Aquatic Resources Delineation Report

Bridge M-21-J

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Executive Summary

Stanley Consultants, Inc. (Stanley) has prepared an aquatic resources delineation for the proposed replacement of a bridge structure on U.S. Highway (US) 350 about 1 mile northeast of Timpas, Colorado, known as the M-21-J Bridge Replacement Project (Project). The purpose of the delineation is to identify any potential waters of the U.S. (WOTUS), including wetlands, present within the Project Area. The delineation was conducted in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Great Plains Region* (Version 2.0) (U.S. Army Corps of Engineers [USACE] 2010). For non-wetland waters, *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010) was used.

This Aquatics Resource Report provides the findings at the CDOT bridge M-21-J survey area (11.1 acres). An unnamed drainage feature drains to the northeast and into the Timpas Creek, which connects to the Arkansas River. However, this ephemeral swale does not appear to see regular flows, with no clear floodplain of any sort upgradient of the bridge, and very little hint of a floodplain downgradient. No waters or wetlands were identified though a swale feature exists.

This report provides documentation of the standards and field survey methods used to determine lack of the potential for waters and wetlands regulated under the Clean Water Act (CWA) within the vicinity of the Project. Based on these results, no further survey for WOTUS will be required and no permitting under CWA Section 404 will be required for Project impacts within the surveyed area.

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APPENDICES

Acronyms and Abbreviations

CDOT	Colorado Department of Transportation
CO	Colorado State Highway
CWA	Clean Water Act
IP	Individual Permit
MP	Mile Post
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OHWM	ordinary high water mark
PIA	Potential Impact Area
PSS	palustrine scrub-shrub
ROW	right-of-way
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOTUS	water of the United States

1. Introduction

On behalf of the Colorado Department of Transportation (CDOT), Stanley Consultants, Inc. (Stanley) has prepared an aquatic resources delineation for the proposed replacement of a bridge structure on U.S. Highway (US) 350 about 1 mile northeast of Timpas, Colorado, known as the M-21-J Bridge Replacement Project (Project). The purpose of the delineation is to identify any potential waters of the U.S. (WOTUS), including wetlands, present within the area of potential Project impacts.

The presence of wetlands and other waters were assessed within the vicinity of the proposed Project construction. The boundaries of the wetlands and other waters were then delineated to determine the extent of potential waters to regulation under the Clean Water Act within the area of potential Project impacts. The purpose of this delineation report is to facilitate efforts to:

- Avoid or minimize impacts to aquatic resources during the design process.
- Document aquatic resource boundary determinations for review by regulatory authorities.

Field investigations were conducted on August 26, 2020, by wetland biologists for Stanley Consultants, Inc.

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2. Location and Project Description

2.1 Location

The surveyed Project Area, to be referred to as the Potential Impact Area (PIA), is approximately 11.1 acres and includes the CDOT right-of-way (ROW), where impacts may occur, along with an expanded limit of disturbance to account for a possible detour or other work. The existing bridge is located approximately 1 mile northeast of Timpas, Colorado and 16 miles southwest of La Junta, Colorado (37.829246/-103.761091), in Section 35, Township 25S, Range 57W (6th Principal Base and Meridian). A map of the PIA is located in the Aquatic Resources Delineation Map in Appendix A, Figure 1.

2.2 Purpose and Need

The treated timber stringer bridge (Structure M-21-J) was built in 1935 on US 350 which is a key north-south corridor connecting residents and tourists from La Junta, Colorado and the Arkansas River Valley to Trinidad, Colorado and the Rocky Mountains. The structure is in poor condition, load-restricted, requiring frequent inspection and repair from issues such as multiple damaged girders, cracked piles, bowed wing walls, rot, mold, water staining, and other general deterioration. This bridge is well past its replacement life and is not up to current construction and safety standards and must be replaced to prevent potential failure.

2.3 Project Description

The CDOT Region 2 Bridge Bundle Design Build Project consists of the replacement of a total of nineteen (19) structures bundled together as a single design-build project. These structures are rural bridges on essential highway corridors (U.S. Highway [US] 350, US 24, CO 239 and CO 9) in southeastern and central Colorado. These key corridors provide rural mobility, intra- and interstate commerce, movement of agricultural products and supplies, and access to tourist destinations. The design build project has two funding sources; Bridge M-21-J will be funded by the USDOT FHWA Competitive Highway Bridge Program grant and the Colorado Bridge Enterprise (Project No. 23558).

Bridge M-21-J is located on US 350 at milepost 57.069, approximately 1 mile northwest of Timpas, Colorado. The bridge is a two-span, treated timber stringer (26 feet [ft] wide by 47 ft long) that crosses over an ephemeral swale. The Project will replace this bridge with similarly sized concrete and steel bridge or concrete box culvert.

As stated by the CDOT grant application, the roadway shall not be closed for construction. Phasing the construction to keep one lane open was investigated. Due to the narrow existing roadway and wood railing keeping one lane of roadway is not recommended.

A two-lane shoofly will be constructed on the east side of the existing bridge with a temporary drainage pipe placed for drainage. The detour to the east was chosen due to

railroad ROW on the west side. Once the bridge is complete and ready for use, any disturbed areas will be restored to original contours and reseeded.

3. Methods

3.1 Regulatory Context

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into WOTUS and is administered by the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA). The definition of WOTUS has been in flux in recent years, with the latest definition published by the EPA in the Navigable Waters Protection Rule, which went into effect on June 22, 2020, in 49 states. Due to an injunction issued by a federal court in Colorado, the Navigable Waters Protection Rule has not gone into effect in Colorado, and instead the state remains under the post-*Rapanos v. United States* (Rapanos) guidance (USACE and EPA 2008). The potential for WOTUS within the PIA therefore will be evaluated per the definition in the Rapanos guidance. Since the WOTUS definition under Rapanos is more expansive than the Navigable Waters Protection Rule, assessing the PIA under Rapanos ensures that no additional revaluation is likely to be required in the event CWA applicability changes in Colorado during the period of Project construction.

The Rapanos guidance defines WOTUS as traditional navigable waters (TNWs), relatively permanent waters, and their adjacent wetlands.[1] Additionally, the Rapanos guidance includes all tributaries with a bed and bank or ordinary highwater mark (OHWM) that have a significant nexus to a Traditionally Navigable Water, as well as wetlands, ponds, impoundments, and lakes located adjacent to said tributaries. Under Section 404 of the CWA, the OHWM defines the lateral extent of federal jurisdiction in non-tidal WOTUS (absent adjacent wetlands) (33 U.S.C. 1251). Per the regional guidance developed by the Corps (Mersel and Lichvar 2014), OHWM in Colorado is considered to be the "physical and biological signature established and maintained at the boundaries of the active channel." Mersel and Lichvar (2014) state the OHWM identification in non-perennial streams is based on three primary physical or biological indicators—topographic break in slope, change in sediment characteristics, and change in vegetation characteristics.

3.2 Wetland Delineations

All wetland delineations were conducted in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the Regional Supplement to the *Corps of Engineers Wetlands Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2010). Survey areas were assessed by the biologists to determine the presence or absence of wetland features. Locations that contained some potential as a wetland based on surface conditions such as the presence of dominant hydrophytic vegetation or surface hydrology were investigated more closely with a sampling point containing a soil pit, a delineation field form, and photo documentation.

[1] Adjacent is defined as "bordering, contiguous, or neighboring" in the Rapanos guidance.

Sources of information used in this Aquatic Resources investigation could include:

- Web Soil Survey (USDA/NRCS 2020)
- Aerial photography of the PIA from the National Agriculture Imagery Program (NAIP) taken in 2017, and from aerial drone photography collected by Stanley.
- National Wetland Plant List, version 3.4 (USACE 2018)
- Munsell Soil-Color Charts (Munsell Color 2009)
- National Wetland Inventory (NWI) Map (See Appendix A, Figure 2)

3.3 Non-Wetland Waters Delineation

Delineations of non-wetland waters were conducted using the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010). The project specific PIA was examined for any potential OHWM supporting features, such as root exposure, water staining, silt deposits, litter removal, etc. (Mersel and Lichvar 2014, USACE 2005), that might provide information interpreting recent flow levels (e.g., drift/wrack deposits or headcutting) or that might eliminate or reinforce potential OHWM locations. Stanley also examined aerial photography and hydrologic data to support the Section 404 CWA assessment. The boundaries of any non-wetland water features were identified by the OHWM indicators and recorded using a Trimble sub-meter GPS antenna connected to a tablet or smart phone.

4. Existing Conditions

4.1 Topography and Climate

The PIA is located on the edge of the eastern plains of Colorado including the Purgatoire River Valley and the distant Arkansas River Valley to the north. To the west is the foothills of the Front Range of the Rocky Mountains, and to the south and east is the Purgatoire River Valley. The elevation at the site is approximately 4,400±5 ft above sea level. Land use in the area is agricultural, open space, and residential about 1 mile to the southwest, with an ecological ecoregion of Piedmont Plains and Tablelands, which includes open grasslands with a small arid shrub component. The highway and bridge structure were constructed in 1935, with fill being built up for the roadway with a gap that allows for any storm flows in ephemeral swale feature, with the bridge constructed across the feature.

Climate in the La Junta area (closest weather station with complete data) has an average maximum temperature of 69.4° F and average minimum temperature of 39.1° F. The average annual precipitation is 11.5 inches, with an average snowfall of 20.7 inches (CCC 2020a). Normal monthly precipitation average for August is 1.6 inches, but during this past August (when the field survey was conducted) the rainfall was measured at 0.38 inches, which is below normal (CCC 2020b).

4.2 Surface Waters

National Wetlands Inventory (NWI) data indicated that no wetlands exist within the PIA. Only one water was classified as riverine (Appendix A, Figure 2). The U.S. Geologic Survey (USGS) classifies this feature as an intermittent stream (Appendix A, Figure 1), as opposed to being considered a perennial stream, the only other USGS classification for surface stream features. The referenced riverine feature is an unnamed drainage feature, an ephemeral swale, within the landscape, but only appears to collect rare storm event flows and transmits those flows northwest to Timpas Creek, just to the northwest of the M-21-J bridge by approximately 0.5 miles. Timpas Creek flows northeast to its confluence with the Arkansas River by the town of Swink, Colorado. From there, the Arkansas River flows east, then southeast to the Mississippi River and south to the Gulf of Mexico.

In the PIA, no surface water was present and soils within and surrounding the ephemeral swale appeared very dry. Given the width of the feature downgradient of the bridge and the surrounding vegetation of grasses and low shrubs, some storm event flows must occur, but with not enough frequency to support any wetland conditions or even a continuous and well-defined channel.

5. Aquatic Resource Results

During the ground investigation, no features with an OHWM or wetland characteristics were observed within the PIA:

- Flows within the PIA appear to be ephemeral in nature, only occurring in response to storm events every few years.
- There was no indication of any older channels upgradient of the bridge. Upgradient sheet flow appears to concentrate under the bridge and exits, continuing in a slight swale feature towards Timpas Creek (see Appendix B, Photo Inventory).
- There was no strong indication of any scour pool under the bridge. Slight soil cracks were evident downgradient of the bridge; this type of soil cracking is common in silty soils such as this, where precipitation may puddle for short periods of time immediately after storm events.
- Downgradient of the bridge, the slight swale feature continues towards the north, under the railroad bridge, and beyond. However, due to the very low gradient slope through this area, any storm event likely flows as sheet flow and moves very slowly along this northward path, leading to occasional pooling and minor soil cracking accompanied by a lack of any visible OHWM-defined channel or even a well-defined swale.
- Grasses, forbs, and even a few shrubs were observed within this area, suggesting rare and weak sheet flows at best.

Based on the lack of bed and bank, OHWM indicators, or other potential indicators of regular surface water contributions, we determined there are no potentially jurisdictional waters of the U.S. within the PIA.

6. Summary

No WOTUS or wetland features were identified and delineated within the PIA. The existing unnamed ephemeral swale appears to only support rare storm flows and not regular, consistent, yearly or seasonal flows. No impacts to any potential WOTUS are anticipated as no regulated resource exists. Therefore, no CWA Section 404 permitting and/or mitigation measures would be needed.

Although mitigation measures to avoid impacts to WOTUS will not be needed for the Project, the Contractor will likely still need to develop best management practices to avoid impacts to additional sensitive resources from stormwater run-off, pollutants, etc., due to construction activities. A review of other Project-related permitting needs is discussed in further detail in the Desktop Analysis for Sensitive Resources Report.

7. References

Colorado Climate Center (CCC), Colorado State University. 2020a. Access Colorado Data for TRINIDAD PERRY STOKES AP Station. https://climate.colostate.edu/data_access.html. Accessed November 16.

_____. 2020b. Access Colorado Water Year Precipitation Data for TRINIDAD PERRY STOKES AP Station. https://climate.colostate.edu/wy_data.html. Accessed November 16.

Curtis, K.E. and R.W. Lichvar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TN-10-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experimental Station, Vicksburg, MS.

Mersel, Matthew K. and Robert W. Lichvar. 2014. “A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States.” ERDC/CRREL TR-13-14. Hanover, NH: U.S. Army Engineer Research and Development Center, Wetlands Regulatory Assistance Program.

Munsell Color. 2009. Munsell Soil-Color Charts. Grand Rapids, MI.

U.S. Army Corps of Engineers (USACE). 2005. Regulatory Guidance Letter: Ordinary High Water Mark Identification. RGL-05-05. December 7, 2005.

_____. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2017 Regional Conditions to Nationwide Permits in the State of Colorado. U.S. Army Corps of Engineers, Albuquerque District, Omaha District, and Sacramento District. January 11, 2017.

_____. 2018. National Wetland Plant List, version 3.4. http://wetland_plants.usace.army.mil/. U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA). 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's

Decision in Rapanos v. United States & Carabell v. United States. December 02, 2008.

U. S. Fish and Wildlife Service (USFWS). 2020. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/. Accessed December 14, 2020.

U.S. Geological Survey (USGS). 2020. StreamStats website. http://streamstats.usgs.gov/ss/. Accessed November 16, 2020.

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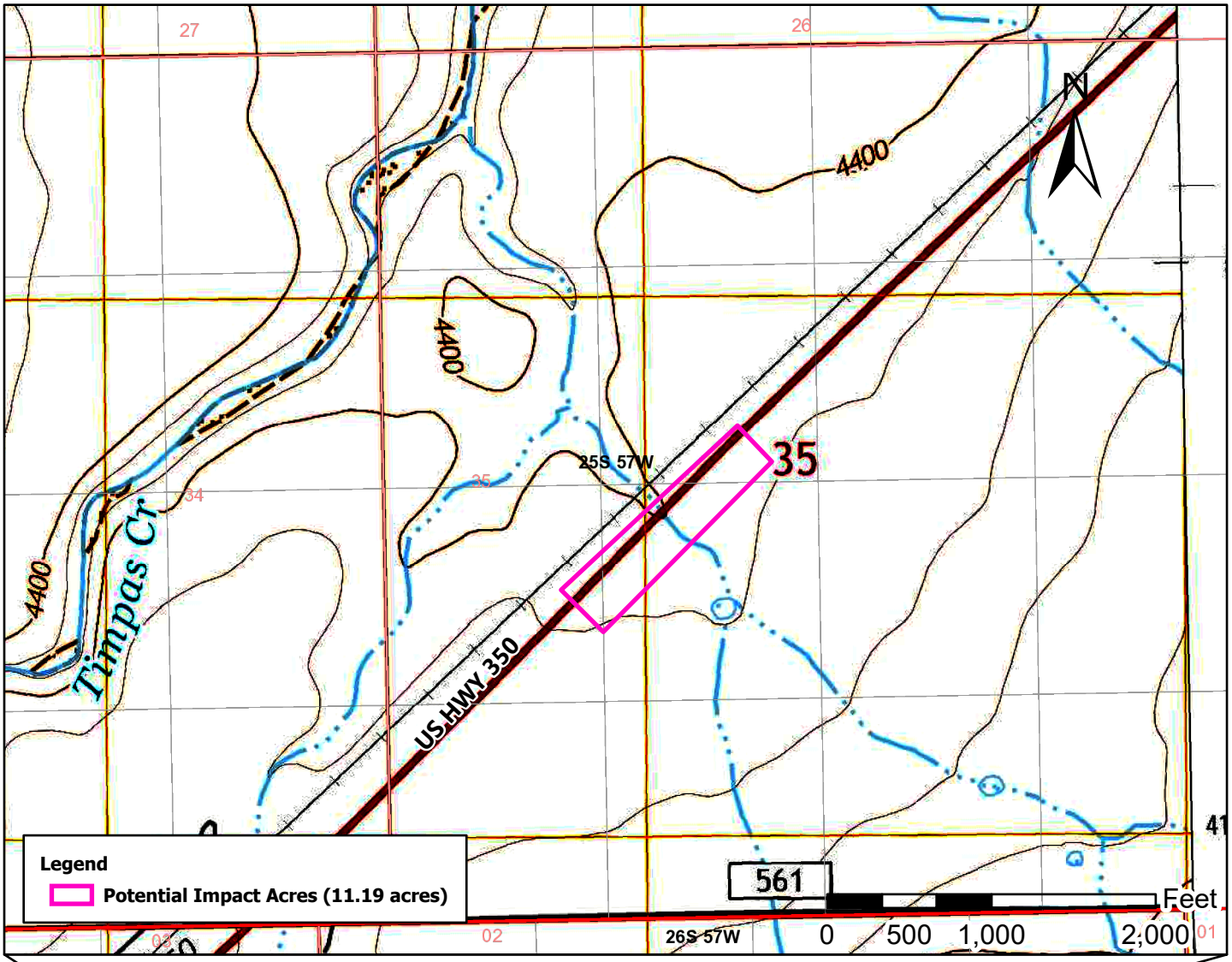
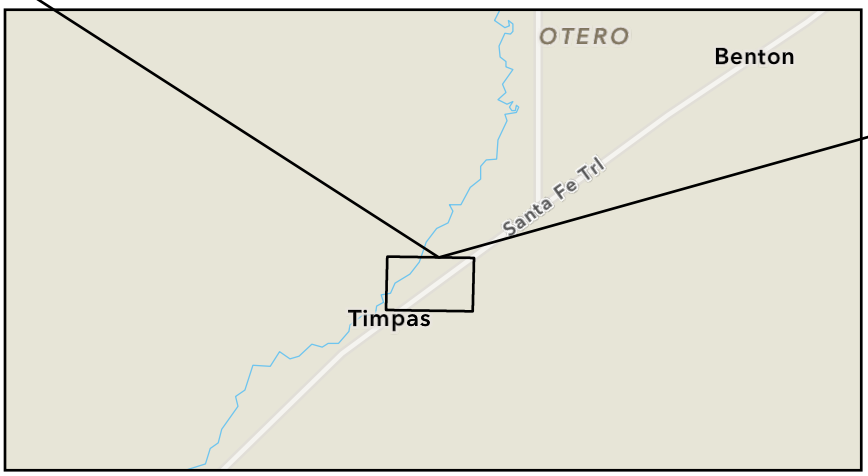
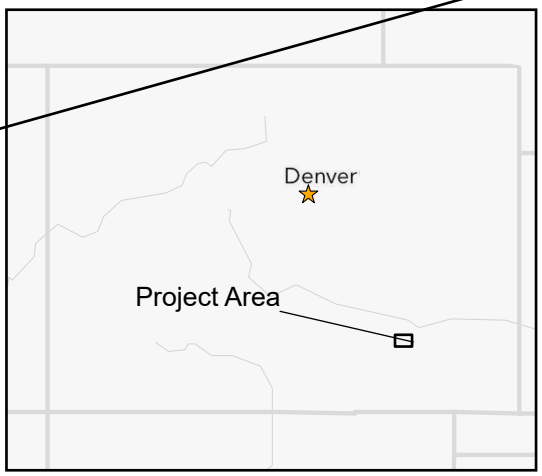
Appendix A

Aquatic Resources Delineation Maps







Colorado Department of Transportation
R2 Bridges Project - M-21-J

Figure 1
Vicinity Map

Image Source: ArcGIS Online, World Street Map, USGS TopoView
USGS Topo: Timpas, CO
S35, T25S, R57W
Bridge Lat/Long: 37.829247/-103.761091

Stanley Consultants INC.

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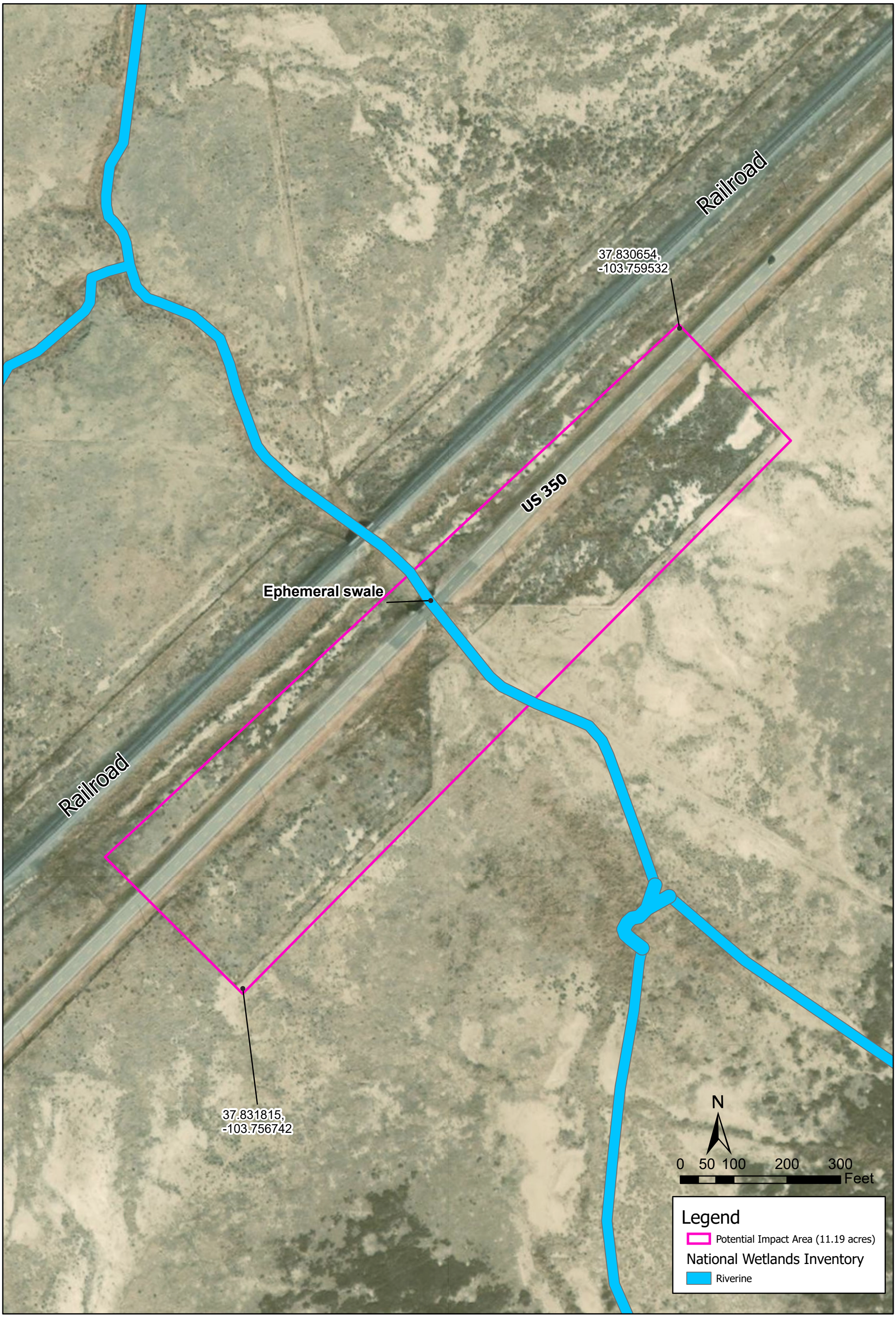

Colorado Department of Transportation
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Figure 2: Aquatic Delineation Map

Data Source: Stanley Consultants, Inc.
Image Source: ArcGIS Online, World Imagery

Coordinate System: NAD 1983
State Plane CO Central FIPS 0502 (US Feet)
Projection: State Plane
Datum: North American 1983
Created: December 15, 2020

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Appendix B

Photo Inventory

Photo 1.
Ephemeral swale, looking southeast and upgradient from bridge, at the condition of the swale. No floodplain of any type exists in this area, only a vague area of concentrated sheet flow.

Photo 2.
Ephemeral swale, looking north and downgradient from near the CDOT ROW fence. The swale appears to just be a vegetated, ephemeral swale, with no defined channel of any sort. No distinct scour pool was observed under the bridge. Only the abutments appear to focus the normal sheet flow under the bridge.

Photo 3.
Ephemeral swale, looking southeast beyond the CDOT ROW fence. No distinct floodplain, only a vague indication of any focused sheet flow in the distance.

Photo 4.
Ephemeral swale, looking southeast and upgradient towards the bridge. No channel of any kind, only a vague area of concentrated sheet flow. Soil cracks are shallow and likely only indicate occasional and brief pooling after storm events. Due to the shallow slope in this area, it is not surprising what little water this area receives, it tends to move slowly, allowing soil cracks to form in this silty soil.

Photo 5.
Ephemeral swale, looking northwest and downgradient of bridge. No distinct channels of any sort, only a vague swale. Vegetation of grasses and forbs cover parts of the exposed silty soils. Railroad bridge in the distance.