

**SH 83 Safety and Operations Analysis:
Bayou Gulch to El Paso County Line
MP 30.20 – MP 53.88
Project Code 23008**

Appendix F – Environmental Report

Prepared for:



Prepared by:



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INTRODUCTION

The Colorado Department of Transportation (CDOT) is conducting a Safety and Operations Analysis on SH 83 in Douglas County between Bayou Gulch Road at milepost (MP) 53.88 and El Paso County Line/Palmer Divide Avenue at MP 30.20. The first phase of this analysis is to document the existing conditions in the corridor for both operations and safety. This memorandum is an Appendix to the Safety and Operations Analysis Report; it addresses key environmental resources that may require additional consideration in a future National Environmental Policy Act (NEPA) study or permitting.

WATER RESOURCES AND WATER QUALITY

Water-related resources generally include lakes, ponds, rivers, draws, gulches, ditches, and irrigation canals. These resources provide many important functions including irrigation to support agriculture; recreational opportunities such as fishing and rafting; quality habitat for resident and migrating wildlife; filtration of pollutants and sediments; and groundwater recharge.

REGULATORY REVIEW AND BACKGROUND

The following regulatory requirements apply to water-related resources:

- *Sections 401 and 402 of the Clean Water Act (CWA)* – Establishes the basic structure for regulating discharges of pollutants into navigable waters. The CWA provides the statutory basis for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating discharge of pollutants into waters of the U.S.
- *Section 404 of the CWA* – Regulates waters of the U.S., such as traditional navigable waters and associated wetlands. Impacts to these resources require permitting through the U.S. Army Corps of Engineers (USACE). Waters of the U.S., including wetlands, are covered under a separate section in this report.
- *Safe Drinking Water Act (SDWA)* (40 Code of Federal Regulations [CFR] Parts 141–143) – Protects public health by regulating the nation's public drinking water supply and protecting drinking water and its sources. The CDOT is a stakeholder in the Colorado Source Water Assessment and Protection program mandated by the SDWA.
- *Erosion and Sediment Control on Highway Construction Projects (25 CFR 650 Subpart B)* – Requires all highways that are funded in whole or in part by the Federal Highway Administration (FHWA) be designed, constructed, and operated according to standards that will minimize erosion and sediment damage to the highway and adjacent properties and abate pollution of surface and groundwater resources.
- *Regulation #93 – Colorado's Section 303(d) List of Impaired Waters* – Establishes Colorado's List of Water-Quality-Limited Segments requiring total maximum daily loads (TMDLs). This list was prepared to fulfill section 303(d) of the CWA, which requires that states submit a list to the U.S. Environmental Protection Agency (EPA) of those waters for which technology based effluent limitations and other required controls are not stringent enough to implement water quality standards.
- *Regulation #72 – Cherry Creek Reservoir Control Regulation (5 Code of Colorado Regulation [CCR] 1002-72)* – Identifies measures necessary to reduce the inflow of pollutants to Cherry Creek from point and non-point sources throughout the Cherry Creek Watershed. This regulation provides the basis for minimum stormwater quality controls and Best Management Practices (BMPs) in the Cherry Creek Basin and contains standards for the implementation of both temporary construction and permanent stormwater quality BMPs for land disturbances.
- *Cherry Creek Basin Water Quality Authority (CCBWA)* - Tasked by Colorado's Legislature with preserving, protecting and enhancing the water quality of Cherry Creek and Cherry

Creek Reservoir, and achieving and maintaining water quality standards for the reservoir and watershed. The CCBWA was designated by the Governor as a Federal Clean Water Act Section 208 Management Agency (CCBWA, 2022).

Once **listed**, the state is required to prioritize these waterbodies or segments (rivers, streams, lakes, and reservoirs) based on the severity of pollution and other factors. The state will then determine the causes of the water quality problem and allocate responsibility for controlling the pollution. This analysis is called the TMDL process and the results include: 1) the determined amount of a specific pollutant that a segment can receive without exceeding a water quality standard (the TMDL), and 2) the apportionment to the different contributing sources of the pollutant loading (the allocation). The TMDL must include a margin of safety, waste load allocation (for point sources), and a load allocation (for non-point sources and natural background). The TMDL must include upstream loads in the assessment and apportionment process.

In addition, Colorado's Monitoring and Evaluation (M&E) list identifies water bodies where there is reason to suspect water quality challenges, but there is also uncertainty regarding one or more factors. This M&E list is a state-only document that is not subject to EPA approval; however, it is included with the list of impaired waters. TMDLs for these water bodies have not been established at this time by the Colorado Department of Public Health and Environment (CDPHE).

The EPA has delegated authority for enforcement of Section 303(d), Sections 401 and 402 of the CWA, and SDWA to CDPHE. Under this authority, the *Colorado Water Quality Control Act (Colorado Revised Statutes Title 25, Article 8)* was passed to protect and maximize the beneficial uses of state waters and regulate water quality. From this Act, the Water Quality Control Commission (WQCC) was created to provide regulations to be implemented by CDPHE that keep Colorado in compliance with the CWA.

Based on requirements promulgated under Section 402 of the CWA, the WQCC has implemented Regulation 61 identifying CDOT as a regulated Municipal Separate Storm Sewer System (MS4). By definition, a separate storm sewer system is not only composed of a storm drainage system but also comprises ditches, gutters, and/or other similar means of collecting and conveying stormwater runoff that do not connect with a wastewater collection system or wastewater treatment facility. The project corridor is entirely within the CDOT MS4 Urban Area. Permanent Water Quality (PWQ) features will be required in accordance with CDOT's new PWQ Program requirements (CDOT, 2020a).

STUDY AREA AND DATA GATHERING METHODOLOGY

The following data sources were reviewed to identify surface waters that cross SH 83 or are within 200 feet of the SH 83 centerline (study area):

- ☐ Stream data from the U.S. Geological Survey (USGS) National Hydrology Dataset (NHD) (USGS, 2020)
- ☐ Federal Emergency Management Agency (FEMA) floodplain maps (FEMA, 2021)
- ☐ Current available aerial photography (e.g., Google Earth)
- ☐ CDPHE List of Impaired Waters and Mapping of Impaired Waters (CDPHE, 2021a and 2021b)
- ☐ CDOT Online Transportation Information System (OTIS) (CDOT, 2021)

Permanent, temporary, and indirect impacts analysis to water quality from the project will be completed when design is advanced, and impacts are known.

EXISTING ENVIRONMENTAL CONDITIONS

The project is located in the South Platte River Basin (EPA, 2021). The drainages that cross the study area are located within the Middle South Platte-Cherry Creek sub-basin, and ultimately flow into the South Platte River north of the study area.

There are 24 surface water features that cross or occur within the study area (**Table F1; Figure F1, F2 and F3**). Surface waters within the study area are primarily associated with tributaries of Cherry Creek and include Elk Creek, Crowfoot Creek, West Cherry Creek, Antelope Creek, Russellville Gulch, and Bayou Gulch, as well as numerous unnamed intermittent drainages. One reservoir, Barney Bird Reservoir Number 1, also crosses the study area (**Table F1**).

Table F1 Table of Surface Waters

Name	Type ^a	Approximate Location	Flow Direction	CDPHE Impaired Water (Segment WBID) (Parameters)
None (Unnamed tributary to West Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 30.5	Northwest	No
Elk Creek	Intermittent	Crosses the study area and US 85 just north of MP 32.	Northwest	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
None (Unnamed tributary to West Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 34.25	Northwest	No
None (Unnamed tributary to West Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 35.7	Northwest	No
Crowfoot Creek	Intermittent	Crosses the study area and US 85 at approximately MP 37.3	Northwest	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
West Cherry Creek	Perennial	Crosses the study area and US 85 at approximately MP 40.8	North	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
Antelope Creek	Perennial	Crosses the study area and US 85 at approximately MP 41.2	North	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 42.7	Northeast	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 43	Northeast	No

None (Unnamed tributary to Cherry Creek)	Intermittent	Begins within the study area at approximately MP 42.2, but does not cross US 85	Northeast	No
Cherry Creek	Perennial	Crosses the study area and US 85 at approximately MP 46.3	Northwest	Yes (COSPCH01_A) (Manganese for Water Supply Use; also, on the Monitoring and Evaluation list for <i>E. coli</i> for Recreational Use)
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 46.5	West	No
None (Unnamed tributary to Russellville Gulch)	Intermittent	Crosses the study area and US 85 at approximately MP 47.9	Northeast	No
None (Unnamed tributary to Russellville Gulch)	Intermittent	Crosses the study area and US 85 at approximately MP 48.3	Northeast	No
Russellville Gulch	Intermittent	Crosses the study area and US 85 at approximately MP 49.5	Northwest	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
Barney Bird Reservoir Number 1	Lake/Pond	Abuts the east side of the study area at approximately MP 49.6	None	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 50.4	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 50.6	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 51.3	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 51.4	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 51.9	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 52.5	West	No
None (Unnamed tributary to Cherry Creek)	Intermittent	Crosses the study area and US 85 at approximately MP 52.8	West	No

Bayou Gulch	Intermittent	Crosses the study area and US 85 at approximately MP 53.7	Northwest	No ^b (COSPCH04a_A) (Dissolved Iron and Manganese for Water Supply Use)
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Sources: CDPHE, 2021a and 2021b; USGS, 2020;

^aTypes listed as Perennial or Intermittent based on USGS Topographical maps and desktop analysis

^bNot a 303(d) stream but is currently being monitored and evaluated under Regulation 93 to determine the total maximum daily load (TMDL) for parameters shown.

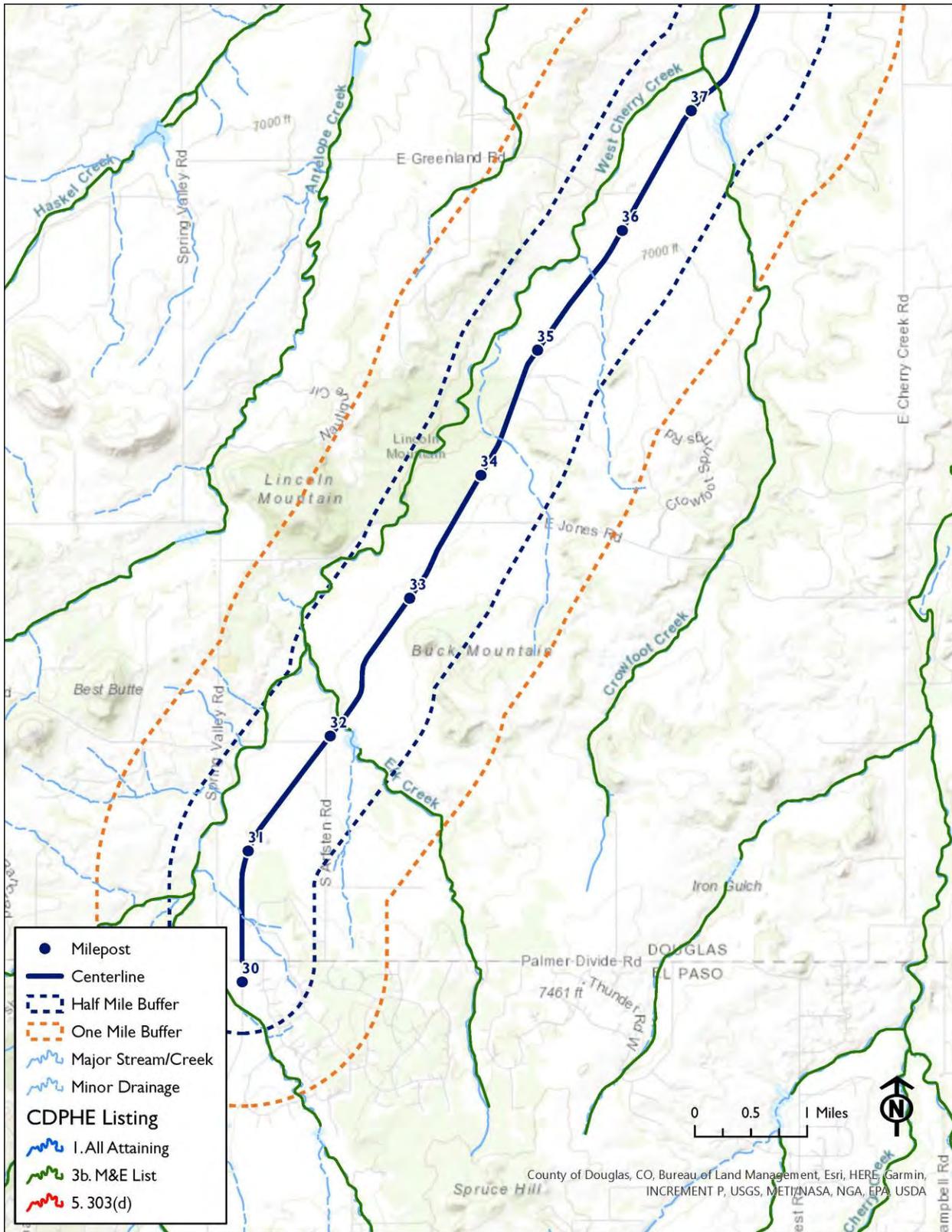
WBID = Water Body ID

The segment of Cherry Creek that crosses the study area is a CDPHE 303(d) listed stream segment (COSPCH01_A) (CDPHE, 2021a; **Table F1**; **Figure F2**). This segment of Cherry Creek is listed for dissolved manganese due to its effect on Water Supply Use and is classified as a low priority 303(d) stream by the CDPHE (CDPHE, 2021a). In addition to Cherry Creek being a 303(d) listed stream in the study area, it is also listed on the M&E list for the effects *E. coli* has on the streams Recreational Use. Additionally, several tributaries of Cherry Creek are currently on the CDPHE M&E list and are being monitored and evaluated for dissolved iron and manganese to determine their TMDLs (CDPHE, 2021a). These include Elk Creek, Crowfoot Creek, West Cherry Creek, Antelope Creek Russelville Gulch, and Bayou Gulch.

Although not listed, numerous unnamed tributaries cross the study area that flow directly into Cherry Creek or a tributary of Cherry Creek. These tributaries could collect and contribute pollutants to the already impaired segment of Cherry Creek.

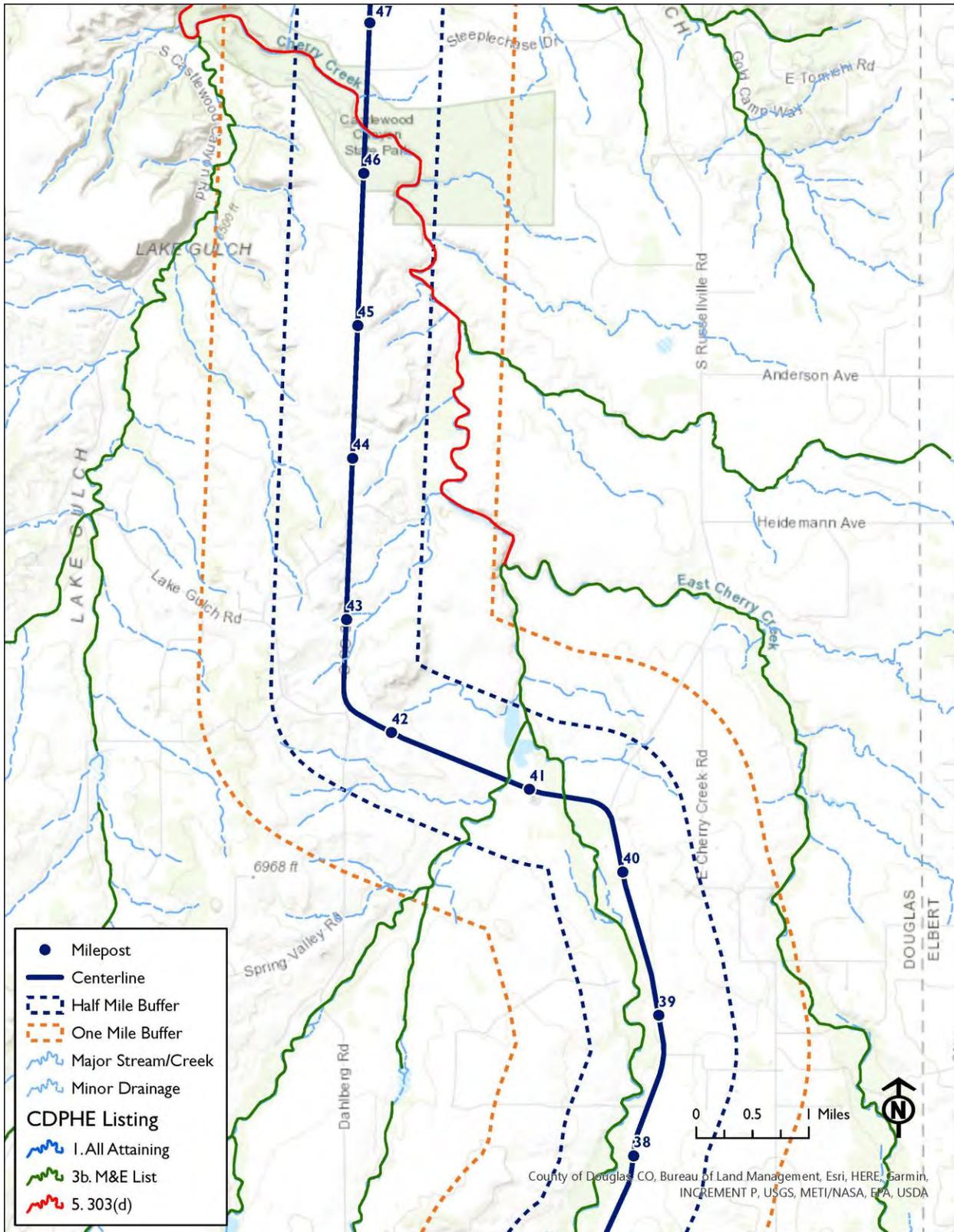
The streams in and adjacent to the study area ultimately flow into Cherry Creek Reservoir, which is located approximately 14.5 miles to the north. Cherry Creek Reservoir is a CDPHE 303(d) listed waterbody (COSPCH02_A) (CDPHE, 2021a). Cherry Creek Reservoir is listed for chlorophyll and dissolved oxygen due to their effects on Aquatic Life Use and is classified as a high priority 303(d) waterbody by the CDPHE (CDPHE, 2021a).

Figure F1. Surface Water Features and CDPHE Listings Within the Study Area – South



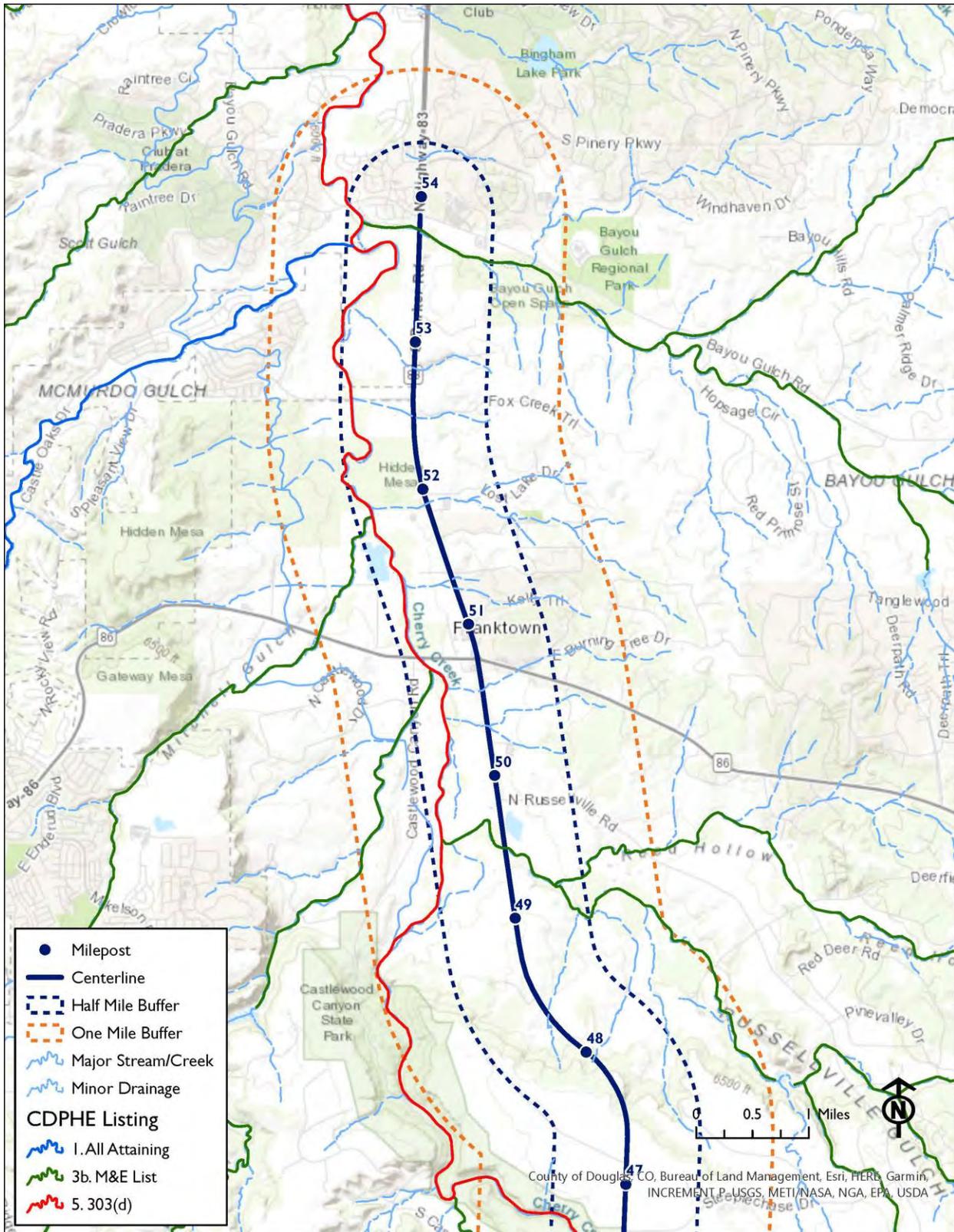
Source: CDHPE, 2021a; CDPHE, 2021b; USGS, 2020

Figure F2. Surface Water Features and CDPHE Listings Within the Study Area – Central



Source: CDHPE, 2021a; CDPHE, 2021b; USGS, 2020

Figure F3. Surface Water Features and CDPHE Listings Within the Study Area – North



Source: CDHPE, 2021a; CDPHE, 2021b; USGS, 2020

The project corridor is entirely within the CDOT MS4 Urban Area. PWQ features will be required in accordance with CDOT’s new PWQ Program requirements (CDOT, 2020a). This should be achieved through compliance with the following minimum control measures: public education and outreach, public participation/involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention/good housekeeping.

In order to minimize current potential water quality impacts, nine existing PWQ features under CDOT’s PWQ Program are present in the study area (**Table F2**). Eight of these PWQ features are located between MP 40.4 and the West Cherry Creek Crossing. One PWQ feature is located at MP 49.7.

Table F2 Summary of Permanent Water Quality Features (PWQs) in the Study Area

PWQ ID	PWQ Description/Type	Milepost
CO-083A-RS00047-EN001	Infiltration Facility	40.42
CO-083A-RS00047-EN002	Infiltration Facility	40.44
CO-083A-RS00047-EN003	Infiltration Facility	40.44
CO-083A-RS00047-EN004	Infiltration Facility	40.45
CO-083A-RS00047-EN005	Infiltration Facility	40.45
CO-083A-RS00047-EN006	Infiltration Facility	40.55
CO-083A-RS00047-EN007	Infiltration Facility	40.55
CO-083A-RS00047-EN008	Infiltration Facility	40.71
CO-083A-RS00056-EN001	Infiltration Facility	49.71

Source: CDOT, 2021a

PWQ = Permanent Water Quality

- In addition, the CDOT MS4 Permit includes conditions and limitations for those portions of the permit area that drain into the Cherry Creek Reservoir drainage basin. This study area is entirely within the Cherry Creek Reservoir drainage basin; therefore, per the Cherry Creek Reservoir Control Regulation (5 CCR 1002-72), additional permanent water requirements as identified in Regulation 72 (Section 72.7), should be incorporated. As defined in Section 72.7, projects will fall under three Tiers: Tier 1 – projects which result in less than 500 square feet of new impervious surfaces
- Tier 2 – projects which result in 500 to 5,000 square feet of new impervious surfaces
- Tier 3 – projects which result in more than 5,000 square feet of new impervious surfaces

Tier 1 projects do not require post-construction PWQs. Tier 2 and 3 projects will require post-construction PWQs.

FLOODWAYS AND 100-YEAR FLOODPLAINS

Floodplains are the lands on either side of a stream that are inundated when the capacity of the stream channel is exceeded. The National Flood Insurance Program encourages state and local governments to adopt sound floodplain management programs. To provide a national standard without regional discrimination, the 100-year flood has been adopted by the FEMA) as the base flood for floodplain management and flood insurance purposes.

A regulatory floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height (FEMA, 2021). Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. For streams and other watercourses where FEMA has provided Base Flood Elevations, but no floodway has been designated, the community must review floodplain

development on a case-by-case basis to ensure that water surface elevation increases do not occur (FEMA, 2021).

A 100-year flood is calculated to be the level of flood water expected to be equaled or exceeded every 100 years on average; thus, it has a 1 percent chance of being equaled or exceeded in any single year. Changes in the floodplain, such as adding fill material, constructing buildings or bridges, or limiting the natural conveyance of floodwaters, can cause a rise in the 100-year water surface and can subsequently impact properties that were not previously anticipated to be affected by a 100-year storm event.

REGULATORY REVIEW AND BACKGROUND

The following Federal regulations apply to floodplains:

- *Executive Order (EO) 11988, Floodplain Management (FEMA, 1977)* - This EO directs federal agencies to “provide leadership and take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.” This EO was authorized to assist in furthering NEPA, the National Flood Insurance Act of 1968 (amended), and the Flood Disaster Protection Act of 1973.
- *CFR, Title 23 – Highways, Chapter I – FHWA USDOT, Part 650 – Bridges, Structures, and Hydraulics (CFR, 2012)* - Prescribes the policies and procedures that the FHWA is directed to implement in the “location and hydraulic design of highway encroachments on floodplains.”
- *CFR, Title 44 - Emergency Management and Assistance, Chapter I – FEMA (CFR, 2021a)* - Contains the basic policies and procedures of FEMA to regulate floodplain management and to analyze, identify, and map floodplains for flood insurance purposes.

The floodplain regulations listed above are typically enforced by local governments. For projects within the floodplains, a floodplain development permit is generally required from the local jurisdictions to allow construction within the it. Local governments are responsible for administration of floodplain lands within their jurisdictions as part of the land use planning process with assistance from agencies such as FEMA, as well as the Mile High Flood District.

STUDY AREA AND DATA GATHERING METHODOLOGY

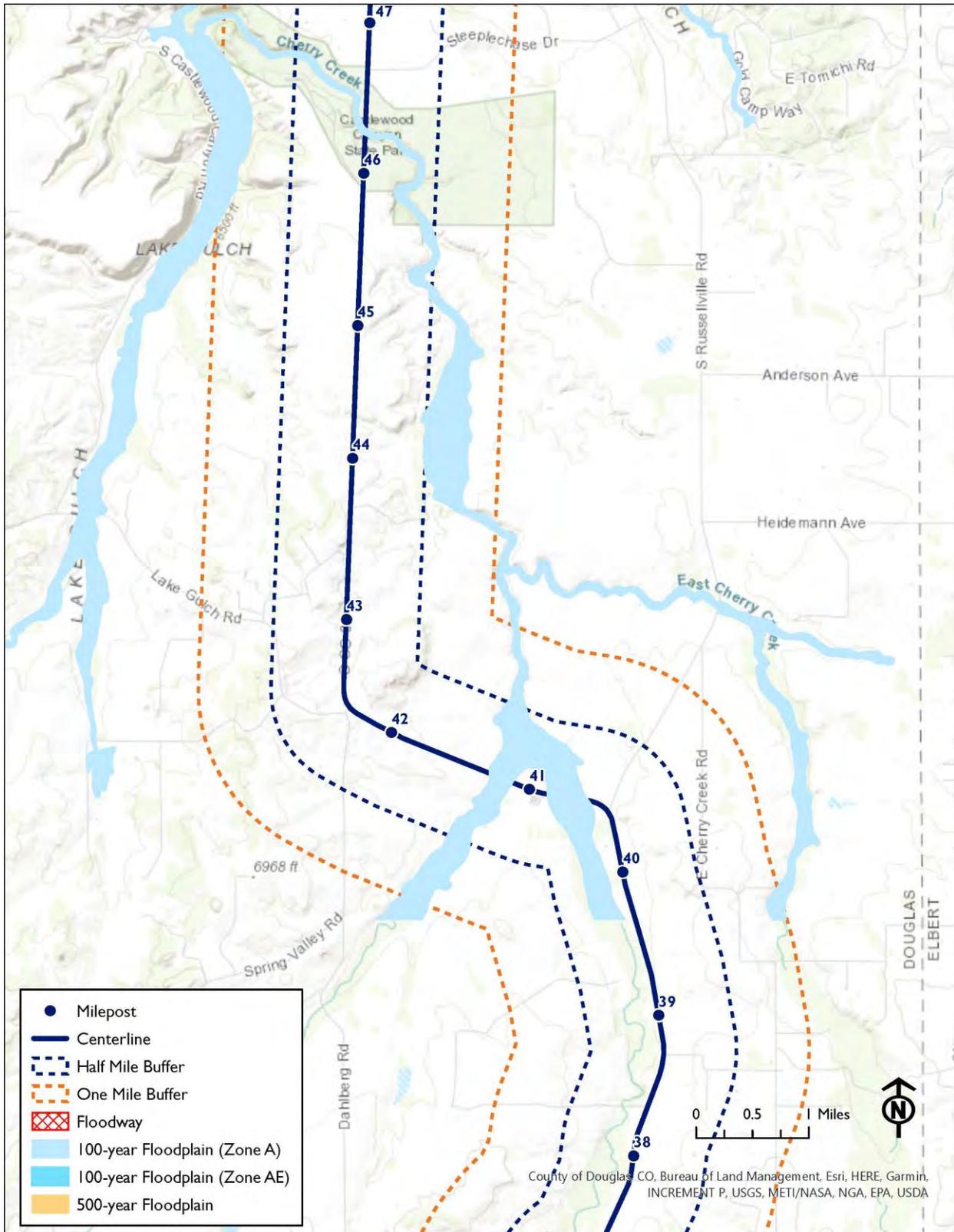
FEMA digital GIS data was used to identify 100-year floodplains and regulatory floodways that cross SH 83 or are within 200 feet of the SH 83 centerline (study area) (FEMA, 2021). The 500-year floodplain areas were also mapped for reference. Currently, digital mapping is not available for the portion of the study area south of MP 39.5. Therefore, only areas north of MP 39.5 are discussed below.

EXISTING ENVIRONMENTAL CONDITIONS

Several 100-year floodplains cross the study area (**Figure F4** and **F5**; Note: only central and northern portions of the study area shown as digital floodplain data is not available for the south portion of the study area). Near MP 41, 100-year floodplains associated with West Cherry Creek and Antelope Creek cross SH 83 and the study area. Further north, near MP 46.3, a narrow portion of the Cherry Creek 100-year flood plain crosses the study area. The 100-year floodplain of Cherry Creek is adjacent to the west side of the study area for the remainder of the corridor, with only a small portion of its 500-year floodplain crossing the study area in two locations: at approximately MP 50.4 and MP 50.6.

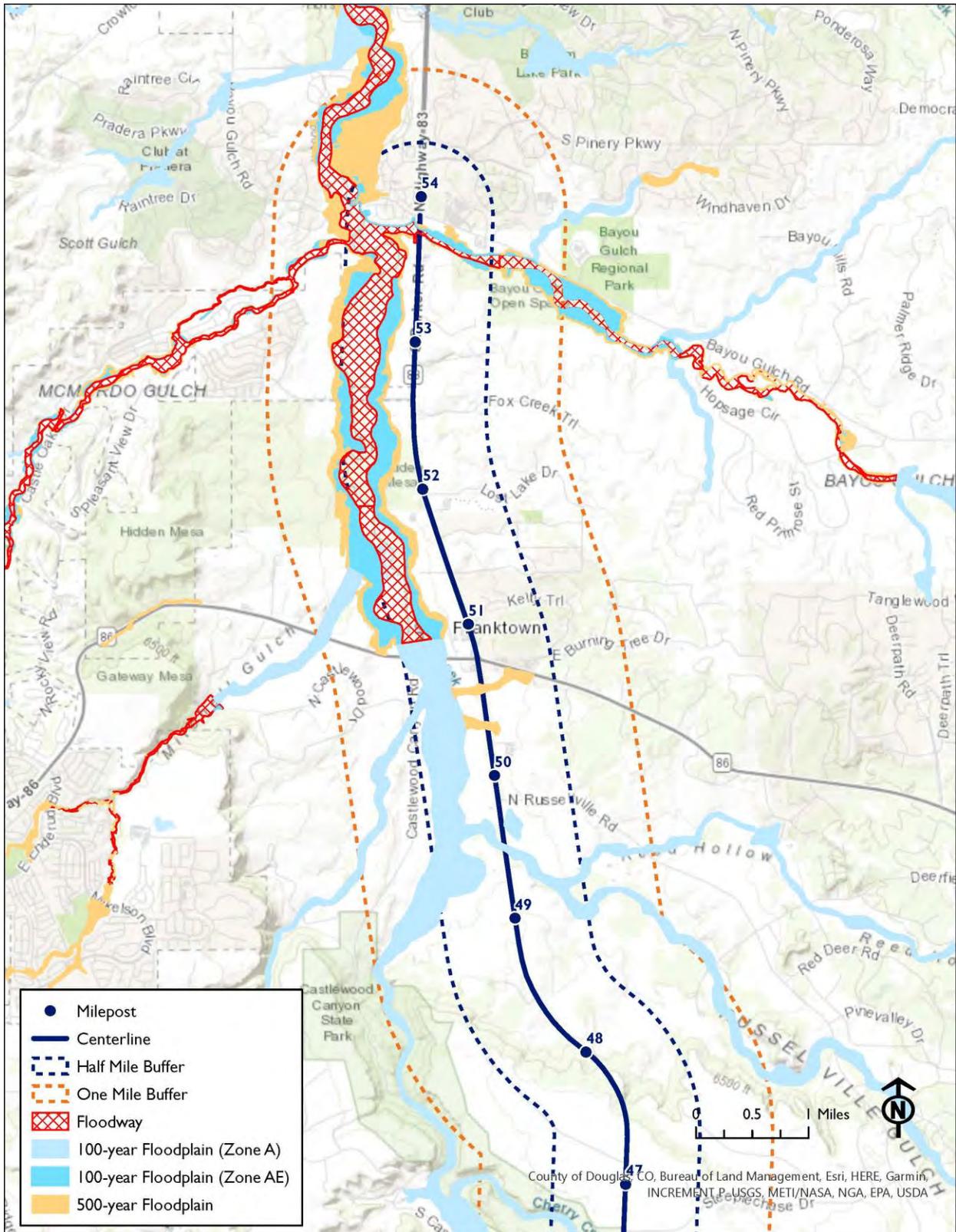
At the very northern end of the study area, Bayou Gulch and its 100- and 500-year floodplains cross the study area (**Figure F5**). In addition, this portion of Bayou Gulch is also a FEMA regulated Floodway.

Figure F4. FEMA Floodplains Mapped Within the Study Area – Central



Source: FEMA, 2021

Figure F5. FEMA Floodplains Mapped Within the Study Area – North



WATERS OF THE US

Surface waters such as rivers, streams, lakes and ponds, and wetlands comprise Waters of the US (WOTUS).

REGULATORY REVIEW AND BACKGROUND

In addition to Section 404 of the CWA summarized in the water quality section above, the following federal and state regulations are in place to protect wetlands and surface waters:

- **Executive Order (EO) 11990 Protection of Wetlands.** The purpose of EO 11990 is to “minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands” (42 Federal Register 26961, 3 *Code of Federal Regulations*, 1977 Comp., p. 121). CDOT has wetland-specific requirements beyond those required by the USACE to comply with EO 11990. A CDOT Wetland Finding report will be required if permanent wetland impacts exceed 500 square feet or if temporary impacts exceed 1,000 square feet, regardless of USACE jurisdiction. This does not include impact to open water areas. CDOT requires mitigation for all wetland impacts at a 1:1 ratio.
- **Colorado Senate Bill (SB) 40.** SB 40 requires that state agencies obtain certification from CPW when the agency plans construction in any stream, stream bank, or tributary (33-5-101-107, *Colorado Revised Statutes* 1973 as amended). Any portions of the project that will impact a SB 40 jurisdictional stream will require SB 40 Certification, including mitigation measures designed to improve fish and wildlife habitat.

STUDY AREA AND DATA GATHERING METHODOLOGY

The study area consisted of the SH 83 ROW between Bayou Gulch Road and County Line Road/East Palmer Divide Avenue. Project GIS specialists compiled geospatial data from publicly available and agency sources using the project’s ArcGIS Online map. Data sources of WOTUS (including wetlands) was gathered from the National Wetland Inventory (NWI) and the National Hydrography Dataset (NHD) (USFWS, 2021a; USGS, 2020). Douglas County and CDOT also provided geospatial data on wetlands and streams (Douglas County, 2021a; CDOT, 2021b). It should be noted that NWI can be incomplete in some areas as it was mapped off older data that has not been field verified. The Pinyon Team believes that there are wetlands present in the study area that are not shown on the NWI mapping. Once improvements are identified, field verification and wetland delineations will be completed as appropriate. Drone footage captured by CDOT was also reviewed during the analysis.

EXISTING ENVIRONMENTAL CONDITIONS

The study area is within the Cherry Creek watershed and water ultimately flows into the South Platte River. There are 24 streams and 2 wetlands mapped by the NWI and/or NHD within the SH 83 ROW (Figures F6 through F8). Named streams include Elk Creek, Crowfoot Creek, West Cherry Creek, Antelope Creek, Cherry Creek, Russellville Gulch and Bayou Gulch. The remaining streams are unnamed tributaries to the above-named streams. There are two potential wetlands within the ROW mapped on the NWI. One is associated with an unnamed tributary to West Cherry Creek and the other is associated with an unnamed tributary to Cherry Creek.

Figure F6. Surface Waters and Wetlands Mapped Within the Study Area – South

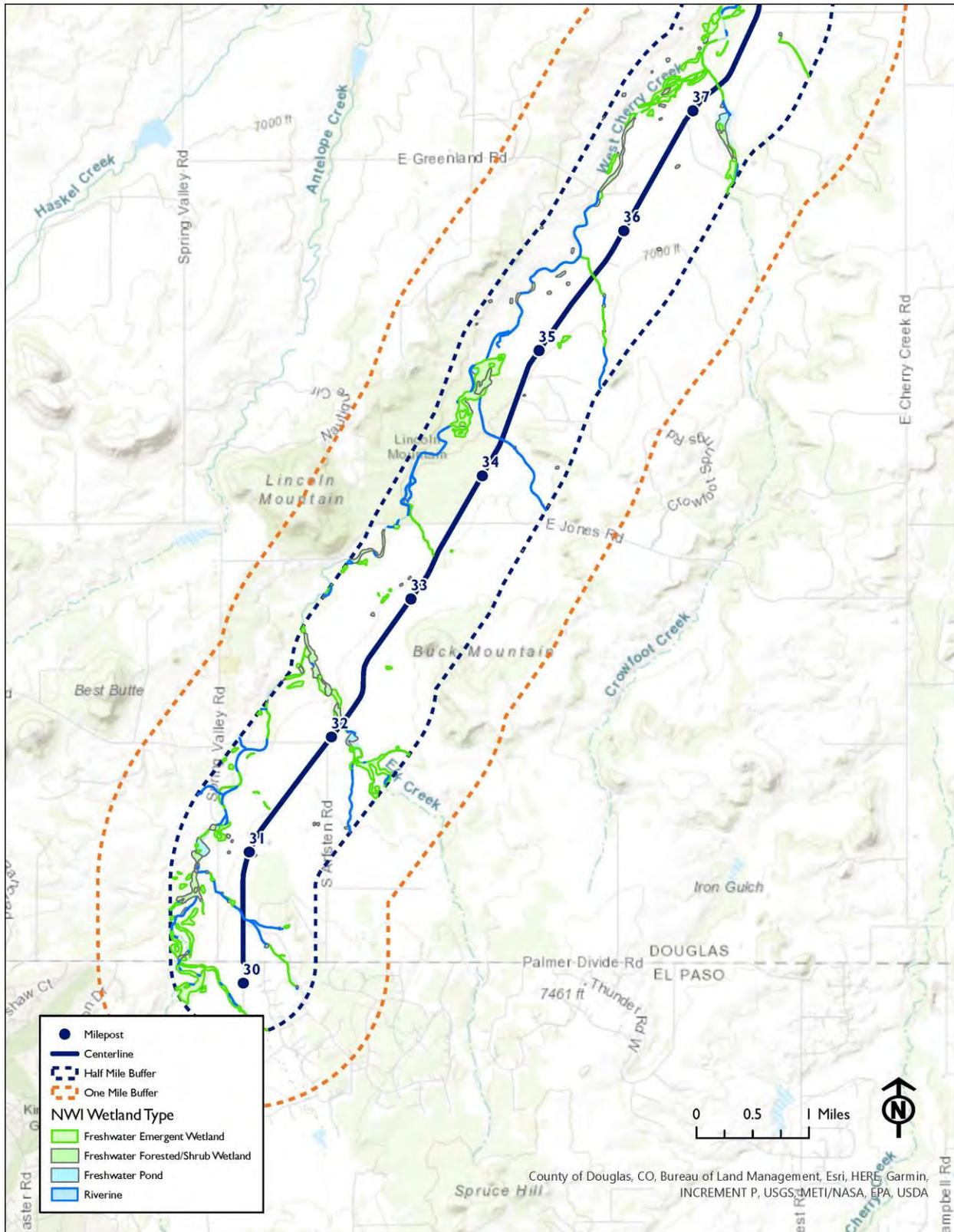


Figure F7. Surface Waters and Wetlands Mapped Within the Study Area – Central

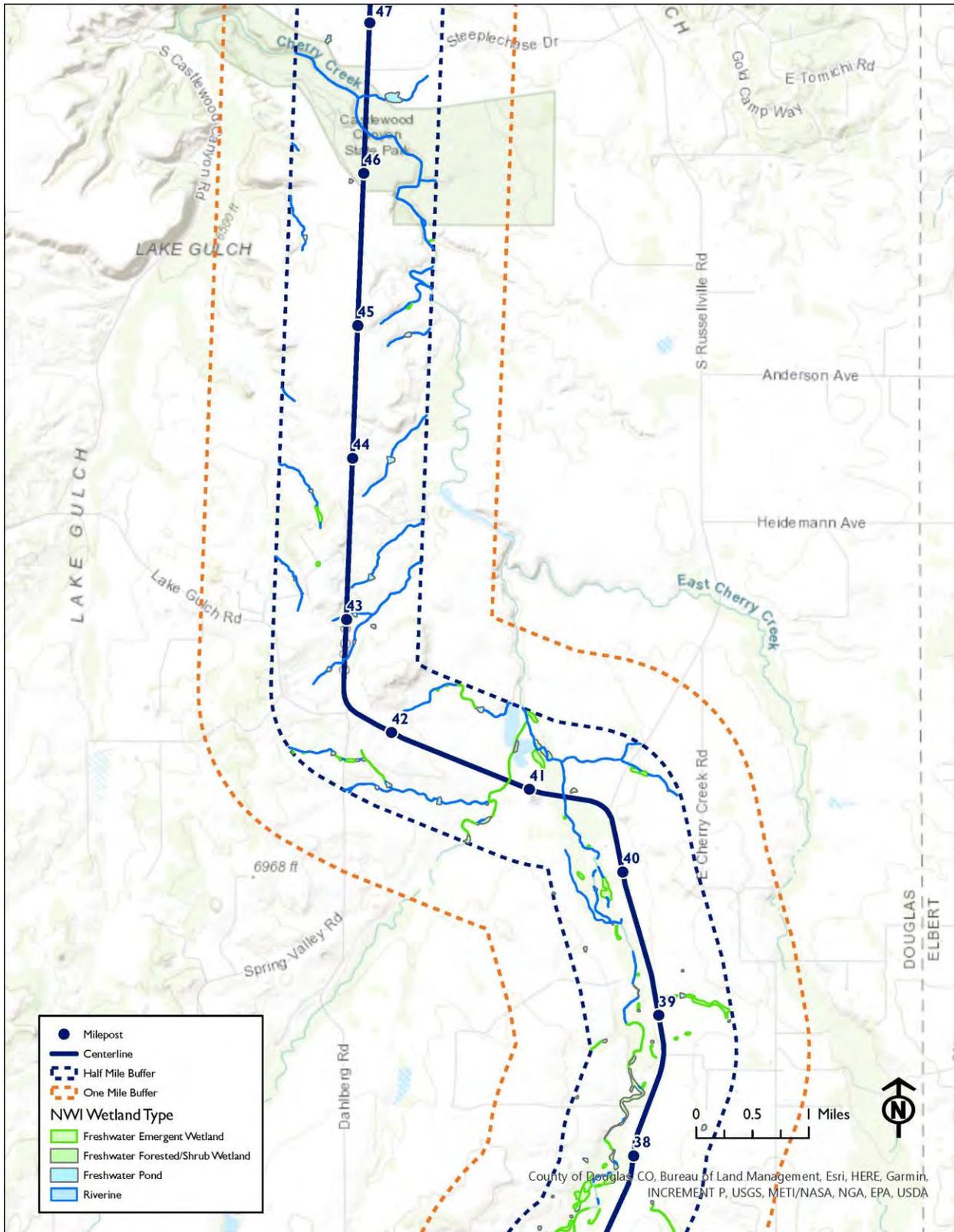
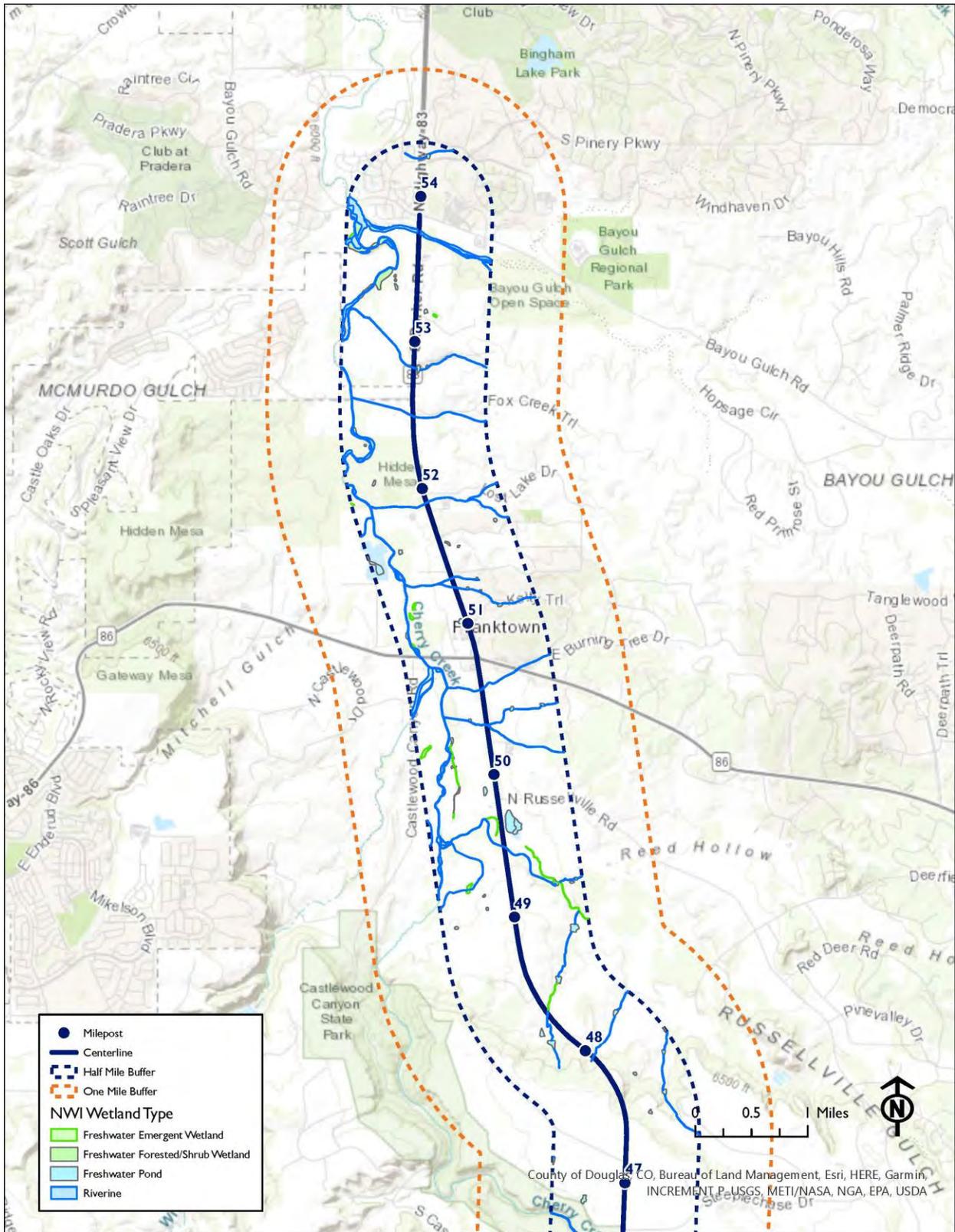


Figure F8. Surface Waters and Wetlands Mapped Within the Study Area – North



Elk Creek

The NWI maps Elk Creek as a riverine, intermittent streambed that is seasonally flooded (R4SBC) (USFWS, 2021a). The creek flows to the northeast where it joins West Cherry Creek. Drone footage shows Elk Creek is wide and heavily vegetated with no distinct channel within the ROW.

Crowfoot Creek

Crowfoot Creek is mapped by the NWI as palustrine emergent wetland with persistent vegetation and is seasonally flooded (PEM1C) (USFWS, 2021a) The creek flows to the northeast where it joins West Cherry Creek. In drone footage, Crowfoot Creek exhibits vegetation but there does not appear to be a distinct channel with flowing water.

West Cherry Creek and Tributaries

West Cherry Creek meanders as it flows to the north, and various tributaries flow through the study area to join the creek. West Cherry Creek and East Cherry Creek join (beyond the study area) to become Cherry Creek. Drone footage shows the channel of West Cherry to be vegetated and not distinct. The portion that flows under a bridge that conveys SH 83 over the creek has an open, unvegetated channel. Drone footage was not taken of the unnamed tributaries of West Cherry Creek.

Antelope Creek

Antelope Creek flows north into West Cherry Creek and is mapped on the NWI as a PEM1C wetland. CDOT has performed mitigation for Preble's meadow jumping mouse (*Zapus hudsonius preblei*; *Preble's*) at this location which is critical habitat for the species. Mitigation included planting herbaceous wetland plants and riparian shrubs. The mitigation plantings are readily apparent on drone footage.

Cherry Creek and Tributaries

Cherry Creek flows to the north, and various tributaries flow through the study area to join the creek. Cherry Creek is a perennial stream that is mapped as riverine, lower perennial with an unconsolidated bottom that is permanently flooded (R2UBH) (USFWS, 2021a). The tributaries are mapped by the NWI as R4SBC (USFWS, 2021a). SH 83 is carried over Cherry Creek as it flows through Castlewood Canyon via a bridge. Drone footage shows Cherry Creek flowing in an open channel with shrubby and herbaceous vegetation on both banks. Drone footage of one of the tributaries shows heavily vegetated shrubs and no distinct channel.

Russellville Gulch and Tributaries

Russellville Gulch is a tributary to Cherry Creek, generally flowing to the northwest to join Cherry Creek west of the study area. Russellville Gulch is mapped as a R4SBC stream (USFWS, 2021a). Drone footage shows the gulch to be densely vegetated by willows east of the highway and willows, other shrubs, and trees on the west side. A distinct channel is not visible on drone footage.

Barney Bird Reservoir Number 1

This water body is located east of the highway. It is mapped as palustrine, aquatic bed, semi-permanently flooded, and has been diked or impounded (PABFh) (USFWS, 2021a). Although this feature is mapped as an impoundment, and is named as a reservoir, aerial imagery shows a grassy area, and surface water is not apparent.

Bayou Gulch

Bayou Gulch is at the northern end of the study area. The gulch flows to the west into Cherry Creek. Bayou Gulch is mapped on the NWI as a riverine intermittent streambed that is temporarily flooded (R4SBA) (USFWS, 2021a). Drone footage shows the channel as dry and appears to be vegetated with a sparse mix of upland and facultative plant -species. The bottom of the channel

is sandy, and there is a wide floodplain vegetated with upland plants. The bridge conveying SH 83 over the gulch spans the channel and the floodplain area.

THREATENED, ENDANGERED, AND SPECIAL-STATUS SPECIES

FEDERAL AND STATE REGULATIONS/POLICIES

Several federal and state regulations are in place to protect certain plant and animal species and their habitats. Federal- and state-listed threatened and endangered species (TES), as well as other special-status (sensitive) species discussed in this technical memorandum are protected by the following federal and state regulations and policies:

- ***The Endangered Species Act of 1973 (ESA)*** – The ESA protects federally listed plant and animal species with the goal of ensuring their long-term survival and recovery (16 United States Code [USC] §1531-1543). Section 7 of the ESA charges federal agencies to aid in the conservation of listed species and requires the agencies to ensure that their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats [Section 7 (a) (1 and 2)]. The ESA is administered by the US Fish and Wildlife Service (USFWS).
- ***The Colorado Nongame, Endangered, and Threatened Species Conservation Act*** – The Conservation Act provides some protection within the state for listed species and establishes the State of Colorado’s intent to protect endangered, threatened, and rare species (Colorado Revised Statutes Annotated § 33-2-101-108). Under the Act, Colorado law provides for the acquisition of habitat for species listed, as well as other protective measures. Colorado Parks and Wildlife (CPW) is responsible for listing state species.
- ***2009 Impacted Black-tailed Prairie Dog (Cynomys ludovicianus) Policy*** – This is based on the policies of any municipal, state, and/or federal agency, and the most stringent policy for a given area must be followed. In the CDOT ROW, the applicable policies that will be followed for implementation of any improvements in the corridor are the 2009 *CDOT Impacted Black-tailed Prairie Dog Policy* and the *Black-Tailed Prairie Dog Relocation Guidelines* or the most recent version thereof (CDOT, 2009; CDOT 2002). In Douglas County open space(s), the applicable policy that will be followed is the *Douglas County Prairie Dog Conservation Policy*, which is discussed further in this memo (Douglas County, 2009).
- ***State Wildlife Action Plan*** – Under this plan, “The Commerce, Justice and State Appropriations Act of Fiscal Year 2001, Title IX, Public Law 106-553 created the Wildlife Conservation and Restoration Program (WCRP), designed to provide funding for the conservation needs of wildlife, as well as for education and wildlife-related recreation. The WCRP was only funded for one year. A second act, the Department of the Interior and Related Agencies Appropriations Act of 2002, Public Law 107-63, Title 1, created a State Wildlife Grants program (SWG), which provides annual funding for conservation of wildlife and wildlife habitats. The SWG requires that each state prepare and adopt a State Wildlife Action Plan (SWAP) to remain eligible for SWG funding. This SWAP meets Colorado’s obligation under this law” (CPW, 2015a).
- ***The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act*** – Both Acts protect migratory birds, nests, and nesting activities that could be disrupted or destroyed during such construction activities as clearing vegetation, moving earth, and demolishing bridges (6 USC § 703–712). The USFWS administers these requirements.

- **Colorado Senate Bill (SB) 40** – SB 40 requires that state agencies obtain certification from CPW when the agency plans construction in any SB 40 jurisdictional stream, stream bank, or tributary (33-5-101-107, *Colorado Revised Statutes [CRS] 1973* as amended). Any portions of the project that will impact a SB 40 jurisdictional stream will require SB 40 Certification, including mitigation measures designed to improve fish and wildlife habitat.
- **Shortgrass Prairie Initiative** – The FHWA, USFWS, CPW, CDOT, and The Nature Conservancy have developed a Memorandum of Agreement to mitigate anticipated impacts to the shortgrass prairie ecosystem. Mitigation will be achieved at offsite locations and through the implementation of onsite BMPs.

LOCAL REGULATIONS/POLICIES

Douglas County considers biological resources through various policies and plans. TES and other sensitive species discussed in this memo are addressed in the following local regulations and policies:

- **Douglas County's 2040 Comprehensive Master Plan** – Section 9 - Wildlife, proposes numerous policies and objectives to allow for development while minimizing impacts to wildlife, wildlife habitat, and wildlife movement (Douglas County, 2019).
- **Douglas County's 2030 Parks, Trails, and Open Space (OS) Master Plan** – In Section 5, Goals, Objectives, and Policies, Goal OS 3 proposes objectives (such as objectives OS 3D-F) to improve, protect, and manage wildlife and wildlife habitat located in county open space through conservation and management practices (Douglas County, 2012).
- **Habitat Conservation Plan (HCP) and Environmental Assessment for Douglas County and the Towns of Castle Rock and Parker** – This is a specific HCP that pertains to Preble's meadow jumping mouse (*Zapus hudsonius preblei*), a species listed as threatened at the state and federal level (Douglas County, 2006).
- **Douglas County Prairie Dog Conservation Policy** – This policy outlines BMPs for black-tailed prairie dog conservation on Douglas County-owned open space and park lands (Douglas County, 2009).

RESEARCH AND EVALUATION METHODS

The study area encompasses the SH 83 ROW between MPs 30-54. A site visit was not conducted for TES and other sensitive species; therefore, Pinyon evaluated the study area for said species and their habitat using publicly available data, including:

- The USFWS online Information, Planning and Conservation (IPaC) System for federally listed threatened and endangered species (USFWS, 2021b)
- USFWS Ecological Services, Mountain-Prairie Region website (USFWS, 2021c)
- CPW and Colorado Natural Heritage Program (CNHP) websites for state-listed endangered, threatened, and sensitive species, as specified by USGS quadrangle (CPW, 2021; CNHP, 2021)
- USFWS, CPW, and CDOT websites for migratory birds (USFWS, 2021d; CPW, 2021, CDOT, 2017)
- USFWS Wetland Mapper for stream and wetland habitat (USFWS, 2021a)
- Aerial imagery (Google Earth, 2021)

EXISTING CONDITIONS

The study area is in a rural area, mainly consisting of scattered residential properties and private lands. Castlewood Canyon State Park, as well as multiple Douglas County Open Space properties (e.g., Bayou Gulch Bridges [two], Hidden Mesa, Lincoln Mountain, and Prairie Canyon Ranch) also occur along and/or are adjacent to the SH 83 corridor. The Town of Franktown is located on the northern half of the study area.

Based on aerial imagery (e.g., Google Earth), several streams (e.g., Cherry Creek and several of its tributaries) are located within and/or adjacent to the study area. Although a site visit was not conducted for the Project, imagery suggests that the area consists of upland, riparian, and wetland habitats. Some vegetation visible on Google Earth include medium-to-short grasses (e.g., smooth brome [*Bromus inermis*]), including some hydrophytic vegetation near/along streams (e.g., reed canary grass [*Phalaris arundinacea*], cattail [*Typha* spp.]), shrubs (e.g., Gambel oak [*Quercus gambelii*], coyote willow [*Salix exigua*]) and trees, such as Ponderosa pine (*Pinus ponderosa*); all-of-which provide suitable habitat for many species of wildlife.

FEDERAL AND STATE-LISTED SPECIES

Based on a review of the IPaC System, CPWs Threatened and Endangered List, and the CNHP Tracking List, there are 7 federally listed species, 1 federal candidate species, and 15 state-listed species with the potential to occur in, or be impacted by, projects in the study area – some federally listed species are also considered to be state-listed species (USFWS, 2021b; CPW, 2021; and CNHP, 2021). One federally listed species, Preble's meadow jumping mouse, has designated critical habitat within and/or adjacent to the study area (USFWS, 2018).

Of the federally listed species, four are included because they occur downstream of the study area and could be impacted by projects that result in water depletions to the South Platte River or its tributaries (e.g., Cherry Creek): the pallid sturgeon (*Scaphirhynchus albus*), Piping Plover (*Charadrius melodus*), western prairie fringed orchid (*Platanthera praeclara*), and Whooping Crane (*Grus americana*). Improvements may have elements that could cause depletions to the South Platte River basin, including using water as a dust palliative. To address the effects water depletions may have on federally listed, downstream species that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program (SPWRAP). CDOT is cooperating with the FHWA regarding depletions to the South Platte River and/or its tributaries. In response to the need for formal consultation for the water used from the South Platte River basin, FHWA has prepared a Programmatic Biological Assessment (PBA) that estimates total water usage through 2032. Water used for this project would need to be reported to the USFWS at the year's end, after the completion of the project, as per the PBA. As water depletion impacts to the four downstream species have already undergone consultation with the USFWS under the PBA, these four species are not discussed further.

General habitat requirements for federally listed species, federal candidate species, and state-listed species with potential to occur within the study area are provided in **Table F3**.

Table F3 Federal and State Listed Species Identified for the Study Area

Common Name	Scientific Name	Status	Habitat
<i>Mammals</i>			
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	SC	Occurs in the Colorado Front Range and inhabits grassy plains or prairies.
Douglas County Pocket Gopher (subspecies of the Northern Pocket Gopher)	<i>Thomomys talpoides macrotis</i>	SC	Inhabits a variety of habitat types, including deep tractable soils, heavily compacted soils, and shallow gravels. Known to occur in Arapahoe, Douglas, and Elbert counties. The Douglas County pocket gopher tolerates a variety of soil types.
Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	FT, ST	Occurs in the Colorado Front Range along permanent and/or intermittent streams in areas with herbaceous cover and adequate cover of shrubs and trees. Occupied habitat/range and federally designated critical habitat are shown in Figure F9.
Swift Fox	<i>Vulpes velox</i>	SC	Prefer open, sparsely vegetated short- and mixed-grass prairie, where visibility and mobility are unimpeded.
Townsend's Big-eared Bat (subspecies)	<i>Corynorhinus townsendii pallescens</i>	SC	Utilize coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, and active agricultural areas. Often found in areas near caves.
<i>Birds</i>			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	Habitat includes reservoirs and rivers. In winter, Bald Eagles may also occur locally in semi-deserts and grasslands, especially near prairie dog towns.
Burrowing Owl	<i>Athene cunicularia</i>	ST	Primarily found in grasslands and mountain parks, usually in or near burrows that have been started by colonies of burrowing mammals (such as black-tailed prairie dogs). Habitat also includes areas with openness, short vegetation, and well-drained soils (for example, steppes, prairies, and agricultural lands).
Plains Sharp-tailed Grouse	<i>Tympanuchus phasianellus jamesi</i>	SE	This species uses rolling hills with scrub oak thickets and grassy glades. As an equivalent to sagebrush, they use scrub oaks, serviceberries, and willows. These brushy sites provide critical winter shelter and food sources. Typically, the plains grouse occupies medium to tall grasslands for courtship and nesting.
<i>Amphibians</i>			
Northern Leopard Frog	<i>Lithobates pipiens</i>	SC	Found near springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes: usually they are in or near permanent water with rooted aquatic vegetation. In summer, they commonly inhabit wet meadows and fields.
<i>Reptiles</i>			
Common Garter Snake	<i>Thamnophis sirtalis</i>	SC	Use a wide variety of habitats, including uplands, marshes, ponds, and the edges of streams.
<i>Fish</i>			
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	FT, ST	Known in select headwater streams in the Arkansas and South Platte River drainages.

			Adapted to cold, clear, oxygenated streams of moderate gradient.
Brassy Minnow	<i>Hybognathus hankinsoni</i>	ST	Occurs in cool water with abundant aquatic vegetation and a gravel substrate with organic sediment. This species is known to occur in major tributary streams of the foothills and plains.
Common Shiner	<i>Luxilus cornutus</i>	ST	Occurs in streams of moderate gradient with cool, clear water and gravelly bottoms shaded by brush or trees.
Northern Redbelly Dace	<i>Chrosomus eos</i>	SE	Native to the South Platte River Basin, and recently found in the Plum Creek drainage, south of Denver. Requires vegetation and slow flowing streams. The pond where the fish was documented has a sand substrate along the shoreline with submerged vegetation covering a substrate of decomposing material in the middle.
Iowa Darter	<i>Etheostoma exile</i>	SC	Occurs in cool, clear water over sand or organic matter and vegetated substrate. Populations in Colorado are found in lakes over mats of vegetation, and in streams with vegetation along the bank; populations are only known to occur in the north-central and northeastern part of the state.
<i>Plants</i>			
Ute Ladies' -Tresses Orchid	<i>Spiranthes diluvialis</i>	FT	Occurs in sub-irrigated alluvial soils along streams and open meadows on floodplains including riparian areas.
<i>Insects</i>			
Monarch Butterfly	<i>Danaus plexippus</i>	FC	Found within a variety of terrestrial habitats that feature their obligate larval host plant, milkweed (<i>Asclepias</i> spp.).

Sources: USFWS, 2021b; USFWS, 2021c; CNHP, 2021; CPW, 2021; CPW, 2019; USGS, 2021; and NatureServe, 2021

Notes:

FT = federally listed as threatened

FC = federal candidate species

SE = state-listed as endangered

ST = state-listed as threatened

SC = state species of concern (not a statutory category)

In addition to the federal and state-listed species included in **Table F3**, CPW tracks other species that have a high priority for conservation. The State Wildlife Action Plan outlines and prioritizes conservation needs by identifying Species of Greatest Conservation Need, which are grouped into two tiers based on conservation priority (CPW, 2015a). Species that have been identified as the highest conservation priority are grouped into Tier 1. All Tier 1 species are designated as nongame wildlife and therefore have legal protection under the Colorado Nongame, Endangered, and Threatened Species Conservation Act (CPW, 2015a; CPW, 2015b). There are several Tier 1 species that have the potential to occur in the study area. These additional species are not discussed herein; however, project-related measures designed to avoid, minimize, or mitigate impacts to federally and state-listed species would/should benefit these other high-priority species.

Of the species noted in **Table F3**, most are not expected to occur in the study area because the study area lacks appropriate suitable habitat. Species with potential to occur in/near the study area are discussed below.

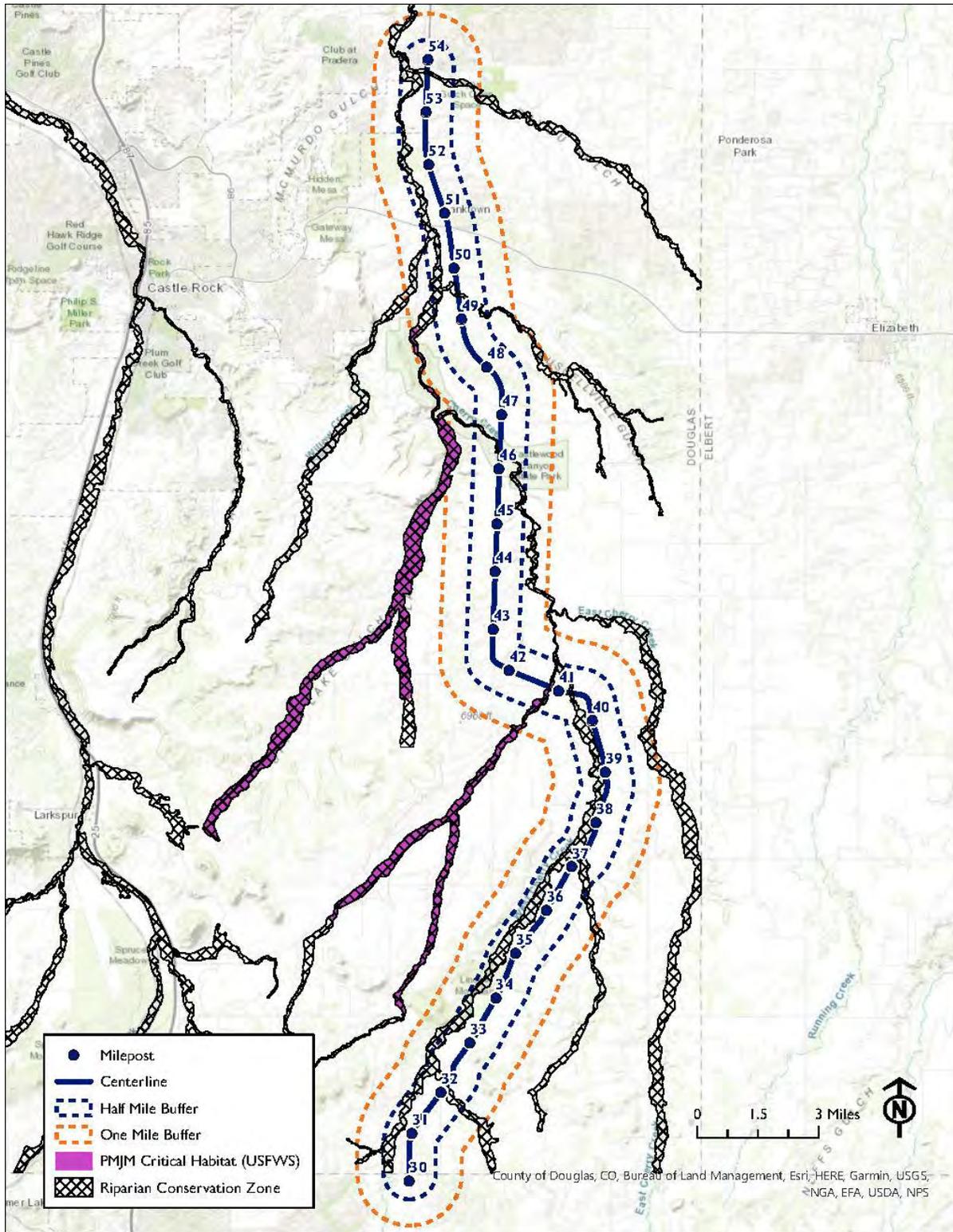
Preble's Meadow Jumping Mouse

The Preble's meadow jumping mouse (Preble's) is a federal and state-listed threatened species that lives and reproduces in and near riparian areas located within grassland, shrubland, forest, and mixed vegetation types where dense herbaceous or woody vegetation occurs near the ground level, where available open water exists during their active season (i.e., non-hibernation season, usually seven to eight months between September or October and May), and where there are adjacent upland habitats of sufficient width and quality for foraging, hibernation, and refuge from catastrophic flooding events (USFWS, 2021c). The study area is located within the overall range for the species and suitable habitat is expected to occur within it. The study area contains mapped occupied and critical habitats within and adjacent to the study area (USFWS, 2021c). Several positive capture records also occur along/near the SH 83 corridor (USFWS, 2018). Preble's are expected to occur in riparian areas and surrounding upland habitats (e.g., upland shrublands, upland grasslands) associated with the floodplains (within 300 feet of the 100-year floodplain) of the following streams within/near the study area:

- Antelope Creek – critical habitat occurs within the study area
- Cherry Creek – critical habitat occurs adjacent (west) to the study area; occupied habitat occurs along the creek adjacent/outside of the study area; Preble's were trapped in multiple locations outside of the study area (east and west of SH 83) along the creek in 1998, 1999, and 2015
- West Cherry Creek – occupied habitat occurs along the creek and extends into portions of the study area (approximately MPs 37.75 – 40); Preble's were trapped just west of SH 83, near MP 39 in 1998
- Russellville Gulch – occupied habitat occurs along the gulch (west of the study area near the Cherry Creek confluence)
- Bayou Gulch – occupied habitat occurs within the study area
- Crowfoot Creek – creek provides potential suitable habitat
- Elk Creek – creek provides potential suitable habitat

Per the Habitat Conservation Plan and Environmental EA for Douglas County and the Towns of Castle Rock and Parker (described in the Local Regulations/Policies section above), incidental take permit holders (i.e., Douglas County and the Towns of Castle Rock and Parker) have received incidental take authorization (for Preble's only) for construction and/or maintenance related activities that fall within the designated Riparian Conservation Zone (RCZ). The RCZ includes areas mapped by Douglas County where potential Preble's habitat occurs. The streams (and their associated habitats) listed above are mapped within the RCZ. The USFWS "considers areas within the RCZ to be an approximation of potential habitat for the mouse on non-Federal lands within Douglas County...critical habitat and the RCZ overlap but they are distinct" (Douglas County, 2021b). Per the Douglas County HCP, "activities occurring outside the RCZ occur outside of Preble's meadow jumping habitat and will not require ESA compliance for potential impacts to Preble's" (Douglas County, 2006). **Figure F9** shows mapped critical habitat for Preble's, as well as the RCZ boundary within/near the study area.

Figure F9 Preble's Meadow Jumping Mouse Map



Source: USFWS, 2021c; Douglas County, 2021

Ute Ladies'-Tresses Orchid

The Ute ladies'-tresses orchid (*Spiranthes diluvialis*) is a federally listed threatened species that occurs at elevations below 6,500 feet in wetland and riparian habitat, including moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes (USFWS, 2021c; NatureServe, 2021). Generally, the preferred vegetative cover for the Ute ladies'-tresses orchid is relatively open; dense overgrown sites are not conducive to establishment of the species. Where the Ute ladies'-tresses orchid is found, soils are typically alluvial deposits of sandy, gravelly material that are saturated to within 18 inches of the surface for at least part of the growing season. Ute ladies'-tresses orchid is found in association with several plant species including creeping bentgrass (*Agrostis stolonifera*), reed grass (*Calamagrostis spp.*), great blue lobelia (*Lobelia siphilitica*), blue-eyed grass (*Sisyrinchium spp.*), goldenrod (*Solidago spp.*), swamp verbena (*Verbena hastata*), swamp milkweed (*Asclepias incarnata*), slenderleaf false foxglove (*Agalinis tenuifolia*), Canada thistle (*Cirsium arvense*), arrowgrass (*Triglochin spp.*), and horsetail (*Equisetum spp.*) (NatureServe, 2021). The Ute ladies'-tresses orchid has not been documented within Douglas County; however, based on a desktop assessment, the study area may contain wet meadow and/or riparian habitat suitable for Ute ladies'-tresses orchid, specifically along Cherry Creek, West Cherry Creek, Antelope Creek, and Elk Creek (NatureServe, 2021).

Monarch Butterfly

The Monarch Butterfly (*Danaus plexippus*) is a federal candidate species with potential to occur in the study area. The species can be found within a variety of terrestrial habitats that feature their obligate larval host plant, milkweed (*Asclepias spp.*). Per the USFWS, "Monarch butterflies are one of the most recognizable and troubled pollinators in the nation, with a 90% decline in overwintering numbers in Mexico's forests over the past two decades. Every year they migrate thousands of miles spanning multiple generations from Mexico, across the US, to Canada. Along the way they rely on milkweed as food for larvae, rest areas, and a place to lay eggs. The loss of milkweed is having harmful impacts on Monarchs" (USFWS, 2021c). Monarch butterflies migrate during the spring, summer, and fall months, with the largest migration occurring through Colorado in the fall (approximately mid-August – October) (USFWS, 2021c). Although most migration activities in Colorado occur in the southeast portion of the state, summer breeding areas are known to occur throughout Colorado (NRCS and USFWS, 2016). No overwintering areas for this species occur in Colorado.

Based on a desktop assessment, milkweed has potential to occur throughout the study area; therefore, the Monarch butterfly may occur throughout the study area during the non-winter months.

Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*) is a state species of concern with potential to occur in the study area. Per CPW data, Bald Eagle winter range occurs within and adjacent to much of the study area (CPW, 2019). A mapped Bald Eagle winter roost is located along Cherry Creek near Castlewood Canyon State Park, approximately one mile west of the study area; however, there is potential for Bald Eagles to utilize areas closer to the study area for roosting, foraging, etc (CPW, 2019). No mapped Bald Eagle nests are located within the study area; the closest mapped nest is located approximately 16 miles north of the study area (CPW, 2019). Bald Eagles may occasionally forage along streams or even food sources in upland habitats (e.g., prairie dog colonies), as well as use large trees in/near the study area for perching. In addition to being a state species of concern, Bald Eagles are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Burrowing Owl

The Burrowing Owl (*Athene cunicularia*) is a state-listed threatened species. Based on aerial review, prairie dog colonies may occur within/near the study area, which provides suitable habitat for Burrowing Owls (see below for additional black-tailed prairie dog information). Therefore, Burrowing Owls have potential to occur within/near the study area.

Black-tailed Prairie Dog

Black-tailed prairie dogs are a state species of special concern. Their populations have declined in recent years due to sylvatic plague; habitat conversion, fragmentation, and loss; and other anthropogenic reasons such as recreational shooting and systematic poisoning (CPW, 2021). Based on an aerial assessment, prairie dog burrows may occur adjacent (west) to the study area near the northern terminus of the study area (approximately MP 53.75).

Douglas County Pocket Gopher

The Douglas County pocket gopher (*Thomomys talpoides macrotis*) is a state species of concern that has potential to occur within the study area. Although the species inhabits a broad range of habitats, deep soils along streams are preferred; therefore, the Douglas County pocket gopher has potential to occur within habitat along all streams within and/or adjacent to the study area (NatureServe, 2021).

Northern Leopard Frog

The northern leopard frog (*Lithobates pipiens*) is a state species of concern with potential to occur within the study area. Northern leopard frogs are still locally common in some areas but have become rare statewide (CPW, 2021). Based on an aerial assessment, potential suitable habitat may occur within the study area, specifically, in areas associated with perennial streams and/or ponds (Cherry Creek, West Cherry Creek, and Antelope Creek).

Common Garter Snake

The common garter snake (*Thamnophis sirtalis*) is a state species of concern that can be found in/near marshes, ponds, and the edges of streams. The species is generally restricted to aquatic, wetland, and riparian habitats along the floodplains of streams, and is seldom found away from water or at isolated ponds (CPW, 2021). This species is active in shallow water and on land adjacent to water. Based on an aerial assessment, the common garter snake has potential to occur within habitat along all streams within and/or adjacent to the study area.

Brassy Minnow

The brassy minnow (*Hybognathus hankinsoni*) is a state-listed threatened species that has potential to be found in perennial streams (Cherry Creek, West Cherry Creek, and Antelope Creek) within the study area (CPW, 2021; USGS, 2021).

Common Shiner

The common shiner (*Luxilus cornutus*) is a state-listed threatened species that has potential to be found in perennial streams (Cherry Creek, West Cherry Creek, and Antelope Creek) within the study area (CPW, 2021; USGS, 2021).

MIGRATORY BIRDS

In addition to the federal and state-listed avian species discussed above, the project could impact other migratory bird species. The upland and riparian habitats in the study area likely provide high-quality foraging and nesting habitat for several species of migratory birds. Bridge structures (e.g., bridges and culverts) located within the study area also likely provide birds with suitable nesting habitat (e.g., Cliff and Barn Swallows [*Petrochelidon pyrrhonota* and *Hirundo rustica*]). Further, large trees are located within and adjacent to the study area. These trees likely provide suitable nesting habitat for raptors (i.e., birds of prey) and other non-raptor species.

SENATE BILL 40

Colorado SB 40 requires any agency of the state to obtain wildlife certification from CPW when the agency plans construction in “any stream or its bank or tributaries....” (33-5-101-107, CRS 1973 as amended). Although SB 40 emphasizes the protection of fishing waters, it acknowledges the need to protect and preserve all fish and wildlife resources associated with streams in Colorado (including federal and state-listed species habitat). CDOT and CPW have a Memorandum of Agreement to clarify when SB 40 certification is required and to describe the procedures to be followed by CDOT in securing this certification (CPW and CDOT, 2022). Streams that meet one or more of five criteria, as noted under the Memorandum of Agreement, fall under the jurisdiction of SB 40.

Per USGS maps, Antelope Creek, Cherry Creek, and West Cherry Creek are mapped as solid blue lines; therefore, they fall under SB 40 criteria (USGS, 2019a; USGS, 2019b; USGS, 2019c; USGS, 2019d; USGS, 2019e; USGS, 2019f). Other streams in the study area may still meet SB 40 criteria; however, field surveys would be necessary to determine this. If impacts occur to streams that fall under SB 40 jurisdiction, the project is subject to SB 40 consultation and applicable mitigation requirements.

SHORTGRASS PRAIRIE INITIATIVE

To protect listed threatened and endangered species, as well as proactively attempt to preserve declining species, CDOT entered into a Memorandum of Agreement with FHWA, USFWS, CPW, and The Nature Conservancy to create the Shortgrass Prairie Initiative to preserve shortgrass prairie and protect and manage habitat for species that are likely to be impacted by highway maintenance and improvement projects over the next 20 years. The Initiative identified an estimated 15,160 acres of shortgrass prairie habitat as potentially being impacted by future highway maintenance and improvement projects. As impacts from projects within the shortgrass prairie ecosystem occur, CDOT will maintain a database of these impacts, which will be reported to USFWS on an annual basis.

The Shortgrass Prairie Initiative generally applies to shortgrass prairie in eastern Colorado. Interstate-25 is the approximate western boundary of the Initiative’s area; therefore, the study area falls within the Initiative’s area. Anything outside of impervious surfaces (such as roads) would be considered habitat covered under the Shortgrass Prairie Initiative.

WILDLIFE MOVEMENT

STATE AND LOCAL REGULATIONS

- **Colorado Executive Order D2019011** – Requires that “*CDOT shall enable safe wildlife passage and reduce wildlife-vehicle collisions and incorporate consideration of big game migration into all levels of its planning process, to the greatest extent possible* (Polis, 2019)”. As part of the Executive Order, CDOT and Colorado Parks and Wildlife (CPW) entered into a Memorandum of Agreement to outline expectations for collaboration on certain transportation projects that may affect wildlife (e.g., identify priority areas for wildlife crossings along Colorado roadways).

DATA GATHERING

CDOT has provided carcass data, as well as traffic and safety data, to help identify Wildlife Vehicle Collisions (WVCs) occurring along SH 83 approximately between mile posts (MPs) 30-54 (CDOT, 2020a). Carcass data are collected by CDOT maintenance crews as they remove carcasses from roadways. Traffic and safety data are received from the Colorado Department of Revenue, where accident reports from state law enforcement agencies are compiled. Carcass data and traffic and safety data were requested for the same dates/period (2010-2021); however, maintenance data

was not collected along this stretch of SH 83 prior to 2016 and 2021 traffic and safety data has not yet been finalized. Therefore, data herein represents carcass data between 2016-2021 and traffic and safety data between 2010-2020. Pinyon Environmental, Inc. (Pinyon), analyzed the data provided to generate Project-specific information (e.g., created a map to show WVCs within the Project corridor; determined costs of WVCs within the Project corridor). Not all WVCs get reported; therefore, WVCs noted herein are an unknown percentage of the actual WVCs that have occurred within the SH 83 corridor.

EXISTING CONDITIONS

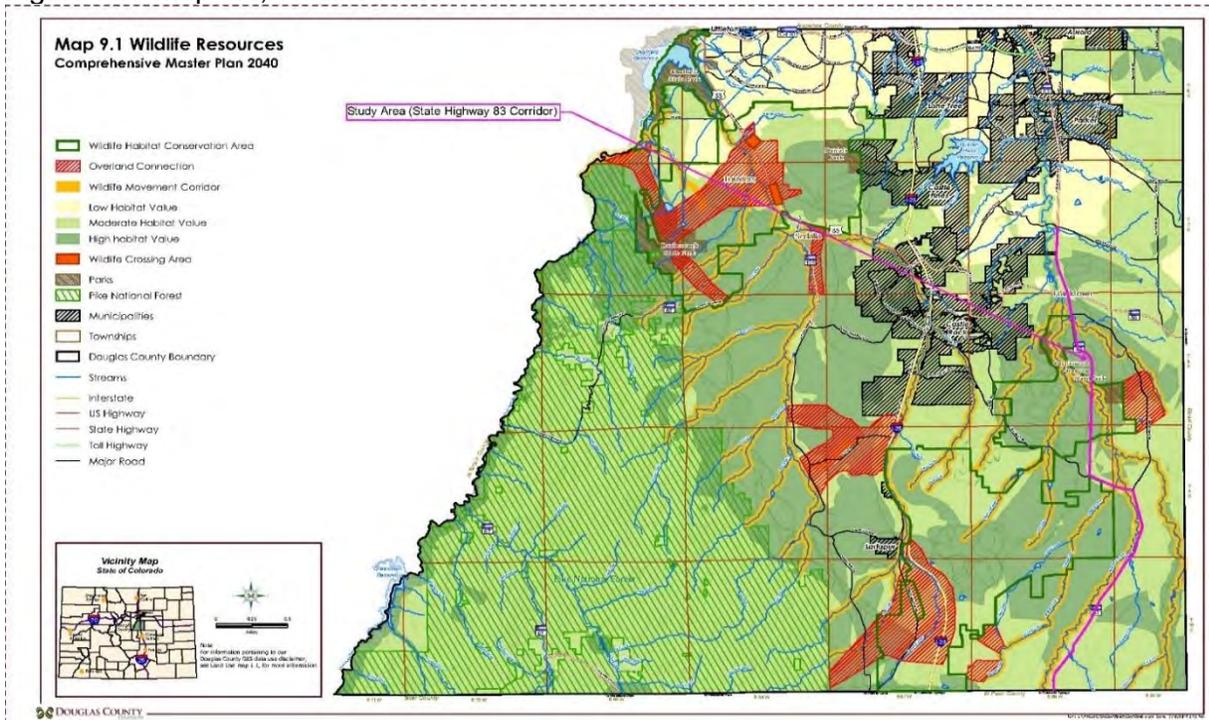
In addition to the summary of existing conditions provided in the *Threatened, Endangered, and Special-Status Species* section above, the following observations were made based on review of the readily available data and drone footage provided by CDOT.

Habitat within the landscape was once contiguous; however, due to the construction of SH 83 and other development, current conditions restrict the safe passage for most wildlife across/under SH 83. Because of this, WVCs occur somewhat frequently within the study area, presenting a challenge for both drivers and wildlife within the corridor.

Several culverts and few bridges are located within the study area. Given the flatter terrain/topography along much of the corridor, most culverts are likely medium-small sized, providing little-to-no opportunity for most large mammals (e.g., deer [*Odocoileus spp.*] and elk [*Cervus canadensis*]) to utilize them to cross under the highway. Wildlife exclusion fencing (wildlife fencing) does not occur within the study area.

Per the Douglas County 2040 Comprehensive Master Plan (CMP), protection of wildlife habitat and movement corridors is critical to the support of healthy wildlife populations (Douglas County, 2019). As shown on Map 9.1 Wildlife Resources in the CMP (displayed in **Figure E2** below), the study area bisects and is adjacent to defined wildlife movement corridors, is noted to have “high” and “moderate” wildlife habitat value and goes through a Wildlife Habitat Conservation Area (Castlewood Canyon State Park).

Figure F10 Map 9.1, Wildlife Resources



Source: Douglas County, 2019

WILDLIFE AND THEIR MOVEMENTS

Ungulates and other large mammals known to occur along SH 83 between MP 30-54 include elk, deer, black bear (*Ursus americanus*), and pronghorn (*Antilocapra americana*). Other smaller mammals anticipated and/or known to occur within the study area include coyotes (*Canis latrans*), red foxes (*Vulpes vulpes*), raccoons (*Procyon lotor*), North American beavers (*Castor canadensis*), and the federally threatened Preble’s meadow jumping mouse (*Zapus hudsonius preblei*), which is discussed above in the TES section of this report.

Most of the large mammal species known to occur within the corridor are believed to be resident herds. Wildlife movements occur throughout the corridor and across SH 83. Factors that drive wildlife to cross SH 83 are likely diversity in habitats (i.e., other sources of sanctuary, food, and water) and for mating and/or rearing purposes.

Most species that reside within the study area likely concentrate their movements along stream/drainage systems (e.g., Cherry Creek) and/or forested habitats. These areas typically provide wildlife with food and/or water, as well as better cover and sanctuary from predators. Also, many of these species are more active during twilight (i.e., dawn and dusk) and nighttime hours, making it difficult for drivers traveling at high speeds to see wildlife on or near the roadway.

Currently, there are few structures within the study area that may be large enough to provide safe passage for ungulates (e.g., bridges over Cherry Creek and Antelope Creek). Some medium-to-small sized culverts in the area may provide safe passage for bears and other smaller mammals (e.g., coyotes, rabbits, mice). Although bears are large mammals, they are known to use smaller structures for passage. However, without an effective system that combines the use of functional crossing structures with wildlife fencing, these bridges and culverts will not be as effective as they could be with the use of wildlife fencing.

WILDLIFE-VEHICLE COLLISIONS ON SH 83

Because the study area does not currently have an effective system for wildlife movement (i.e., wildlife crossings, fencing, escape ramps, and guards [wildlife system]), the majority of wildlife must cross SH 83 at-grade. CDOT collision data indicates that WVC are the second leading cause of crashes in the corridor. As part of the Project, certain areas of the SH 83 corridor may be expanded (e.g., adding turning lanes, widening shoulders); thus, permeability for wildlife movement will decrease further. Because of this, WVCs are likely to continue to occur and/or increase throughout the corridor, which endangers wildlife and drivers (and passengers) using the corridor. **Figure F11** shows WVCs that have occurred along the SH 83 corridor between MP 30-54.

Per CDOT data, between MPs 30 – 54, 320 WVCs were recorded between 2010 and 2021 (this number includes CDOT maintenance data [2016-2021] and traffic and safety data [2010 – 2020]) (CDOT, 2020a; CDOT, 2021). Of these WVCs, 169 were reported to law enforcement (i.e., traffic and safety data) which resulted in 33 human injuries and 200 property damage incidents (CDOT, 2020a). No human fatalities resulted in the reported incidents. Reported data within the study area are presented in **Table F4**.

Table F4 Number of Reported WVCs between MP 30 – 54, 2010 – 2021

Species Involved	Number of Animals Involved	Number of Vehicles Involved	*Crash Severity - Human			Totals
			Fatality	Injury	Property Damage Only	
Bear	1	1	0	0	1	1
Deer	137	138	0	21	169	123
Coyote	1	1	0	0	1	1
Elk	20	23	0	7	24	16
Pronghorn	6	6	0	5	5	5
Totals	165	169	0	33	146	179

Notes: *Crash Severity may be a higher number than animals and vehicles involved as some incidents included multiple passengers in vehicles

Per reported WVC data, deer were involved in the majority of the WVCs within the Project corridor (138 WVCs), followed by elk (23 WVCs) (CDOT, 2020a; **Table F4**). Per CDOT maintenance data, 108 deer carcasses and 15 elk carcasses were removed from the roadway (among other species) (CDOT, 2021).

WILDLIFE VEHICLE COLLISION COSTS

WVCs have direct and indirect costs in terms of driver safety, collision costs, and the ecological consequences for wildlife populations. As noted above, 169 WVCs were reported between MPs 30 – 54 between 2010 and 2020. **Table F5** provides direct costs of WVCs for the corridor between those dates. Information provided in **Table F5** is based on CDOT’s assessment of the average economic costs of vehicular collisions (CDOT, 2020b). These cost estimates include wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employers’ uninsured costs. Costs noted in **Table F5** are likely underestimated, as they do not include the costs of wildlife loss to society and to the health of the wildlife population. Further, not all WVCs get reported. Therefore, estimated costs noted are likely a percentage of the actual cost associated with WVCs in area.

Table F5 Direct Costs Associated with Reported WVCs between MPs 30 – 54 (2010 – 2020)

Crash Severity	Number of Crashes	Cost per Crash	Total Cost
Human Fatality	0	\$1,820,600	\$0
Human Injury (including disabling and non-disabling)	33	\$101,800	\$3,359,400
Property Damage Only	146	\$11,100	\$1,620,600
Totals	179	-	\$5,579,400

Sources: CDOT, 2020a; CDOT, 2020b

PARKS, OPEN SPACES, TRAILS, RECREATIONAL RESOURCES, SECTION 4(F) RESOURCES SECTION 6(F) RESOURCES INCLUDING BICYCLE AND PEDESTRIAN FACILITIES

The study area was evaluated for parks and recreational resources including trails, open spaces, Section 4(f), and Section 6(f) resources, along with bicycle and pedestrian facilities.

REGULATORY REVIEW AND BACKGROUND

- **Section 4(f) of the US Department of Transportation (DOT) Act of 1966** - Section 4(f) of the US Department of Transportation Act of 1966 (Section 4(f)) affords special protection to publicly owned parks; recreational resources; wildlife and waterfowl refuges; and publicly or privately-owned historic sites. This DOT regulation only allows for incorporation of a Section 4(f) property into a transportation use if there is no feasible and prudent alternative to doing so. This document discusses both Section 4(f)/non-historic resources (wildlife refuges and recreation facilities) as well as Section 4(f)/historic resources. Use of a Section 4(f) property occurs when:
 - (1) land is permanently incorporated into a transportation facility;
 - (2) there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose; or
 - (3) there is a constructive use (the project's impacts are so severe that the protected activities, features, or attributes of an adjacent property are substantially impaired).
- **Section 6(f) of the Land and Water Conservation Act** - Section 6(f) of the Land and Water Conservation Fund Act of 1965 (Section 6(f)) prohibits the conversion of property acquired or developed with grants from this fund to a non-recreational purpose without the approval of the National Park Service (NPS).

STUDY AREA AND DATA GATHERING METHODOLOGY

The study area was reviewed for the presence of open spaces, parks, trails, and other publicly accessible recreational facilities near the study area. The search consulted aerial imagery, DRCOG online maps, OTIS Section 6(f) online mapper, CPW's State Parks maps, CPW's Colorado Trail Explorer online mapper, Douglas County Division of Open Space and Natural Resources data, and Town of Castle Rock Parks, Open Space, and Trails map. The parks and recreation study area was based on the existing transportation infrastructure, buffered one mile from SH 83.

EXISTING ENVIRONMENTAL CONDITIONS

Multiple parks, open spaces, and trails are located within one mile of the study area. Bicycles and pedestrians use the existing trails, while bicycles also use SH 83 itself. Parks and recreation facilities are listed from south to north, as shown in **Figures F12, F13, and F14**.

Parks

- Castlewood Canyon State Park, on both sides of SH 83 between approximately MP 44 and MP 47, is a 2,291-acre state park that has hiking trails, picnic areas, rock climbing, and a natural amphitheater (**Figure F13**).

- Cherry Valley Elementary School, on the east side of SH 83 near MP 38, has a playground and ball courts primarily for school children’s use (**Figure F13**).
- Ponderosa High School, on the east side of SH 83 near MP 54, has multiple ball fields, running track, and tennis courts primarily for school use (**Figure F14**).
- Sagewood Middle School, on the east side of SH 83 near MP 54 just west of the Bayou Gulch Regional Park, has ball fields and a running track (**Figure F14**).
- Bayou Gulch Regional Park, on the east side of SH 83 near MP 54, is located within the 205-acre Bayou Gulch open space area. Amenities include trails, picnic shelters, playgrounds, dog park, skate park, and ball fields (**Figure F14**).
- Franktown Elementary School, on the east side of SH 83 near MP 50, has ball fields and a playground primarily for school children’s use (**Figure F14**).
- Villages at Castle Rock Metropolitan District neighborhood park is located on the west side of SH 83 between approximately MP 52 and MP 53. This 14-acre park has a pool, playground, and tennis courts (**Figure F14**).

Trails

- Several trails are located within the Lincoln Mountain Open Space described below between approximately MP 33 and MP 35, including the 2.4-mile Lincoln Mountain Trail Top Loop and the 3.9-mile Palmer Divide Trail, both of which are managed by the Douglas County Division of Open Space and Natural Resources (**Figure F12**).
- Several trails exist within Castlewood Canyon State Park between approximately MP 46 and MP 47, including the 2.6-mile-long East Canyon Trail that traverses SH 83, and the 1.5-mile-long Canyon View Nature Trail. Both trails are managed by Castlewood Canyon State Park via Colorado State Parks (**Figure F13**).
- The Hidden Mesa Trail segment near MP 52 is a 0.5-mile trail west of SH 83 that connects to the Cherry Creek Trail. Its trailhead is located just west of SH 83 and the trail is within the Hidden Mesa Open Space (**Figure F14**).
- The Bayou Gulch Cherry Creek Connector Trail is a 1.75-mile-long trail that extends on both sides of SH 83 just south of Bayou Gulch Road near MP 54. The trail is managed by Douglas County Division of Open Space and Natural Resources, and it connects the Cherry Creek Trail to the Bayou Gulch Regional Park (**Figure F14**).
- The Town of Castle Rock manages several short trail segments on the west side of SH 83 within the Cobblestone Ranch subdivision near MP 53 (**Figure F14**).
- The Cherry Creek Trail is a 45-mile-long regional trail that traverses multiple cities and jurisdictions. The segment near the study area is located west of SH 83 and is managed by the Douglas County Division of Open Space and Natural Resources. It does not cross SH 83 near the project area.

Open Spaces

- The Colorado State Land Board owns a one-square-mile open space parcel on the west side of SH 83 near MP 38, primarily used for agricultural/rangeland purposes (**Figures F12 and F13**).
- Lincoln Mountain Open Space, on the west side of SH 83 between approximately MP 33 and MP 35, is an 876-acre natural conservation area managed by Douglas County with trails and livestock grazing (**Figure F12**).
- Spring Valley School Open Space, on the west side of SH 83 near MP 32, is a 5.4-acre parcel managed by Douglas County for historic preservation purposes (**Figure F12**).
- Prairie Canyon Ranch Open Space, on the east side of SH 83 between approximately MP 44 and MP 46, is a 978-acre Douglas County open space managed as a working cattle ranch to preserve historic values and protect wildlife habitat. It is adjacent to Castlewood Canyon State Park and only open to the public by special event permit (**Figure F13**).

- High Prairie Farms Metro District manages several private open space parcels on the east side of SH 83 between approximately MP 54 and MP 55 (**Figure 14**).
 - 4.5-acre open space parcel with incidental uses.
 - 31-acre open space parcel used as a preserve and community separator.
 - 2.5-acre open space parcel with incidental uses.
 - 11.8-acre open space parcel used as a preserve.
- Three Douglas County Open Space parcels on the west side of SH 83 between approximately MP 53 and MP 54 (**Figure 14**):
 - 148-acre parcel that is used as a preserve.
 - 69-acre parcel on the east side of the Cherry Creek Trail that is used as a preserve. The Bayou Gulch Cherry Creek Connector Trail runs through this parcel.
 - 25-acre parcel on the east side of the Cherry Creek Trail that is used as a preserve.
- Bayou Gulch Open Space, on the east side of SH 83 between approximately MP 53 and MP 54, is a 205-acre open space and park with amenities such as trails, picnic shelters, playgrounds, and ball fields (**Figure F14**).
- Town of Castle Rock Open Space. on the west side of SH 83 near MP 53. is an 84-acre parcel within the Cobblestone Ranch subdivision (**Figure 14**).
- Town of Castle Rock Proposed Park Open Space, on the west side of SH 83 near the Cobblestone Ranch subdivision near MP 53, is a 201-acre parcel that the Town of Castle Rock will eventually use as a park (**Figure 14**).
- Hidden Mesa Open Space is a 1,200-acre Douglas County open space on the west side of SH 83 between approximately MP 51 and MP 53. It has a production orchard and picnic shelter and is bisected by Cherry Creek and the Cherry Creek Trail (**Figure F14**).
- Legacy Pines Open Space is a 203-acre open space managed by the Legacy Pines Homeowners Association on the east side of SH 83 near MP 52 for the use of neighborhood residents (**Figure 14**).
- Pfeifer Greenway Open Space is a Douglas County greenway on the west side of SH 83 near MP 51. The Cherry Creek Regional Trail traverses this 7-acre open space parcel, which also preserves important wildlife habitat along Cherry Creek (**Figure F14**).

Section 4(f)

For the purposes of this study all the trails and parks within the study area will be considered Section 4(f) resources. Open spaces are only considered Section 4(f) resources if they are publicly owned and function primarily for recreation, or wildlife/waterfowl refuge or management activities as documented in a master or management plan. Lands functioning primarily as open space but where recreation or refuge activities are secondary or incidental would not be considered Section 4(f) resources. Additionally, a portion of an open space may function primarily for recreation activities (e.g., picnic and camping areas, playgrounds, and dog parks) and would therefore be considered 4(f).

Section 6(f)

A portion of Castlewood Canyon State Park west of SH 83 has been encumbered by Land and Water Conservation Funds and is therefore a Section 6(f) resource (**Figures F13 and F14**).

Bike Crashes

Bike crashes have occurred along the extent of SH 83 within the study area, with a higher number of bike crashes historically located near Frankton up to Bayou Gulch Road (**Figure F15**).

Figure F12 Parks and Recreation Resources – South Section

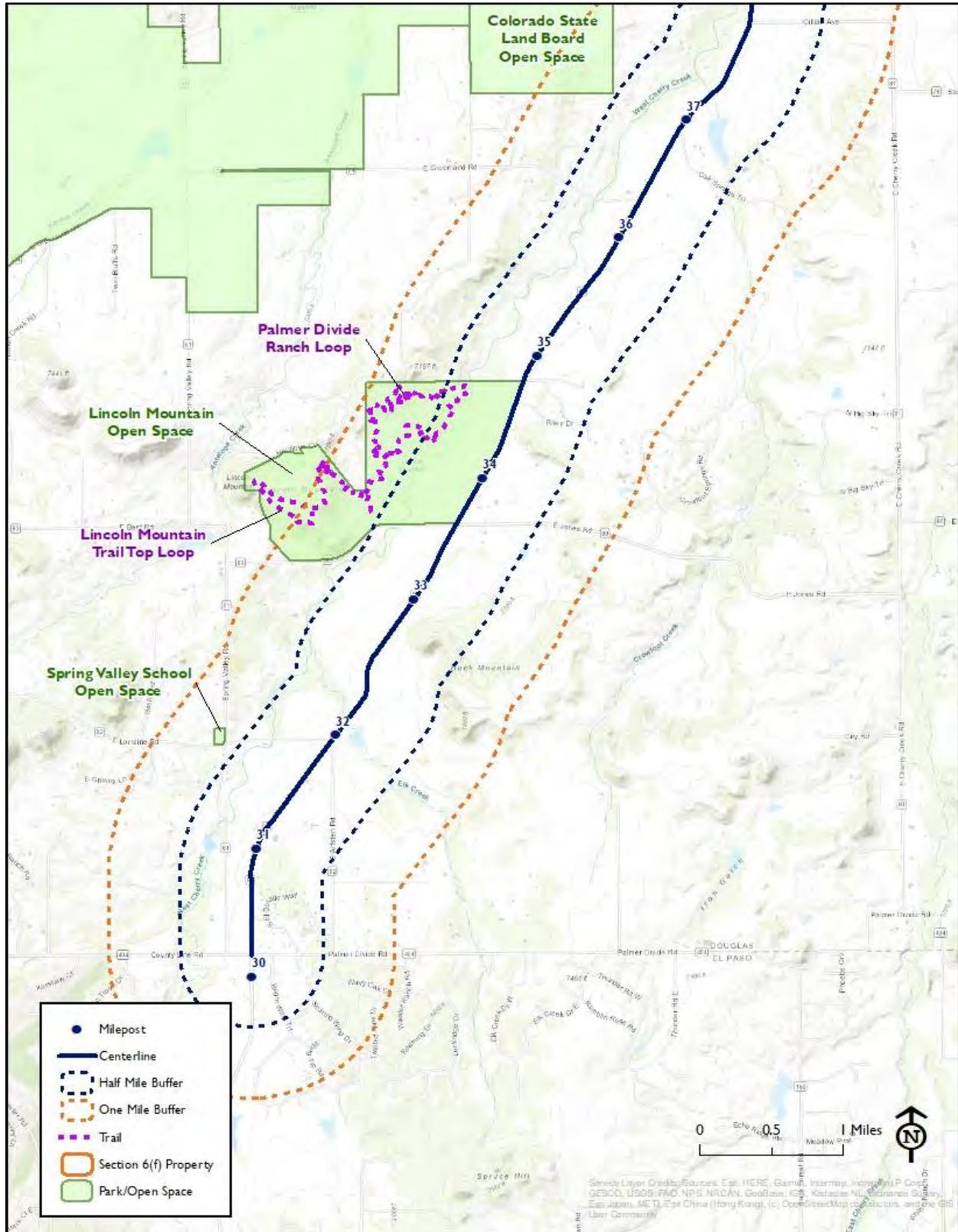


Figure F13 Parks and Recreation Resources – Central Section

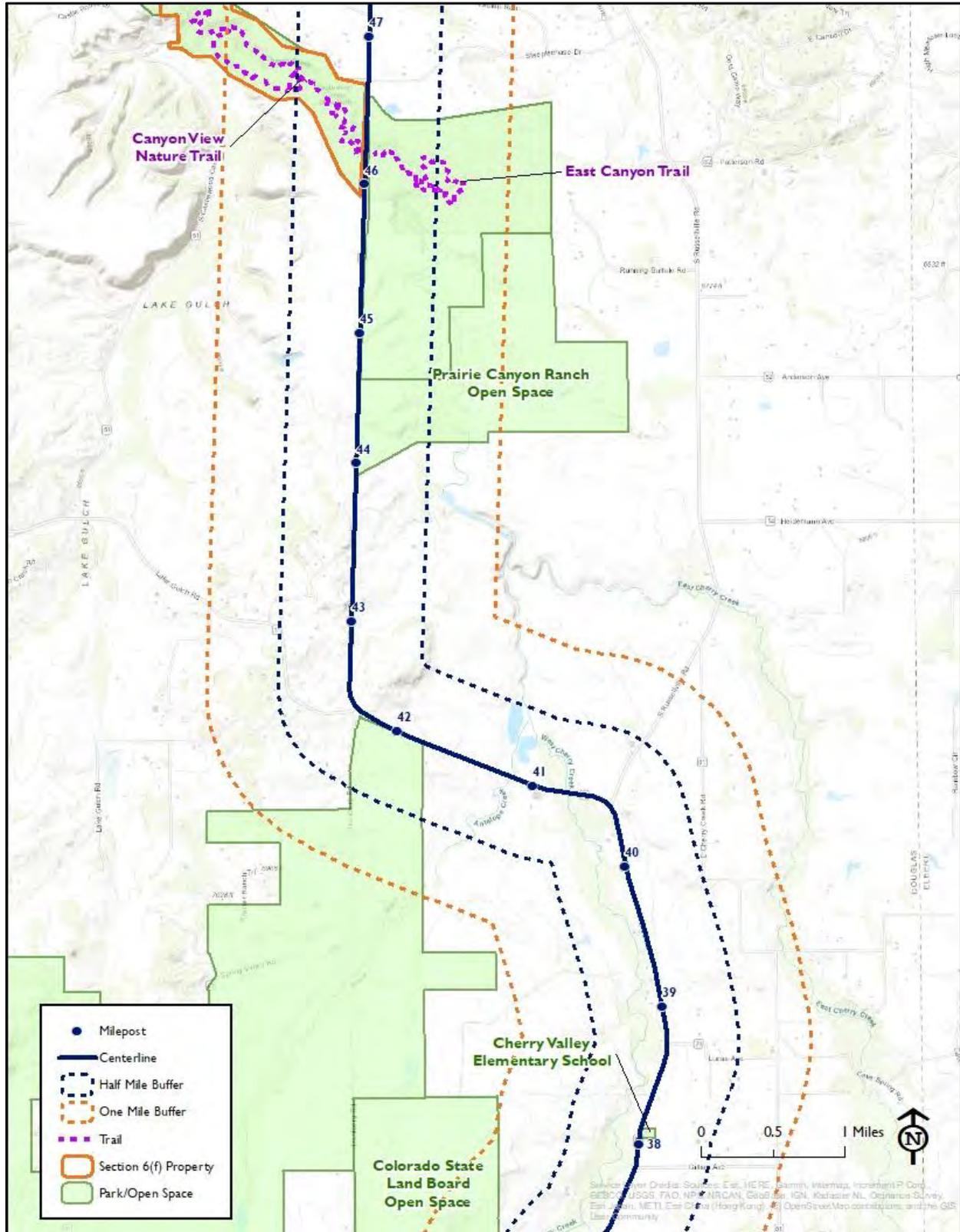


Figure F14 Parks and Recreation Resources – North Section

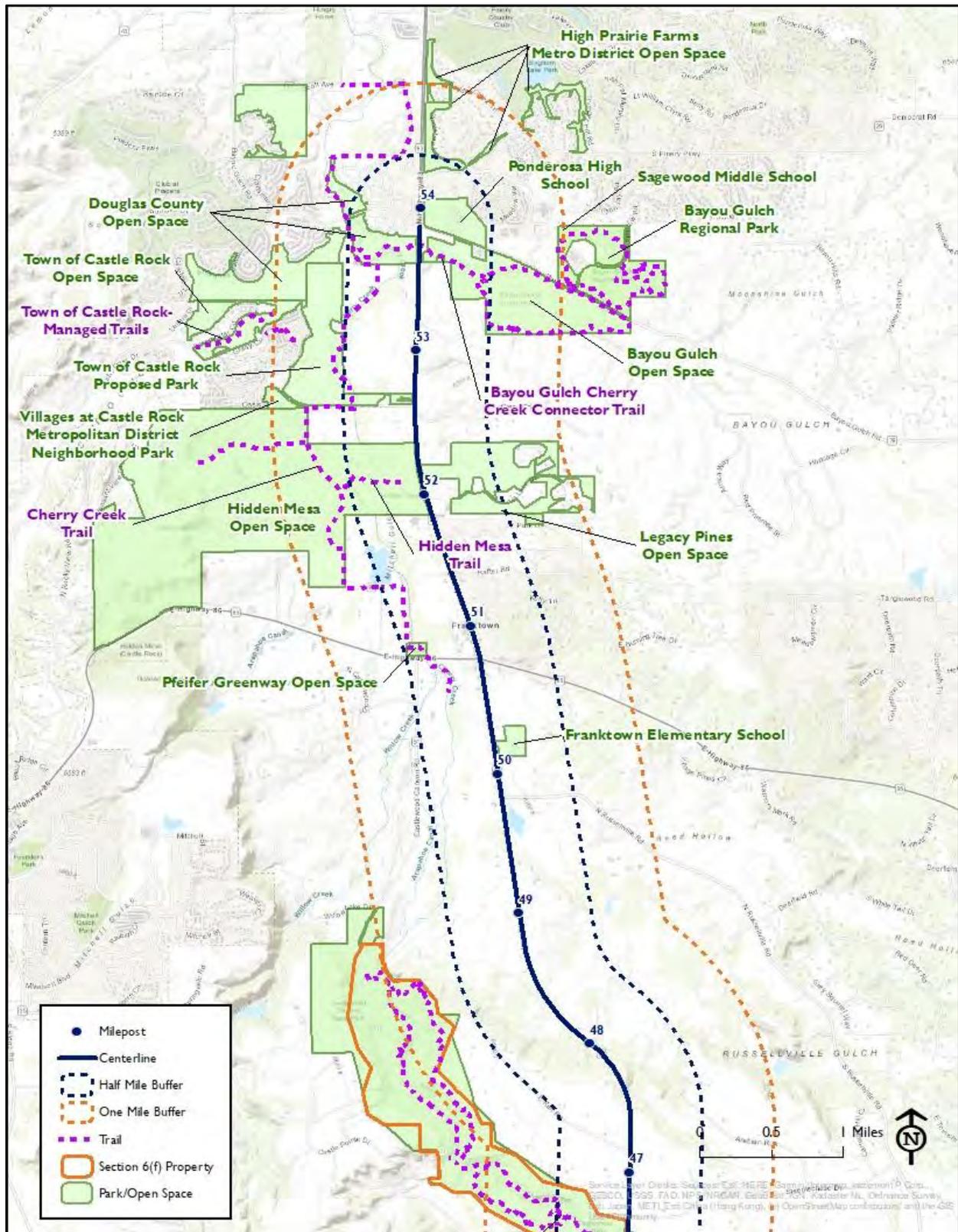
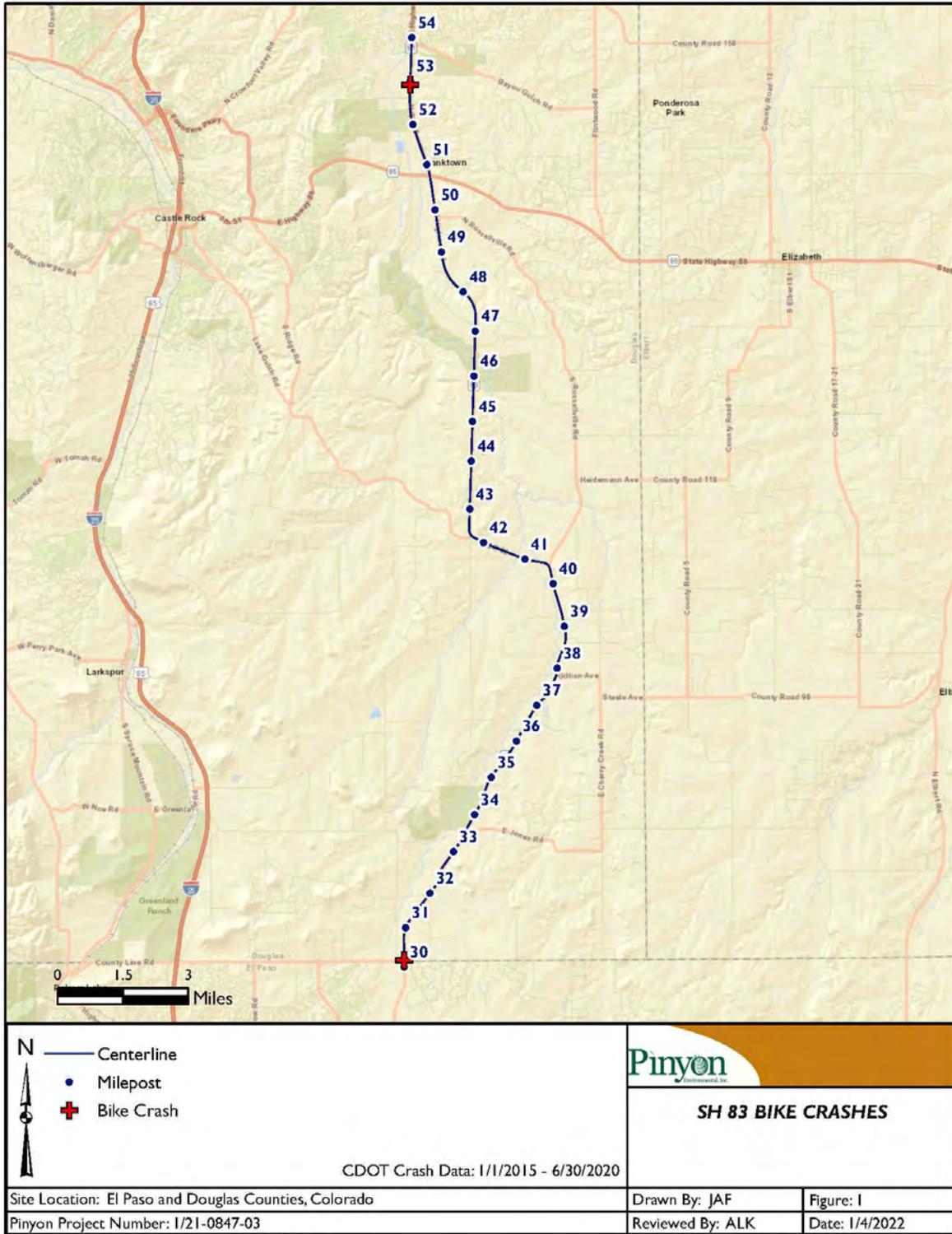


Figure F15 Bike Crashes



HISTORIC RESOURCES

Federal legislation requires that federal government agencies assess the impacts of their decisions and actions (undertakings) on historic properties before approving such actions. Historic properties are defined as any prehistoric or historic districts, sites, buildings, structures, or objects that are eligible for or already listed in the National Register of Historic Places (NRHP). Also included are any artifacts, records, and remains (surface or subsurface) that are related to and located within historic properties and any properties of traditional religious and cultural importance to Tribes. Historic properties are evaluated for NRHP eligibility based on criteria identified by the NPS and must retain sufficient integrity to convey historic significance. Historic resource evaluations typically use an age threshold of 50 years when identifying potentially eligible historic resources. Infrastructure projects often use 45 years as the year-built threshold to accommodate extended review as necessary while minimizing the need to reevaluate project impacts to individual resources. In some instances, resources determined to have exceptional importance that are less than 45 years old may be considered eligible to the NRHP.

Transportation projects review historic resources under Section 106 of the National Historic Preservation Act (NHPA) and Section 4(f) of the Department of Transportation Act, both passed in 1966; please refer to the parks and recreation section of this report for more discussion on Section 4(f). Historic properties associated with state actions are also evaluated under the Colorado Register of Historic Places Act (State Register Act), passed in 1975.

REGULATORY REVIEW AND BACKGROUND

Federal Regulations

- **National Historic Preservation Act** - The NHPA was passed in 1966, containing a set of regulations commonly referred to as “Section 106”. Section 106 [36 CFR Part 800] is a procedural law that requires federal agencies to take into account effects of undertakings on historic properties. As defined by Section 106 [36 CFR 800.16(y)], an undertaking is a “project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval.” Consulting parties may include local governments, historic preservation commissions, and non-profit organizations with an interest in historic preservation. The three potential determinations of effect are: no historic properties affected, no adverse effect, and adverse effect.

Section 106 requires federal agencies to consider avoidance of historic properties. When avoidance is not possible, the agency should consider alternatives to minimize the impact. If avoidance and minimization are not possible, and the project results in a determination of an adverse effect, the agency will be required to mitigate impacts to historic resources.

Native American Consultation

Preservation regulations (36 CFR 800) mandate that federal agencies must involve interested Native American tribes in the planning process for federal undertakings. Consultation with a Native American tribe recognizes the government-to-government relationship between the US government and sovereign tribal groups. Federal agencies must be sensitive to the fact that historic properties of religious and cultural significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands beyond modern reservation boundaries. Consulting tribes are offered the opportunity to identify concerns about cultural resources and comment on how a

project might affect them. If it is found that a project would impact cultural resources that are eligible for inclusion on the NRHP and are of religious or cultural significance to one or more consulting tribes, their role in the consultation process may also include participation in resolving how best to avoid, minimize, or mitigate those impacts. By describing the proposed undertaking and the nature of known cultural sites, and consulting with the interested Native American community, CDOT and FHWA strive to effectively protect areas important to American Indian people.

There are 11 federally recognized tribes with an established interest in Douglas County Colorado:

- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma
- Comanche Nation of Oklahoma
- Kiowa Tribe of Oklahoma
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Northern Ute Tribe
- Oglala Lakota Nation
- Pawnee Nation of Oklahoma
- Southern Ute Indian Tribe
- Ute Mountain Ute Tribe

State Regulations

- **State Register Act [24 CRS 80.1]** – This act was passed with the intent to preserve the cultural and historic places in Colorado for the “education and enjoyment of the residents of this state, present and future (CRS 24.801-101, 2016).” The State Register Act primarily creates the State Register of Historic Places, which is similar to the NRHP and provides a framework for nominating sites to this list. The State Register Act also includes a stipulation for review of actions by state agencies. CDOT and the State Historic Preservation Office (SHPO) have established a process for State Register review, which is outlined in the CDOT NEPA Manual (CDOT, 2017).

STUDY AREA AND DATA GATHERING METHODOLOGY

A study area of 0.5-mile was used in order to account for both direct and indirect effects as a result of the proposed improvements to historic and potentially historic resources proximate to SH 83. To identify previously identified historic resources in the study area historians consulted the COMPASS database maintained by the Office of Archaeology and Historic Preservation (OAHP). In addition to the database search, historians reviewed historic aerial photography, topographical maps, Douglas County Assessor records, CDOT files of recorded resources, and historic newspapers to locate newly identified potentially eligible historic resources. Lastly, the Douglas County map of locally designated historic landmarks and other historic resources was consulted for their presence within the study area.

Typically, resources are considered potentially eligible for National Register of Historic Places evaluation once they have reach 50 years of age. To account for a shifting construction horizon resources 45-years of age or older (1976) are considered in this existing conditions.

EXISTING ENVIRONMENTAL CONDITIONS

SH 83 is a well-studied corridor and numerous cultural resource surveys and evaluations have occurred intermittently throughout the corridor. Because of the high number of previously evaluated resources with an official determination from SHPO of not eligible, only those resources that are eligible, listed, or potentially eligible are discussed below.

Previously Identified Historic Resources and Surveys

The historic file search found that within the study area there are four NRHP-listed resources (Table F6). In addition, there were six more properties identified that did not have an official not eligible designation in the COMPASS database, four of which are archaeological sites (Table F7). Through the extent of the study area, at least 16 Class III archaeological resources surveys have been completed. Lastly, two previously identified Centennial Farms are located in the study area (Table F8). The Colorado Centennial Farms and Ranches (CCFR) program is administered by History Colorado. Through the program Historic Structures Awards are given to families who have owned and operated their farm or ranch for 100 years or more and successfully preserved historic buildings on their farms and ranches. This program is separate from the National and State registers of historic places.

The Douglas County Historic Preservation Board (DCHPB) manages a County landmarking process for purpose of fostering the preservation of the unique historic and cultural heritage of Douglas County. Through the landmarking process the HPB has developed a robust inventory of regionally important historic resources. This program is separate from the National and State registers of historic places. Within the study area there are at least 30 sites identified on the Douglas County Historic Resources Map and four properties designated as Douglas County Historic Landmarks: Pikes Peak Grange, Franktown Cemetery, Rock Ridge Ranch, and Gideo Pratt Homestead/Pratt Gravesite. In some instances, a resource may be ineligible for NRHP listing but is recognized as a Centennial Farm and/or a Douglas County Historic Landmark.

Table F6 NRHP Listed Historic Resources in Study Area

Name/Resource Number	Eligibility
Pikes Peak Grange (5DA.341)	Listed – NRHP (1990)
Cherry Creek Bridge G-18-BL (5DA.1519)	Listed – NRHP (2002)
Evans Homestead Rural Historic Landscape (5DA.2841)	Listed – NRHP (2012)
Archaeological Site (5DA.265)	Listed – NRHP (2020)

Table F7 Other Previously Recorded Historic Resources in Study Area

Name/Resource Number	Eligibility
5DA.261*	Eligible (1980)
5DA.262*	Needs Data (1993)
5DA.263*	Eligible (1980)
5DA.907*	Needs Data - Field (1989)
Schrieber Family Home/J&L Land and Livestock Company (5DA.2678)	Needs Data (2006)
Pottenger Ranch (5DA.3515)	Needs Data (2017)
Franktown Historical Marker (5DA.3129)**	NA

*Denotes Archaeological Resource.

**Monuments and historical markers are considered a sub-type of Object, as defined in 36 CFR 60.3. Ordinarily, resources that are primarily commemorative in nature are not considered eligible for the NRHP. However, such resources may qualify if they are integral parts of an eligible historic district that or if they are primarily commemorative in intent, or if its design, age, tradition, or symbolic value has invested the monument with its own exceptional significance.

Table F8 Centennial Farms in Study Area

Name/Resource Number	Eligibility
Rock Ridge Ranch (5DA.1006)	Centennial Farm (1993)
Kelty's Bar Mill Iron Ranch (5DA.231)	Centennial Farm (1988)

Newly Identified Potentially Historic Resources

There are at least 48 potentially eligible historic resources in the study area. Douglas County Assessor records indicate there are 44 parcels adjacent to SH 83 in the study area containing at least one building or structure older than 45 years of age. In addition to these properties, there are at least three un-surveyed potentially eligible irrigation ditches intersecting the highway. Finally, SH 83 itself is a potentially eligible historic resource and should be evaluated for NRHP eligibility. Please refer to **Figures F16, F17, and F18** for more information.

Figure F16 Historic Resources – South Section

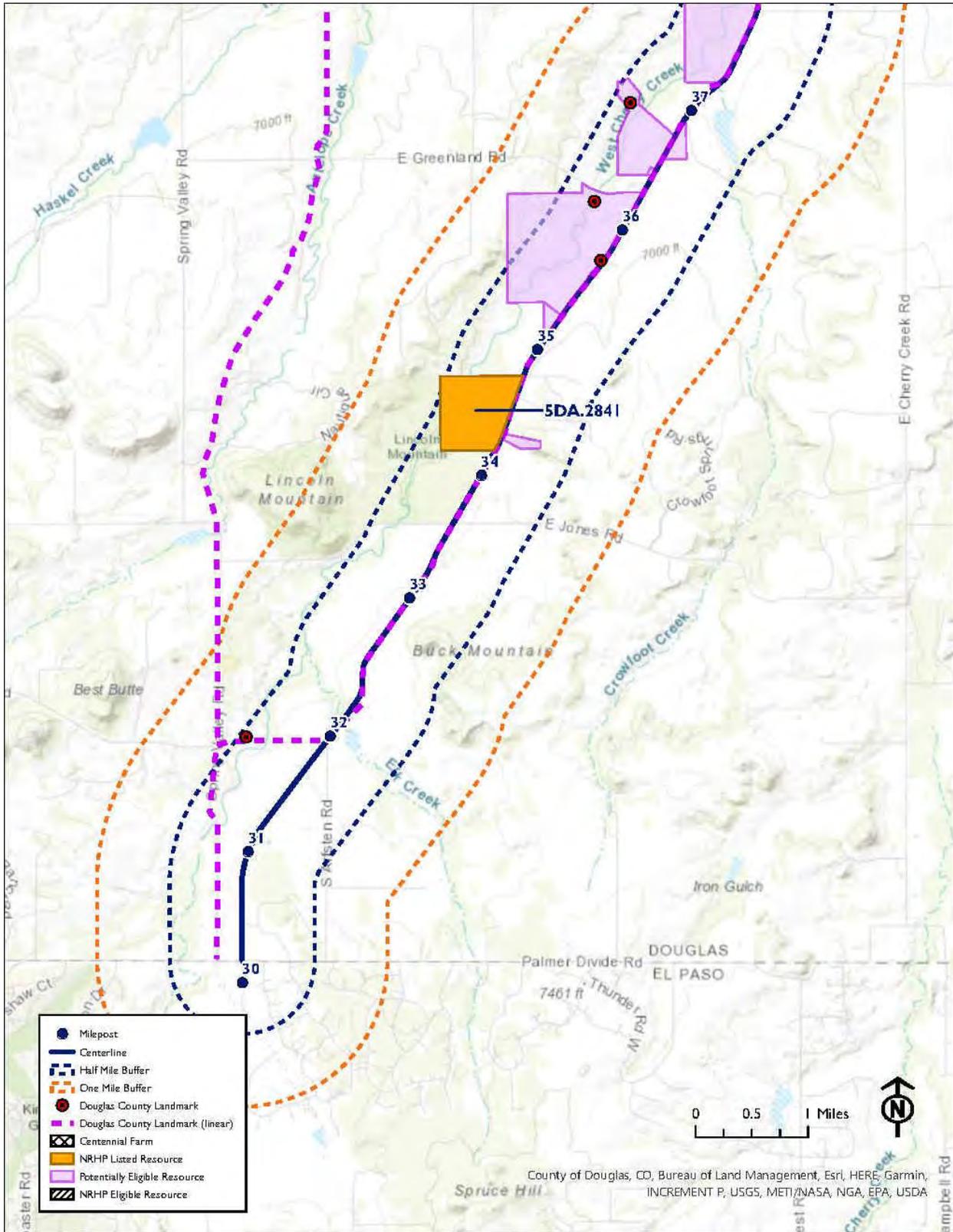


Figure F17 Historic Resources – Central Section

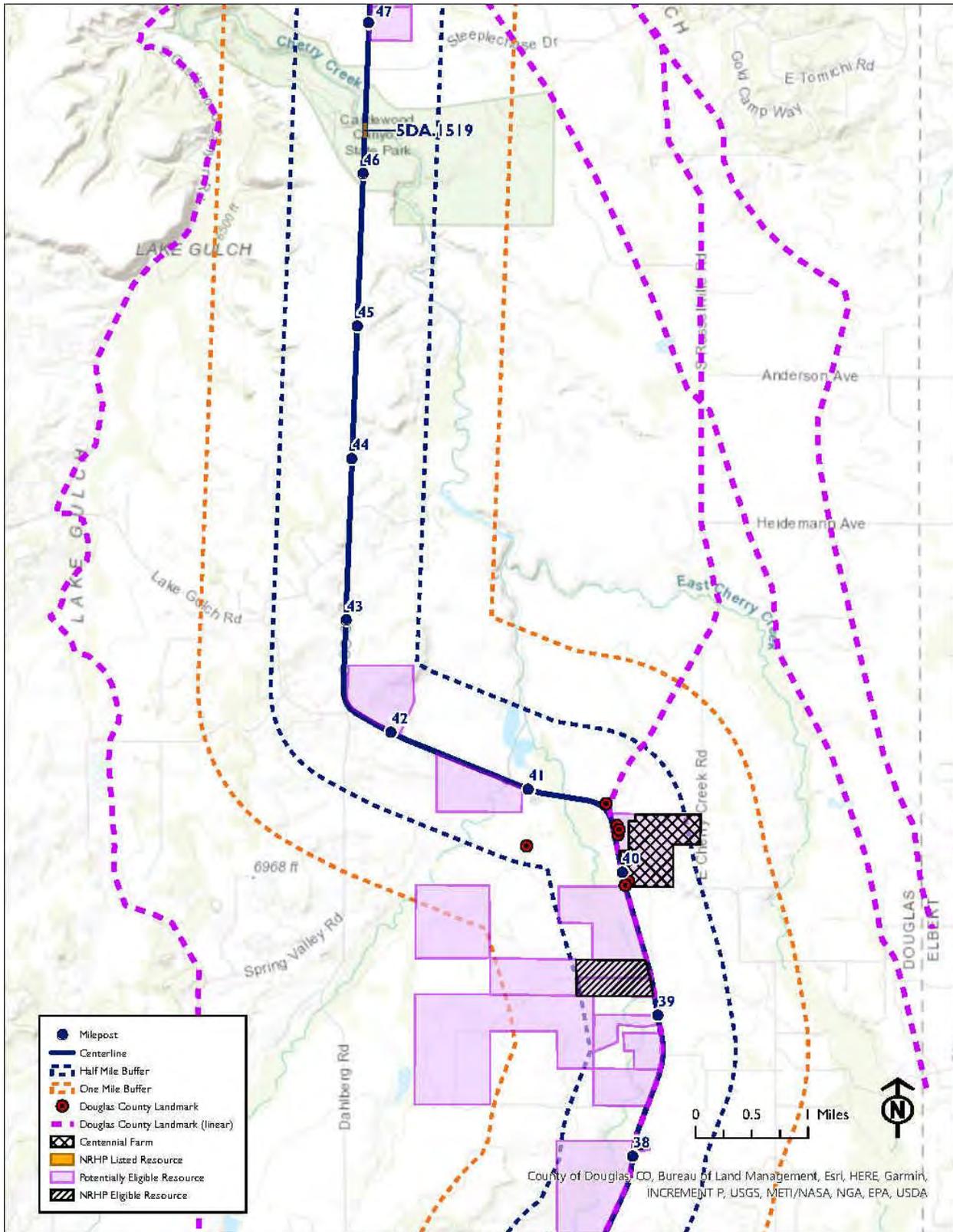
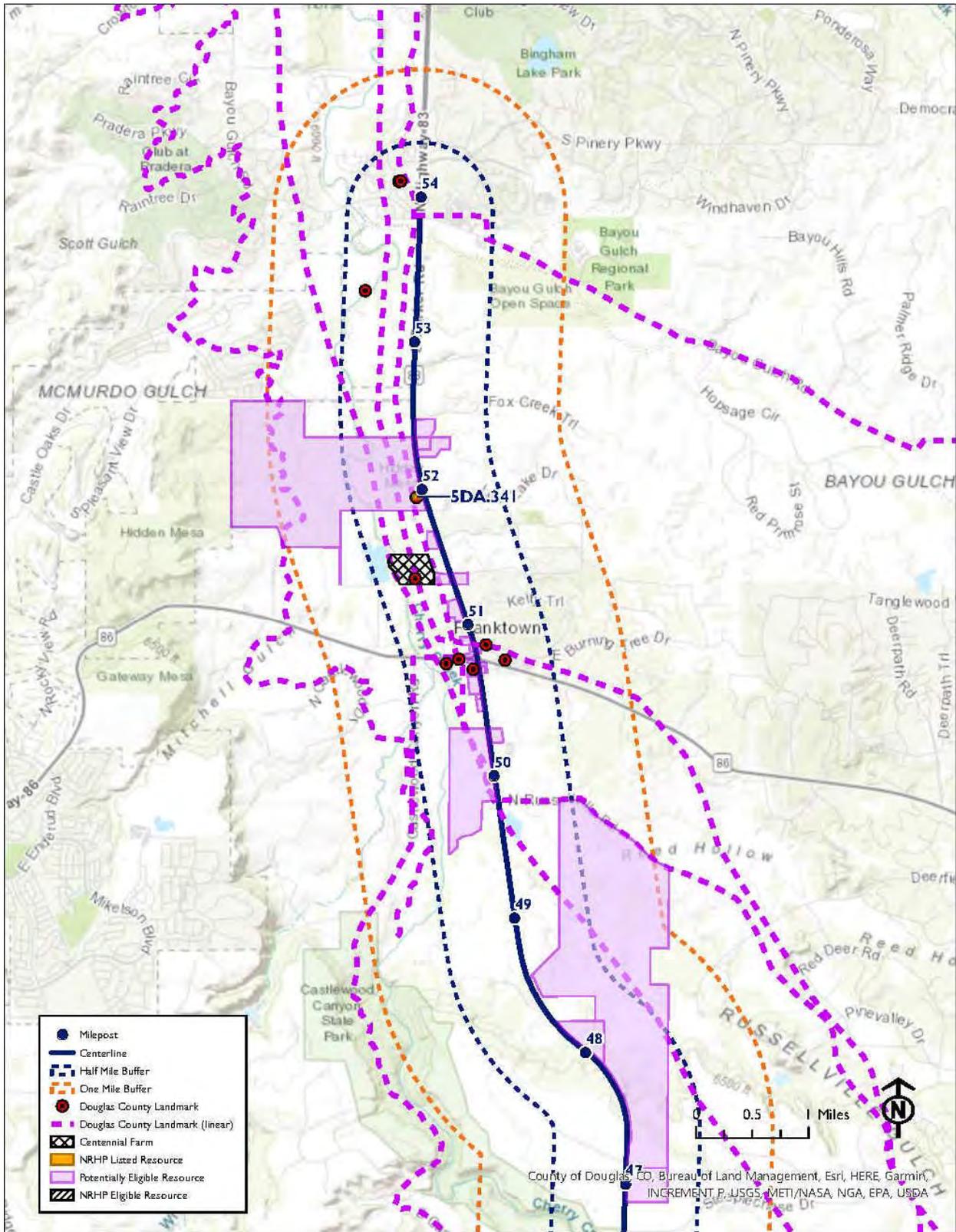


Figure F18 Historic Resources – North Section



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