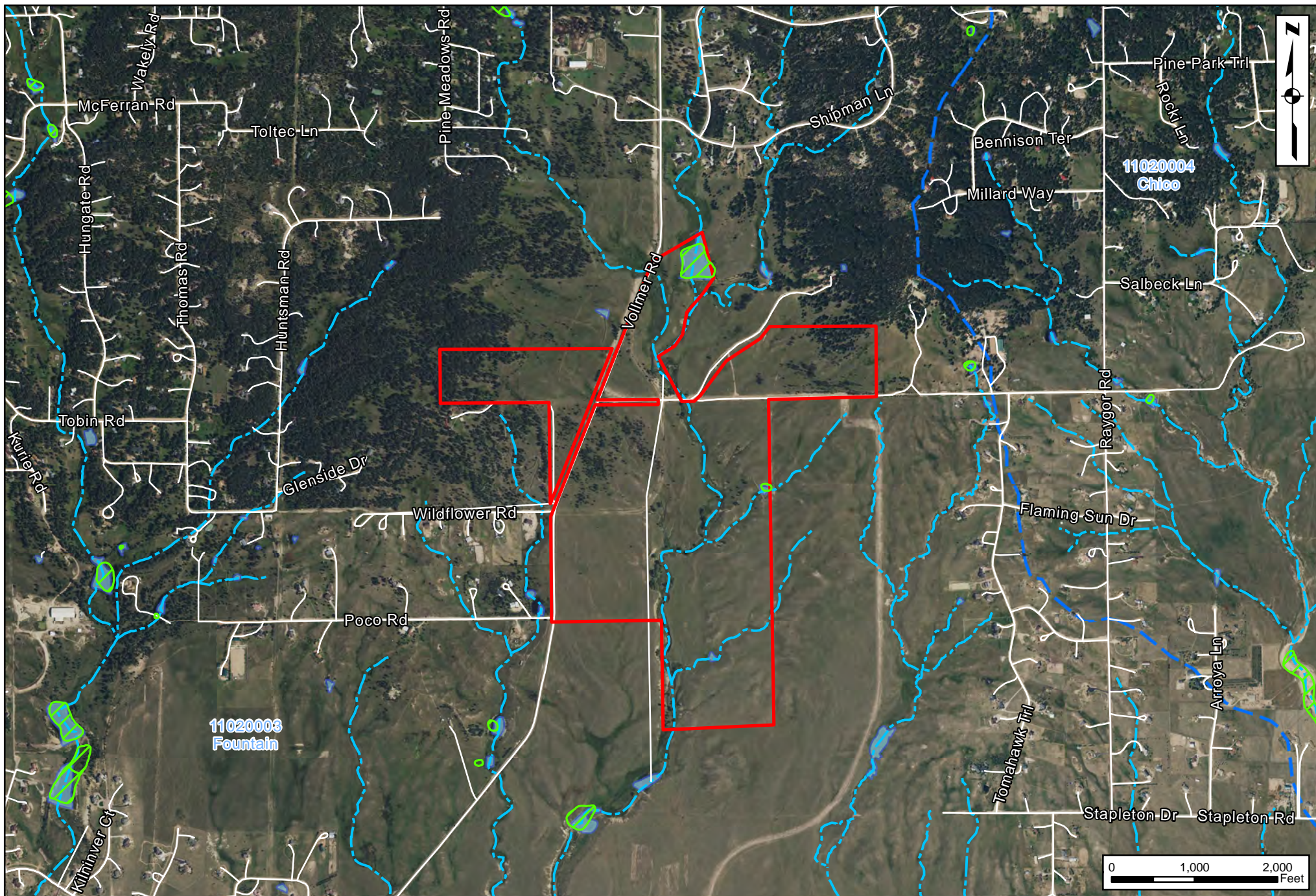


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ATTACHMENT II

NATIONAL WETLAND INVENTORY MAP



- Project Boundary
- NHD Watercourse
- NHD Waterbody
- NWI Wetland
- USGS Watershed

The Retreat at Timber Ridge
National Wetland Inventory Map
 El Paso County, Colorado

Date: 4/3/2017
 CORE Project #: 16-059

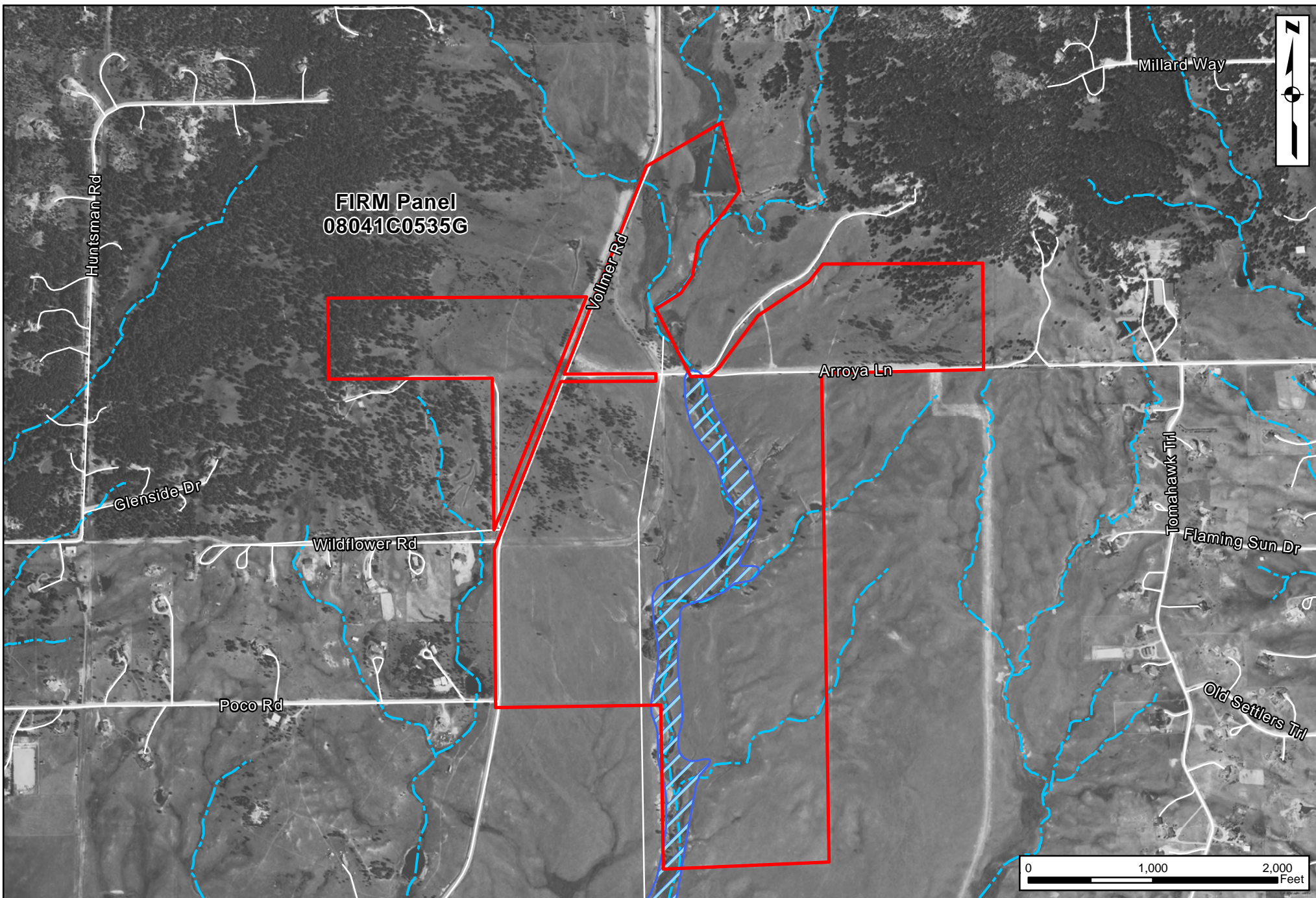





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ATTACHMENT III

FEMA FIRM PANEL



-  Project Boundary
-  NHD Watercourse
-  Zone A: 100-year floodplain

The Retreat at Timber Ridge

FEMA FIRM Panel
El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059



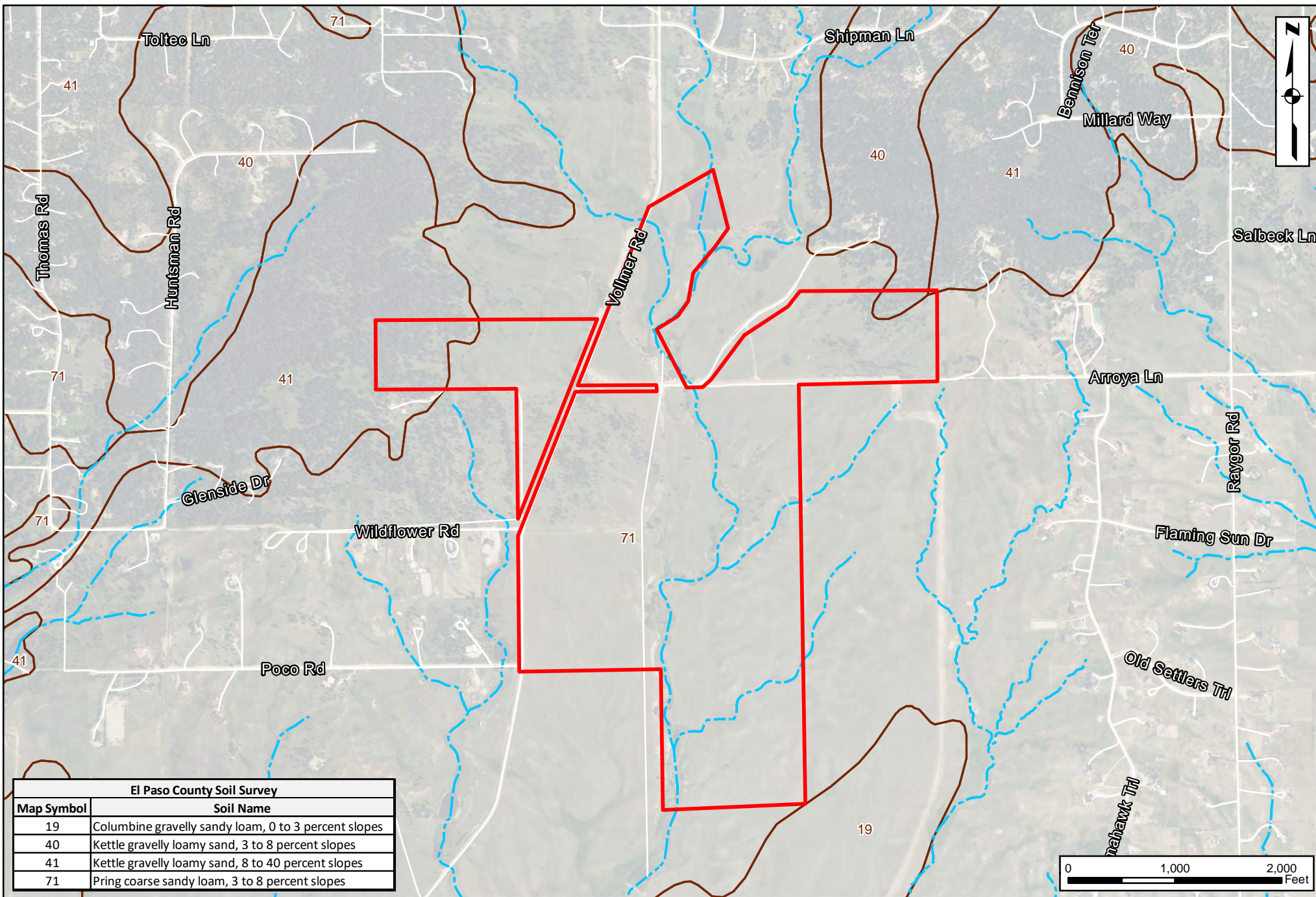
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Littleton, CO 80120



ATTACHMENT IV

COUNTY SOIL SURVEY MAP



- Project Boundary
- NHD Watercourse
- Soil

The Retreat at Timber Ridge

County Soil Survey Map

El Paso County, Colorado

Date: 4/3/2017
CORE Project #: 16-059



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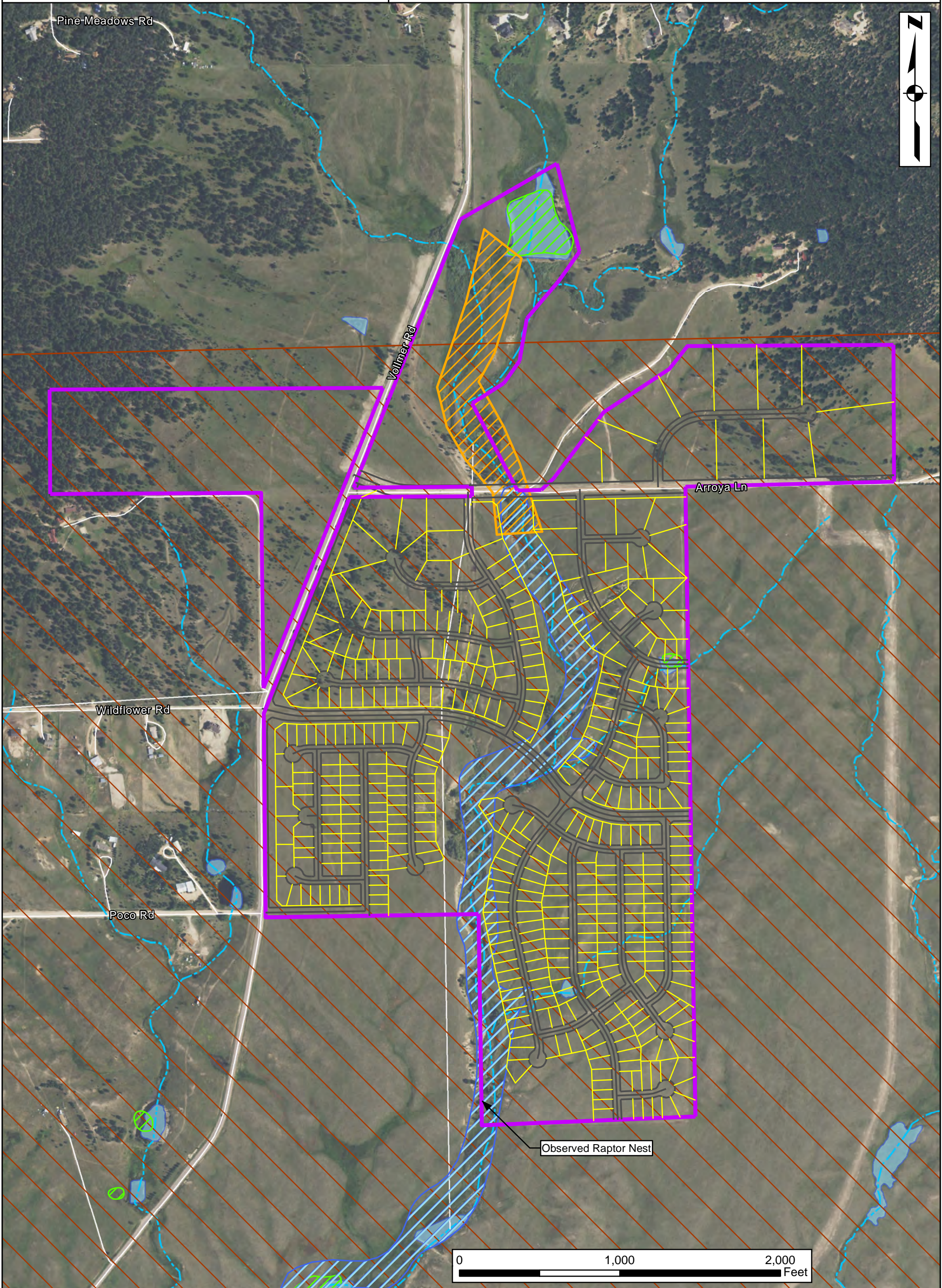
ATTACHMENT V




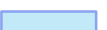



HABITAT ASSESSMENT MAP



Trails at Timber Ridge

Habitat Assessment Map

El Paso County, Colorado



- | | |
|---|--|
|  Project Boundary |  NHD Watercourse |
|  Proposed Road |  NHD Waterbody |
|  Proposed Lot |  NWI Wetland |
| |  FEMA 100-year Floodplain |

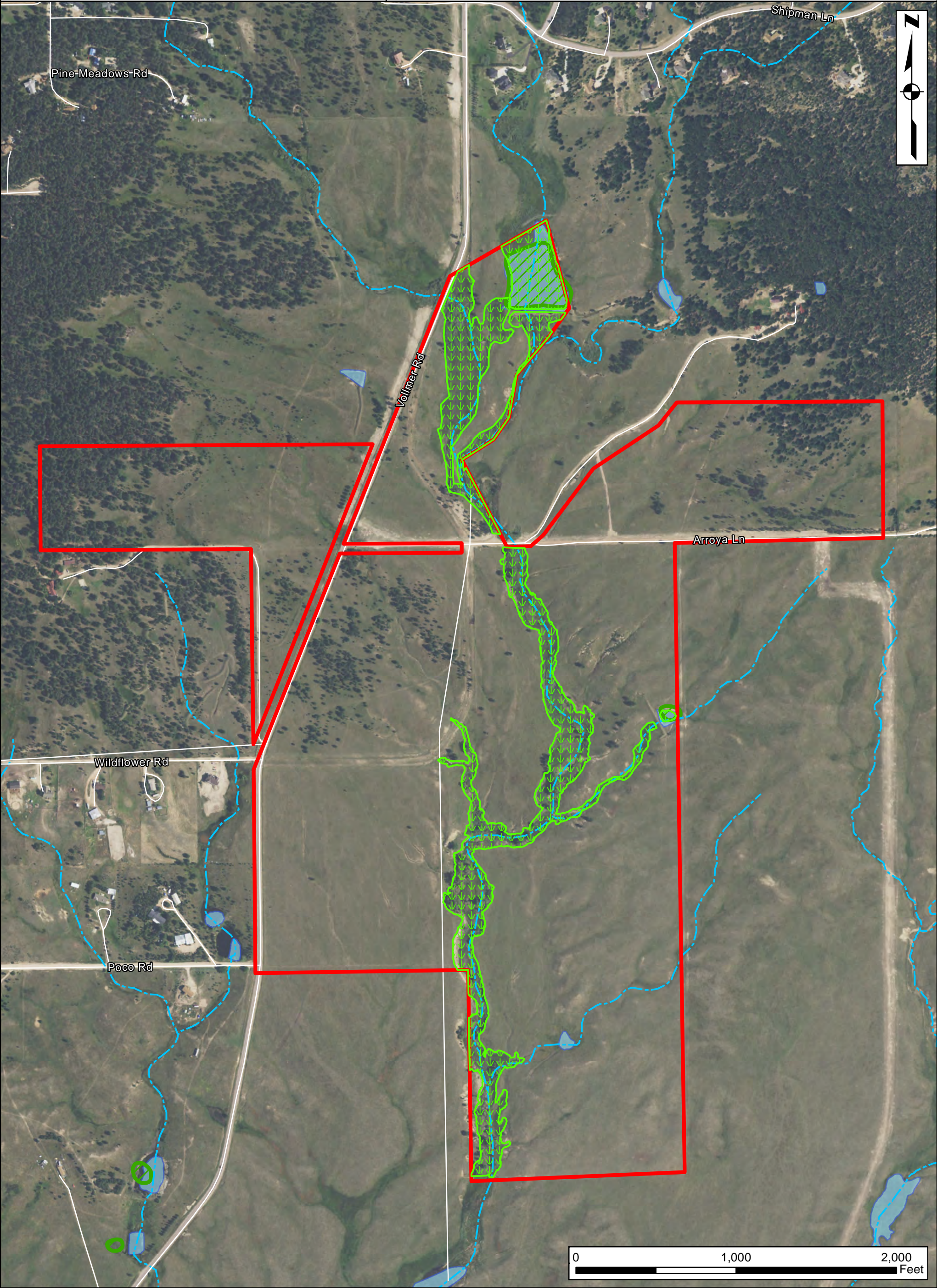
- | |
|---|
|  Approximate Suitable PMJM Habitat |
|  Colorado Springs PMJM Block Clearance |








ATTACHMENT VI

MAXIMUM EXTENT OF WETLANDS MAP

Trails at Timber Ridge
Maximum Extent of Wetlands Map
El Paso County, Colorado



-  Project Boundary
-  NHD Watercourse
-  NHD Waterbody
-  NWI Wetland
-  Preliminary Wetland



ATTACHMENT VII

PHOTOGRAPHIC LOG



Southern portion of Project facing west, raptor nest visible to the right (north)



Steep banks within southern portion of the Project



Uplands adjacent to channel, facing west



Main channel of Sand Creek south of Arroya Lane, facing north



Well-developed riparian corridor and surface water, south of Arroya Lane
facing southwest



Large stock pond in northcentral portion of Project and adjacent wet meadow on west side,
facing southwest



ATTACHMENT VIII

CLASS I CULTURAL RESOURCES REVIEW

Cultural Resource Existing Data Review and Assessment for The Timber Ridge Development Project, El Paso County, Colorado

**By: Colin R. Ferriman, MA RPA
Cultural Resource Analysts, Inc.**

Project Description

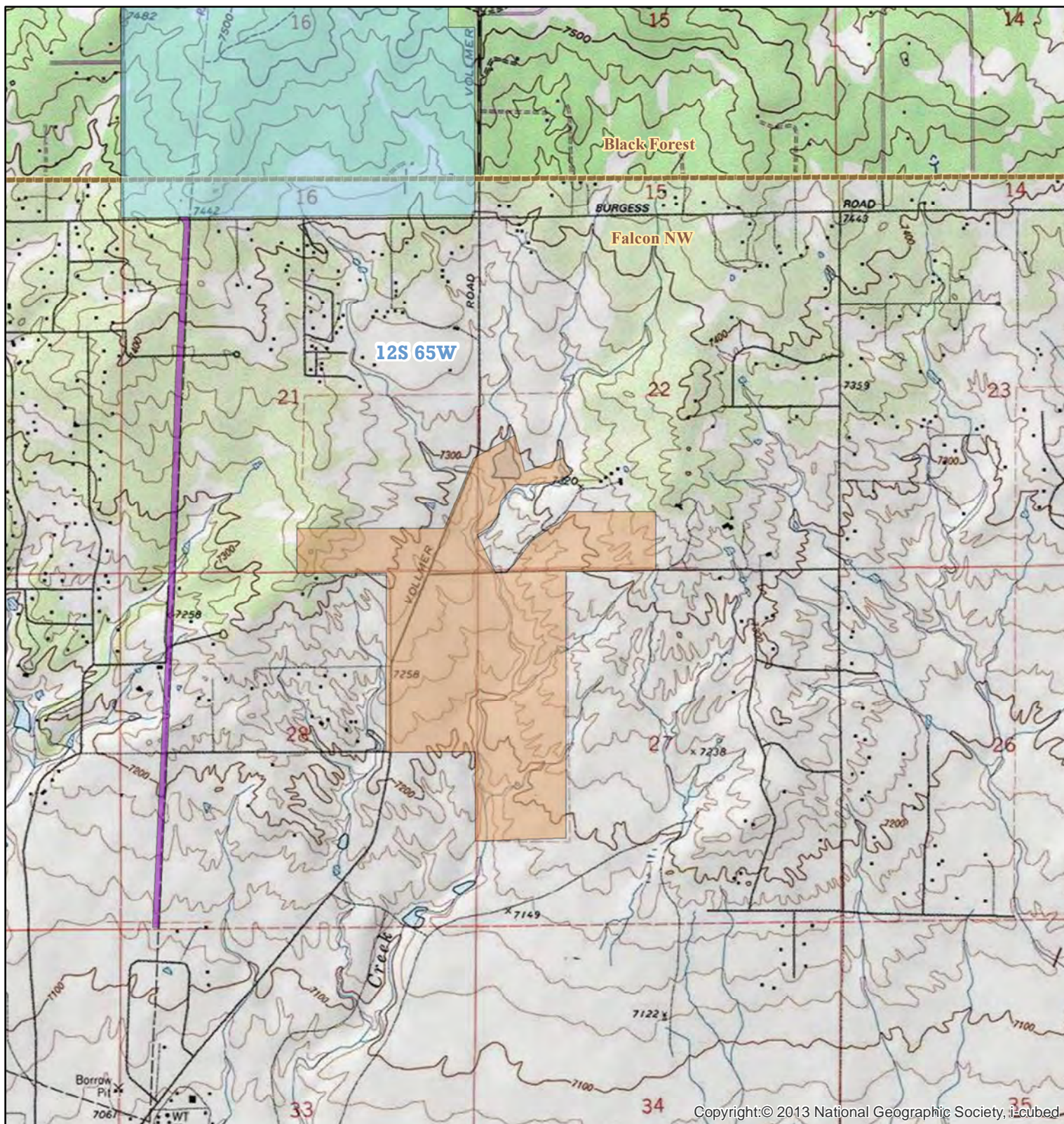
Cultural Resource Analysts, Inc. (CRA), was contracted by Core Consultants to conduct a records review for cultural resources in regards to the proposed Timber Ridge Development Project. This project area covers approximately 306 acres of private land within Sections 21, 22, 27, and 28 of Township 12S, Range 65W. It is located in El Paso County immediately northeast of Colorado Springs, Colorado (Figure 1).

For this records review the study area was defined as all areas within and around the project area out to 1 mi. The purpose of this study is to provide an assessment of known cultural resources and previous investigations within this study area.

Records Review and Assessment of Cultural Resources

An official file search was conducted using the records housed with the Colorado Historical Society's Office of Archaeology and Historic Preservation (OAHP). The file search results listed one previous investigation near the study area that occurred in 2002 (OAHP 2017). This investigation was conducted in regards to a pipeline project that traversed the western halves of Sections 21 and 28. None of the current project area has been subjected to cultural resource inventory. Furthermore, there are no previously identified cultural resource sites within or near the current project area.

In addition to the official file search the background research for this project included the examination of the 1886 General Land Office (GLO) plat map (BLM 2017a), as well as a search of the GLO land patent records (BLM 2017b). The plat map does not depict any trails, roads, or towns within or near the project area. (Figure 2). The search of the GLO patent records was conducted to identify the origins of historic occupation in the study area and provide some indications as to the likelihood of encountering historic sites within the project area. Twenty-three patents were issued within the study area between 1870 and 1890. Seventeen of the private individual patents were issued under the 1820 Cash Sale Act. The 1820 Cash Sale Act required settlers to pay in cash at the time of land purchase, but it lowered the number of required acres to purchase from 160 to 80 and the price per acre was set at \$1.25 (Clark 2011:376). Five patents were issued to military veterans (and their heirs) under the Scrip Warrant Act of 1855. Prior to the Civil War the United States Government issued bounty land warrants as a way to encourage men to volunteer for military service and as a way to reward veterans (National Archives Record Administration 2010). These men served in militia companies that were likely associated with the numerous conflicts that occurred throughout the 1850s between the United States Government and various Native American tribes. One patent was issued under the Morrill Act (1862 State Grant Agri College). This act provided each state with 30,000 acres of Federal Land for each member of their congressional delegation. The land was then sold by the states in order to fund public colleges that focused on agriculture and mechanical arts. Many of the Nation's early public colleges were initially funded throughout this act (Library of Congress 2015).

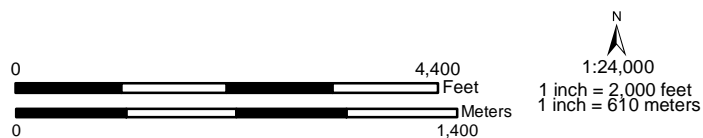


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- Study Area
- Previous Inventory
- Private
- State
- Quadrangle Boundary
- Township

Timber Ridge Development

Figure 1: Project Location Map at 1:24,000 scale





cra
cultural resource analysts, inc
248 West Brundage St., Sheridan, Wyoming 82801
307.674.1702

CONFIDENTIAL

Prepared By: CRF	Date: 3-28-2017
Project Number: Y17C001	Project Name: Timber Ridge Development

Coordinate System:
UTM NAD 83 Zone13N

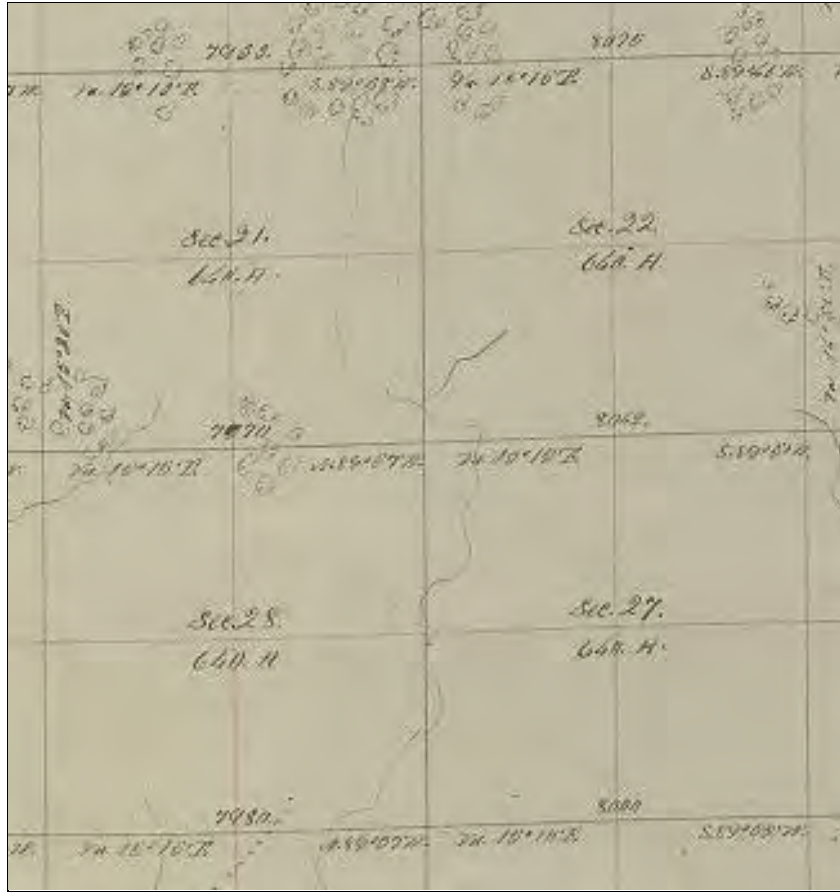


Figure 2. 1886 GLO plat map overview, T12S, R65W. Adapted from BLM 2017a.

Table 1. GLO Land Patents within and around the Study Area

TwN/Rng	Sec.	Patentee	Associated Military Unit or College	Date	Accession Number	Authority
12S/65W	21	George H. Bend Thomas J. Wood Francis H. Jackson William Van Marter Benjamin Stalvey	Captain Tornlisons Company Georgia Militia	11/15/1871	MW0441447	Scrip Warrant Act of 1855
12S/65W	21	George H. Bend Thomas J. Wood Francis H. Jackson Argalus M. Wright Patty Wright Abram Wright	Captain Babock Company New York Militia	11/15/1871	MW0441459	Scrip Warrant Act of 1855
12S/65W	21	George H. Bend Thomas J. Wood Francis H. Jackson	Not Applicable	11/10/1870	CO0220107	1820 Sale Cash Entry Act

Table 1. Continued

Twn/Rng	Sec.	Patentee	Associated Military Unit or College	Date	Accession Number	Authority
12S/65W	21	George H. Bend Thomas J. Wood Francis H. Jackson	Not Applicable	11/10/1870	CO0220115	1820 Sale Cash Entry Act
12S/65W	21	Cyrus H. McLaughlin	Not Applicable	11/10/1870	CO0220084	1820 Sale Cash Entry Act
12S/65W	22	George H. Bend Thomas J. Wood Francis H. Jackson William Van Marter Hannah Corby John J. Corby	Captain Adams Company New York Militia	11/15/1871	MW0441441	Scrip Warrant Act of 1855
12S/65W	22	George H. Bend Thomas J. Wood Francis H. Jackson Argalus M. Wright Patty Wright Abram Wright	Captain Babock Company New York Militia	11/15/1871	MW0441459	Scrip Warrant Act of 1855
12S/65W	22	Cyrus H. McLaughlin	Not Applicable	11/10/1870	CO0220084	1820 Sale Cash Entry Act
12S/65W	22	William J. Palmer	North Carolina State University	7/1/1870	AGS0319068	1862 State Grant Agri College
12S/65W	27/28	George H. Bend Thomas J. Wood Francis H. Jackson Mary V. Gilbert William H. Van Marter Sylvester Gilbert	Captain Hitchcocks Company New York Militia	11/15/1871	MW0441444	Scrip Warrant Act of 1855
12S/65W	27/28	Benjamin F. Crowell	Not Applicable	11/15/1872	CO1090167	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	12/5/1884	CO1140087	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	5/25/1885	CO1140223	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	6/12/1885	CO1140262	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	3/1/1886	CO1140415	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	10/18/1886	CO1140493	1820 Sale Cash Entry Act
12S/65W	27	Francis B. Hill	Not Applicable	10/18/1886	CO1150029	1820 Sale Cash Entry Act
12S/65W	28	Francis B. Hill	Not Applicable	3/1/1886	CO1140386	1820 Sale Cash Entry Act
12S/65W	28	Francis B. Hill	Not Applicable	3/1/1886	CO1140414	1820 Sale Cash Entry Act
12S/65W	28	Francis B. Hill	Not Applicable	10/18/1886	CO1150029	1820 Sale Cash Entry Act
12S/65W	28	Francis B. Hill	Not Applicable	3/5/1890	CO1170177	1820 Sale Cash Entry Act
12S/65W	28	Patrick H. McNeill	Not Applicable	12/5/1884	CO1140151	1820 Sale Cash Entry Act
12S/65W	28	Patrick H. McNeill	Not Applicable	12/5/1884	CO1140188	1820 Sale Cash Entry Act

Cultural Resource Recommendations

Based on the results of the OAHF file search and the desktop data review, it appears that the proposed project area has not been subjected to adequate cultural resource inventory. Subsequently, it is possible that unidentified cultural resources could be impacted by the proposed project.

Therefore, it is recommended prior to ground disturbing activities associated with this project that an intensive cultural resource inventory be conducted. The purpose of this inventory is to identify and to evaluate any undiscovered cultural resources for inclusion in the National Register of Historic Places.

References Cited

Bureau of Land Management

2017a "Survey Plats and Field Notes." General Land Office Records Automation Web Site. United States Department of the Interior, Bureau of Land Management. Electronic database, <http://glorerecords.blm.gov>, accessed March 29, 2017.

2017b "Search Land Patents." General Land Office Records Automation Web Site. United States Department of the Interior, Bureau of Land Management. Electronic database, <http://glorerecords.blm.gov>, accessed March 29, 2017.

Clark, Cynthia

2011 *The American Economy A Historical Encyclopedia*, Revised Edition. ABC-Clío, Denver Colorado.

Library of Congress

2015 *Merrill Act*. Electronic document, <https://www.loc.gov/rr/program/bib/ourdocs/Morrill.html>, accessed March 29, 2017.

National Archives and Records Administration

2010 *Bounty Land Warrants for Military Service, 1775-1855*. Electronic document, www.archives.gov/files/research/military/bounty-land-1775-1855.pdf, accessed March 29, 2017.

OAHP

2017 *Timber Ridge Development; Y17C001 File Search No. 20093*. Colorado Historical Society's Office of Archaeology and Historic Preservation. Denver, Colorado.