



April 2, 2020

Mike DeGrant
Schuck Communities
2 N. Cascade Avenue, Suite 1280
Colorado Springs, CO 80903
CORE Consultants Project Number 16-055

**Re: Wildlife Impact Identification Report: 2020 Update
CoNexus Development Project
Town of Monument, El Paso County, Colorado**

Dear Mr. DeGrant:

CORE Consultants, Inc. (CORE) presents this memo summarizing a wildlife impact identification report of the proposed CoNexus Development Project (Project) in the Town of Monument, El Paso County, Colorado. The memo tiers to the requirements set-forth in the Impact Identification Report Checklist created by El Paso County (County). The report is required as part of a County submittal application for a Planned Unit Development (PUD). The Project is located west of Interstate 25, north of Baptist Road and south of State Highway (SH 105) and is on the U.S. Geological Survey (USGS) Gleneagle 7.5-minute quadrangle, on a portion of Section 26 in Township 11 South, Range 67 West (Attachment I). The Project would consist of the construction of an industrial development and associated facilities.

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

- 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, big game migratory routes and species-specific concentration areas, and general wildlife.

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; Attachment II), and USGS aerial imagery. A site reconnaissance was conducted on March 2, 2017 to field-verify results of the desktop review. In March 2020, a second site reconnaissance was conducted to encompass additional parcels to the north of the original project boundary; these parcels were not surveyed during the initial site reconnaissance in 2017.

ENVIRONMENTAL SETTING

The Project encompasses approximately 247 acres in the Level IV Pine-oak Woodlands Ecoregion within the Level III Southwestern Tablelands Ecoregion. Elevations of the Project range between approximately 6,850 feet above mean sea level (AMSL) in the southern portion to 6,950 feet AMSL in the northern portion of the Project. Typical botanical species within the Pine-Oak Woodlands include Gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), serviceberry (*Amelanchier alnifolia*), fringed sage (*Artemisia frigida*), gray rabbitbrush (*Ericameria nauseosa*), Junegrass (*Koeleria macrantha*), bluebunch wheatgrass (*Pseudoroegneria spicata*), needle-and-thread (*Hesperostipa comata*), slender wheatgrass (*Elymus trachycaulus*), and galleta grass (*Pleuraphis jamesii*). Two tributaries of Monument Creek (Teachout Creek and an unnamed tributary) drain the Project in southwesterly direction. Existing residential development, industrial development, and Interstate 25 surround the Project.

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. (WOTUS) within the Project. Aerial imagery was reviewed to locate aquatic features not included within the NWI and NHD datasets. Spatial data indicate that Dirty Woman Creek, Teachout Creek, and an unnamed tributary to Monument Creek drain the Project in a southwesterly direction (Attachment III). NWI data depicted 11 wetlands within the Project area (Attachment III). Types and locations of NWI wetlands included:

- Three Palustrine, persistent emergent, seasonally flooded wetlands: one along Teachout Creek, one along Dirty Woman Creek, and one along the unnamed tributary to Monument Creek south of Teachout Creek
- Two Palustrine, aquatic bed, semi-permanently flooded ponds: one along Teachout Creek and one along the unnamed tributary of Teachout Creek
- One Palustrine, shrub-scrub, broad-leaved deciduous, seasonally-flooded wetland
- Five Riverine, intermittent streambed, seasonally flooded wetlands: two along Teachout Creek and three along the unnamed tributary of Teachout Creek

NWI maps may not accurately depict the extent or existence of wetlands or other aquatic features, nor do maps consistently and accurately identify wetland type. As such, the maps were used for preliminary analysis only. Aerial imagery interpretation indicates that emergent wetlands abut Dirty Woman Creek, Teachout Creek, and the unnamed tributary within the Project. A site reconnaissance and a routine wetland delineation were deemed necessary to confirm desktop findings.

Federal TES

The USFWS IPaC database (USFWS 2017a) was used to determine the potential for occurrence of 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 (Table I).

Table 1. 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).
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	FT, ST	Likely; see discussion below
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	Unlikely to occur: 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>Scaphirhynchus 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*, or "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. The mouse is active between the months of May and September. Hibernation begins in September/October and lasts until May of the following year. Hibernation occurs outside of the active stream channel and alluvial floor in adjacent upland areas with appropriate habitat characteristics, though mice have been found hibernating within the 100-year floodplain (Shenk and Silvert 1999b and Schorr 2001). Upland habitats provide refuge for the mouse during flood events. Flooding is also a habitat requirement, as regular scouring of vegetation prevents the growth of a tall, mature tree canopy. PMJM construct nests from forbs, grasses, and other plant material available and may establish multiple nest sites (Ryon 2001). Nests are typically located under shrubs or clumps of vegetation. Studies have estimated PMJM abundance between 3 and 108 individuals per mile, and a mean of 53 mice per mile (White and Shenk 2001).

PMJM population has declined due to habitat fragmentation and degradation resulting from urban development in riparian areas (USFWS 2004). The USFWS-designated Critical Habitat for PMJM across its range in 2003 (68 FR 37275). PMJM designated Critical Habitat zones are those areas that scientifically and biologically support reproduction, foraging, hibernation, rearing young, and dispersal. CPW designated PMJM Occupied Range across all USFWS-designated Critical Habitat and some additional drainages within the Front Range. PMJM Occupied Range is defined as the area within one mile of CPW known occurrences (CPW 2014). USFWS Critical Habitat occurs along the stretch of Dirty Woman Creek and Teachout Creek within and adjacent to the Project (USFWS 2017b). CPW PMJM occupied range occurs along Dirty Woman Creek, Teachout Creek, and the unnamed tributary within and adjacent to the Project (CPW 2014). A PMJM-specific habitat assessment was deemed necessary to determine and map the exact extents of potentially suitable PMJM habitat along and abutting the three drainages bisecting the Project. It is anticipated that any impacts to Critical Habitat, and/or habitat deemed potentially suitable for PMJM, would require on-site mitigation and approval from the USFWS. Mitigation would require improvement and enhancement of existing stream channels and upland habitat to better support the potential success of the local PMJM population, if any.

Ute Ladies'-tresses Orchid

Ute ladies'-tresses orchid (*Spiranthes diluvialis*; 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 (Attachment IV; 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 23 migratory bird species, including 15 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. CPW species profiles were reviewed to determine the potential for the occurrence of state threatened and endangered species (ST, SE). The review indicated that there is potential for the occurrence of eight mammals, eight reptiles, one amphibian, and two birds (Table 2).

General wildlife and SC 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 and human conflict area for black bears (*Ursus americanus*), as well as a specific human conflict area for mountain lion (*Puma concolor*). Development of residential property has the potential to attract black bear and mountain lion if trash is readily available for forage. There is potentially suitable habitat for PMJM, since USFWS-designated Critical Habitat for PMJM coincides with Dirty Woman Creek and Teachout Creek, and CPW occupied PMJM range coincides with Dirty Woman Creek, Teachout Creek, and the unnamed tributary (see above). Black-tailed prairie dog (*Cynomys ludovicianus*) and northern leopard frog (*Lithobates pipiens*) are listed as SC, which do not receive statutory protections. However, treatment of prairie dogs, if any are present, would need to comply with recommended CPW policy for black-tailed prairie dogs. Coordination with CPW would also be required to mitigate for impacts to northern leopard frog, if any area anticipated. A site reconnaissance would determine the potential for occurrence of any additional general wildlife species.

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

COMMON NAME	SCIENTIFIC NAME	TYPE OF OCCURENCE (CPW 2017)	STATUS
Mammals			
Black bear	<i>Ursus americanus</i>	Fall concentration area, human conflict area	NA
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	Fall concentration area	SC
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	Overall range	NA
Elk	<i>Cervus canadensis</i>	Eastern edge of overall range	NA
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	Overall range	NA
Mountain lion	<i>Puma concolor</i>	Overall range; southern edge unit of Human Conflict Area	NA
Mule deer	<i>Odocoileus hemionus</i>	Summer range; winter range	NA
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Occupied range	ST
Reptiles			
Bullsnake	<i>Pituophis catenifer sayi</i>	Overall range	NA
Milk snake	<i>Lampropeltis triangulum</i>	Overall range	NA
Plains garter snake	<i>Thamnophis radix</i>	Overall range	NA
Prairie lizard	<i>Sclerophorus undulatus</i>	Overall range	NA
Prairie rattlesnake	<i>Crotalus viridis</i>	Overall range	NA
Six-lined racerunner	<i>Aspidoscelis sexlineata</i>	Overall range	NA
Smooth green snake	<i>Opheodrys vernalis</i>	Overall range	NA
Terrestrial garter snake	<i>Thamnophis elegans</i>	Overall range	NA
Amphibians			
Northern leopard frog	<i>Lithobates pipiens</i>	Overall range	SC
Birds			
Burrowing owl	<i>Athene cunicularia</i>	Overall range	ST
Wild turkey	<i>Meleagris gallopavo</i>	Overall range at western edge of Project	NA

SITE RECONNAISSANCE

A site reconnaissance of the Project was conducted on March 2, 2017 within the original project boundary (southern half of the current Project). In March 2020, the Project was expanded to the north. CORE conducted a second site reconnaissance on March 31, 2020. Both site visits confirmed the majority of the initial results of the desktop review.

Preble's Meadow Jumping Mouse

CORE conducted a PMJM-specific habitat assessment during the general site reconnaissance visit on March 2, 2017. CPW developed a Habitat Scorecard for PMJM that assigns values to PMJM habitat conditions before and after restoration or other management actions are conducted to improve habitat quality on a specific project. Each habitat variable is assigned a potential value out of three possible values (low-rank, mid-rank, high-rank, where rank corresponds to level of quality). Values should be assigned during early to mid-summer; however, values can be accurately assigned as long as vegetation is identifiable to genus level. Riparian habitat and upland habitat along Dirty Woman Creek, Teachout Creek, and the unnamed tributary were scored using these Habitat Scorecards, and scores are presented in Attachment V. For the purpose of this study, CORE modified the scorecard to separately assess the habitat value of the riparian corridor and adjacent upland habitat (Attachment V). Since the Project would avoid impacting Critical Habitat or any field-verified suitable PMJM habitat along the unnamed tributary, restoration and mitigation would not be required and an "after" score would not be assigned.

The site reconnaissance confirmed the initial results of the desktop review regarding the presence of potentially suitable habitat for PMJM along Teachout Creek and the unnamed tributary. Although Teachout Creek is designated Critical Habitat, quality was characterized as low to moderate throughout the portion of the channel that contained surface water during the site visit (Attachments V and VI). Dirty Woman Creek is also designated Critical Habitat, but has low quality habitat for PMJM, with limited shrubbery and wetland vegetation, heavy grazing, and low plant species richness. PMJM habitat quality increases along Dirty Woman Creek outside of the northern and southern boundaries of the Project, but is low quality throughout the entire reach within the Project area. Habitat along the southern unnamed tributary was characterized as moderate. Species richness within both stream channels was similar; however, overall vegetative coverage was higher in the unnamed tributary since level of grazing was lower and percent coverage of grasses was higher (Attachment V and VII). Upland vegetation across the Project included fringed sage (*Artemisia frigida*), sand sagebrush (*Artemisia filifolia*), milkweed (*Asclepias* sp.), common mullein (*Verbascum thapsus*), slender wheatgrass (*Elymus trachycaulus*), yucca (*Yucca glauca*), buckwheats (*Eriogonum* spp.), narrowleaf cottonwood (*Populus deltoides*), tufted hairgrass (*Deschampsia cespitosa*), sweet clover (*Melilotus officinalis*), common yarrow (*Achillea millefolium*), western snowberry (*Symphoricarpos occidentalis*), knapweed (*Centaurea* sp.), and additional unknown grasses and forbs. In-channel vegetation included peachleaf willow (*Salix amygdaloides*), serviceberry (*Amelanchier alnifolia*), Baltic rush (*Juncus arcticus*), Nebraska sedge (*Carex nebrascensis*), Canada thistle (*Cirsium arvense*), broadleaf cattail (*Typha latifolia*), and fireweed (*Chamaenerion angustifolium*).

Dirty Woman Creek is a broad, sandy channel with perennial flow throughout the entire reach within the Project area (Attachments VI and VII). The creek and surroundings are used by a small herd of cattle and a mule, and as a result, are heavily grazed, particularly along the stream channel. The only stream channel improvement in the vicinity is the stream channelization at the point where Dirty Woman Creek passes under the Santa Fe Trail, just outside the western Project boundary. Vegetative coverage is low along Dirty Woman Creek and consists of a few plant species representative of typical PMJM habitat. However, based on the CPW PMJM habitat assessment scores, no PMJM habitat variables in this area are high quality (Attachment V). The riparian corridor and uplands are heavily grazed and received habitat scores of either low-value or no-value. The extent of grazing and resulting low vegetation heights is unlikely to facilitate PMJM movement along the Project reach of Dirty Woman Creek. Riparian and upland shrub cover is limited to a few small patches of snowberry and sparse willow saplings. One grove of Gambel oaks is present 25 meters west of Dirty Woman Creek, but limited grass cover and no shrub cover is present between the creek and the oaks.

Teachout Creek is also a broad, sandy channel with perennial flow along the eastern third-to-half of the drainage (Attachment VII). Water flow then transitions to groundwater at which point the channel becomes characterized by a broad, dry channel with high sand deposition indicative of regular flooding. Stream channel improvements were located at culverts under I-25 and the Santa Fe Trail on the western edge of the property. Vegetative coverage is low-to-moderate along Teachout Creek and consists of species representative of typical PMJM habitat. However, based on the CPW scorecard, no variable was considered high quality since only low rank and mid-rank values were assigned to all scoring categories (Attachment V). The riparian corridor is heavily grazed and did not qualify for any value (low, mid, high) under the habitat scorecard. However, percent grass cover within the uplands was ranked moderate (in locations considered more suitable) and would provide some groundcover for PMJM movement in and out of the perennial portion of the channel. Moderate shrub cover was observed and would provide some nesting and hibernacula structures. Regardless, the lack of true perennial flows within the downstream half of the channel would potentially deter PMJM from utilizing this portion of Teachout Creek. Additionally, large portions of the uplands adjacent to the channel are sandy or have been denuded as a result of grazing.

The southern unnamed tributary presented as a broad, shallow, perennial stream with overall greater vegetative coverage than Teachout and Dirty Woman creeks (Attachment VII). Vegetative cover of the southern tributary was higher quality as a result of lower-level grazing impacts (Attachment V). However, percent shrub cover was ranked low-value, whereas Teachout Creek shrub cover ranked mid-value. The lack of a shrubby mid-story, a mainstay of healthy PMJM habitat, could preclude PMJM from nest building and hibernating along the southern tributary. Additionally, cattails within the pond at the upstream end of the tributary are not preferred, and could provide an obstacle for PMJM moving through the channel (although movement outside of the channel at this location would be possible).

The overall quality of potential PMJM habitat within the Project could be characterized as low to moderate quality. Dirty Woman Creek has continuous, perennial flow, but has limited shrub and forb cover, heavy grazing, and low plant species richness. Thus, the portion of Dirty Woman Creek within the Project area is unlikely to host PMJM. Water flow through Teachout Creek is broken by transition of the stream channel to groundwater approximately halfway downstream from I-25. Some potential nesting and hibernacula structures were present; however, use by PMJM is less likely since other requisite habitat components (high level herbaceous cover, contiguous perennial flows) were absent (Attachments V and VII). Hydrology through the southern tributary was contiguous throughout its stretch within the Project, and mostly dense herbaceous channel and upland groundcover were present. Shrubby hibernacula and nest-building structures were mostly absent from this channel (Attachment V and VII). As such, it is less likely that PMJM would utilize Teachout Creek or the southern tributary for nest building or hibernation. More suitable habitat is present just downstream of the Project in both tributaries, on the west side of Old Denver road.

Despite the somewhat low PMJM habitat scores, Project design would avoid impacts to designated Critical Habitat and CPW occupied range along Dirty Woman Creek, Teachout Creek, and the southern tributary. Since the Project design designates drainage tracts and/or dedicated open space along designated Critical Habitat in Dirty Woman Creek and Teachout Creek and CPW occupied habitat within the southern tributary, uplands and riparian corridor within all three channels would be completely avoided by Project construction. Additionally, best management practices (BMPs) would be utilized to protect the channels from sedimentation during nearby ground-disturbing activities.

Migratory Birds

Site reconnaissance further revealed that suitable substrates for nesting raptors were present, in the form of one mature cottonwood and two mature peachleaf willows. Raptor nest structures were not observed in these substrates during the site visit. A nesting raptor survey during the breeding season (February 1 through July 15) would quickly confirm the presence or absence of active raptor nests within the Project (CPW 2008). If raptor nests are found, appropriate raptor nest buffers would be coordinated with CPW and adhered to during construction activities.

CPW Species Activity Mapping

The site reconnaissance determined a high probability for the occurrence of several state status and general wildlife species identified during the desktop review of CPW SAM data (CPW 2017). Historic black-tailed prairie dog colonies are located across the Project; the northern end of the Project area had prairie dog activity during the March 2020 site visit, particularly along Dirty Woman Creek. Prairie dog numbers and density decreased from north to south in this area. With the presence of active prairie dog colonies, there is potential for nesting or migrating burrowing owls (*Athene cunicularia*; state threatened) to occur. No burrowing owls were observed during either site visit; however, prior to construction, the absence of burrowing owls should be confirmed by following the recommended CPW burrowing owl survey protocols (CPW 2007). A stock pond within the unnamed tributary could provide requisite habitat components for northern leopard frog (Colorado species of special concern).

Development of the Project has the potential to attract black bear and mountain lion since trash from the development may become available for forage. There is potential for the occurrence of big game species, including mule deer (*Odocoileus hemionus*) and elk; however, the Project does not coincide with specific migration corridors. The Project provides suitable habitat for general reptile and amphibian species identified during the desktop review. There is the potential for occurrence of other general wildlife including avian and amphibian species. CPW SAM data does not include non-status amphibians (CPW 2017). Coordination with CPW would determine if additional wildlife surveys are necessary prior to construction.

Waters of the US

The site reconnaissance determined that WOTUS are present along Dirty Woman Creek, Teachout Creek, and the unnamed tributary within the Project. The site reconnaissance confirmed the presence of a defined beds and banks along the entire stretch of the three drainages within the Project (Attachment VII). The unnamed tributary presented as a narrow, perennial channel with abutting emergent wetlands (Attachment VII). Teachout Creek presented as a well-defined sandy stream channel and abutting emergent wetland complex extending to the edge of the floodplain (Attachment VII). Dirty Woman Creek presented as a well-defined sandy stream channel with limited wetland vegetation at the edge of the water. Flows were present through all of the Project reach of Dirty Woman Creek and along the eastern half of Teachout Creek. As the area surrounding Dirty Woman Creek will not be developed, the ordinary high water mark was mapped for the creek but no formal wetland delineations were conducted in this drainage. Any impacts to WOTUS would require permitting under Section 404 of the Clean Water Act (CWA), however the Project has been designed to avoid both streams in the Project.

CONCLUSIONS

The site reconnaissance indicated some biological constraints within the Project. USFWS-designated Critical Habitat for PMJM and CPW occupied PMJM range are present within the Project. The site reconnaissance determined that Teachout Creek and the unnamed tributary would provide potentially suitable habitat for PMJM; the channel flows and vegetative composition of the unnamed tributary are representative of somewhat higher quality PMJM habitat than Teachout Creek. The reach of Dirty Woman Creek within the Project area is unlikely to host PMJM because of limited shrub cover, heavy grazing, and low plant species richness. However, there is possibility that PMJM would move through the Project area along the creek to access the higher quality PMJM habitat outside of the northern and southern Project boundaries. The Project would avoid impacts to USFWS-designated Critical Habitat or other potentially suitable PMJM habitat within the Project area. Active black-tailed prairie dog colonies were observed in the uplands along Dirty Woman Creek, and historic colonies exist throughout the Project area uplands. As such, there is potential for nesting or migrant burrowing owls (state threatened) between mid-March and late October. Absence of burrowing owls would be confirmed prior to construction by following the recommended CPW burrowing owl survey protocols (CPW 2007). There is potential for the occurrence of northern leopard frog (SC) as well as multiple general wildlife species, including black bear, mountain lion, and various reptiles. It is not anticipated that Project development would impact general wildlife since construction would occur adjacent to Interstate 25 and existing residential and industrial development. Coordination with the appropriate agencies (e.g. CPW and USFWS) would determine whether any additional wildlife surveys or permits are required.

Suitable nesting raptor substrates were present within the Teachout Creek drainage in the form of one mature cottonwood and two peachleaf willows. Potential nesting raptor substrates along Dirty Woman Creek include a few mature cottonwoods and peachleaf willows as well as about two dozen ponderosa pines (*Pinus ponderosa*). However, it is unlikely that construction disturbance would impact nesting raptors since raptor nest structures were not observed at the time of the 2020 site visit. A nesting raptor survey prior to construction would confirm the presence or absence of active raptor nests within the Project, and if necessary, appropriate nest buffers could then be applied in accordance with CPW guidance (CPW 2008). 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). WOTUS are present within Dirty Woman Creek, Teachout Creek, and the unnamed tributary. Any impacts to WOTUS would require permitting under Section 404 of the Clean Water Act (CWA); however, the Project has been designed to avoid the three drainages within the Project.

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

Sincerely,

CORE Consultants, Inc.

A handwritten signature in black ink, appearing to read 'Tyler Stuart'.

Tyler Stuart
Environmental Consultant

A handwritten signature in black ink, appearing to read 'Chris Haas'.

Chris Haas, M.S.
Vice President

LIST OF ATTACHMENTS

- ATTACHMENT I:** *SITE LOCATION MAP*
ATTACHMENT II: *FEMA FLOOD INSURANCE RATE MAP*
ATTACHMENT III: *NATIONAL WETLAND INVENTORY MAP*
ATTACHMENT IV: *COUNTY SOIL SURVEY MAP*
ATTACHMENT V: *HABITAT SCORECARDS FOR PREBLE'S MEADOW JUMPING MOUSE*
ATTACHMENT VI: *PMJM HABITAT ASSESSMENT MAPS*
ATTACHMENT VII: *PHOTOGRAPHIC LOG*

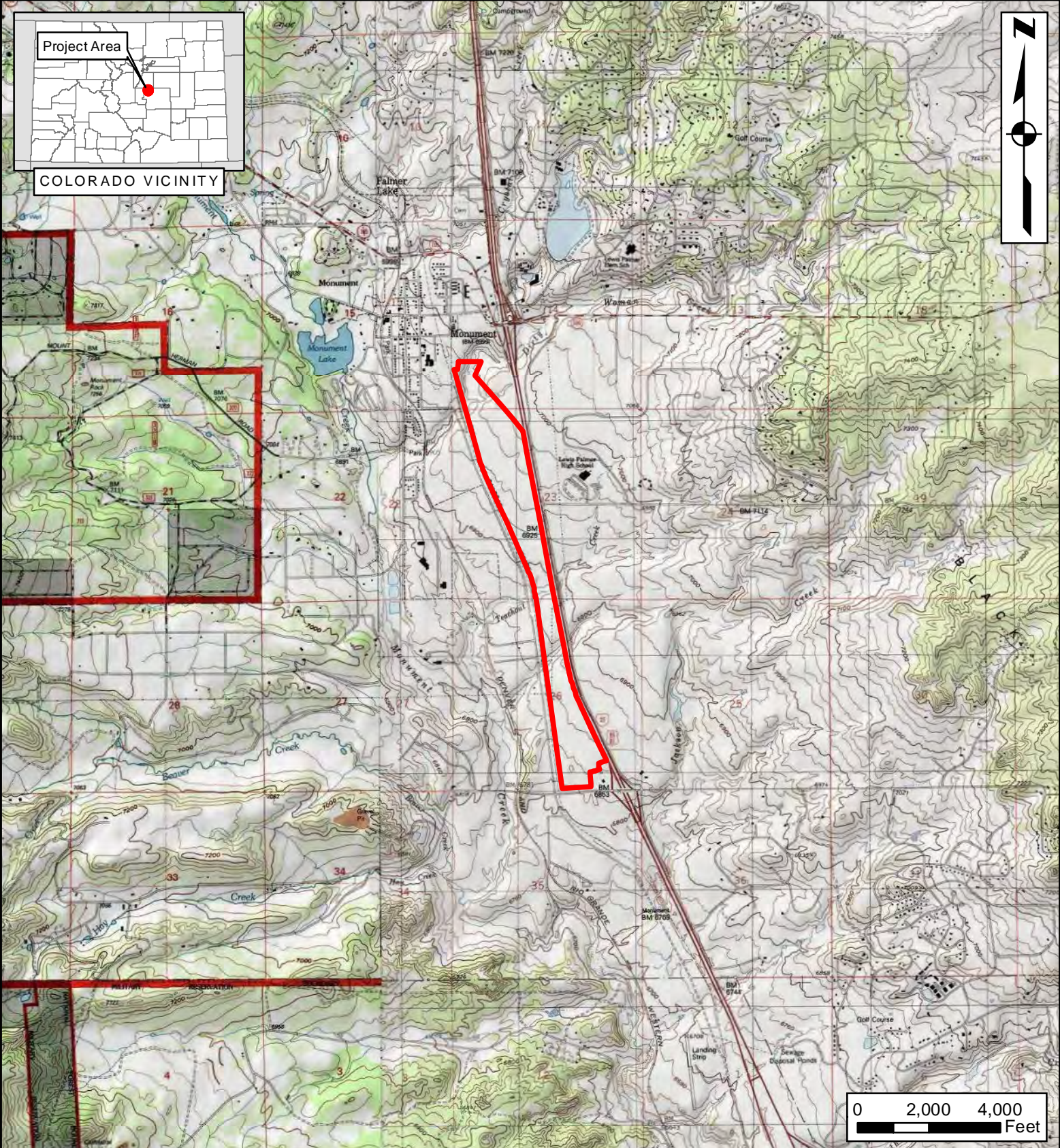
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CONEXUS
SITE LOCATION MAP
EL PASO COUNTY, COLORADO

Date: 4/2/2020



 Project Boundary

USGS
7.5 Minute
Topographic Quadrangle
Monument, CO



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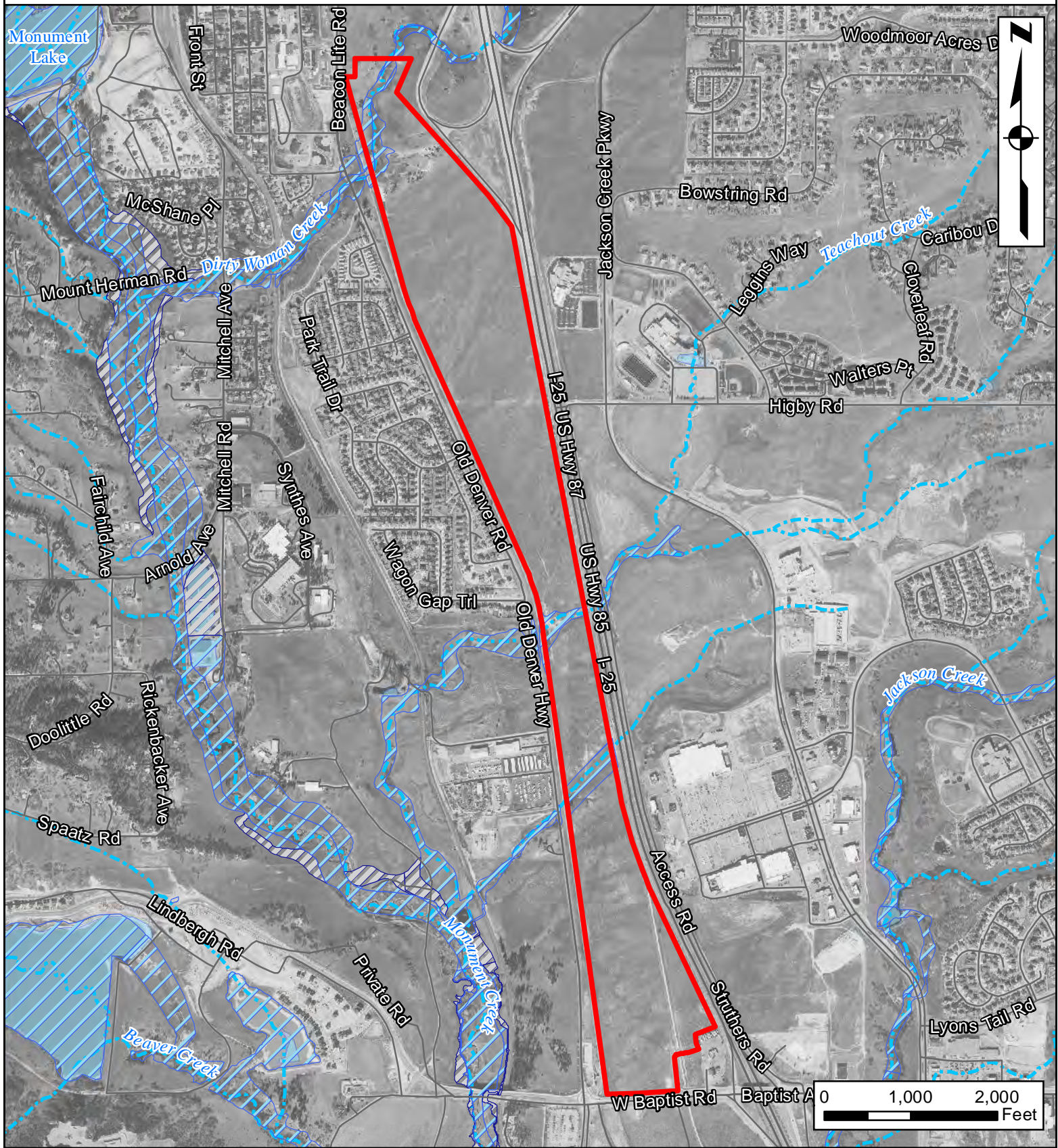
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CONEXUS

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO

Date: 4/2/2020



- Project Boundary
- 100-year Floodplain
- 500-year Floodplain
- NHD Watercourse
- NHD Waterbody



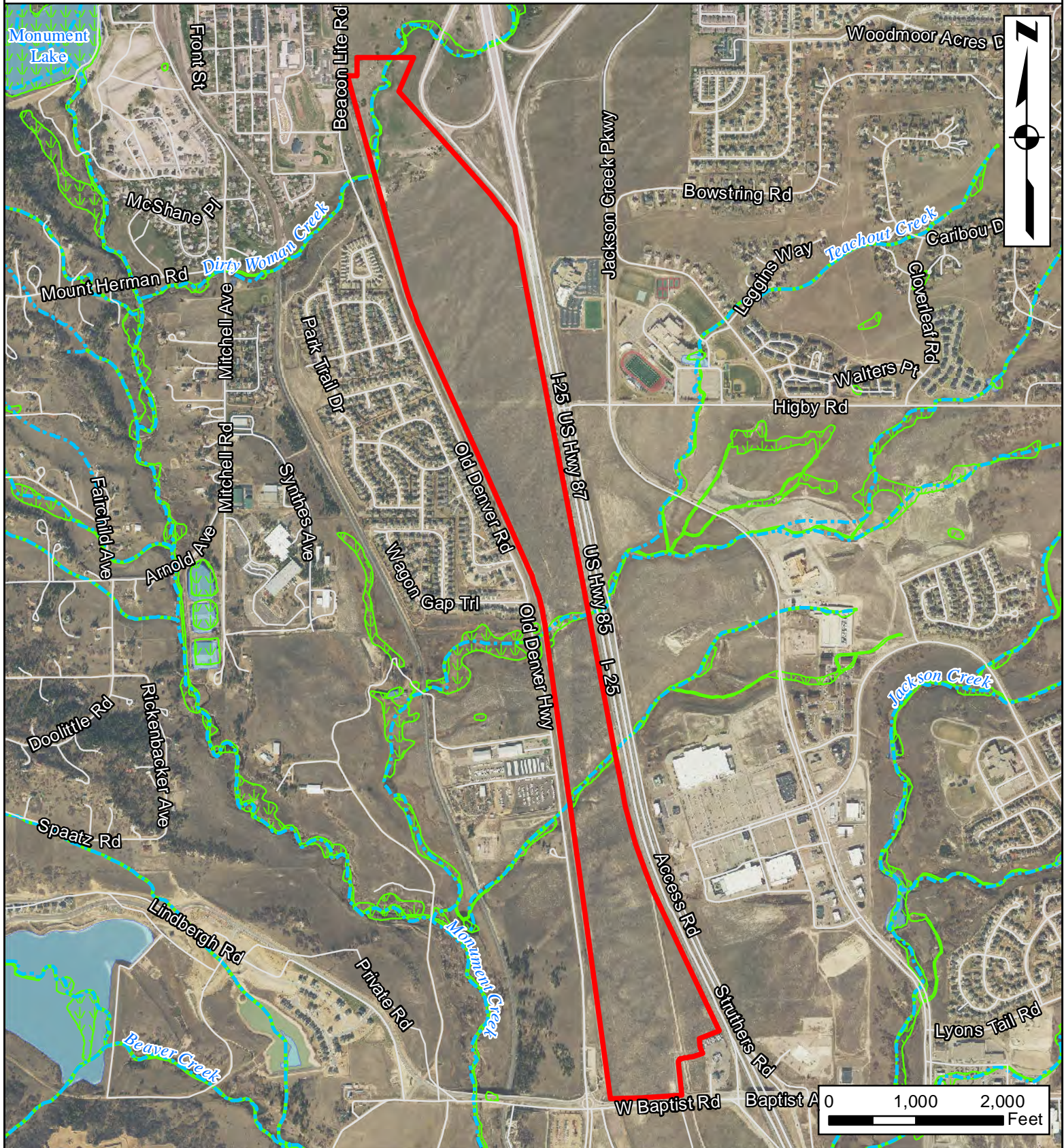
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CONEXUS

NATIONAL WETLAND INVENTORY MAP

EL PASO COUNTY, COLORADO

Date: 4/2/2020



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



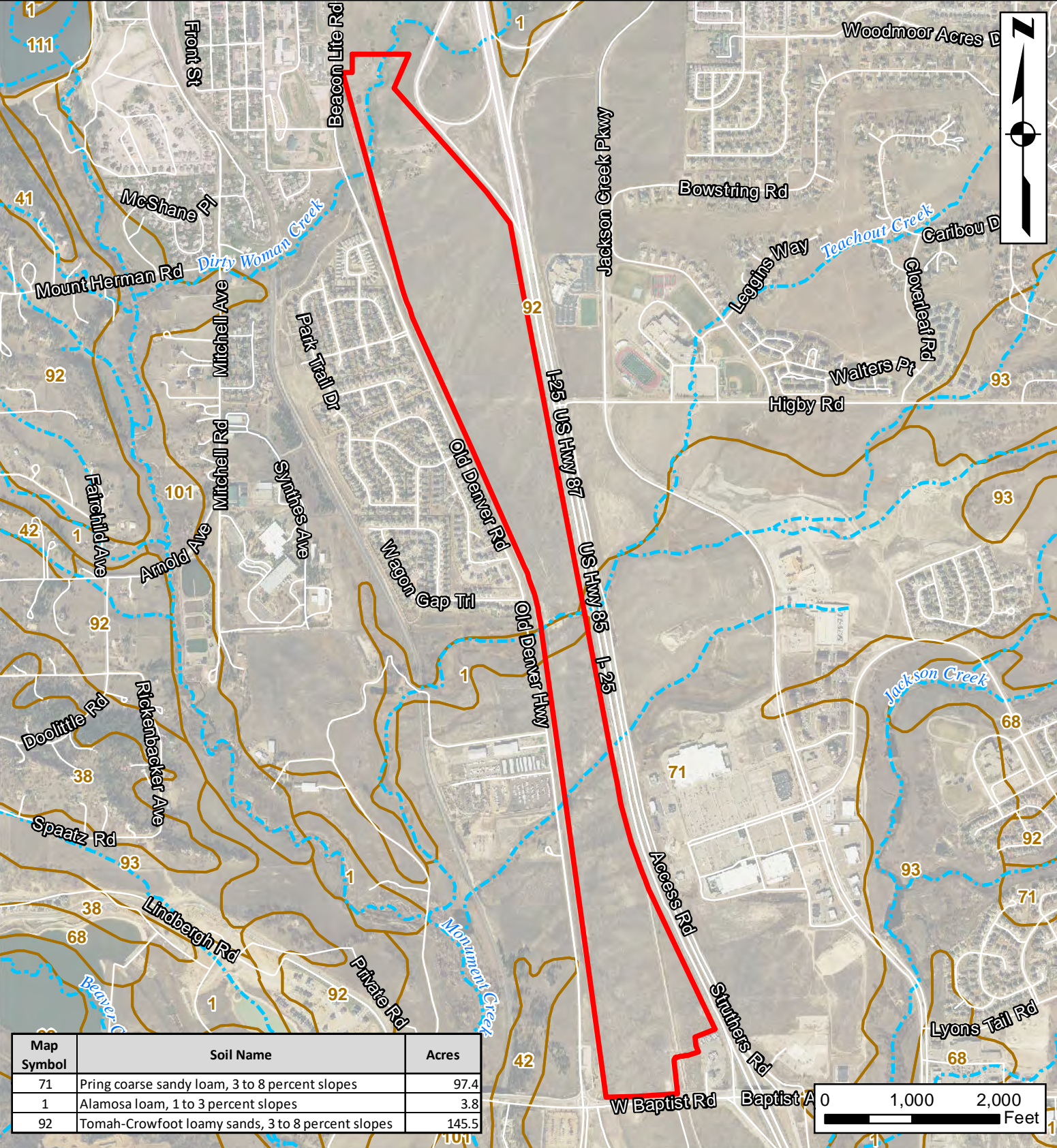
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CONEXUS

COUNTY SOIL SURVEY MAP

EL PASO COUNTY, COLORADO

Date: 4/2/2020



Map Symbol	Soil Name	Acres
71	Pring coarse sandy loam, 3 to 8 percent slopes	97.4
1	Alamosa loam, 1 to 3 percent slopes	3.8
92	Tomah-Crowfoot loamy sands, 3 to 8 percent slopes	145.5

- Project Boundary
- NHD Watercourse
- Soil Type

Habitat Scorecard for Preble's Meadow Jumping Mouse (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name:

Phoenix Bell Property

Date(s) of Assessment:

3/2/17

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

Teachout Creek / Northern Stream

Riparian Corridor Uplands

Key habitat variable and conditions	Value	Before	After
Dominant vegetation			
Combination of sedges, grasses, annual and perennial forbs and dense shrubs	13.2		
Combination of sedges, grasses, and dense shrubs	8.8	4.4	0
Combination of sedges, grasses, and more open shrubs	4.4		
Percent grass cover			
>40%	13.2		
>20 – 40%	8.8	8.8	0
10 – 20%	4.4		
Percent shrub cover			
>80%	13.2		
>50 – 80%	8.8	8.8	4.4
5 – 50%	4.4		
Distance from habitat patch to water			
<10 yards	12.5		
10 – 20 yards	8.4	8.4	0
>20 – 40 yards	4.2		
Species richness (number of species in vegetation community)			
>20 species	11.9		
10 – 20 species	7.9	7.9	7.9
<10 species	4.0		
Habitat size			
>60 acres	10.6		
50 – 60 acres	7.0	0	0
<50 acres	3.5		
Percent forb cover			
>35 – 50%	10.4		
>15 – 35%	6.9	3.5	3.5
5 – 15%	3.5		
Height of herbaceous vegetation (grasses and forbs)			
>20 – 40 inches	9.9		
8 – 20 inches	6.6	6.6	6.6
<8 inches	3.3		
Land use within 100 yards			
Ungrazed	5.1		
Grazed lightly	3.4		
Grazed moderately	1.7		1.7
Total (of 100 possible): add all numbers in before or after columns		48.4	24.1

less than 10 ac

heavily grazed in riparian corridor

Habitat Scorecard for Preble's Meadow Jumping Mouse (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name:

Phoenix Bell Property

Date(s) of Assessment:

3/2/17

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

SOUTHERN TRIBUTARY

Key habitat variable and conditions	Value	Before	After
Dominant vegetation			
Combination of sedges, grasses, annual and perennial forbs and dense shrubs	13.2	4.4	
Combination of sedges, grasses, and dense shrubs	8.8		
Combination of sedges, grasses, and more open shrubs	4.4		
Percent grass cover			
>40%	13.2	13.2	
>20 – 40%	8.8		
10 – 20%	4.4		
Percent shrub cover			
>80%	13.2	4.4	
>50 – 80%	8.8		
5 – 50%	4.4		
Distance from habitat patch to water			
<10 yards	12.5	12.5	
10 – 20 yards	8.4		
>20 – 40 yards	4.2		
Species richness (number of species in vegetation community)			
>20 species	11.9	7.9	
10 – 20 species	7.9		
<10 species	4.0		
Habitat size			
>60 acres	10.6	0	
50 – 60 acres	7.0		
<50 acres less than 10 ac	3.5		
Percent forb cover			
>35 – 50%	10.4	3.5	
>15 – 35%	6.9		
5 – 15%	3.5		
Height of herbaceous vegetation (grasses and forbs)			
>20 – 40 inches	9.9	6.6	
8 – 20 inches	6.6		
<8 inches	3.3		
Land use within 100 yards			
Ungrazed	5.1	3.4	
Grazed lightly	3.4		
Grazed moderately	1.7		
Total (of 100 possible): add all numbers in before or after columns		5.9	

Habitat Scorecard for Preble's Meadow Jumping Mouse (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name: CONEXUS BUSINESS PARK Date(s) of Assessment: 3/31/20

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

Near north prop. bndry on Dirtybman Cr. ^① Riparian Upland

Key habitat variable and conditions	Value	Before	After
Dominant vegetation			
Combination of sedges, grasses, annual and perennial forbs and dense shrubs	13.2	2.2	0
Combination of sedges, grasses, and dense shrubs	8.8		
Combination of sedges, grasses, and more open shrubs <i>No sedges apparent; minimal shrubs</i>	4.4		
Percent grass cover			
>40%	13.2	8.8	8.8
>20 - 40%	8.8		
10 - 20% <i>Overgrazed</i>	4.4		
Percent shrub cover			
>80%	13.2	4.4	4.4
>50 - 80%	8.8		
5 - 50% <i>10-20%</i>	4.4		
Distance from habitat patch to water			
<10 yards	12.5	12.5	8.4
10 - 20 yards	8.4		
>20 - 40 yards	4.2		
Species richness (number of species in vegetation community)			
>20 species	11.9	4.0	7.9
10 - 20 species	7.9		
<10 species <i>7 species (RIP) 13 spp (UPL)</i>	4.0		
Habitat size			
>60 acres	10.6	3.5	3.5
50 - 60 acres	7.0		
<50 acres	3.5		
Percent forb cover			
>35 - 50%	10.4	3.5	3.5
>15 - 35%	6.9		
5 - 15%	3.5		
Height of herbaceous vegetation (grasses and forbs)			
>20 - 40 inches	9.9	3.3	3.3
8 - 20 inches	6.6		
<8 inches <i>Heavily grazed</i>	3.3		
Land use within 100 yards			
Ungrazed	5.1	0	0
Grazed lightly	3.4		
Grazed moderately <i>Heavy</i>	1.7		
Total (of 100 possible): add all numbers in before or after columns		37.8	39.8

42.2

Riparian coordinates (WGS84): 39.08915^{°N}, -104.86626^{°W}

Upland coordinates (WGS84): 39.08863^{°N}, -104.86691^{°W}

Habitat Scorecard for Preble's Meadow Jumping Mouse (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name: CONEXUS BUSINESS PARK Date(s) of Assessment: 3/31/20

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

Near DW Creek underpass of Santa Fe Trail ⁽²⁾ Riparian Upland

Key habitat variable and conditions	Value	Before	After
Dominant vegetation			
Combination of sedges, grasses, annual and perennial forbs and dense shrubs	13.2		
Combination of sedges, grasses, and dense shrubs	8.8	4.4	0
Combination of sedges, grasses, and more open shrubs	4.4		
Percent grass cover			
>40%	13.2		
>20 - 40%	8.8	13.2	4.4
10 - 20%	4.4		
Percent shrub cover			
>80%	13.2		
>50 - 80%	8.8	4.4	4.4
5 - 50% <u>~20%</u>	4.4		
Distance from habitat patch to water			
<10 yards	12.5		
10 - 20 yards	8.4	12.5	4.2
>20 - 40 yards	4.2		
Species richness (number of species in vegetation community)			
>20 species	11.9		
10 - 20 species <u>12 spp (RIP) 14 spp (UPL)</u>	7.9	7.9	7.9
<10 species	4.0		
Habitat size			
>60 acres	10.6		
50 - 60 acres	7.0	3.5	3.5
<50 acres	3.5		
Percent forb cover			
>35 - 50%	10.4		
>15 - 35%	6.9	3.5	10.4
5 - 15%	3.5		
Height of herbaceous vegetation (grasses and forbs)			
>20 - 40 inches	9.9		
8 - 20 inches	6.6	3.3	6.6
<8 inches	3.3		
Land use within 100 yards			
Ungrazed	5.1		
Grazed lightly	3.4	0	1.7
Grazed moderately <u>Heavy</u>	1.7		
Total (of 100 possible): add all numbers in before or after columns		52.7	43.1

Riparian coordinates (WGS84): 39.08634°N, -104.86668°W

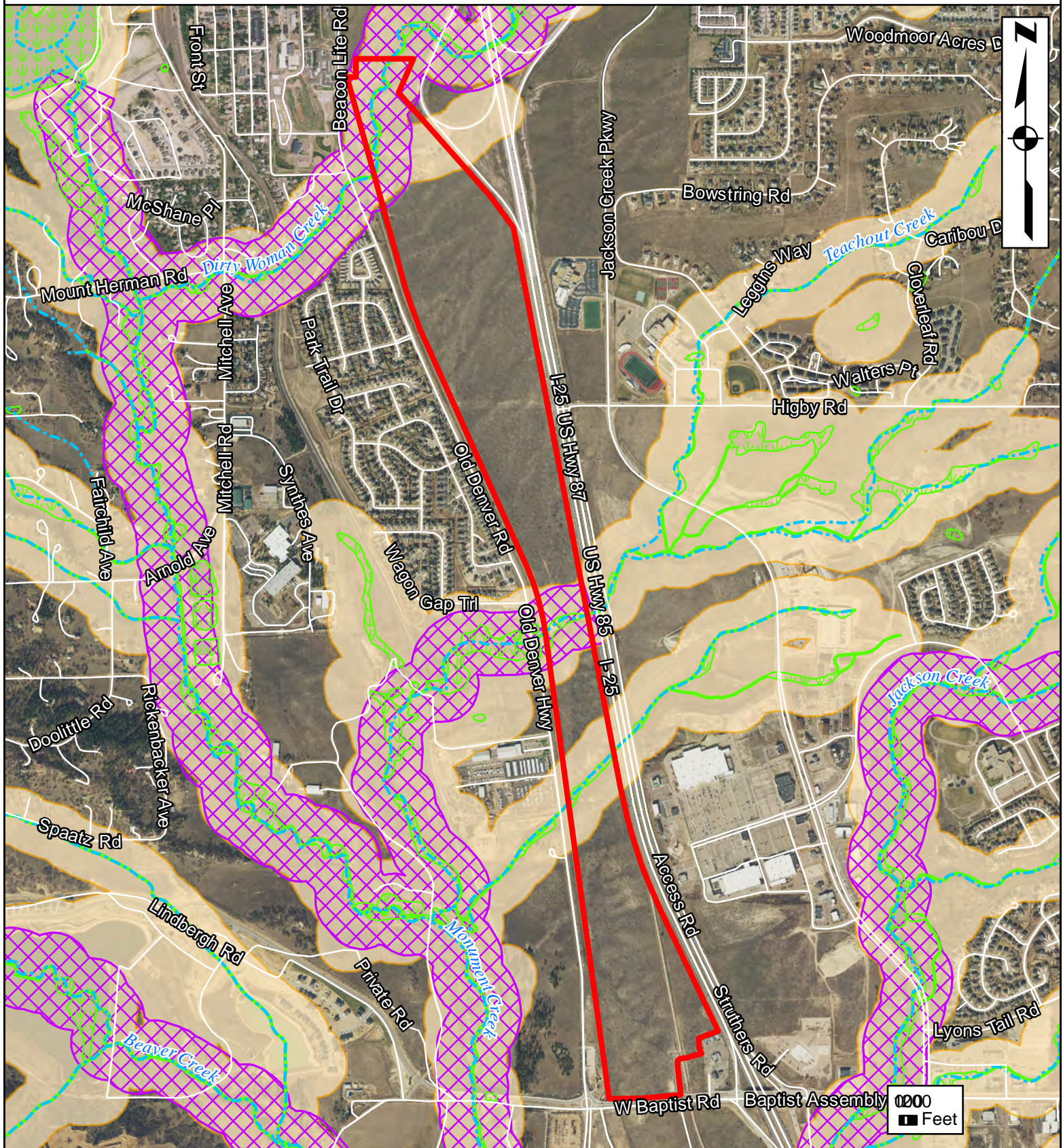
Upland coordinates (WGS84): 39.08594°N, -104.86605°W

CONEXUS

PMJM HABITAT ASSESSMENT MAP

EL PASO COUNTY, COLORADO

Date: 4/2/2020



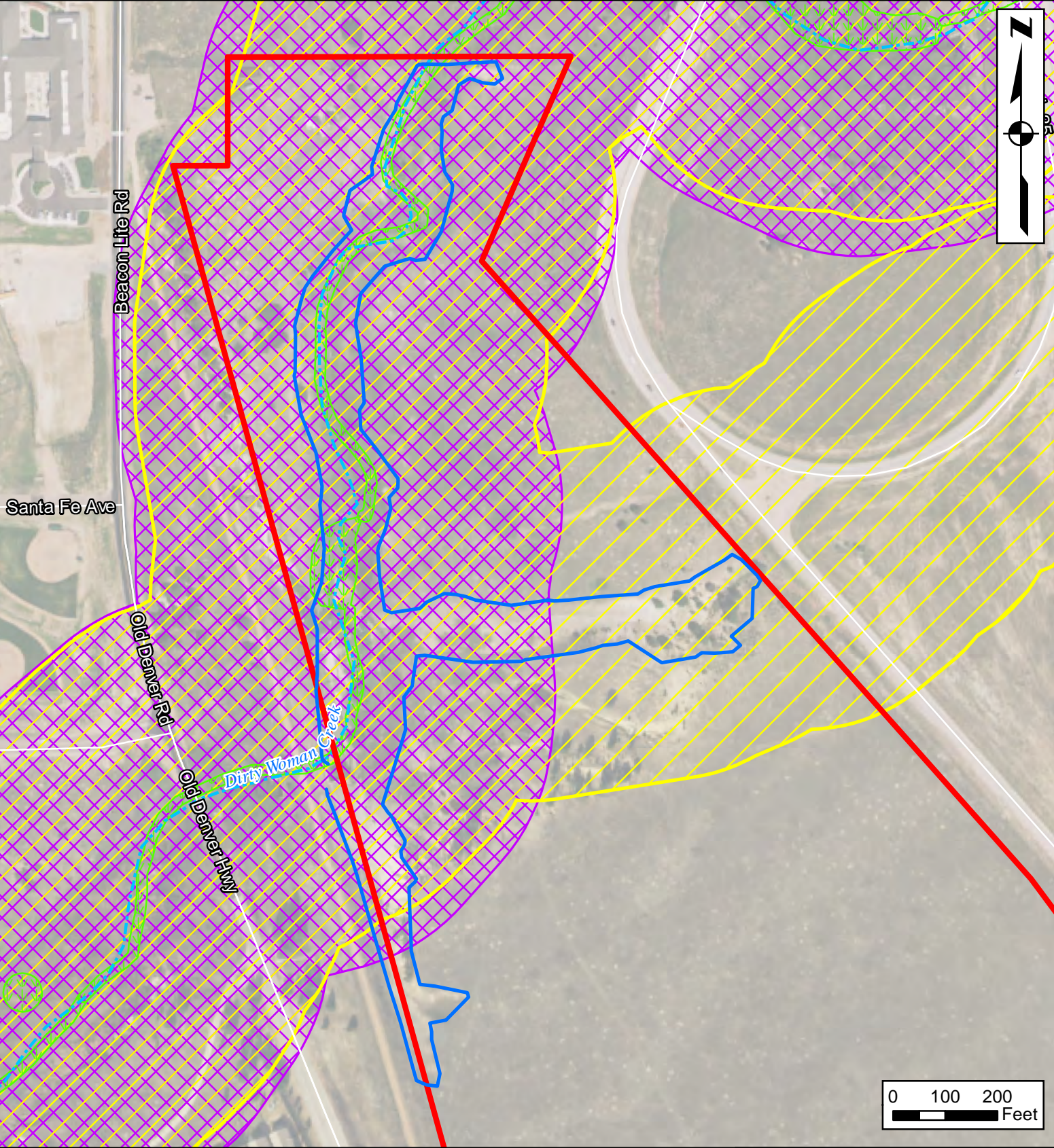
- Project Boundary
- PMJM Occupied Range (CPW)
- NHD Watercourse
- PMJM Critical Habitat (USFWS)
- NWI Wetland





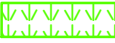
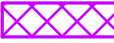


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CONEXUS
DIRTY WOMAN CREEK HABITAT ASSESSMENT
EL PASO COUNTY, COLORADO

Date: 4/2/2020



- | | |
|---|---|
|  Project Boundary |  Ordinary High Water Mark |
|  NHD Watercourse |  PMJM Occupied Range (CPW) |
|  NWI Wetland |  PMJM Critical Habitat (USFWS) |



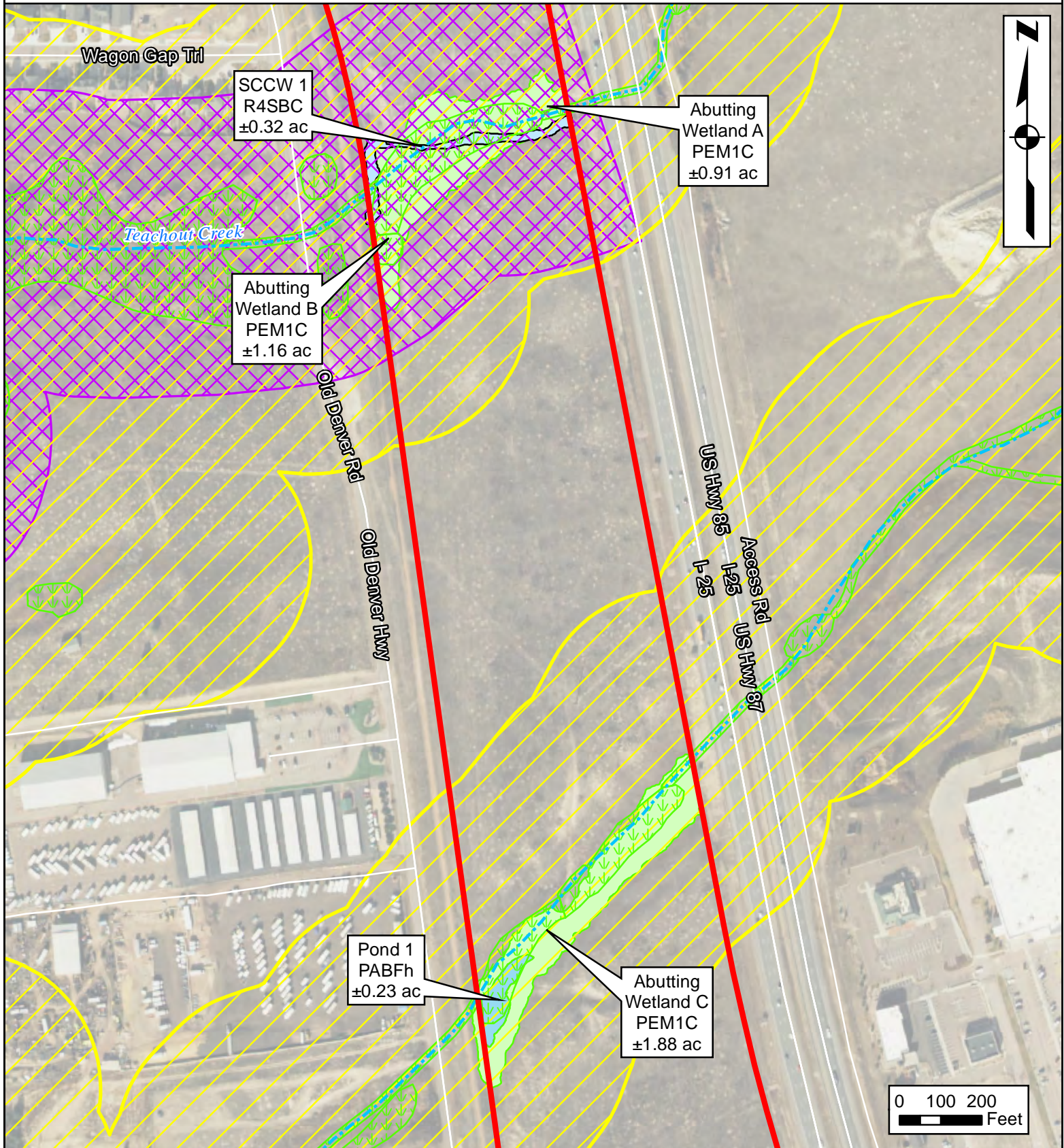
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LITTLETON, CO 80120

CONEXUS

TEACHOUT CREEK HABITAT ASSESSMENT

EL PASO COUNTY, COLORADO

Date: 4/2/2020



- Project Boundary
- NHD Watercourse
- NWI Wetland
- Stream Channel Containing Wetlands
- Delineated Wetland
- Pond

- PMJM Occupied Range (CPW)
- PMJM Critical Habitat (USFWS)



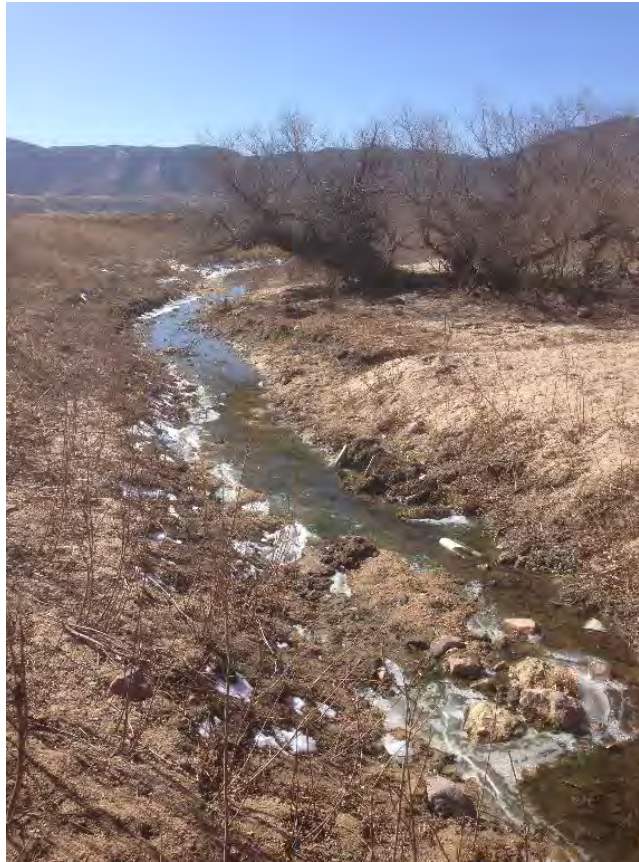
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Upper Teachout Creek, facing north-northeast



Lower Teachout Creek, facing west



Teachout Creek near Interstate 25



Cattails at upper end of pond in southern tributary



Pond in southern tributary



Dense wetland vegetation in and around southern tributary



Dirty Woman Creek near north end of Project area, looking south-southwest



Minimal shrub cover in Dirty Woman Creek channel, looking northeast



Ponded area of Dirty Woman Creek, looking south



Heavily-grazed channel of Dirty Woman Creek, looking south



Dirty Woman Creek channel and cattle trail near Santa Fe Trail overpass, looking southwest



View of ponded area on Dirty Woman Creek from second riparian PMJM habitat assessment point, looking north