



Tepee Park Ranch Project  
**Environmental Assessment**

Draft

**U.S. Forest Service**  
**White River National Forest, Rifle Ranger District**

2300 River Frontage Rd.  
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## TABLE OF CONTENTS

<b>1.0</b>	<b>CHAPTER 1 – PURPOSE AND NEED .....</b>	<b>1</b>
1.1	Summary of Proposed Action and Alternatives .....	2
1.2	Background.....	3
1.3	Federal Purpose and Need .....	5
1.4	Federal Decision .....	5
1.5	Scope of the Federal Action .....	8
1.6	Public Notice .....	8
<b>2.0</b>	<b>CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES .....</b>	<b>9</b>
2.1	Proposed Action .....	9
2.1.1	Roadways .....	11
2.1.2	Underground Pipelines .....	18
2.1.3	Construction .....	20
2.1.4	Operation and Maintenance.....	22
2.1.5	General Environmental Protection Measures .....	23
2.2	Other Permits and Approvals Required.....	24
2.3	No Action Alternative .....	25
2.4	Alternatives Considered but Eliminated from Further Analysis .....	26
2.4.1	Continued Commercial Use of Lower FS 824 .....	26
2.4.2	Pipeline Construction Adjacent to Lower FS 824 .....	27
<b>3.0</b>	<b>AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS.....</b>	<b>28</b>
3.1	Land Use and Recreation .....	28
3.1.1	Affected Environment.....	28
3.1.2	Environmental Effects .....	30
3.1.3	Environmental Mitigation and Other Protection Measures .....	33
3.2	Geology and Soils.....	34
3.2.1	Affected Environment.....	34
3.2.2	Environmental Effects .....	36
3.2.3	Environmental Mitigation and Other Protection Measures .....	38

<b>3.3</b>	<b>Water Quality .....</b>	<b>39</b>
3.3.1	Affected Environment.....	39
3.3.2	Environmental Effects .....	44
3.3.3	Environmental Mitigation and other Protection Measures .....	48
<b>3.4</b>	<b>Air Quality .....</b>	<b>49</b>
3.4.1	Affected Environment.....	49
3.4.2	Environmental Effects .....	50
3.4.3	Environmental Mitigation and Other Protection Measures .....	51
<b>3.5</b>	<b>Vegetation.....</b>	<b>51</b>
3.5.1	Affected Environment.....	51
3.5.2	Environmental Effects .....	56
3.5.3	Environmental Mitigation and Other Protection Measures .....	60
<b>3.6</b>	<b>Wildlife.....</b>	<b>61</b>
3.6.1	Affected Environment.....	61
3.6.2	Environmental Effects .....	67
3.6.3	Environmental Mitigation and Other Protection Measures .....	80
<b>3.7</b>	<b>Scenery Resources.....</b>	<b>80</b>
3.7.1	Affected Environment.....	80
3.7.2	Environmental Effects .....	83
3.7.3	Environmental Mitigation and Other Protection Measures .....	85
<b>3.8</b>	<b>Cultural Resources .....</b>	<b>86</b>
3.8.1	Affected Environment.....	86
3.8.2	Environmental Effects .....	90
3.8.3	Environmental Mitigation and Other Protection Measures .....	90
<b>3.9</b>	<b>Transportation.....</b>	<b>91</b>
3.9.1	Affected Environment.....	91
3.9.2	Environmental Effects .....	93
3.9.3	Environmental Mitigation and Other Protection Measures .....	96
<b>3.10</b>	<b>Noise .....</b>	<b>96</b>
3.10.1	Affected Environment.....	96
3.10.2	Environmental Effects .....	97

3.10.3	Environmental Mitigation and Other Protection Measures .....	99
<b>3.11</b>	<b>Socioeconomics and Community Resources .....</b>	<b>99</b>
3.11.1	Affected Environment.....	99
3.11.2	Environmental Effects .....	101
3.11.3	Environmental Mitigation and Other Protection Measures .....	102
<b>3.12</b>	<b>Health and Safety .....</b>	<b>102</b>
3.12.1	Affected Environment.....	102
3.12.2	Environmental Effects .....	103
3.12.3	Environmental Mitigation and Other Protection Measures .....	104
<b>4.0</b>	<b>CUMULATIVE EFFECTS.....</b>	<b>105</b>
4.1	Methodology .....	105
4.2	Cumulative Effects Findings for the Proposed Action .....	105
4.3	Past, Present, and Reasonably Foreseeable Future Projects .....	107
4.3.1	Oil and Gas Activity.....	107
4.3.2	Grazing Operations .....	108
4.3.1	Commercial Logging .....	108
4.3.2	South Rifle Habitat Improvements .....	108
4.3.3	Lower CR 317 Improvements .....	109
4.3.4	Upper CR 317 Relocation .....	109
4.3.5	FS 824 Road Improvements .....	109
4.4	Irreversible or Irretrievable Commitment of Resources .....	110
<b>5.0</b>	<b>CONSULTATION AND COORDINATION.....</b>	<b>111</b>
5.1	List of Preparers .....	111
5.2	Agencies and Organizations Contacted .....	111
5.3	Comments Received on the Notice of Proposed Action .....	113
<b>6.0</b>	<b>REFERENCES.....</b>	<b>114</b>

## TABLES

Table 2-1. Proposed Access Roads .....	14
Table 2-2. Estimated CPX Road Use .....	15
Table 2-4. Proposed Underground Pipelines.....	20
Table 2-5. Estimated Construction Personnel and Equipment.....	21
Table 2-6. General Environmental Protection Measures .....	23
Table 2-7. Anticipated Permits and Clearances Required .....	24
Table 3-1. Water Features in the Project Area .....	42
Table 3-2. Water Wells nearest the Project Area.....	43
Table 3-3. Meteorological Data near the Project Area .....	49
Table 3-4. Field-Surveyed Plant Species .....	52
Table 3-5. USFS Sensitive Plant Species Potentially in the Project Area .....	55
Table 3-6. Estimated Disturbance Areas .....	57
Table 3-7. USFWS Federally Listed Animal Species in the Project Area.....	64
Table 3-8. Forest Service Sensitive Animal Species Potentially in the Project Area .....	66
Table 3-9. Potentially Sensitive Viewing Locations.....	83
Table 3-10. Cultural Resource File Search Sections .....	87
Table 3-11. Cultural Resource Class I File Search Data .....	87
Table 3-12. Cultural Resource Class I Previously Recorded Sites .....	88
Table 3-13. Cultural Resource Sites Identified by Historic Maps .....	89
Table 3-14. Estimated 2010 and 2016 Road Use.....	93
Table 3-15. Common Noise Sources and Levels .....	97
Table 3-16. Construction Equipment Noise Levels.....	97
Table 3-17. Population Characteristics.....	100
Table 4-1. Cumulative Effects Findings for the Proposed Action .....	106
Table 4-2. Past, Present, and Reasonably Foreseeable Future Projects.....	107
Table 5-1. White River National Forest Interdisciplinary Team .....	111

## FIGURES

Figure 1-1	Project Vicinity
Figure 1-2	Project Location
Figure 2-1	Representative Water Truck
Figure 2-2	Road Design

Figure 2-3	Existing 4.5-inch Pipeline
Figure 2-4	Pipeline Trench
Figure 3-1	Soils
Figure 3-2	Landslide Deposits
Figure 3-3	Water Features
Figure 3-4	Old Growth
Figure 3-5	Lynx Denning Habitat
Figure 3-6	Scenery Integrity Objectives

## **APPENDICES**

Appendix A	Figures
Appendix B	Public Comments on the Notice of Proposed Action

## ACRONYM LIST

AASHTO	American Association of State Highway and Transportation Officials
amsl	Above mean sea level
ANSI	American National Standards Institute
APE	Area of potential effects
APEN	Air Pollution Emission Notice
ASME	American Society of Mechanical Engineers
BA	Biological Assessment
BE	Biological Evaluation
BLM	Bureau of Land Management
BMP	Best management practice
b.p.	Before present
CDA	Colorado Department of Agriculture
CDLA	Colorado Department of Local Affairs
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMP	Corrugated metal pipe
CNHP	Colorado Natural Heritage Program
COGCC	Colorado Oil and Gas Conservation Commission
CPW	Colorado Parks and Wildlife
CPX	CPX Piceance Holdings, LLC
CR	County road
CSFS	Colorado State Forest Service
dBA	Decibel (A-weighted) (CW)
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERT	Electrical resistivity tomography
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of no significant impact

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FS	National Forest System Road
GLO	Government Land Office
HDPE	High-density polyethylene
IF	Incidental find
ILBT	Interagency Lynx Biology Team
IPaC	Information for Planning and Conservation
LAU	Lynx analysis unit
LCAS	Lynx Conservation Assessment and Strategy
LRMP	Land and Resource Management Plan
MA	Management Area
MBTA	Migratory Bird Treaty Act
MLA	Mineral Leasing Act of 1920, as amended
NAAQS	National ambient air quality standard
NEPA	National Environmental Policy Act
NFS	National Forest System
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NOPA	Notice of Proposed Action
NRHP	National Register of Historic Places
NSO	No surface occupancy
NTU	Nephelometric turbidimeter units
OAHP	Office of Archaeology and Historic Preservation
OHWM	Ordinary high water mark
PCN-NWP	Pre-construction Notification-Nationwide Permit
POD	Plan of Development
PM <sub>2.5</sub>	Particulate matter less than or equal to 2.5 microns in diameter
PM <sub>10</sub>	Particulate matter less than or equal to 10 microns in diameter
psi	Pounds per square inch
ROD	Record of Decision
ROI	Region of influence
ROW	Right-of-way
RWPD	Rifle Watershed Protection District
SF-299	Standard Form 299
SIO	Scenic integrity objective

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SMS	Scenery Management System
SUA	Special Use Authorization
SUP	Special Use Permit
SWMP	Stormwater Management Plan
Tetra Tech	Tetra Tech, Inc.
TMI	Travel Management Implementation
TNW	Traditional navigable water
TPR	Tepee Park Ranch
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRNF	White River National Forest
WUS	Waters of the U.S.

## 1.0 CHAPTER 1 – PURPOSE AND NEED

The U.S. Forest Service (Forest Service or USFS) has prepared this Environmental Assessment (EA) to disclose the direct, indirect, and cumulative environmental effects potentially resulting from the Tepee Park Ranch Project (TPR or project) on National Forest System (NFS) land. The EA has been prepared to provide sufficient evidence and analysis of the proposed action and alternatives to determine whether to prepare either an Environmental Impact Statement (EIS) or a finding of no significant impact (FONSI) associated with issuance of Forest Service special use permits (SUPs) and easements for the project. The document complies with requirements in the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations for implementing NEPA at 40 Code of Federal Regulations (CFR) Parts 1500–1508, the Forest Service’s NEPA implementing regulations at 36 CFR Part 220, the Forest Service NEPA implementing guidance in Forest Service Handbook 1909.15, and the standards and guidelines outlined in the WRNF Land and Resource Management Plan (LRMP) (USFS 2002).

The document is organized into five chapters, as follows:

**Chapter 1 – Purpose and Need.** This chapter provides a project overview, the federal purpose and need, the federal decision to be made, the scope of the federal action, a summary of potentially-affected resources, and a summary of the public notice process.

**Chapter 2 – Proposed Action and Alternatives.** This chapter describes the proposed action, and the construction, operation, maintenance, and permitting activities associated with the proposed action. It describes alternatives to the proposed action, including the alternative of no action, and alternatives considered but eliminated from further analysis.

**Chapter 3 – Affected Environment and Environmental Effects.** This chapter describes the existing environment in the project area and potential environmental effects to resources in the project area from the proposed action and alternative.

**Chapter 4 – Cumulative Effects.** This chapter describes the proposed action in relation to other past, present, and reasonably foreseeable future actions in the project area.

**Chapter 5 – Consultation and Coordination.** This chapter Identifies those who contributed to the preparation of the EA, as well as those who were consulted.

## 1.1 Summary of Proposed Action and Alternatives

CPX Piceance Holdings, LLC (CPX) is requesting Forest Service authorization for the proposed action, which consists of the following project elements located on NFS land:

- **Beaver Creek Bypass** – Special Use Authorization (SUA) for construction of an approximately 0.75-mile-long new access road (Beaver Creek bypass) from the upper switchback on Forest Service Road (FS) 824 north to CPX private property in Township 7 South, Range 94 West, Section 24. The road would interconnect with the existing Garfield County Road (CR) 317 for continued access to NFS land (Figures 1-1 and 1-2 in Appendix A). The proposed road alignment represents a corridor, which allows for minor route adjustments based on final road engineering design in consultation with the Forest Service. The alignment would be located within a proposed temporary construction corridor up to 100 feet wide. Areas with steeper slopes may be wider than 100 feet to accommodate slope-specific cut and fill work. The post-construction authorization issued by the Forest Service would be for a 75-foot-wide permanent right-of-way.

A cattle guard would be placed at the Forest Service boundary, and existing fencing would be tied into the structure. A winter closure gate would be installed south of the Forest Boundary to prevent unauthorized motorized travel on NFS land in winter. An area north of the gate would be widened to accommodate vehicles and vehicle turnaround for winter recreational uses, such as hiking, snowshoeing, and skiing.

- **Continued Commercial Use of Upper FS 824** – Authorization for continued commercial use of the approximately 0.80-mile-long upper (southern) FS 824; reconstruction of an approximately 1,200-foot-long section of upper FS 824 near the CPX property gate; improvements for vehicle access at the Beaver Creek trailhead; and road improvements for stormwater drainage and user safety. The temporary construction corridor is proposed to be up to 100 feet wide. Areas with steeper slopes may be wider than 100 feet to accommodate slope-specific cut and fill work. The permanent right-of-way easement issued by the Forest Service would be increased from the current 60-foot width to a 75-foot-wide right-of-way for consistency along the entire FS 824 road alignment.
- **Underground Pipelines** – Approximately 1.55 miles of underground pipelines would be installed within the temporary 100-foot-wide construction corridor authorized for road construction. The post-construction pipeline right-of-way (ROW) likewise would overlap

and sit within the permanent 75-foot-wide road easement. Pipelines would be authorized under a Special Use Permit (SUP) issued by the Forest Service. The pipelines would be located adjacent to the upper portion of FS 824 and the proposed Beaver Creek bypass in Township 7 South, Range 94 West, Sections 24 and 25. The underground pipelines would replace the existing, above-ground, 4.5-inch-diameter steel pipeline used to transport natural gas. The existing pipeline would be removed from both private and federal land. All pipelines would be designed to meet required standards. The pipelines would transport natural gas, natural gas condensate, produced water, and fresh water. They would tie in to surface facilities at a receiving point north of NFS land on CPX private property, adjacent to CR 317 (Figure 1-2). The receiving point is a contractual sales point where CPX product would be transferred to a third-party natural gas pipeline company.

- **Decommissioning Lower FS 824** – Decommissioning lower (northern) FS 824 in response to a request from the Forest Service. CPX would be responsible for earth work and revegetation to reclaim lower FS 824 from the upper switchback north to the Forest Service boundary in Township 7 South, Range 94 West, Section 24 (Figure 1-2). Commercial road use and public access to the Beaver Creek trailhead would relocate to the proposed Beaver Creek bypass.

The proposed action relocates and realigns an existing roadway that is adjacent to Beaver Creek, and addresses the request from CPX for continued access to TPR, an existing natural gas operation on private property owned by CPX in unincorporated Garfield County, Colorado (Figure 1-1). The area north of TPR, where portions of the project would be located, is under the jurisdiction of the Forest Service. This portion of National Forest is administered by the White River National Forest (WRNF), Rifle Ranger District.

Alternatives to the proposed action, which were considered but eliminated from further analysis, are continued commercial use of lower FS 824, as shown on Figure 1-2, and pipeline construction adjacent to lower FS 824. These alternatives are discussed in Chapter 2. The alternative of no action is analyzed together with the proposed action in this EA.

## 1.2 Background

The Forest Service is evaluating CPX's proposal to construct the Beaver Creek bypass, continue commercial use of upper FS 824, and install underground pipelines. The project is located in the western portion of the WRNF, south of Rifle, Colorado. Land use in this portion of the WRNF

consists primarily of oil and gas activities and public recreation, including hiking, hunting, fishing, and winter activities.

The Forest Service evaluation of the proposal considers that FS 824 and the above-ground temporary pipeline in use by CPX are adjacent to Beaver Creek. The proposed action would relocate and realign the road by moving it further from the stream, eliminate its steep switchbacks, and would bury CPX pipelines.

TPR is an existing, exploratory natural gas operation owned and operated by CPX, a Colorado-based company formed to acquire and develop oil and natural gas resources in the U.S. The TPR operation is located entirely on private property in unincorporated Garfield County. CPX owns both surface and certain mineral rights on TPR. Access to TPR is provided by CR 317 and FS 824. The existing 60-foot-wide easement for commercial use of FS 824 was granted to the previous operator by the Forest Service on December 6, 2007 and has been transferred to CPX. The SUP for the existing pipeline for conveyance of natural gas was granted to the previous operator by the Forest Service under File Code 2720 on July 8, 2015, and has been transferred to CPX.

CPX has determined that the results of exploratory development of TPR warrant further development of the natural gas reserve. The existing, 4.5-inch-diameter steel pipeline now being used to transport natural gas does not meet CPX needs or Forest Service standards for transport of the anticipated natural gas, natural gas condensate, and produced water from TPR. In order to accommodate the anticipated future development, the Forest Service, in its evaluation of the proposal considers the proximity of the road and pipeline to Beaver Creek, adequacy of FS 824 for commercial and public use, and future pipeline needs. The proposed action would relocate and realign the road by moving it further from the stream, eliminate its steep switchbacks and narrow sections, and would bury CPX pipelines adjacent to the road.

The purpose and need for the proposed action is the following:

First, FS 824 is located adjacent to Beaver Creek north of the switchbacks (Figure 1-2) without adequate setback from the creek. This lower reach of Beaver Creek is within the City of Rifle, Colorado, Watershed Protection District (RWPD).

Second, the portion of FS 824 from the upper switchback to CR 317 does not provide adequate area to locate buried underground pipelines while preserving an optimal setback from Beaver Creek.

Third, FS 824 contains switchbacks in Township 7 South, Range 94 West, Section 24, which present maintenance and safety concerns to the proponent due to steep grades, especially under wet or icy conditions and during winter months.

Fourth, traffic signals or other safety measures currently are required for the road because of the narrow road width and lack of turnouts on the 0.5 miles of road across private lands located in Township 7 South, Range 94 West, Section 24.

### **1.3 Federal Purpose and Need**

CPX oil and gas operations are located on noncontiguous parcels of private property separated by NFS lands. In order for CPX to develop their mineral estate, there is a need for CPX to use FS 824 and install pipelines across NFS lands.

The purpose of this EA is to provide the WRNF Forest Supervisor with an analysis, as required under NEPA, to use in evaluating the CPX request for new road construction, and road and pipeline use on NFS land. The analysis will enable the Forest Supervisor to determine whether an EIS is required for the project. If an EIS is not required, the Forest Supervisor's final decision will be documented in a Decision Notice and FONSI. A FONSI is appropriate if the Forest Supervisor determines that issuance of SUPs and easements are not likely to have significant adverse effects on the environment after implementation of mitigation and environmental protection measures. If the proposed project is found to have potentially significant adverse effects to the environment, an EIS may be required.

### **1.4 Federal Decision**

Application for this project was made under the Mineral Leasing Act of 1920 (MLA), as amended and the Federal Land Policy and Management Act (FLPMA) of 1976. The MLA [Section 28(a)] authorizes Federal agencies to grant ROWs for pipeline purposes for the transportation of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product produced. The MLA [Section 28(e)] further gives federal agencies authority to allow temporary uses of federal lands for construction, operation, and maintenance of pipelines. Forest Service implementing regulations for this portion of the MLA are found at 36 CFR 251.

The MLA directs agencies to require the applicant to submit a plan of construction, operation, and rehabilitation for ROWs. CPX's submission of a Plan of Development (POD) would satisfy this

requirement. In addition, the MLA at Section 28(h)(2) gives federal agencies the authority to impose stipulations on pipeline projects for the following:

- (A) Requirements for restoration, revegetation, and curtailment of erosion of the surface of the land
- (B) Requirements to ensure that activities in connection with the ROW or permit do not violate applicable air and water quality standards or related facility siting standards established by or pursuant to law
- (C) Requirements designed to control or prevent:
  - Damage to the environment (including damage to fish and wildlife habitat)
  - Damage to public or private property
  - Hazards to public health and safety
- (D) Requirements to protect the interest of individuals living in the general area of the ROW or permit who rely on the fish, wildlife, and biotic resources of the area for subsistence purposes

Such regulations shall be applicable to every ROW granted.

Forest Service Manual 2700 establishes Forest Service policy for issuing, suspending, or terminating easements and ROWs. According to Forest Service Manual Chapter 2730, the proposed action must be analyzed for environmental and social effects in accordance with NEPA and Forest Service procedures for implementing NEPA.

The Forest Supervisor is tasked with review of the Standard Form-299 (SF-299) application prepared by CPX for the project, project alternatives, and potential environmental effects of the project to make the following decisions:

- (1) Issue the SUPs and easements per the SF-299 application;
- (2) Deny the SUPs and easements; or
- (3) Notify CPX of changes or additions to the SF-299 application necessary to minimize or eliminate adverse environmental effects on NFS land.

The project is consistent with the previously-issued Forest Service authorizations granting an easement and authorizing commercial use of FS 824 for installation of the existing surface pipeline. The Forest Service is required under 36 CFR 251, Subpart B, to evaluate special use requests for, in this case, new road construction, and road and pipeline use on NFS land.

The project also is consistent with the LRMP, which establishes direction for managing land and resources within the WRNF boundaries. The project is located in LRMP Management Area (MA) 5.41. The overall MA Category 5 applies to lands which primarily are forested ecosystems managed to meet a variety of ecological and human needs. They often are characterized by a substantially modified natural environment and display high levels of investment, use activity, facility density, and vegetation manipulation evidence. Users expect to see other people and evidence of human activity. The MA Subcategory 5.41, Deer and Elk Winter Range, is managed according to multiple use principals so that deer and elk can continue to effectively use the area. Motorized travel, for instance, generally is confined to designated use corridors (USFS 2002). The project is consistent with the MA 5.41 theme and standards, which are listed below.

1. Over-the-snow vehicle use is restricted to designated routes and play areas unless authorized by SUP or for emergency use.
2. All new roads passing through this area will avoid important forage, cover, and birthing areas.
3. Roads and trails needed to implement management in the area should be low-standard, single-purpose roads.
4. Avoid crossing these areas with new arterial or collector roads.

The construction period and road use would be in compliance with the MA 5.43 timing restriction for winter use between December 1 and April 14.

In accordance with Section 31.1 of the Forest Service, Region 2, NEPA Procedures Handbook (USFS 1993a), the Forest Service notes that an EA is not a decision document. Instead, it is a document disclosing the environmental consequences of implementing the proposed action and alternatives to that action. The proposed action and alternatives are described in Chapters 2 and 3 of the EA. The federal decision is documented in a Decision Notice issued by the Forest Service.

Environmental consequences for activities administered by other federal, state, and local jurisdictions resulting from the proposed action also are disclosed in the EA. Other federal, state, and local jurisdictions have assisted in the disclosure of environmental consequences and development of alternatives to the proposed action.

## **1.5 Scope of the Federal Action**

The scope of the federal action is the Forest Service's issuance of easements and ROWs, which permit CPX's proposed activities on NFS land and, concurrently, decommissions lower FS 824 on NFS land from further motorized use. The project activities consist of construction of a new access road, commercial use of upper FS 824 with improvements to this portion of road, installation of underground pipelines, and earth work and revegetation to decommission and reclaim lower FS 824. This EA analyzes potential effects on the quality of the natural and human environments associated with the proposed activities on NFS land.

## **1.6 Public Notice**

An SF-299 application was submitted to the Forest Service for authorization to construct, operate, and maintain transportation (access road) and utility systems (underground pipelines) on NFS lands. The SF-299 application initiates preparation of the EA and the release of a Notice of Proposed Action (NOPA). The NOPA and announcement of the 30-day comment period was published on September 6, 2016, in the Glenwood Springs, Colorado, *Post Independent*, in order to elicit comments, concerns, and issues regarding the proposed action from residents, interested individuals, public agencies, and organizations on the Forest Service distribution list. The Forest Service will provide an additional review period and opportunity to object after public notice of the availability of this EA and draft decision notice.

Comments received in response to the September 6, 2016, NOPA were categorized by substantive comment and resource issue. Comments received are shown by resource category in Appendix B. The WRNF Interdisciplinary Team provided input on individual public comments to guide the analysis in this EA.

## **2.0 CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES**

This chapter describes the proposed action and alternatives to the proposed action. The discussion includes the construction, operation, maintenance, and reclamation activities planned for the proposed action. The discussion of alternatives consists of the no action alternative and alternatives considered but eliminated from further analysis.

### **2.1 Proposed Action**

CPX proposes to construct an approximately 0.75-mile-long new access road (Beaver Creek bypass); continue commercial use of an approximately 0.80-mile-long portion of FS 824 between CPX's noncontiguous, privately-owned parcels of land in Township 7 South, Range 94 West, Sections 24 and 25 with certain improvements to this road; and construct approximately 1.55 miles of underground pipelines to transport natural gas, natural gas condensate, produced water, and fresh water (Figure 1-2). The proposed action is located on NFS land in Township 7 South, Range 94 West, Sections 24 and 25. As part of the proposed action, CPX would be responsible for earth work and revegetation to decommission and reclaim lower FS 824, from the upper switchback north to the Forest Service boundary in Township 7 South, Range 94 West, Section 24. Public and commercial road use would relocate to the proposed Beaver Creek bypass. The temporary Beaver Creek trailhead on lower FS 824 would be decommissioned concurrent with decommissioning and reclamation of lower FS 824. Lower FS 824 would no longer provide motorized access. The Forest Service would work with the private landowner along a section of FS 824 located on private lands to determine the future status of the current access agreement, but motorized travel would be prohibited. Improvements would be made to the Beaver Creek trailhead on upper FS 824 to accommodate parking and access to NFS lands.

The project represents continuation of an existing use of NFS lands. CPX currently is operating under an existing easement and existing SUP granting commercial use of FS 824 and operation of an existing 4.5-inch-diameter pipeline. A 60-foot-wide easement for commercial use of FS 824 was granted by the Forest Service on December 6, 2007 to a previous operator, and has been transferred to CPX. The SUP for the existing pipeline for conveyance of natural gas was granted to the previous operator by the Forest Service under File Code 2720 on July 8, 2015, and has been transferred to CPX.

SUAs for the Beaver Creek bypass and continued use of FS 824 would remain in effect for as long as needed. The SUPs for pipeline operation would be issued for 30 years with renewal

options. It is anticipated that the project would require approximately 3 months to construct. Decommissioning and reclamation for lower FS 824 would require approximately 1 month to complete.

As a condition of approval, CPX would be responsible for earth work and revegetation to decommission and reclaim lower FS 824, from the upper switchback to the Forest Service boundary in Township 7 South, Range 94 West, Section 24 (Figure 1-2). Public and commercial road use would relocate to the proposed Beaver Creek bypass, which would continue to provide direct access from CR 317 to upper FS 824 and the Beaver Creek trailhead located at the south end of upper FS 824. The engineering design for decommissioning lower FS 824 would be reviewed by the WRNF. The temporary Beaver Creek trailhead on lower FS 824 would be decommissioned concurrent with decommissioning and reclamation of lower FS 824. Improvements would be made to the Beaver Creek trailhead on upper FS 824 to accommodate increased parking capacity and vehicle turnaround.

The Forest Service would collect a reclamation bond from the operator to ensure operator compliance with the terms of the approved plans and specifications for the project and to enable the Forest Service to remedy site restoration concerns should the operator fail to do so. The reclamation bond would not be released to the operator until reclamation standards were met.

In summary, the proposed action addresses the following:

- **Protection of Water Quality** – There is a need to protect water quality and riparian health in Beaver Creek during use of FS 824 and the underground pipeline transport of natural gas, natural gas condensate, and produced water.
- **Increased Safety** – There is a need to address safety concerns associated with the switchbacks and narrow road width on FS 824, which can be hazardous for both commercial and public use.
- **Eliminate Need for Traffic Control Signals** – The project addresses safety concerns with two-way traffic by eliminating the need for long-term traffic control on lower FS 824, where FS 824 crosses private land (Figure 1-2).
- **Improved Access to Beaver Creek Trailhead** – There would be improved access along the Beaver Creek Road to reach the Beaver Creek trailhead at the south end of FS 824. The Beaver Creek trailhead would have an improved vehicle parking area.

- **Minimize Damage to Pipelines** – There would be less potential for damage to the pipelines because they would be buried.

### **2.1.1 Roadway**

The use of FS 824 is needed to support this project. FS 824 would continue to provide commercial use of the approximately 0.80-mile-long portion of upper FS 824. This proposal includes realignment of an approximately 1,200-foot-long section of this road, widening locations on upper FS 824 up to 28 feet wide for traffic pullouts, separation of the Beaver Creek trailhead from FS 824 with an expanded trailhead parking area and vehicle turnaround, and construction of the approximately 0.75-mile-long Beaver Creek bypass. Details for each segment are provided below.

#### **Continued Use of Existing FS 824**

CPX is requesting authorization for continued commercial use of FS 824 from the upper switchback on FS 824 south to the TPR property boundary in Township 7 South, Range 94 West, Section 25 (Figure 1-2), which would be used for TPR-related traffic, such as pickup trucks, haul trucks, water trucks, and other equipment (drilling and completion equipment) consistent with current usage of FS 824. The current Forest Service easement granted for this portion of road is 60 feet wide. CPX proposes a temporary construction corridor up to 100 feet wide and a post-construction easement 75 feet wide for consistency along the FS 824 road alignment with the proposed Beaver Creek bypass. Areas with steeper slopes may be wider than 100 feet to accommodate slope-specific cut and fill work. CPX would make the following improvements to FS 824:

- Widen the travel surface in specified areas on upper FS 824 to approximately 24 to 28 feet to provide pull outs for safe passing for two-way traffic;
- Install stormwater culverts under the roadway to provide adequate drainage, where needed;
- Realign and straighten an approximately 1,200-foot-long section of upper FS 824 near the CPX property gate to improve travel safety; and
- Separate Beaver Creek Trail trailhead access from FS 824 with a Y-intersection, which would provide for an expanded trailhead parking area and vehicle turnaround to accommodate recreational uses. The upper trailhead represents more direct access to the

Beaver Creek Trail system than the lower trailhead located adjacent to Beaver Creek (Figure 1-2).

The improvements are necessary to provide for an adequate travel lane and traffic safety for vehicles supporting TPR operations that may be up to 14 feet wide and for tractor-trailer combinations that may be up to 90 feet long. The improvements also facilitate road maintenance by removing low spots and areas of poor drainage to better maintain a bladed and well-drained travel surface.

### **New Access Road**

CPX is requesting a 100-foot-wide construction corridor and 75-foot-wide post-construction easement to construct, operate, and maintain the approximately 0.75-mile-long Beaver Creek bypass, which would be a new, aggregate surfaced access road from a point of interconnection with the upper switchback on FS 824 to the northern Forest Service boundary with a parcel of land privately owned by CPX. From there, the road would cross CPX property and interconnect with the existing CR 317 (Figure 1-2). Areas with steeper slopes may be wider than 100 feet to accommodate slope-specific cut and fill work. The road would be used for TPR-related traffic, such as pickup trucks, haul trucks, water trucks, and other equipment needed to support TPR operations. A representative produced water truck is shown in Figure 2-1. The road also would be for public use to provide direct access to the Beaver Creek trailhead on upper FS 824 from CR 317 after decommissioning of lower FS 824. The road design allows for safe shared public and commercial use of the Beaver Creek bypass by providing an adequate travel lane width and pull outs for two-way traffic. The design considers geologic hazards and conforms to the WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a) and Forest Service Road Preconstruction Handbook, FSH 7709.56 (USFS 2011a) for roadways. The final road design also would conform to the American Association of State Highway and Transportation Officials (AASHTO) Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT <400) (AASHTO 2001). The road design would be signed and stamped by a professional engineer licensed in Colorado and would be reviewed by the WRNF.

The travel surface for the road is proposed to be 14 feet wide with 3-foot-wide shoulders on each side for a total travelway width of 20 feet. Turnouts would be constructed as needed to provide for more efficient and safe vehicle passing. The proposed design is shown on Figure 2-2. (Appendix A) and provides for an adequate travel lane and traffic safety for the vehicles needed to support TPR operations and public use, and is consistent with the improvements proposed for



**Figure 2-1. Representative Produced Water Truck (produced water trucks currently being used are full-sized 18-wheel tankers)**

the existing segment of upper FS 824. The design vehicle used as the basis for the road design is a tractor-trailer combination approximately 8.5 feet wide and 53 feet long, while the critical vehicle used as the basis for the road design is a lowboy hauling construction equipment or drilling rig components, approximately 14 feet wide and 90 feet long. Together, these specifications determined the appropriate road geometry. Vehicle weights were assumed to range from 2 tons for a passenger car, to 5 tons for a delivery truck, 20 tons for a 3-axle truck, up to 60 tons for a workover rig, and up to 85 tons for a lowboy hauling construction or drilling rig components (Table 2-2).

CPX would rely on already-disturbed road surfaces provided by FS 824 and the Beaver Creek bypass to support construction. Staging areas would be located on CPX private property. Stream crossings in the area do not exceed 24 inches wide and would be spanned with corrugated metal pipe, except where select locations might require concrete box culvert construction, as determined by poor subgrades or the presence of running water. Wetlands in the area have been delineated, as described in Section 3.3.1, and would be avoided. Temporary disturbance would be authorized under Nationwide Permits issued by the U.S. Army Corps of Engineers (USACE).

Material used for the new road would consist of native borrow, material accumulated during road construction, and commercial aggregate. Material for road subgrade reinforcement could be obtained from a pit area on CPX land. Use of this material is discussed in Section 3.3.2. The sub-

base would consist of a proposed 6 to 8 inches of 3 to 6-inch minus pit run material, as needed. The road surface would consist of a maximum 18 inches of 2-inch-diameter, or less, aggregate base course. Final material depths would be determined through geotechnical and structural analysis.

Specifications for both FS 824 and the Beaver Creek bypass are listed in Table 2-1. Estimated road use varies according to TPR operations. Periods of well drilling, completion, and production are anticipated to require the levels of road use listed in Table 2-2.

**Table 2-1. Proposed Access Roads**

Road	Length (miles)	Long-term Travelway Disturbance Width (feet)	Temporary Disturbance Width (feet) <sup>1</sup>	Surface
FS 824	0.80	Up to 24	Up to 100	Aggregate surfaced
Beaver Creek bypass	0.75	Up to 24	Up to 100	Aggregate surfaced

<sup>1</sup> Areas with steeper slopes may be wider than 100 feet to accommodate slope-specific cut and fill work.

The north end of the Beaver Creek bypass crosses approximately 900 feet of private land owned by CPX before intersecting with CR 317 (Figure 1-2). An easement would be granted by CPX for this portion of the Beaver Creek bypass to allow for road use by the public and private access across CPX land. Options for granting the easement are for CPX to grant an easement to Garfield County or the Forest Service for public road use from CR 317 to the Forest Service boundary. The decision regarding parties to an easement would be determined through discussion between CPX and representatives from Garfield County or the Forest Service and would be documented in a signed easement between the identified parties.

A new easement across NFS lands would be granted to CPX by the Forest Service for use of FS 824. The new easement would replace an existing easement currently in use and would include the 75-foot-wide bypass section on NFS lands.

### **Decommissioning Lower FS 824**

CPX would be responsible for earth work and revegetation to decommission and reclaim the Forest Service portion of lower FS 824 after the bypass was constructed, new underground pipelines were installed and commissioned, and the existing 4.5-inch-diameter pipeline was removed. Decommissioning the portion of lower FS 824 on private land, and the status of the

**Table 2-2. Estimated CPX Road Use**

Construction, Drilling, and Completion Phases					
Per Operational Phase	Road, Pad, Pipeline Construction	Drill Rig Up/ Rig Down	Drilling	Well Completion Mobilization	Completion
Average Length of Time	Up to 20 days per pad	Average 4 days up/ 4 days down	Up to 15 days per well	2 days in/ 2 days out	Up to 5 days per well
Average Daily Hours of Operation	12 hours	Varies	24/7	12 hours	12 hours
Average Daily Vehicle Round Trips	~40	~19 per pad	~13	~25	~12
Percent Over Legal Loads	4	7	1	1	0
Percent Heavy Truck	30	60	30	80	45
Percent Light Truck	65	30	70	55	55
Production and Reclamation Phases					
Per Operational Phase	Production	Workover	Plug and Abandon Well	Road and Pad Reclamation	
Average Length of Time	Up to 30 years per well. Varies by formation.	Every 4 years per well average (~10 days per well)	Up to 5 days per well	Up to 20 days per pad	
Average Hours per Day	Varies	Varies	12	12	
Average Daily Vehicle Round Trips	~5	~5	~5	~10	
Percent Over Legal Loads	0	2	4	3	
Percent Heavy Truck	40	30	50	5	
Percent Light Truck	60	65	60	90	

current access agreement with the Forest Service for that portion of roadway, would be determined on the basis of discussion with Laramie Energy, LLC.

Continuous access to the Beaver Creek Trail, TPR, and the single private inholding in Township 7 South, Range 94 West, Section 24 would be maintained during and after construction. During construction of the Beaver Creek bypass, lower FS 824 would continue to be used for public and commercial traffic. After construction, public and commercial traffic would relocate to the Beaver Creek bypass. Relocation to the Beaver Creek bypass would provide the public with a more direct

route, and a safer, improved road for recreational use and access to the Beaver Creek Trail and NFS lands.

The WRNF Travel Management Implementation (TMI) Action Plan 2011-2015 (USFS 2012a) describes engineering methods for decommissioning roads, which are grouped into six categories to define the level of ground disturbance. The categories are intended for planning purposes to identify scope and scale of the needed action and are listed below.

1. Block entrance (earthen barrier, rocks, logs, stumps). Road revegetates naturally.
2. Block entrance, scarify the road surface, revegetate.
3. Block entrance, fill roadside ditches, out slope the road surface, install water bars, scarify the road surface, revegetate.
4. Block entrance, remove culverts, fill roadside ditches, out slope the road surface, install water bars, scarify the road surface, revegetate.
5. Recontour for a specified distance, remove culverts, fill roadside ditches, out slope the road surface, install water bars, scarify the road surface, revegetate.
6. Fully recontour, remove culverts, revegetate.

The WRNF would use the categories listed above and the WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a) to identify the final design for the level of reclamation appropriate for lower FS 824. The design would meet the following reclamation objectives identified by the WRNF for lower FS 824 (USFS 2014a):

- Remove road surfacing, culverts, pipelines, gates, cattle guards and any other associated structures from NFS lands.
- Remove road surfacing to native soils (when possible). Haul and place at upper trailhead for base material.
- Fence and bypass gate construction at beginning of the rehabilitation section (at current cattle guard location).
- Recontour and outslope roadbed segments; fill ditches; and construct cross-ditches/water bars.

- Round cut slopes catch points.
- Full reclamation is not anticipated (i.e., pulling cut and fill slopes back to as near normal contours as possible). Agreement, in writing, would be required if the Forest Service requires full reclamation in select locations.
- Pull back unstable fill slopes (where visible signs of fill slope failure are evident), and excavate material placed on stable portions of existing road prism in a manner that will not allow excess sedimentation to enter the stream system. Finished slopes would be left at 1V:2H slopes.
- Remove compacted soil by ripping to 18 inches the entire length and width of the road prism and “pocking” by excavating 3 foot by 3 foot craters to a maximum depth of 18 inches. Decomposition craters would be staggered across the road prism and spaced a minimum of 8 feet apart.
- Restore natural drainage patterns including armoring and other measures to reduce erosion potential during revegetation period
- Schedule operations and conduct to prevent soils from entering any waterway.
- Bypass live stream channels carrying water at the time of excavation around the work site, with erosion control measures implemented to control sediment from entering the stream channel. Specific measures as follows:
  - Divert live streams from work areas prior to excavation of culverts, or any other stream crossing structure.
  - Submit a stream diversion plan to the Forest Service for approval prior to starting excavation in live streams.
  - Stream turbidity may be monitored by the Forest Service during reclamation work. If an increase in turbidity from contractor operations exceeds 20 nephelometric turbidimeter units (NTU) for a period exceeding 30 minutes, the contractor must cease operations. The contractor will be notified when increases in turbidity are nearing 10 NTUs so that operations may be modified. The Forest Service will not issue waivers of NTU limits.

- Transplant small brush, trees, and other vegetation on the reclaimed sections. Excavation of transplants will be accomplished by reaching past the existing disturbance to reach the transplant, if needed.
- Logs, slash, stumps and boulders within reach of the road prism may be used to aid in sediment and erosion control.
- Erosion control matting and erosion control devices will be placed as shown on plans or as determined by onsite inspection.
- Disturbed areas will be seeded, fertilized, and mulched per Conditions of Approval (seeding/revegetation to Forest Service standards for all disturbed areas (i.e., 75 percent of adjacent vegetative cover after two growing seasons).

The final engineering design for reclamation would be identified prior to construction of the Beaver Creek bypass and would be implemented once the Beaver Creek bypass is operational. The engineering design would be reviewed by the WRNF with reclamation standards discussed more fully in the POD prepared by CPX and reviewed by the Forest Service and the Conditions of Approval for the project, which would be prepared by the Forest Service.

### **2.1.2 *Underground Pipelines***

CPX is seeking SUPs to replace the 4.5-inch-diameter pipeline currently in place to transport natural gas from TPR exploratory operations with approximately 1.55 miles of new underground pipelines. The current pipeline is shown in Figure 2-3. CPX is requesting a 100-foot-wide construction and 75-foot-wide post-construction ROW for installation and operation of the



**Figure 2-3. Existing 4.5-inch Pipeline**

pipelines adjacent to the roadway. The ROWs would overlap and sit within the 100-foot-wide construction corridor and 75-foot-wide post-construction road easement. The ROWs, together with use of the road, would provide an adequate area for pipeline installation, operation, and maintenance.

The pipelines would be installed concurrently. The preliminary design is a shared trench up to approximately 100 inches wide with approximately 60 inches of soil cover above the pipelines, to protect the pipelines from frost damage and erosion (Figure 2-4, Appendix A). The pipelines would be collocated along this single pipeline corridor adjacent to upper FS 824 and the Beaver Creek bypass on NFS land. The pipeline corridor would be located against the cut slope on the west side of the road, except for areas that require the pipelines to be on the east side of the roadway because of geological or other constraints in pipeline routing. A geotechnical analysis would be used to determine construction specifications for any areas of concern.

The pipelines would be used to transport natural gas, natural gas condensate, produced water, and fresh water from long-term development of natural gas wells operated by CPX. The pipeline launcher and receiver would be located on CPX-owned land. The pipelines would tie in to a receiving point north of NFS land on private property owned by CPX (Figure 1-2). The receiving point is a contractual sales point where CPX product would be transferred to a third-party natural gas pipeline company at a contractual minimum operating pressure of 220 pounds per square inch (psi).

A POD would be prepared by CPX, reviewed by the Forest Service, and incorporated into the construction, operation and maintenance of the pipeline. The pipeline design would be included in the POD and would be signed and stamped by a professional engineer licensed in the State of Colorado. Pipelines would meet or exceed requirements of COGCC, Department of Transportation (DOT), and other regulatory agencies, and would meet or exceed industry standards provided by ANSI/ASME, and others. The existing 4.5-inch-diameter pipeline could be repurposed as a buried pipeline to transport condensate after meeting pipeline integrity, pressure testing, and other engineering requirements. The POD, pipeline design, and material specifications would be reviewed by the RWPD.

Pipeline specifications are described in Table 2-4. Individual pipelines would be designed to transport pipeline flows as follows:

- Designated to transport natural gas;
- Designated to transport natural gas condensate; and
- Designated to transport produced or fresh water.

The pipeline flows would vary based on operation needs. Pipeline flows for produced and fresh water may be bidirectional depending on operation phase in which, for example, a pipeline could transport fresh water to the TPR operation for well development and later transport produced water off site. Pipeline volumes are subject to production outcomes and would vary over time.

**Table 2-4. Proposed Underground Pipelines**

Pipeline	Flow Direction	Number	Length (miles)	Diameter (inches)	Pressure (psi)	Material
Natural gas	North	1	1.55	12	High	Carbon Steel
Condensate	North	1	1.55	2 to 4.5	High	Carbon Steel
Produced or fresh water	Bidirectional	1	1.55	8	High	HDPE <sup>1</sup>

<sup>1</sup>High-density polyethylene with flexible steel core for high pressure service and corrosion resistance

### **2.1.3 Construction**

The project is estimated to require approximately 3 months to construct. Between one and 10 construction workers would be on site at a given time during different phases of construction. Construction hours generally would occur between 6:30 a.m. and 8:00 p.m., 7 days a week. The construction contractor would restrict construction traffic and activities to the temporary disturbance areas.

Construction sequencing would begin with clearing, cut (benching), fill, and grading for the pipelines. Then, pipeline installation, pressure testing, and backfilling of the pipeline trench would occur, followed by road construction and installation of culverts and the borrow ditch. Soil removed during construction would be segregated to preserve topsoil for revegetation. In areas where pipelines would be installed against the cut slope, dirt spoils would be brought down to the road surface and then backfilled into the pipeline trench. Disturbed areas outside of the roadway would be revegetated. Public road use would continue along FS 824 during construction of the Beaver Creek bypass but road closures may occur during pipeline construction along upper FS 824.

The estimated area of temporary disturbance during project construction may be up to 15.16 acres in size, based on an average 100-foot-wide area affected for road and pipeline construction

and additional disturbance for road improvements and Beaver Creek trailhead work. The estimated area of permanent new disturbance after project construction would be approximately 3.08 acres, based on the area for the permanent road surfaces and after reclamation of the pipeline corridor and other temporary disturbances. The net permanent disturbance would be approximately 1.42 acres after decommissioning lower FS 824. Disturbance areas are shown in Table 3-6.

The Forest Service would oversee an appraisal and settlement sale to CPX for any merchantable timber removed for the project. The construction contractor would chip or hydroaxe small brush for reuse on site. Water needed for dust suppression during construction would be trucked to the project area from off site by a commercial hauler. No on-site surface or groundwater withdrawals would be needed to support project construction.

Table 2-5 describes the construction phases, and estimated personnel, equipment, and duration of construction activities. Some activities could occur simultaneously.

**Table 2-5. Estimated Construction Personnel and Equipment**

Construction Phase	Estimated No. Personnel	Equipment <sup>1</sup>	Estimated Duration (days)
Clearing and grubbing, cut, fill, and grading	6	Excavators, bulldozers, compactors, logging equipment, hydroaxe	30-45
Pipeline trenching	5	Excavator, bulldozer, laydown, side boom	10
Pipeline installation and pressure testing	10	Pipe trucks, welders, pipe layers, pressure testing equipment (water trucks or pressurized gas trucks)	20
Trench backfilling	5	Excavator, bulldozer, front end loader,	10
Access road construction and surfacing	10	Excavator, blade, roller, belly dumps, water trucks	14
Reclamation and revegetation	3	Broadcast seeders, hydro mulching equipment	5

<sup>1</sup> Crew trucks, pickup trucks, and supply trucks are needed for all phases of construction.

Pipeline installation would be conducted in accordance with industry standards, regulatory requirements, conditions of approval, and the POD. The POD would include explicit procedures for assembly, joint welds, inspection, installing corrosion prevention, and pressure testing. Any water used for pressure testing would be dumped off site by a commercial hauler after testing was completed.

After pipeline burial, the portion of the pipeline ROW not needed for construction or reconstruction of FS 824 would be recontoured and revegetated. The WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a) specifies seeding and revegetation standards for disturbed areas, which are anticipated to be 75 percent vegetative cover after two growing seasons.

#### **2.1.4 Operation and Maintenance**

Use of the pipeline and access would be continuous and would occur year-round to support TPR operations. The roadways primarily would be traveled during daylight hours, 7 days per week. Nighttime access would occur to respond to on-site operation needs, as necessary.

Signage for the Beaver Creek bypass would conform to requirements specified in the White River National Forest TMI Action Plan (USFS 2012a). Clearly visible signage at the CR 317 turnoff would alert the public to the new access to NFS land and the Beaver Creek Trail. Periodic road maintenance and repair would be conducted for upper FS 824 and the Beaver Creek bypass in accordance with standards identified in the WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a), the Forest Service's Low-volume Roads Engineering Best Management Practices Field Guide (USFS 2003), and an annual operations and maintenance plan submitted by CPX to the WRNF.

The pipelines would be remotely monitored for large swings in flow or pressure, which could be indicators for necessary maintenance or repair. Pipeline markers would be installed to ensure awareness of the location of the pipelines. CPX would perform routine inspections of the pipeline ROW, valves, signs, corrosion meters, and markers under a pipeline maintenance plan. Pigging the pipelines would be used to clean the pipeline and address blockages, if indicated. Pigging can also determine if corrosion, pitting, loss of a section, or pipeline damage has occurred. These practices ensure pipeline integrity and minimize the potential for leaks or spills.

The term of authorization for the pipelines is 30 years with renewal options. After operations end, buried pipelines would be abandoned in place to avoid further surface disturbance to soils, vegetation, and habitat. The Beaver Creek Road would remain to provide continued access to the trailhead and private property.

### 2.1.5 General Environmental Protection Measures

The general environmental protection measures described in Table 2-6 would apply to construction and operation activities. Additional details regarding environmental protection and mitigation measures are described by resource in Chapter 3, Affected Environment and Environmental Effects.

**Table 2-6. General Environmental Protection Measures**

<b>General</b>
CPX will comply with applicable federal, state, and local environmental regulations. Prior to construction, supervisory construction personnel will be instructed on environmental protection measures for resources.
CPX will conduct construction activities in a manner that avoids unnecessary scarring or defacing of the existing surroundings in or adjacent to work areas.
CPX will remove construction waste material from the construction area.
CPX private property and the existing roadways will be used for construction laydown areas to further minimize the area of disturbance.
<b>Air Quality</b>
Emission controls on vehicles and equipment will be maintained in good working order. Vehicles and equipment showing excessive emissions as a result of poor engine adjustments or other inefficient operating conditions will not be operated until repaired.
Areas of disturbance will be limited to the area necessary to support construction and operations in order to limit fugitive dust emissions.
There will be no open burning of waste material.
<b>Water Quality</b>
Construction will be performed using methods to prevent accidental spills of solid material, contaminants, or other pollutants and wastes into surface or ground water. CPX has a current Emergency Response Plan that addresses spills and spill response, and directs the on-site availability of absorbents and other spill cleanup materials. The potential for spills is small and readily can be contained because most materials will be used off site.
Erosion control measures will be implemented on disturbed areas to avoid transport of sediments to surface water.
A Stormwater Management Plan will be developed for the project which specifies stormwater controls for construction and inspection of the controls to ensure they are maintained in proper working order.
<b>Vegetation Resources</b>
Once construction is complete, disturbed areas will be left in a condition that facilitates revegetation, limits the potential for invasive weeds, provides for proper drainage, and prevents erosion.
Disturbed areas will be revegetated with a Forest Service-approved seed mix after construction ends.
There will be no cross country travel during construction and operation. Travel will be limited to the existing and proposed access corridors.
Topsoil will be stockpiled to use for reclamation and revegetation.
Invasive weeds will be managed in accordance with WRNF LRMP standards and guidelines and the WRNF Invasive Species Action Plan (USFS 2008a).

<b>Cultural Resources</b>
An inventory of pre-historic and historic cultural resources will be completed for the areas of planned disturbance prior to construction. Important cultural areas will be managed in accordance with the WRNF LRMP standards and guidelines and in coordination with the Colorado Office of Archaeology and Historic Preservation (OAHF).
Before construction begins, supervisory construction personnel will be instructed on the protection of cultural resources inadvertently encountered during construction, and the need to cease work in the location if cultural resource items are discovered.
<b>Transportation</b>
The contractor will conform to traffic safety standards and will conduct construction activities to avoid or minimize obstruction and inconvenience to the traveling public, including minimization of any road closures.
<b>Noise</b>
Internal combustion engines used for construction will be properly maintained to minimize nuisance conditions created by construction noise.

## 2.2 Other Permits and Approvals Required

In addition to Forest Service approval of the project, the portions of the project located on NFS land are anticipated to require the permits or clearances listed in Table 2-7.

**Table 2-7. Anticipated Permits and Clearances Required**

<b>Agency</b>	<b>Action</b>
Colorado Department of Public Health and Environment	Stormwater Construction Permit
Colorado Office of Archaeology and Historic Preservation	Cultural resource survey
Rifle Watershed Protection District	Watershed Permit amendment
U.S. Army Corps of Engineers	Clean Water Act, Section 404, nationwide permits
U.S. Fish and Wildlife Service	Endangered Species Act compliance
U.S. Forest Service	Migratory Bird Treaty Act compliance
U.S. Forest Service	Biological Evaluation
U.S. Forest Service	Annual road operation and maintenance plan
U.S. Forest Service	Geotechnical and structural analysis for road and pipeline construction
U.S. Forest Service	Plan of Development for pipeline construction
U.S. Forest Service	Road construction plan set
U.S. Forest Service	Special Use Authorization for pipeline construction
U.S. Forest Service	Traffic Control Plan

Regarding regulation for stormwater, according to the State of Colorado, private oil and gas operations on federal lands are regulated by the state and must meet Colorado Department of Public Health and Environment’s (CDPHE’s) stormwater permitting requirements (CDPHE 2007).

Oversight is anticipated for compliance with the state Air Pollution Emission Notice (APEN) requirements for control of fugitive dust during construction. Land development activities that are less than 25 contiguous acres and less than 6 months in duration, however, do not need to comply with APEN requirements. Garfield County does not require pipeline permitting for pipelines that are not greater than 12 inches in diameter (Garfield County 2013).

On March 4, 2014, representatives for CPX met with representatives from RWPD to discuss the project. During the discussion, representatives from RWPD stated that continued use of FS 824 will require an activity review by RWPD, consisting of a review of plans and specifications for the road work and pipelines. Construction of the Beaver Creek bypass will require an amendment to the existing RWPD permit issued in 2008 for the TPR operations.

On March 5, 2014, RWPD issued a memorandum addressed to then-Black Diamond Minerals citing the history of operator compliance since the RWPD permit was issued for TPR in 2008. The memorandum acknowledged positive contributions made to the Beaver Creek Watershed from road improvements and water monitoring activities. The memorandum then concluded that RWPD sees value in rerouting the access road to the proposed Beaver Creek bypass because it moves TPR traffic farther from the creek, which reduces the potential for stormwater runoff and sedimentation to affect Beaver Creek (RWPD 2014).

### **2.3 No Action Alternative**

Under the no action alternative to the proposed action, CPX would not construct a new access road, underground pipelines, and associated facilities (located on private lands) to support the continued development of TPR. CPX would continue to use the existing FS 824 for commercial traffic and the existing 4.5-inch-diameter above-ground pipeline adjacent to Beaver Creek to transport natural gas with associated potential for sediment loadings and spills impacting Beaver Creek. FS 824 does not provide optimal safety for the mix of anticipated large commercial vehicles/traffic volumes and public use. In particular, continued use of the steep switchbacks on FS 824 by vehicles such as those described in Table 2-2 is a concern winter or when travel conditions are wet or icy. Traffic safety concerns associated with the existing roadway, therefore, would not be addressed. The no action alternative limits TPR development to the existing pipeline capacity, which is not adequate to transport the volumes of natural gas, natural gas condensate, and produced water anticipated from further development of natural gas resources.

## **2.4 Alternatives Considered but Eliminated from Further Analysis**

Two alternatives to construction of the project as proposed were considered but eliminated from further analysis. The alternatives consist of the following:

- Continued commercial use of lower FS 824
- Pipeline construction adjacent to lower FS 824

Lower FS 824 is shown on Figure 1-2. The sections below discuss why the alternatives were not considered for further analysis.

### **2.4.1 *Continued Commercial Use of Lower FS 824***

Continued commercial use of lower FS 824 by widening the roadway, and grading and reconstruction of the switchbacks was not considered a feasible alternative. The earthwork would increase the area of disturbance and sedimentation adjacent to Beaver Creek while not adequately addressing safety concerns. Options for widening lower FS 824 are limited by the physical constraints in this narrow valley and by the need to preserve slope stability for the steep topography on the west side of the road. Widening that could occur would not address underlying safety concerns for commercial and public use because the road would continue to contain narrow, steep sections and switchbacks less suitable for long-term safe travel than the new access road.

CPX is seeking to minimize the safety concerns associated with continued travel on the steep switchbacks on FS 824. The switchbacks are visible on Figure 1-2. Certain vehicles associated with oil and gas exploration and development can be up to 90 feet long. Negotiating the grade and turns on the switchbacks is not optimal during winter or when travel conditions are wet or icy. Widening the current area of disturbance, further excavation into the cut slope on the west side of the road, and grading and placement of fill on the switchbacks increases sedimentation concerns for Beaver Creek, which is located adjacent to lower FS 824.

The narrow area surrounding lower FS 824 would require pipeline installation under the roadway where the steep area topography could not support the cut and fill necessary for trenching alongside the road. Construction under roadways increases construction time, necessitates shutting the road down during the period of construction and again for maintenance, limits the

accessibility of the pipelines for inspection, and increases the risk to surface water contamination from pipelines permanently installed adjacent to Beaver Creek.

Burying pipelines adjacent to the proposed Beaver Creek bypass would decrease traffic volumes by eliminating the need to transport condensate, produced water, and fresh water for TPR operation. Reducing truck traffic, in turn, reduces noise, road dust, and safety risks from commercial and public shared use of the road, and potential for contaminant releases to Beaver Creek or the environment from accidents from commercial haul traffic.

#### **2.4.2 Pipeline Construction Adjacent to Lower FS 824**

Use of lower FS 824 was not selected for pipeline construction because it does not provide adequate area along the roadway, likely would necessitate construction of portions of the pipeline under FS 824, and is adjacent to Beaver Creek.

Portions of lower FS 824 (particularly on private lands) consist of an approximately 15-foot-wide roadway with Beaver Creek to the east and slopes of approximately 30 to 50 percent to the west. This configuration does not provide adequate area along the roadway in some areas to excavate the cut slope to the west of the road to locate the proposed pipelines, particularly in areas with poor slope stability. Instead, some areas likely would necessitate that portions of the pipelines be constructed under the roadway. Construction and maintenance are more difficult when pipelines are under roadways because the configuration necessitates shutting the road down during the period of construction and again for maintenance. Also, it is difficult to isolate a portion of the pipeline for inspection and maintenance when the pipeline is not easily accessible by removing the surface soil.

Excavating the cut slope west of the road for placement of the pipelines increases sedimentation concerns for Beaver Creek, which CPX is seeking to minimize for the reasons discussed in Section 2.4.1.

## **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS**

This chapter describes the existing conditions of the natural and human environment in the project area. The project area is considered to be the affected portions of USFS land, except where additional area is described to more fully characterize an individual resource.

This chapter also describes potential environmental effects of the project and associated environmental mitigation and other protection measures. The discussion of potential effects distinguishes between short-term versus long-term and direct versus indirect effects. Short-term effects would be associated with project construction. Long-term effects would be associated with project operation and maintenance. Direct effects would result from CPX activities (e.g., vegetation removal). Indirect effects would be a byproduct of direct effects (e.g., erosion resulting from vegetation removal). Cumulative effects are discussed separately in Chapter 4. Cumulative effects would be incremental effects to the environment in combination with resource effects occurring in the project area from other past, present, or reasonably foreseeable future actions.

### **3.1 Land Use and Recreation**

#### **3.1.1 *Affected Environment***

The project is located on private and NFS land in the western portion of the WRNF, south of Rifle, Colorado. The land is managed by the Rifle Ranger District. There are eight wilderness areas in the WRNF, none of which are located in the project area. Elevations in the project area range from 8,000 to almost 9,000 feet above mean sea level (amsl). The elevation at CR 317 is approximately 7,900 feet, and the elevation at the southern CPX gate is approximately 8,700 feet.

The National Visitor Use Monitoring program recorded over 14 million annual recreational visits in the WRNF in 2012 (U.S. Department of Agriculture 2017). Recreational opportunities in the WRNF include hiking, hunting, fishing, dispersed camping, mountain biking, rock climbing, horseback riding and winter activities such as snow shoeing, cross-county skiing, snowmobiling or dog sledding. Recreational use specific to the project area averages approximately 260 vehicles per month during the summer and fall, based on the traffic count conducted by representatives from the WRNF between August 2016 and November 2016, which is described in Section 3.9 (USFS 2016a).

There are two private inholdings accessed by FS 824: TPR and a part-time residence near the switchbacks on FS 824. Figure 1-2 shows land use and ownership surrounding the project area. Surrounding land uses consist of oil and gas exploration and development on private property north and south of the project area, public land, and residential development. Oil and gas exploration and development north of the proposed project is conducted by Piceance Energy, LLC, doing business as Laramie Energy, LLC. Oil and gas exploration and development south of the project area is conducted by CPX. Additional exploration and development in the surrounding area is conducted by Encana Corporation, Terra Energy Partners, and Summit Midstream Partners (COGCC 2016). The project area is a remote location with no full-time residents. The part-time residence is located approximately 0.4 mile from the nearest point of the proposed access road.

There is a single WRNF trail in the project area, the Beaver Creek Trail. The Beaver Creek trailhead is located near the TPR gate and is accessed using FS 824. The trail is approximately 3.5 miles long. The trailhead and a portion of the trail are shown on Figure 1-2. The Beaver Creek Trail is a non-motorized trail open to hiking and horseback riding. Dispersed camping is permitted off of FS 824 but is limited by steep topography in the area in combination with the WRNF prohibition against camping within 100 feet of streams. Beaver Creek, located east of the proposed project supports recreational use by anglers. Winter activities allowed in the area include snow shoeing, cross country skiing and other non-motorized winter sports.

The WRNF is managed under land use policies in the LRMP (USFS 2002). The plan outlines standards and guidelines for forest management and includes a monitoring component for forest managers to assess the goals, objectives, and future desired conditions across the WRNF for the next 15 years.

The project area is located in LRMP Category 5. Category 5 applies to lands which primarily are forested ecosystems managed to meet a variety of ecological and human needs. They often are characterized by a substantially modified natural environment and display high levels of investment, use, activity, facility density, and vegetation manipulation. According to the LRMP, users expect to see other people and evidence of human activity (USFS 2002).

Within LRMP Category 5, the project area is designated MA 5.41, Deer and Elk Winter Range. These areas are managed so that deer and elk can continue to effectively use the area. Motorized travel generally is confined to designated use corridors. Road systems are relatively undeveloped.

Roads are low-standard, single-purpose roads. The applicable MA 5.41 themes and standards are listed below.

1. Over-the-snow vehicle use is restricted to designated routes and play areas unless authorized by SUP or for emergency use.
2. All new roads passing through this area will avoid important forage, cover, and birthing areas.
3. Roads and trails needed to implement management in the area should be low-standard, single-purpose roads.
4. Avoid crossing these areas with new arterial or collector roads.

Road realignment must conform to the WRNF LRMP, Chapter 2, standards to maintain or reduce the existing net density of roads in order to restore or prevent alteration of the hydrologic function of the sub-watershed in which Colorado River cutthroat trout are found, to restrict construction of new roads within 350 feet of occupied cutthroat trout streams, and to reroute roads adjacent to cutthroat trout streams and their tributaries (USFS 2002).

### **3.1.2 Environmental Effects**

#### **Proposed Action**

Under the proposed action, current private and public land uses would continue, including residential, recreational, and commercial uses in the area. Motorized travel would continue to be confined to a designated use corridor on an aggregate surfaced, low-standard, local road because the shift to the Beaver Creek bypass alignment would be aggregate surfaced, designed for AASHTO low-volume usage, and would continue to be a local road with no through traffic, arterial, or collector roads.

The Beaver Creek bypass would meet the LRMP standard to maintain or reduce the existing net density of roads in order to restore or prevent alteration of the hydrologic function of the sub-watershed in which Colorado River cutthroat trout are found, to restrict construction of new roads within 350 feet of occupied cutthroat trout streams, and to reroute roads adjacent to cutthroat trout streams and their tributaries. The new access road represents a *shift* of commercial and public road use from lower FS 824 to the Beaver Creek bypass with no net increase in road density. The Forest Service notes that the minimal increase to road width for the Beaver Creek bypass does

not represent a net increase to road density because the standard applies to lineal feet, not square feet, of road (USFS 2016b). Post-construction, there would no longer be a road within 350 feet of a cutthroat trout stream. Lower FS 824 would be decommissioned, to the benefit of Beaver Creek water quality by reducing the potential for continued sedimentation in the stream.

FS 824 currently is closed to public motorized travel in winter, defined as November 23 through May 20 annually, in accordance with WRNF's 2011 Travel Management Plan Record of Decision (ROD) (USFS 2011b). The winter motorized travel restriction includes snowmobile use, unless by permit. Road closure conforms to management goals under MA 5.41 in the LRMP (USFS 2002) to protect deer and elk winter range. A locked gate to limit winter access was installed by the Forest Service in 2015. The winter motorized travel closure and gate would remain in effect for the new FS 824 road alignment. Only the Forest Service and permitted users, such as CPX and other landowners, would have motorized access to FS 824 during the winter closure. CPX would continue to plow FS 824 throughout the winter to access TPR, which requires year-round maintenance and administration. Plowing on FS 824 is anticipated to leave an unplowed area for snowshoers and skiers that is wider than the area that currently exists in winter because the plowed travel lane would be narrower than the new 20-foot-wide road surface. The additional unplowed area would be a benefit to wintertime recreational use and would be supplemented by further unplowed skiing and snowshoeing access along the buried pipeline corridor.

A cattle guard would be placed at the Forest Service boundary, and existing fencing would be tied into the structure. A winter closure gate would be installed approximately 150 feet south of the forest boundary on the new Beaver Creek bypass to prevent unauthorized motorized travel on NFS land in winter. The area in front of the gate would be widened to accommodate vehicles and vehicle turnaround for winter recreational use, such as hiking, snowshoeing, and skiing.

During non-winter months, the public motorized access to FS 824 currently in effect would continue, with safer travel conditions from the improved road. There would be signage for FS 824 at the intersection of the new FS 824 alignment and CR 317 to alert the public to the new road location. Additional signage at the Laramie property boundary would alert the public that that road is no longer in use. The Beaver Creek trailhead at the south end of FS 824 would have improved access with a Y-intersection to separate this portion of road from through traffic and with an expanded trailhead parking area and vehicle turnaround area. The additional area would be a benefit for periods when multiple recreational visitors in the area are seeking trailhead access.

The cost for the civil site work necessary for the expanded trailhead parking area and vehicle turnaround area would be borne by CPX.

The north end of the Beaver Creek bypass would cross approximately 900 feet of private land owned by CPX (Figure 1-2). CPX would develop an access agreement for public use of this portion of road to allow for public and private landowner access to FS 824.

CPX commercial use of FS 824 and operation of adjacent pipelines would be authorized and regulated by an SUP issued to CPX by the Forest Service. The Forest Service would stipulate conditions of use and would impose additional requirements for road maintenance and annual reporting of road use.

During road and pipeline construction, recreational users would notice direct, short-term effects from human activity along FS 824, including equipment use, noise, fugitive dust, and potential traffic delays to accommodate construction vehicles and activities. Effects would occur intermittently over a period of approximately 3 months, which includes the time necessary to remove the existing 4.5-inch-diameter pipeline and then decommission lower FS 824. Construction activities could indirectly affect a hunting season experience by coinciding with early season portions of the season. The construction period and road use would be in compliance with the MA 5.43 timing restriction for winter use between December 1 and April 14.

Long term, TPR operations would continue commercial use of FS 824, consistent with current usage. Traffic would increase episodically during periods of well drilling and well completions, with associated truck traffic to transport equipment, personnel, and water, as is the case currently. Traffic then would return to baseline operating levels for light duty pickup, supply, and water pumper trucks at the estimated 5 to 30 round trips per month shown in Table 2-2. Installation of buried underground pipelines, by design, would eliminate some products from being transported by truck.

Recreational users of FS 824 would experience long-term improved and safer road conditions through elimination of the narrow road that does not consistently accommodate two-way passing traffic and elimination of the steep switchbacks on lower FS 824. There would be a long-term recreational benefit from separation of the Beaver Creek trailhead from FS 824 with a Y-intersection at the trailhead and expanded trailhead parking area and vehicle turnaround area. Decommissioning lower FS 824 would provide an improved experience for anglers by creating a larger setback between Beaver Creek and passing vehicle traffic, and reducing potential

sedimentation to Beaver Creek. The improved travel and recreational experiences are anticipated to have a neutral to positive effect for public land use and recreation in the project area.

### **No Action**

Under the no action alternative, CPX would continue to use the existing FS 824 for commercial traffic and would continue to operate the existing above-ground 4.5-inch-diameter pipeline adjacent to Beaver Creek to transport natural gas for the authorized time period. The no action alternative does not provide optimal travel safety for passing or large vehicles, or an optimal setback from Beaver Creek for the road and pipeline. Lower FS 824 would not be decommissioned, and improvements would not be made for access and an expanded trailhead parking and vehicle turnaround area at the Beaver Creek trailhead.

#### **3.1.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be employed to avoid potential effects to land use and recreation:

- The existing 4.5-inch-diameter surface pipeline now in use will be removed prior to decommissioning lower FS 824.
- Access to lower FS 824 will be maintained during construction of the Beaver Creek bypass.
- Signs will alert the public to construction activity and any periodic traffic delays.
- Signs will alert the public to relocation of NFS access via the Beaver Creek bypass.
- An easement will be developed for access to NFS land across the CPX private parcel at CR 317.
- The winter closure gate on the Beaver Creek bypass will have an area for vehicle parking and turnaround.
- The decommissioning and revegetation of lower FS 824 will be overseen by the Forest Service.
- CPX will have stipulations issued by the Forest Service regarding FS 824 road use and maintenance.

## **3.2 Geology and Soils**

### **3.2.1 Affected Environment**

#### **Geology**

The project area is located on the northeast side of Battlement Mesa, approximately 3 miles northeast of North Mamm Peak. Battlement Mesa is located along the south-central part of the Piceance Basin. It is an erosional remnant of a large late Tertiary (early Pliocene) basalt plain (Yeend 1969). The majority of the project area is located within the Anvil Point Member of the Green River Formation, which is Tertiary age sedimentary rock composed primarily of lake deposited mudstone, shale, and sandstone with lesser amounts of marlstone, and limestone (Green 1992). A Quaternary-age pediment of clay and siltstone gravels and large-diameter ( $\leq 8$  feet) basalt boulders forms the ridge above the project area. Subangular to rounded basalt boulders from this pediment are common on the surface in the project area and originated from the top of Battlement Mesa to the west. Elevations in the project area range from 8,000 to 9,000 feet amsl.

#### **Soils**

Soils in the project area were mapped by the Forest Service (USFS 1993b). The major soil map units are shown on Figure 3-1. They include Doughspon (Map Unit 345B) and Tampico-Echemoor (Map Unit 449C). A section of upper FS 824 lies on the boundary between Tampico-Echemoor and Leadville (till) (Map Unit 220B). Doughspon soils have a loam to clay texture. Tampico soils have a loam to clay loam texture. Echemoor soils have a silt loam to clay loam texture. They generally drain well with some areas of poorly drained soils. In general, mass movement potential for landslide and debris flow for the soil types is low.

Six partial soil profiles were exposed in hand-excavated pits to a depth of 10 to 18 inches in the A and B soil horizons along the Beaver Creek bypass during a July 2014 field survey conducted by Tetra Tech, Inc. (Tetra Tech). Four of the soil profiles were excavated in aspen forest and woodlands. One was excavated in a scrub oak shrubland, and one in a subalpine fir forest. Soil profiles were confined to the upper horizons of the soils.

The field survey soil profiles located in the aspen and subalpine fir forests appeared to have fine to fine loamy horizons. The predominant texture was clay loam and 0 to 5 percent coarse rock

fragments. This is consistent with a 2008 geotechnical analysis of the area, which characterized soils as clay fill overlying sandy clay and gravel with cobbles (HP Geotech 2008).

The A horizon colors indicated a moderate to high organic matter content. These soils would likely be classified as a Mollisols. The estimated erodibility value for these soils was 0.27. The estimate is based on the dominant clay loam texture and subangular blocky structure observed in the soil profiles, an assumed organic matter content of 2 percent, and a permeability class of slow to moderate.

The soil profile in the scrub oak shrubland was similar to the profiles described above. This soil likely would be classified as an Alfisols because of the accumulation of clay in the B horizon (argillic). It would have a similar or slightly higher estimated erodibility potential than that reported for the profiles above because of a lower estimated organic matter content. The susceptibility of these soils to water erosion upon disturbance and compaction is estimated to be moderate.

A subsurface investigation was conducted by Tetra Tech in September 2016, which consisted of a geophysical survey and geotechnical drilling (Tetra Tech 2017). For the geophysical survey, Tetra Tech used electrical resistivity tomography (ERT) for inaccessible segments of the proposed road alignment where a drill rig could not gain access because the area contains dense vegetation. ERT uses electrode resistivity along survey lines to investigate the subsurface, such as depths to bedrock and groundwater, and differences in soil stratigraphy. The data showed layered subsoil to depths of approximately 30 feet consistent with fine to medium grained sand and a mixture of coarse and fine grained materials. For the geotechnical investigation, Tetra Tech used a drill rig to collect samples from exploratory soil borings along the road and pipeline corridor where a drill rig could gain access. Soils were tested for, among other parameters, density and moisture content, Atterberg limits, grain size distribution, silt and clay content, compaction characteristics, and shear strength. The subsurface investigation results indicate soils similar to published Forest Service mapping and previous investigations.

### **Geologic Hazards**

Instability of slopes due to naturally occurring conditions can be exacerbated by human activity. The project area consists of densely vegetated hillsides with slopes ranging from approximately 2H:1V to 5H:1V. The slopes are comprised of clay, sand, gravel, and boulders in a variable and interlayered configuration. U.S. Geological Survey (USGS) mapped landslides are shown on Figure 3-2, which indicates that there are no mapped landslide deposits within or adjacent to the

project area (Colorado Geological Survey 2016). Field investigations by Tetra Tech identified small, localized slump features along the proposed road alignment and at the top of the switchback on FS 824. Based on this information, it appears the naturally occurring slopes have developed a shear stress close to but less than the shear strength of the soil in most locations. In other words, the slopes appear stable in their current configuration but may be susceptible to failure with changes to either the shear stress or shear strength.

Shear stress can increase from additional loading or from a change to the geometry. Increased loading would occur in the event of seismic activity or from vehicles on top of the roadway embankment. Increased slope angle could occur as a result of erosion, construction practices, or other factors. Shear strength can decrease from an increase in the phreatic surface (for example, a localized increase in the ground water level due to prolonged wet weather, unusual snow melt/runoff conditions, or poor drainage conditions).

Tetra Tech installed inclinometers for ongoing measurement of slope stability in two of the soil borings along upper FS 824 considered to be at locations where instability is most likely to occur. The initial inclinometer readings indicated little to no slope movement. Inclinometers are anticipated to be left in place and monitored throughout 2017.

Other naturally occurring geologic hazards such as faults, collapsible soil, or swelling soil have not been mapped within or adjacent to the project area. Additionally, no mining claims exist within the project area (Causey 2011).

### **3.2.2 *Environmental Effects***

#### **Proposed Action**

Regarding soils, effects to soils from the proposed action are anticipated to be localized and short-term. Topsoil would be windrowed during construction and stored to support revegetation and, potentially, reclamation of lower FS 824. Direct effects to soils would result from vegetation clearing, excavation and fill placement, compaction, modification of surface drainage patterns, and disruption of litter fall and soil organic matter. These primarily would affect efforts to revegetate and stabilize disturbed areas and would be minimized by limiting the area of disturbance and inspecting the road and pipeline corridor for erosion or undercutting and runoff.

Soil transport during construction would be controlled using stormwater best management practices (BMPs) to avoid sediment from reaching Beaver Creek. Site-specific BMPs would be

included on project design drawings. They would be inspected daily during construction and would be modified or replaced, as needed. BMPs also would be used during decommissioning work on lower FS 824. The standards for the level of work necessary to decommission lower FS 824 will be designated by the Forest Service. The Forest Service has indicated minimal earthwork should be performed to avoid unnecessary disturbance and potential to introduce sediment to Beaver Creek (Section 2.1.1). Work would be limited to removing aggregate surfacing, decompacting, scarifying, and vegetating the roadbed; removing culverts; and armoring drainages with rock to support natural surface and stormwater flows.

Regarding slopes, the project area is located along steep slopes that are susceptible to slumps. The proposed action has the potential to affect slope stability in the short and long term by contributing to activation of new slumps or enlarging existing slumps. The probability of slope instability typically increases during, and immediately following, high precipitation events, rapid snowmelt, or a seismic event. Earth and debris flow could directly affect FS 824 and indirectly affect access to TPR and NFS land until any obstruction was resolved. Ground deformation associated with soil movement also could cause bending and risk to buried pipelines. Potential slope movement could be caused by conditions like those listed below.

- Increased water content from concentration of runoff, perennial stream flow, and shallow subsurface flows
- Clearing of vegetation
- Increased snow accumulation along the road and pipeline corridor
- Excavation and addition of fill material at the toe of slump escarpments/blocks and flow deposition zones with removal of lateral support
- Shocks and vibrations from equipment and removal of trees

The geotechnical investigation and analysis conducted in September 2016 indicated that the proposed action would not have an impact on the stability of slopes with appropriate engineering design from a Colorado-licensed professional engineer. The analysis identified site-specific design criteria necessary to address the geologic hazard of slope instability, including engineering design to stabilize cut slopes and fill slopes; retaining areas, where necessary; surface water drainage improvements; and compaction for roadways and trench backfill (Tetra Tech 2017). All engineering design and construction would be reviewed by the Forest Service and would be

guided by the Forest Service Road Management Decision and Design Criteria Worksheet (USFS 2017a).

### **No Action**

Human activity appears to have caused minor slumps in the project area. Slumps may occur in the future, depending on forest management practices, precipitation events, runoff, snowmelt, and seismic activity. Soil resources in the project area would continue to be subject to potential runoff and resulting sedimentation in Beaver Creek. Such sedimentation potential would be greater under the no action alternative than the proposed action because the existing FS 824 alignment is closer to Beaver Creek without the wider setback and vegetation buffer to anchor soil and filter stormwater runoff presented by the Beaver Creek bypass.

### **3.2.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to reduce potential adverse effects to soils.

- Data collected from the September 2016 geophysical survey, boring logs, laboratory testing results, and slope stability modeling will be used in cooperation with the Forest Service to support road and pipeline design.
- Engineering design will address stabilizing cut slopes for pipeline installation.
- Detailed road and pipeline designs and drawings will be prepared under Forest Service design criteria. Construction specifications will be developed to guide construction.
- Continued inclinometer monitoring will be used to monitor areas of potential slope instability.
- Topsoil will be windrowed and retained to support revegetation along the Beaver Creek bypass and potentially used to reclaim lower FS 824.

### **3.3 Water Quality**

#### **3.3.1 Affected Environment**

##### **Surface Water Features**

The analysis area for potential effects to water resources is the Beaver Creek watershed and the tributaries to Beaver Creek that cross the construction corridor. The project area is located within the Colorado Headwaters-Plateau Watershed (Hydrologic Unit Code 14010005) (EPA 2014). The USGS National Hydrography Dataset (NHD) shows Beaver Creek as the predominant perennial stream in the project area. It is a tributary to the Colorado River and drains a subalpine watershed on the northeast side of Battlement Mesa. Annual discharge patterns for Beaver Creek are dominated by spring snowmelt (Resource Engineering 2012). In the project area, Beaver Creek parallels the east side of FS 824. The NHD shows two unnamed tributaries extending from the hillside west of FS 824 to Beaver Creek in Township 7 South, Range 94 West, Sections 24 and 25 (Figure 3-3)(USGS 2014).

A field survey was conducted on July 22, 2014, by Tetra Tech to formally delineate surface water and wetland features. The delineations were conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Western Mountain, Valleys, and Coast Region Regional Supplement (USACE 2010). Identification of the ordinary high water mark (OHWM) followed guidance in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008), and *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* (Mersel and Lichvar 2014). Follow up field work was completed in September 2015 by Tetra Tech.

Drainage features in the survey area were assumed to have a significant nexus with Beaver Creek, a traditional navigable water (TNW). Water features that were identified and delineated by Tetra Tech in the field on NFS land are shown in Figure 3-3. They are described below and in Table 3-1, starting at the north end of the project area.

Stream Feature 9 is a perennial feature. Water was flowing within a clearly defined bed and bank at the time of the survey. The OHWM, defined by a clear break in vegetation, defined banks, and sediment deposits in the channel bed, averaged 12 inches across with a bank height of 2 inches.

A fringe wetland was delineated adjacent to this feature and is discussed as Wetland 4. Stream Feature 9 likely meets the definition of a waters of the U.S. (WUS) because it was flowing at the time of the survey, has a clearly defined bed and bank, and has a nexus to a TNW.

Wetland 4 is a fringe wetland adjacent to Stream Feature 9. It was delineated by Tetra Tech as 0.006 acre of palustrine emergent wetland that is permanently flooded/saturated. Soil in the wetland was saturated in the upper 6 inches, with a hydrogen sulfur odor. The presence of hydrogen sulfide odor in the upper 12 inches of the soil profile indicates that an anaerobic state exists and that the soil is a hydric soil. Dominant vegetation in the wetland is sedge (*Carex* sp.) and Torrey's rush (*Juncus torreyii*).

Stream Feature 8 is a perennial feature. Water was flowing within a clearly defined bed and bank at the time of the survey. The stream turned to sheet flow in the survey area east of the wetland, likely caused by down trees across the defined feature. Downstream and east of the survey area, the defined bed and bank re-form and connect the feature to Beaver Creek. The OHWM is defined by a clear break in vegetation, incised banks, and sediment deposits in the channel. The OHWM averaged 24 inches across with an average bank height of 2 inches. A fringe wetland was delineated adjacent to this feature and is discussed as Wetland 3. Stream Feature 8 likely meets the definition of a WUS because it was flowing at the time of the survey, has a clearly defined bed and bank, and has a nexus to a TNW.

Wetland 3 is a fringe wetland adjacent to Stream Feature 8. The wetland was delineated by Tetra Tech as 0.015 acre of palustrine emergent wetland that is permanently flooded/saturated. Dominant vegetation in the wetland is horsetail (*Equisetum laevigatum*), Torrey's rush, and manna grass (*Glyceria striata*). Soil in the wetland was saturated in the upper 6 inches, with a hydrogen sulfur odor. Water in the area sheet flows east of the wetland and was evaluated for wetland indicators.

Stream Feature 7 is a perennial feature. Water was flowing within a clearly defined bed and bank at the time of the survey. The OHWM, defined by a clear break in vegetation and incised banks, averaged 20 inches across with an average bank height of 2 inches. A fringe wetland was delineated adjacent to this feature and is discussed as Wetland 2. Stream Feature 7 likely meets the definition of a WUS because it was flowing at the time of survey, has a clearly defined bed and bank, and has a nexus to a TNW.

Wetland 2 is a fringe wetland adjacent to Stream Feature 7. The feature was delineated by Tetra Tech as 0.015 acre of palustrine emergent wetland that is permanently flooded/saturated. Dominant vegetation in the wetland consists of horsetail, Torrey's rush, and fowl manna grass. Soil in the wetland was saturated in the upper 6 inches, with a hydrogen sulfur odor. The wetland boundary was identified by determining the location of non-hydric soils and by a transition in the hydrophytic status of the vegetation.

Stream Feature 6 is a perennial feature. The OHWM, defined by a clear break in vegetation, and a bed and incised banks, averaged 20 inches across. The average bank height was 4 inches. Stream Feature 6 likely meets the definition of a WUS because it was flowing at the time of survey, has a clearly defined bed and bank, and has a nexus to a TNW.

Stream Feature 5 is a non-perennial (likely an ephemeral) feature. There was no flowing water at the time of the survey. The feature forms from a swale, but a defined bed and bank develops within the survey area. The bed consists of silt loam soil with upland vegetation species growing between the banks. The OHWM is defined by a subtle change in vegetation, clearly defined banks, and litter and debris demonstrating a flow pattern in the channel. The OHWM averaged 18 inches across with bank heights averaging 6 inches high. This feature likely meets the definition of a WUS because it has a clearly defined bed and bank and has a nexus to a TNW.

Stream Feature 4 is identified by NHD as an intermittent feature. The feature had flowing water at the time of the survey. The substrate in the defined bed consisted of gravels, cobble, and boulders with vegetative litter and debris in the channel. The OHWM is identified by a clear break in vegetation and an incised channel. The OHWM averaged 72 inches across. The bank averaged 24 inches high. The feature likely meets the definition of a WUS because it has a clearly defined bed and bank and a nexus to a TNW.

An NHD line intersects the survey area to the south of Stream Feature 4. The area was evaluated for a potential wetland or WUS, but no feature was found. Topography was uniform with the mountainside and did not form a swale or channel.

Additional stream and wetland features were identified south of Stream Feature 4, but are located on private, not NFS, land.

**Table 3-1. Water Features in the Project Area**

Feature	Description	Long-term Effect
<b>Streams</b>		
Feature 9	Perennial	Spanned
Feature 8	Perennial	Spanned
Feature 7	Perennial	Spanned
Feature 6	Perennial	Spanned
Feature 5	Ephemeral	Spanned
Feature 4	Intermittent	Spanned
<b>Wetlands</b>		
Wetland 4	Palustrine emergent	Avoided
Wetland 3	Palustrine emergent	Avoided
Wetland 2	Palustrine emergent	Avoided

### Surface Water Quality

Water quality data for Beaver Creek is collected at a monitoring station north of the project area by the Rivers of Colorado Water Watch Network (Station ID 803). Data is collected for 26 water quality parameters, including alkalinity, metals, oxygen content, pH, temperature, and total suspended solids. Beaver Creek designated uses are classified by the CDPHE as agricultural, cold water aquatic life, domestic water, and primary contact recreation. Water quality data for Beaver Creek, available through the EPA STORET website, indicates that samples were last collected in 2008 (EPA 2017). The EPA Waterbody Quality Assessment Report ranked the overall status “good,” indicating that the creek supports its designated uses. There are no listed impairments or designated total maximum daily loads for the stream reach adjacent to the project area. An approximately 7.5-mile-long segment of Beaver Creek from the Forest Service boundary to the confluence with the Colorado River, however, is listed on the Clean Water Act, Section 303(d), list as impaired for selenium (CDPHE 2016).

Beaver Creek is located within the RWPD, which consists of a 5-mile-wide radius surrounding the City of Rifle intake diversion on lower Beaver Creek. The RWPD was established to protect Rifle’s water supply and the public water supply infrastructure from harmful constituents, such as sediments. Beaver Creek supplies approximately 9 percent of the city’s drinking water (Resource Engineering 2012). The Rifle intake on Beaver Creek consists of a concrete diversion structure where water is transported by gravity flow approximately 3 miles to a water treatment plant on CR 317 where water is stored in a holding pond at the water treatment plant. Water quality is monitored for turbidity, pH, conductivity, and oxidation reduction potential at the Beaver Creek

intake. A 2012 Cumulative Impact Study commissioned by the RWPD for Beaver Creek found that water quality degradation in Beaver Creek is associated, in part, with sedimentation caused by runoff from adjacent roadways (Resource Engineering 2012).

Rifle participated in the Source Water Protection Plan developed for communities participating in Colorado River Partnership source water protection. The initiative was designed to ensure protection of clean, high quality drinking water sources for current and future uses (Hill 2013). Also in response to the Colorado River Partnership, Rifle developed a watershed ordinance to protect the city’s drinking water supply. The ordinance requires project review and permitting for any activity within the RWPD which may pose a risk to drinking water supplies. Continued use of FS 824 requires an activity review by the RWPD, consisting of staff review of plans and specifications for road work and pipeline installation. Construction of the Beaver Creek bypass also will require an amendment to the existing RWPD permit issued for the TPR operations in 2008.

**Groundwater**

Groundwater in the project area is present in Colorado River alluvium. The Colorado River is located approximately 5 miles north of the project area. Alluvial groundwater resources are used for public water supply, agricultural irrigation, and domestic use. Reported water well depths along the Colorado River, near the City of Rifle, range from 10 to 115 feet below ground surface (Topper 2003). According to data from the Colorado Department of Natural Resources (CDNR), the wells located nearest the project area are shown in Table 3-2 (CDNR 2017).

**Table 3-2. Water Wells nearest the Project Area**

Permit No.	Owner	Location	Use	Aquifer	Permit Status	Well Depth	Water Level
212427	Honea, Katharine	SE1/4 NE1/4 Section 24, T7S R94W	Domestic	Unnamed	Expired 10/2/2000	Not reported	Not reported
222267	Bauer, George	SW1/4 NW1/4 Section 24, T7S R94W	Domestic <sup>1</sup>	Unnamed	Expired 12/8/2001	Not reported	Not reported

Source: CDNR 2017

<sup>1</sup>CDNR records indicate this is an infiltration gallery well (i.e., spring box).

## **Floodplains**

The project area is designated by the Federal Emergency Management Agency (FEMA) as Zone D on Flood Insurance Rate Maps. Zone D corresponds to areas located on federal or tribal land where no flood hazard analysis has been conducted (FEMA 2017). Flood hazards, therefore, have not been determined for these areas.

### **3.3.2 *Environmental Effects***

#### **Proposed Action**

Road realignment conforms to the WRNF LRMP, Chapter 2, standards to maintain or reduce the net density of roads in order to restore or prevent alteration of the hydrologic function of the sub-watershed in which Colorado River cutthroat trout are found, to restrict construction of new roads within 350 feet of occupied cutthroat trout streams, and to reroute roads adjacent to cutthroat trout streams and their tributaries. Construction of the Beaver Creek bypass represents an offset for the current road adjacent to lower FS 824 because lower FS 824 would be decommissioned. This meets the standard to maintain or reduce the net density of roads in cutthroat trout habitat. The bypass would be approximately 0.15 mile shorter than the current road. The Forest Service considers lineal feet, not square feet, when determining compliance with the standard (USFS 2016b). Lower FS 824 is located just 35 to 345 feet from Beaver Creek along various portions of the road. The bypass, in contrast, would be located approximately 500 to 750 feet from Beaver Creek, which exceeds the restriction to set back new roads a minimum of 350 feet from the creek. The location of the Beaver Creek bypass, combined with decommissioning lower FS 824, would reduce the potential for sedimentation in the creek. As vegetation is established on the decommissioned road, the vegetation and stabilized soil would provide a further buffer against stormwater runoff. Vegetation is frequently employed this way as a vegetative filter strip for stormwater control.

Wetlands were delineated within a survey area wider than the 100-foot-wide construction corridor to allow for adjustments to the road alignment to avoid wetlands. Wetlands that occur within the construction corridor would be avoided during construction by surrounding them with flagging and erosion control structures to prevent siltation from equipment inadvertently entering the areas, and by implementing BMPs to further minimize indirect effects from sedimentation. Flow patterns and ecological functions of wetlands would be sustained, and actions that could dewater or reduce water budgets in wetlands would be avoided.

Construction would involve trenching to place pipelines, and trenching and fill to place culverts. These components would result in both temporary and permanent effects to surface water features. The placement of dredged or fill material in a jurisdictional WUS requires permitting under CWA, Section 404, which is administered by the USACE. CPX is submitting an aquatic resources report for verification of the WUS delineation and a request for determination of the jurisdictional status to the USACE. Effects to waterbodies in the project area, including the temporary and permanent placement of fill material, would be permitted under a Pre-construction Notification-Nationwide Permit (PCN-NWP) application. PCN-NWP stipulations are anticipated to require use of BMPs and reclamation techniques to minimize or avoid effects to surface waters.

Short-term direct effects to flow, hydrologic function, and sedimentation in surface waters during construction at drainage crossings would be minimized using site-specific BMPs, such as temporary water diversions and erosion controls with daily monitoring to ensure their effectiveness. Activity would be limited to only the area necessary for placement of the pipelines and culverts.

Either box culverts or corrugated metal pipe (CMP) would be placed long-term in perennial features to support road crossings. CMP crossings also may be used for intermittent and ephemeral features. Culverts and CMP would allow surface water to flow unobstructed through the structure. The permanent footprint for a box culvert and supporting rip rap could parallel the stream bank for up to 36 linear feet in the channels of perennial streams. Culvert installation would incorporate a concrete cutoff wall on the upstream end to serve as a water barrier and to reduce seepage. The downstream end would be flared to prevent erosion and undercutting, and would have riprap placed over geotextile fabric to dissipate flow energy. Sizing and installation would conform to the Forest Service Road Management Decision and Design Criteria Worksheet (USFS 2017a), and would be overseen by the Forest Service. Clean Water Act, Section 404, permitting would contain general conditions to minimize impacts to WUS. Integration of Forest Service design criteria and conditions of NWPs would ensure that flow patterns of WUS are maintained and that ecological functions are sustained.

Short-term indirect effects to surface waters would be avoided or minimized using erosion and sediment control measures during construction and reclamation. The short-term potential for erosion and stormwater runoff would be controlled by BMPs under a Stormwater Management Plan (SWMP) prepared to comply with CDPHE's general stormwater permit: Stormwater Discharge Associated with Construction Activities. The permit regulates construction activity that

disturbs one or more acres of land. The SWMP would establish BMPs that would be installed, maintained, and inspected to avoid transport of sediments to surface water, including BMPs necessary during decommissioning on lower FS 824. Anticipated BMPs would include a combination of removing the minimum amount of vegetation necessary for road and pipeline construction; preserving topsoil for replacement and reestablishment of vegetation in disturbed areas; controls on soil stockpiles; and placement and maintenance of erosion controls, such as silt fencing. Until vegetative cover is reestablished, the outer extent of wetland areas would continue to be flagged and surrounded by erosion control measures to prevent siltation. Water quality would be further protected by oversight from the RWPD, which will review the project under an amendment to CPX's existing RWPD permit.

The proposed action would reduce potential for sedimentation to Beaver Creek long term by moving commercial and public traffic further from the waterbody. When coupled with decommissioning lower FS 824, this represents a long-term net benefit to surface water quality in Beaver Creek. The proposed action would not contribute to further impairment in Beaver Creek from selenium because naturally-occurring soils would not be anticipated to have concentrations of selenium that could contribute to water quality degradation, and because erosion control measures during construction would prevent soils from migrating to Beaver Creek. Shale from a pit area on CPX land could be used for road sub-base material. In 2010, a Forest Service fisheries biologist responded to a citizen complaint about potential effects to aquatic life in Beaver Creek from use of shale obtained from the pit area. The study, however, did not find evidence of aquatic impacts from use of the material (USFS 2011c).

Actions that would indirectly dewater or intercept springs, reduce water budgets, or affect water rights, either short or long term, would not occur because water features would be spanned to allow the feature to flow naturally through or beneath the span. Construction would not occur within 100 feet of the discharge point of a spring.

The buried pipelines would be designed to meet ASME design and safety Standard B31.8 for natural gas and B31.4 for condensate. The operator would adopt explicit procedures for proper construction, operation, and maintenance of the pipelines, including the pipeline material, assembly, welded joints, pressure testing, and inspection. The pipelines would be monitored for large swings in flow or pressure that could indicate the need for pipeline repair. The pipelines would be buried with approximately 60 inches of soil cover, which protects the pipelines from frost damage and erosion. These practices minimize the potential for contamination to Beaver Creek.

The proposed road alignment's setback from Beaver Creek (in contrast to locating pipelines adjacent to lower FS 824) also minimizes potential for contamination to the creek.

Neither surface water withdrawals from Beaver Creek and its tributaries, nor groundwater withdrawals, would occur to support water for dust suppression, pipeline pressure testing, or revegetation. Water would be provided by a commercial hauler and would be trucked on site from an off-site source. Under the proposed action there would be no direct or indirect effects to instream flows, water rights, surrounding irrigation practices, or domestic water supplies.

Decommissioning lower FS 824 has potential for short-term direct effects to Beaver Creek by introducing stormwater runoff while work is occurring to replace the current cattle guard with a livestock gate, remove culverts, scrape road base off of the travelway, decompact and scarify the roadbed, revegetate, and install water bars to direct long-term stormwater flows. Decommissioning work would be considered construction activity that would occur with BMPs under the CDPHE general stormwater permit to prevent sediments from reaching Beaver Creek while the road is in transition for approximately 4 weeks.

The greatest potential source of disturbed soil during road decommissioning would be from disturbed hillsides. Vegetation on the steep hillside on the west side of lower FS 824 and surrounding the switchbacks is well-established. Therefore, these areas would not be disturbed by an attempt to cut the slopes in order to recontour them. Instead, minimal earth work would be performed to minimize transport of sediments to Beaver Creek while still providing the necessary seed bed preparation and successful revegetation for lower FS 824.

The final engineering design for decommissioning lower FS 824 would be identified prior to construction of the Beaver Creek bypass and would be implemented once the Beaver Creek bypass is operational. The engineering design would be reviewed by the WRNF with reclamation standards discussed more fully in the POD prepared by CPX, and the Environmental Analysis and Conditions of Approval prepared by the Forest Service.

### **No Action**

Under the no action alternative, CPX would continue commercial use of FS 824. Road use and maintenance would continue to have potential to introduce sediments to Beaver Creek, as was the finding of the RWPD Cumulative Impact Study for Beaver Creek (Resource Engineering 2012). Continued commercial use of the current FS 824 alignment also has potential for haul truck spills adjacent to Beaver Creek.

### **3.3.3 Environmental Mitigation and other Protection Measures**

The following environmental mitigation and other protection measures will be employed to avoid potential effects to water resources and wetlands, in addition to those listed in Table 2-6:

- CPX will comply with design criteria established by the Forest Service Road Management Decision and Design Criteria (USFS 2017a).
- Waterbody crossings will be designed and constructed to allow water and aquatic organisms to flow naturally through or under the crossings, and will comply with conditions of the NWP.
- CPX will implement BMPs in its SWMP for erosion control from stormwater runoff.
- Impacts to wetlands, seeps, and springs will be avoided.
- Water used for dust suppression, pipeline testing, and revegetation will be trucked from off site by a commercial hauler.
- Construction will be performed to prevent accidental spills of solid material, contaminants, or wastes from entering surface or groundwater water. CPX's Emergency Response Plan will address spills and spill response.
- CPX will return post-construction disturbed areas to pre-construction contours to the extent practicable.
- Disturbed areas will be revegetated to provide soil stabilization and will be monitored to ensure establishment of vegetative cover.
- Pipelines will meet ASME standards and will be monitored for large swings in pressure to indicate a functional issue for field staff to respond, as needed.
- Pipeline markers will be installed to ensure surface awareness of the location of the pipelines. CPX will perform routine inspections of the pipeline ROW, valves, signs, and markers.
- Pigging the pipelines will be used to monitor pipeline integrity and address blockages or other routine maintenance.

### 3.4 Air Quality

#### 3.4.1 Affected Environment

The project area is approximately 10 miles south of Rifle. This portion of western Colorado is semi-arid. The project area, however, is located between 8,000 and 9,000 feet amsl in a forested subalpine environment. More precipitation and snowfall occurs in this forested environment than in nearby Rifle, which is approximately 5,300 feet amsl and which provides the nearest weather station.

Meteorological data collected from three weather stations located within 60 miles of the project area are provided by the Western Regional Climate Center and are shown in Table 3-3 (Western Regional Climate Center 2017).

**Table 3-3. Meteorological Data near the Project Area**

Weather Station	WRCC ID	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Snowfall (inches)	Average Precipitation (inches)
Rifle	057031	64.3	31.2	38.6	11.61
Grand Valley	053508	65.8	33.0	33.7	13.53
Collbran	051741	61.7	30.7	64.8	14.81

<sup>1</sup>Source: Western Regional Climate Center 2017

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for the following seven criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM<sub>10</sub>), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM<sub>2.5</sub>). Garfield County is classified as attainment for each criteria pollutant (CDPHE 2017).

Authority to implement regulations under the federal Clean Air Act is delegated to the State of Colorado by the EPA. The CDPHE, Air Pollution Control Division, therefore, administers air quality permitting requirements in Colorado, including facilities located on federal land. Land development activities that are less than 25 contiguous acres and less than 6 months in duration, however, do not need to comply with APEN requirements.

### **3.4.2 Environmental Effects**

#### **Proposed Action**

Minimal short-term, direct air emissions effects would be generated during construction, including lower FS 824 decommissioning. Construction is not expected to alter the air quality status in the area. Air emissions would be generated directly from equipment and vehicle emissions, as well as indirectly from fugitive dust. Construction would generate less than significant amounts of carbon monoxide, nitrogen oxides, and volatile organic compounds from heavy equipment and tailpipe emissions. Nitrogen oxides and volatile organic compounds are precursor pollutants to the formation of ground-level ozone. Heavy equipment and tailpipe emissions would be controlled by catalytic converters and equipment air emission controls.

Construction also would generate less than significant amounts of PM<sub>10</sub> and PM<sub>2.5</sub> from fugitive dust associated with soil disturbance. The amount of fugitive dust generated depends on the silt and moisture content of the soil, frequency of rainfall, wind speed, traffic volumes and speeds, and the application of BMPs, such as speed limits. Because roadway fugitive dust is composed of large particles, however, it tends to settle quickly in the atmosphere, and effects would be temporary, localized, and minor. They would not extend beyond the immediate project area and would not affect surrounding land uses, including livestock operations.

Short-term, indirect effect from increased construction-related traffic on CR 317 would be consistent with current, temporary increases in traffic volumes experienced from well drilling and well completions at TPR. The increased road usage and road dust from construction would be intermittent, short-term, and would be mitigated by driver compliance with posted speed limits and by dust suppression using water trucks and other approved dust abatement techniques.

There would be no new long-term air quality effects associated with the proposed action. After project construction, there would be no new soil disturbance or vehicle and equipment operation from construction activities. Road usage would return to pre-construction levels with temporary periods of higher road use associated with well drilling and completion activities, as there are currently. Water trucks would be used to control fugitive dust. Disturbed areas outside of the roadway would be revegetated with a USFS-approved seed mix.

Submission of an APEN to CDPHE is not anticipated for the project because it is not expected to disturb 25, or more, contiguous acres of land or exceed 6 months in duration. The site would be controlled using construction-related BMPs.

## **No Action**

Under the no action alternative, there would be no additional actions on USFS land affecting air quality beyond those that exist under current conditions. Fugitive dust associated with traffic would continue at levels consistent with current uses.

### **3.4.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be employed to avoid potential effects to air quality, in addition to those listed in Table 2-6:

- During construction, worker trips will be consolidated to minimize vehicle travel.
- Disturbed areas will be limited to the minimum needed for construction/decommissioning, operation, and maintenance activities.
- Roads will be watered or other dust abatement measures will be applied, as necessary, and will be properly maintained during project operation.
- Aggregate will be placed on roads to provide stability and reduce fugitive dust.

## **3.5 Vegetation**

### **3.5.1 Affected Environment**

#### **General Vegetation**

The area of potential effects for vegetation is the construction corridor for the Beaver Creek bypass and pipeline corridor, realignment of upper FS 824, improvements to upper FS 824, and an expanded trailhead parking and vehicle turnaround area at the Beaver Creek trailhead.

The project area is in the North-Central Highlands and Rocky Mountain Ecological Subregion of the Southern Rocky Mountain Steppe-Open Woodland-Coniferous Forest-Alpine Meadow Ecological Province (USFS 2007). Based on ecological system descriptions developed by the Colorado Natural Heritage Program (CNHP) (CNHP 2014), the project is dominated by Rocky Mountain Aspen Forests and Woodlands with small areas of Rocky Mountain Subalpine Dry-Mesic and Rocky Mountain Mesic Spruce-Fir Forests and Woodlands, and Rocky Mountain Gambel Oak-Mixed Montane Shrublands. Typical alliances formed with aspen include Rocky Mountain maple (*Acer glabrum*), Saskatoon serviceberry (*Amelanchier alnifolia*) and, to a lesser

degree, chokecherry (*Prunus virginiana*) and mountain snowberry (*Symphoricarpos oreophilus*). The alliance formed with subalpine fir (*Abies lasiocarpa*) is with aspen (*Populus tremuloides*). The dominant alliances formed with scrub oak are with mountain snowberry and Saskatoon serviceberry. Elevations in the project area range from approximately 8,000 feet to 9,000 feet amsl, with lower elevations to the north containing Gambel oak woodlands and mixed montane shrubland.

Field surveys conducted on July 22, 2014, and September 3 and 4, 2015, by Tetra Tech verified the vegetation and community types described above. Vegetation observed consisted of forested communities dominated by aspen with a mix of Douglas fir (*Pseudotsuga menziesii*) and subalpine fir. Riparian areas consisted of an overstory of aspen with an understory of chokecherry trees, Rocky Mountain maple, and dogwood (*Cornus sericea*). An herbaceous layer in riparian areas was dominated by baneberry (*Actaea rubra*). Other herbaceous vegetation in riparian areas includes western meadow rue (*Thalictrum occidentale*), starry solomon’s seal (*Maianthemum stellatum*), common cow parsnip (*Heracleum maximum*), false hellebore (*Veratrum viride*), and horsetail (*Equisetum hyemale*). Fringe wetland communities were documented at select locations along drainages during the wetland delineation in 2014 conducted by Tetra Tech.

A summary of plant species observed in the project area is listed in Table 3-4. Non-native and invasive weed species were noted in the survey area, two of which are species listed on the Colorado Department of Agriculture (CDA) Colorado Noxious Weed List B (CDA 2015).

**Table 3-4. Field-Surveyed Plant Species**

Common Name <sup>1</sup>	Scientific Name
<b>Forbs</b>	
Yarrow	<i>Achillea millefolium</i>
Columbian monkshood	<i>Aconitum columbianum</i>
Red baneberry	<i>Actaea rubra</i>
Nettleleaf giant hyssop	<i>Agastache urticifolia</i>
Columbine	<i>Aquilegia saximontana</i>
Heartleaf bittercress	<i>Cardamine cordifolia</i>
Fireweed	<i>Chamerion angustifolium</i>
Canada thistle	<i>Cirsium arvense</i> <sup>2</sup>
Thistle	<i>Cirsium</i> spp.
Houndstongue	<i>Cynoglossum officinale</i> <sup>2</sup>
Subalpine larkspur	<i>Delphinium barbeyi</i>
Scouringrush horsetail	<i>Equisetum hyemale</i>
Fleabane	<i>Erigeron</i> spp.

Common Name <sup>1</sup>	Scientific Name
Engelmann's aster	<i>Eucephalus engelmannii</i>
Bedstraw	<i>Galium</i> spp.
Richardson's geranium <i>richardsonii</i>	<i>Geranium</i>
Common cowparsnip	<i>Heracleum maximum</i>
Pea	<i>Lathyrus</i> spp.
Pepperweed	<i>Lepidium</i> spp.
Fernleaf licorice-root	<i>Ligusticum filicinum</i>
Lupine	<i>Lupinus</i> spp.
Sweetcicely	<i>Osmorhiza berteroi</i>
Western polemonium	<i>Polemonium occidentale</i>
Cinquefoil	<i>Potentilla</i> spp.
Western coneflower	<i>Rudbeckia occidentalis</i>
Tall ragwort	<i>Senecio serra</i>
Western meadow-rue	<i>Thalictrum occidentale</i>
Salsify	<i>Tragopogon dubius</i>
Stinging nettle	<i>Urtica dioica</i>
Violet	<i>Viola</i> spp.
False hellebore	<i>Veratrum viride</i>
<b>Grasses</b>	
Mountain brome	<i>Bromus marginatus</i>
Smooth brome	<i>Bromus inermis</i>
Blue wildrye	<i>Elymus glaucus</i>
Rush	<i>Juncus</i> spp.
Bluegrass	<i>Poa</i> spp.
<b>Grass-like</b>	
Starry false lily of the valley	<i>Maianthemum stellatum</i>
Rocky Mountain Iris	<i>Iris missouriensis</i>
<b>Shrubs</b>	
Rocky Mountain maple	<i>Acer glabrum</i>
Saskatoon serviceberry	<i>Amelanchier alnifolia</i>
Redosier dogwood	<i>Cornus sericea</i>
Chokecherry	<i>Prunus virginiana</i>
Gambel oak	<i>Quercus gambelii</i>
Woods' rose	<i>Rosa woodsia</i>
Thimbleberry	<i>Rubus parviflorus</i>
Mountain snowberry	<i>Symphoricarpos oreophilus</i>
<b>Trees</b>	
Subalpine fir	<i>Abies lasiocarpa</i>
Quaking aspen	<i>Populus tremuloides</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>

<sup>1</sup> Plant species observed by Tetra Tech, July 22, 2014.

<sup>2</sup> Species included on the Colorado Noxious Weed List B (CDA 2015).

## **Threatened, Endangered, Candidate, and Proposed Plant Species**

The Endangered Species Act (ESA), Section 7(a)(2), requires federal agencies to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of threatened, endangered, or candidate species, or to result in the destruction or adverse modification of critical habitat for these species. A Section 7 consultation with the USFWS is required if listed species or their designated critical habitat may be affected by a proposed action.

Federally threatened, endangered, candidate, and proposed plant species considered for this EA were identified from the species list for the project, which was acquired from the USFWS Information for Planning and Conservation (IPaC) website on September 8, 2016 (USFWS 2016). A biological assessment (BA) was prepared for the project to use for consultation with the USFWS and to comply with Section 7 of the ESA. Specifically, the BA is used to: 1) determine whether listed and proposed species and their designated and proposed critical habitat may be present in the project area, and 2) to evaluate the potential effects of the federal action on these species and their habitat. The BA is provided in the project record. Only one threatened plant species, Ute ladies'-tresses orchid (*Spiranthes diluvialis*), was listed for the project area and is described below.

### ***Ute Ladies'-tresses Orchid***

Ute ladies'-tresses orchid is a perennial plant that prefers wetland communities with an open canopy along drainages and moist meadows. The elevation range for this species is typically documented as below 7,000 feet (Fertig et al. 2005; USFWS 1995). The WRNF Oil and Gas Leasing Final EIS does contain documentation that Ute ladies'-tresses orchid is known to occur below 7,200 feet in Eagle, Garfield, and Pitkin counties. Populations of the species are known only off of the WRNF, in the Roaring Fork River Valley (USFS 2014b). No critical habitat has been designated for the Ute ladies'-tresses orchid.

## **Forest Service Sensitive Plant Species**

In addition to species listed by the USFWS, the Forest Service separately lists sensitive species. The Forest Service Manual describes sensitive species as plant and animal species identified by

the regional forester for which population viability is a concern, as evidenced by the following (USFS 2005):

- Significant current or predicted downward trends in population numbers or density
- Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution

Sensitive plant species considered for this EA were identified from the *Rocky Mountain Region: White River National Forest Endangered, Threatened, Proposed, and Sensitive Species* list dated July 28, 2016 (USFS 2016c). A biological evaluation (BE) was prepared for the project to document review of sensitive species and to: 1) ensure that the federal action does not contribute to a loss of viability of sensitive species or contribute to a trend towards federal listing under the ESA, and 2) incorporate concerns for sensitive species throughout the planning process, identify opportunities for enhancement, and reduce any potential negative impacts. The BE is provided in the project record.

Twenty-eight sensitive plant species were reviewed for the project area. Twenty-three of the plant species were eliminated from further analysis because the project area is outside of the species' known range or because no suitable habitat for the species is present in the project area, based on field surveys. The BE for the project provides the rationale for elimination of each of the plant species. The remaining five sensitive plant species have the potential to occur in the project area. Their distribution, range, and habitat are described in Table 3-5.

**Table 3-5. USFS Sensitive Plant Species Potentially in the Project Area**

Species	Distribution, Range, and Habitat Description
Park Milkvetch ( <i>Astragalus leptaleus</i> )	This species is a regional endemic that has been reported in Colorado, Idaho, Montana, and Wyoming. Grows in sedge-grass meadows, swales and hummocks, and among streamside willows. Occurs in the montane life zone in Colorado and Wyoming. Montane zone occurs between 6,000 and 9,000 feet and is characterized by woodlands of ponderosa pine and Douglas-fir (Ladyman 2006a).
Trianglelobe moonwort ( <i>Botrychium ascendens</i> )	This species has a wide range in North America but is considered rare because it is widely scattered in disjunct populations, and population numbers are usually small. Vegetation and topography of observed sites vary across their range. Many occur in open habitats and microsites with evidence of slight to moderate disturbances. Throughout their range, they appear to prefer montane, moist, early-successional habitats (e.g., moist meadows, edges of trails, seeps and mossy openings in forests). However, this species has been found in a variety of habitats (Beatty, Jennings, and Rawlinson 2003).

Species	Distribution, Range, and Habitat Description
Yellow lady's slipper ( <i>Cypripedium parviflorum</i> )	Endemic to North America. Distributed in boreal regions of the northern hemisphere. Generally found in shady deciduous and mixed woodlands; relatively open oak, ash, and hazelnut woodland; or shrublands, swamps, bogs, and spruce and pine forests. Elevations from sea level to 9,700 feet have been reported. Most often found on or confined to predominantly calcareous soils. Often associated with moist to saturated soils, but may also be found in dry soils (Mergen 2006).
Giant Helleborine ( <i>Epipactis gigantea</i> )	Forty-one occurrences are known from USFS, Region 2, with the majority on public lands. Only two occurrences are on NFS lands: one on the Black Hills National Forest and one on the San Juan National Forest. Occupies a variety of habitats, but requires a constant supply of water. Suitable habitats include seeps, springs, and perennial streams (Rocchio, March, and Anderson 2006).
Dwarf raspberry ( <i>Rubus arcticus</i> ssp. <i>acaulis</i> )	Restricted to North America and possibly Siberia. Known from mountainous areas in Colorado. Typically grows in mesic conditions, and frequently in hydric soils. Designated as an obligate wetland species in western Colorado. In Region 2, grows in montane and sub-alpine, at elevations between approximately 7,000 and 9,720 feet (Ladyman 2006b).

### 3.5.2 Environmental Effects

#### Proposed Action

##### General Vegetation

The direct effect to vegetation from the proposed action would be vegetation removal for road and pipeline construction, as quantified below in Table 3-6. Clearing of mature aspen trees and understory trees, shrubs, and herbaceous vegetation would occur. The dominant vegetation type that would be affected by vegetation clearing along the proposed bypass is Rocky Mountain Aspen Forests and Woodlands. Vegetation within all or portions of the construction corridor would be removed for development of the bypass, upper FS 824 road realignment, Beaver Creek trailhead improvements, and placement of pipelines. Vegetation removal also would be required for select areas designated for road and drainage improvements on upper FS 824.

The new Beaver Creek trailhead is anticipated to require access to separate trailhead parking from FS 824 and up to approximately 2,000 square feet of new, permanent disturbance to accommodate vehicle turnaround and horse trailers. Trailhead disturbance would be minimized by using a portion of the existing upper FS 824 for trailhead access and vehicle turnaround. The rest of upper FS 824 would be reclaimed after the approximately 1,200-foot-long segment of upper FS 824 was realigned.

Temporary disturbances would be recontoured and revegetated with a Forest Service-approved seed mix. LRMP forest standards for biodiversity would be followed, which include use of native plant species when technically and economically feasible, and use of seed mixtures and mulch that are noxious weed-free. Revegetation would be monitored by CPX in coordination with Forest Service staff until the effective groundcover reaches levels provided in the Forest Service Soil Management Handbook, FSH 2509.18 (USFS 2011d) and the WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a).

Long-term, CPX would maintain a 75-foot-wide easement for use of the road and operation of the pipeline ROW. Permanently-disturbed areas, however, would be limited to the new 20-foot-wide road. An approximately 25-foot-wide area above the pipelines would be revegetated but would be kept clear of large-diameter trees to allow for pipeline operation and maintenance. Reseeding would be conducted, as necessary.

While vegetation reestablished, there could be indirect effects to the specific community structure and species composition where it varied from pre-disturbance conditions. Grasses and forbs, for example, would be the first species to reestablish, followed by shrubs and small trees.

The estimated temporary disturbance area is approximately 15.16 acres. The estimated permanent disturbance area is approximately 3.08 acres (Table 3-6), of which approximately 1.66 acres would be reclaimed by decommissioning lower FS 824. This would result in a net permanent disturbance of approximately 1.42 acres. Disturbance acreages are shown in Table 3-6.

**Table 3-6. Estimated Disturbance Areas**

Disturbance	Length (miles)	Length (feet)	Width (feet)	Area (square ft)	Acres
<b>Temporary</b>					
Upper FS 824 Realignment	0.19	1,200	Up to 100	120,000	2.75
Upper FS 824 Pipeline, Only, North of Realignment Area	0.61	3,221	40	128,840	2.96
Upper FS 824 Road Improvements	0.04	200	28	5,600	0.13
Beaver Creek Trailhead Access	.02	100	80	8,000	0.18
Beaver Creek Trailhead				2,000	0.05
Beaver Creek bypass	0.75	3,960	Up to 100	396,000	9.09

<b>Disturbance</b>	<b>Length (miles)</b>	<b>Length (feet)</b>	<b>Width (feet)</b>	<b>Area (square ft)</b>	<b>Acres</b>
<b>Total Temporary Disturbance</b>					<b>15.16</b>
<b>Permanent</b>					
Upper FS 824 Realignment	0.19	1,200	24	24,000	0.66
Upper FS 824 Pipeline, Only, North of Realignment Area	Revegetated				
Upper FS 824 Road Improvements	0.04	200	28	5,600	0.13
Beaver Creek Trailhead Access	.02	100	24	2,400	0.06
Beaver Creek Trailhead				2,000	0.05
Beaver Creek bypass	0.75	3,960	24	95,040	2.18
<b>Total Permanent Disturbance</b>					<b>3.08<sup>1</sup></b>

<sup>1</sup>Net permanent disturbance of approximately 1.42 acre after reclaiming approximately 1.66 acres of lower FS 824.

Removal of mature forest constitutes a long-term effect because of the time required for the species to reach maturity. Old growth forest in the project area is mapped by the Forest Service (Figure 3-4). The current Beaver Creek trailhead would be expanded in a portion of the National Forest mapped as old growth. There would be approximately 0.02 acres of temporary and permanent disturbance in this area, which already is disturbed by a current vehicle parking and turnaround area. Consultation with the WRNF timber specialist indicated that further trailhead improvements would not disrupt WRNF’s ability to meet Forest Plan standards for both late successional and old growth forest. The standard to manage 30 percent of the Forest unit where the trailhead is located as late successional growth has been met and the current level of protection actually exceeds the standard by an estimated 45 percent. Likewise, the standard to manage 10 percent of the Forest unit as old growth also has been met, according to the timber specialist, and the current level of protection exceeds the standard by 29 percent (USFS 2017b).

There would be potential for indirect effects from introduction and/or distribution of non-native, invasive weed species during construction from equipment and vehicles brought on site. BMPs required by the Forest Service would be implemented to control the establishment and spread of invasive weeds. The BMPs are listed in Section 3.5.3 as environmental mitigation measures.

Approximately 1.66 acres of land would be reclaimed and revegetated with decommissioning of lower FS 824. This portion of roadway is approximately 0.90 miles long and 15 feet wide. Scarifying and revegetating the area represents a long-term environmental benefit to Beaver Creek by reducing continued potential for sediments in road runoff to impact Beaver Creek water quality. Short-term effects during road decommissioning would be avoided or minimized by limiting the extent of soil disturbance and implementing stormwater BMPs to prevent sedimentation from the decommissioning work, itself.

The sections below are specific to analysis of sensitive plant species.

### ***Threatened, Endangered, Candidate, and Proposed Plant Species***

Beaver Creek may have potential habitat for Ute ladies'-tresses orchid downstream (north) of the project area, but it is unlikely that the species would occur within the construction corridor because surface disturbance areas would be located above 7,200 feet. In addition, the section of Beaver Creek and tributary perennial streams in the construction corridor occur in an aspen-dominated woodland with a dense canopy and understory and densely vegetated banks. The species grows in open habitats, often along stream banks with gravelly substrates or open, moist meadows supported hydrologically by groundwater. Ute ladies'-tresses orchid, therefore, is not expected to occur in the construction corridor because of the lack of suitable habitat. The proposed action would have no water withdrawals and no associated effect to downstream hydrology or habitat suitability. This species does not have critical habitat designated. The effects determination for the Ute ladies'-tresses orchid is no effect from the proposed action.

### ***Forest Service Sensitive Plant Species***

Project construction would disturb four perennial streams and associated riparian and fringe wetland habitat within the OHWM at the drainage crossings of the pipeline and Beaver Creek bypass. These locations may include suitable habitat for park milkvetch, trianglelobe moonwort, yellow lady's slipper, giant helleborine, and dwarf raspberry, none of which were observed during field surveys for the construction area. Species-specific surveys were not conducted. Construction generally would cause surface disturbance within the construction corridor. Trenching and road construction at drainage crossings, however, would be reduced to only the area necessary for placement of culverts and pipelines. The permanent footprint for a box culvert and supporting rip rap could parallel the stream bank for up to 36 linear feet in the channels of perennial streams. Wetlands delineated within the corridor would be avoided and surrounded by flagging and erosion

control measures to prevent equipment from entering those areas. The proposed action may result in localized effects to park milkvetch, trianglelobe moonwort, yellow lady's slipper, giant helleborine, and dwarf raspberry individuals.

In summary, the proposed action may affect individual plants but is unlikely to result in a loss of viability in the project area or cause a trend toward federal listing. Effects from construction would be minimized by limiting temporary disturbance to the area needed to place culverts, CMP, and pipelines at water crossings. Site-specific reclamation techniques, Forest Service-approved seed mixes for revegetation, and invasive weed control measures would be implemented to avoid or minimize effects. After decommissioning and revegetation on lower FS 824, the proposed action is expected to have a net effect to vegetation equivalent only to the road disturbance needed for the new road to meet current safety dimensions. The lower Beaver Creek trailhead would be reclaimed during road decommissioning when the trailhead is relocated to upper FS 824. There would be an environmental benefit for vegetation habitat by preserving a riparian corridor along Beaver Creek after decommissioning and revegetation on lower FS 824.

### **No Action**

New temporary disturbance would not occur for road and pipeline construction. Use of lower FS 824 and disturbance in that area would continue, however, without road decommissioning, revegetation, and improvements to the riparian corridor along Beaver Creek.

### **3.5.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be employed to minimize effects to vegetation, in addition to those listed in Table 2-6:

- A pre-construction survey will be conducted for sensitive plant species in the construction area.
- The minimum area necessary for construction of roadbeds and the pipeline trench will be disturbed.
- Disturbed areas will be reclaimed. Topsoil will be stockpiled to facilitate seed germination.
- Stormwater drainage structures will be installed as part of road construction and road improvement work to reduce potential for erosion and to promote vegetation regrowth.

- Wetlands delineated within the corridor will be avoided and surrounded by flagging and erosion control measures to prevent equipment from entering those areas.
- Off-road equipment used for construction will be inspected and cleaned by the construction contractor of soil, seeds, and vegetative matter that could introduce invasive weeds.
- Seed mixes used to support revegetation will be Forest Service-approved and certified noxious weed free. They will be genetically local native plant species when technically and economically feasible.
- To prevent soil erosion, non-persistent, non-native annuals, sterile annuals, or sterile perennial species may be used while native perennials become established.
- Revegetation will be monitored by CPX in coordination with Forest Service staff to achieve revegetation cover goals after the first and second growing seasons.
- Infestations of invasive weeds that may occur in revegetated areas will be treated by CPX in coordination with Forest Service staff, using a Forest Service-approved method by determining the risk of introduction or spread; implementing prevention or mitigation measures; using integrated weed management principles; and using certified noxious weed free seed and mulch for revegetation.

## **3.6 Wildlife**

### **3.6.1 *Affected Environment***

The analysis area for potential effects to wildlife is referred to as the action area and consists of a 0.5-mile-wide buffer surrounding the construction corridor for the Beaver Creek bypass and pipeline corridor, the approximately 1,200-foot-long road realignment along upper FS 824, road and trailhead improvements on upper FS 824, and the area along lower FS 824 where the road would be decommissioned. This section describes wildlife and aquatic resources in the action area, including federally listed species and Forest Service sensitive species.

#### **General Fish and Wildlife**

Wildlife associated with aspen, mixed aspen-coniferous, and montane riparian forests are expected to occur in the project area. Aspen and montane riparian forests are two forest types in Colorado that have among the highest diversity of wildlife species, according to the Colorado

State Forest Service (CSFS), an arm of Colorado State University. Aspen forests are an important source of forage and cover for wildlife inhabiting mountainous terrain (CSFS 2017). Species in the aspen forest environment include elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), moose (*Alces alces*), snowshoe hare (*Lepus americanus*), cottontail rabbit (*Sylvilagus nuttallii*), beaver (*Castor canadensis*), porcupine (*Erethizon dorsatum*), and pocket gopher (*Thomomys talpoides*) (DeByle 1985). Other small mammal species, such as squirrel, chipmunk, vole, mice, and shrews provide prey for predatory species. Montane bat species are known to forage in aspen communities, especially in more mesic (moist) locations, likely because of a greater number of insects present compared to coniferous forests (DeByle 1985).

### **Big Game**

Based on mapped data from Colorado Parks and Wildlife (CPW), the project area provides habitat for elk, mule deer, and moose (CPW 2016a). The project area is classified as general summer range for elk. Summer concentration areas for elk are found adjacent to and south of the project area. There are no elk production areas within 0.5 mile of planned disturbances. The project area is classified as general summer habitat for mule deer, but there are no special concentration areas in or near the project area. The project area is classified as general summer and winter range for moose, but is not a priority habitat or concentration area. There are no migration corridors for elk, deer, or moose mapped in or near the project area (CPW 2016a).

Elk and mule deer typically move to lower elevations below the project area in the winter. The project area, however, is located in an area that WRNF classifies as MA 5.41, where the primary management emphasis is on deer and elk winter range (USFS 2002). These are areas on the lower elevation fringes of the forest where snowmelt and green-up occur earlier in the spring, and snow accumulation occurs later in the fall. The LRMP describes management objectives for MA 5.41, which recognize that modifications to the natural environment have occurred and human use, activity, and facilities are present, but that these areas are generally managed to provide adequate amounts of forage, cover, and solitude to allow deer and elk to effectively use the area during the winter and spring. The MA 5.43 timing restriction for winter use is December 1 through April 14 (USFS 2002).

### **Other Large Mammals**

Based on mapped data produced by CPW, the southern portion of the project area overlaps with a black bear (*Ursus americanus*) summer concentration area. These are areas where black bear

activity is typically greater than the surrounding overall range each year from approximately June 15 to August 15 (CPW 2016a).

## **Birds**

Under the Migratory Bird Treaty Act (MBTA), it is unlawful to take, kill, or possess migratory birds. The project area provides habitat for numerous migratory bird species. Nongame birds include canopy nesters, shrub/understory nesters, and cavity nesters (DeByle 1985). Other species may not nest, but use the area for foraging. Avian use varies depending on the forest understory characteristics and associated coniferous tree species. Aspen forests are particularly important to cavity nesters because the trees are susceptible to rot and are easier to excavate compared to coniferous trees. Primary cavity nesters (mainly woodpeckers, but in some cases chickadees and nuthatches) excavate their own cavities each year, which then provide cavities for secondary cavity nesters (DeByle 1985).

Diverse raptors are found in aspen forests, including *accipiters*, *buteos*, falcons, golden eagle, and numerous owls. Northern goshawk (*Accipiter gentilis*) and great horned owl (*Bubo virginianus*) are key predators of grouse, lagomorphs, and other small mammals in aspen forests (DeByle 1985).

Game birds that may occur include blue grouse (*Dendragapus obscurus*), ruffed grouse (*Bonasa umbellus*), band-tailed pigeon (*Patagioenas fasciata*), mourning dove (*Zenaida macroura*), and wild turkey (*Meleagris gallopavo*). Based on map data produced by CPW, three-quarters of the project area crosses a wild turkey production area. These areas may be used by turkey for nesting from approximately March 15 to August 15 (CPW 2016a).

## **Threatened, Endangered, Candidate, and Proposed Animal Species**

Federally threatened, endangered, candidate, and proposed animal species were identified from official species list for the project, which were acquired from the USFWS IPaC website on September 8, 2016 (USFWS 2016). Table 3-7 shows the federally listed animal species for the project area and their status. Two federally listed aquatic or wildlife species have the potential to occur in the project area or near the project area. They are green lineage Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*) and Canada lynx (*Lynx canadensis*). The following seven federally listed avian or wildlife species are not expected to be affected by the proposed action: Mexican spotted owl (*Strix occidentalis lucida*), North American wolverine (*Gulo gulo luscus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), razorback sucker

(*Xyrauchen texanus*), humpback chub (*Gila cypha*), and greenback cutthroat trout (*Oncorhynchus clarkii stomias*). These species, therefore, are not analyzed further in the EA but are detailed in the BA prepared for the project, which is available in the project record.

**Table 3-7. USFWS Federally Listed Animal Species in the Project Area**

Species	Common Name	Listing Status
<b>Birds</b>		
<i>Strix occidentalis lucida</i>	Mexican spotted owl	Threatened
<b>Mammals</b>		
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Gulo gulo luscus</i>	North American wolverine	Proposed Threatened
<b>Fish</b>		
<i>Ptychocheilus lucius</i>	Colorado pikeminnow	Endangered
<i>Gila elegans</i>	Bonytail chub	Endangered
<i>Xyrauchen texanus</i>	Razorback sucker	Endangered
<i>Gila cypha</i>	Humpback chub	Endangered
<i>Oncorhynchus clarkii stomias</i>	Greenback cutthroat trout	Threatened
<i>Oncorhynchus clarkii [pleuriticus]</i>	Green lineage Colorado River cutthroat trout	Treated as Threatened

The two federally listed aquatic and wildlife species with potential to occur in or near the project area are discussed below.

**Colorado River Cutthroat Trout**

The greenback cutthroat trout (*Oncorhynchus clarkii stomias*) is endemic to the headwaters of the South Platte and Arkansas River drainages in eastern Colorado. Early genetic studies suggested that greenback cutthroat trout occurred west of the Continental Divide (Metcalf et al. 2007). Based on that study, the USFWS listed purported greenback cutthroat populations both east and west of the Continental Divide as threatened. As a result, greenback cutthroat trout is listed as threatened in Table 3-7. Studies subsequent to the initial listing, however, concluded that the populations west of the Continental Divide that previously were attributed to greenback cutthroat trout might instead be a newly-identified lineage and referred to them as “green lineage” Colorado River cutthroat trout (Hirsch et al. 2013). Current understanding is that the only population of greenback cutthroat trout that remains is located in Bear Creek in the Arkansas River drainage (Metcalf et al. 2012, USFWS 2014a). Bear Creek is on the east side of the Continental Divide and is not within the project area or surrounding 0.5 mile. Greenback cutthroat

trout, therefore, is not analyzed further in the EA. Instead, the EA recognizes the cutthroat trout in Beaver Creek as “green lineage” Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*). Pending resolution of the taxonomic issues and re-listing for the various lineages, the USFWS is treating all populations previously listed as greenback subspecies protected under the ESA. This includes the population in Beaver Creek, which is considered threatened, consistent with the prior species listing.

### **Canada Lynx**

The southern Rocky Mountains in Colorado and northern New Mexico represent the southernmost range for Canada lynx (Shenk 2009). Lynx habitat occurs in the subalpine and montane forest zones at elevation ranges between 8,000 and 12,000 feet. The highest densities of snowshoe hares in Colorado, which lynx depend on for approximately 70 percent of their diet in Colorado, have been found in mature and late-successional spruce-fir forests, according to the Interagency Lynx Biology Team (ILBT) (ILBT 2013) (Shenk 2009). As a result, lynx in Colorado primarily use high elevation mature mesic spruce-fir and mixed mesic spruce-fir forests. Telemetry data for lynx indicated that their elevation averages 10,400 feet (Shenk 2009). Denning habitat in Colorado consists of mature Engelmann spruce (*Picea engelmannii*) and subalpine fir stands in concave drainages or basins with dense horizontal cover and abundant coarse woody debris (ILBT 2013). Lynx breeding occurs in late winter, and kittens are born in April or May, which coincides with annual snow melt (CPW 2016b).

The Forest Service mapped Canada lynx habitat on the WRNF as part of the Lynx Conservation Agreement between the USFWS and cooperating agencies. The action area primarily is mapped as non-habitat or as private land. There are two small areas mapped as denning habitat in the action area. One 17-acre area is located east of the proposed construction areas, and is centered along the Beaver Creek drainage. A portion of the mapped polygon is adjacent to upper FS 824 near the existing Beaver Creek trailhead and proposed parking area (Figure 3-5). A second 7-acre area is located approximately 670 feet west of the upper switchback on FS 824. Forest Service land surrounding this denning habitat is mapped as non-habitat. Linkage areas and corridors were mapped for lynx in the Forest Service Southern Rockies Lynx Amendment (USFS 2008b). The project area is not within a linkage area or corridor. The Battlement Mesa linkage area, which connects Grand Mesa with Battlement Mesa, is located 5 miles southeast of the project area. The Forest Service does not have data available on the current status or occurrence

of lynx in the action area. Based on habitat maps and historic radio collar locations on the WRNF, however, individual lynx have potential to occur in the action area.

### Forest Service Sensitive Animal Species

Thirty-five sensitive animal species are listed on the *Rocky Mountain Region: White River National Forest Endangered, Threatened, Proposed, and Sensitive Species* list, dated July 28, 2016. Of these, 11 species may occur within or near the project area and are both listed and discussed in Table 3-8. The BE prepared for this project is available in the project record and provides the rationale for elimination of the remaining 24 Forest Service sensitive animal species. Those species are not analyzed further in the EA.

**Table 3-8. Forest Service Sensitive Animal Species Potentially in the Project Area**

Species	Distribution, Range, and Habitat
<b>Mammals</b>	
Hoary Bat ( <i>Lasiurus cinereus</i> )	In Colorado, probably occur statewide from the plains to timberline. Solitary, tree-roosting species, expected to live in any habitat with trees. Arrive in Colorado in April and are gone in November. No record of hibernation in Colorado (CPW 2017).
American Marten ( <i>Martes Americana</i> )	Prefer and depend on mature late successional mesic conifer and mixed conifer stands containing intermediate canopies (30 to 70 percent). Also found strongly associated with stream and riparian corridors that are adjacent to conifer stands (Vasquez and Spicer 2005).
<b>Birds</b>	
Northern Goshawk ( <i>Accipiter gentilis</i> )	Distribution and range in Region 2 is not well known. Use a wide range of forest communities during the breeding season, but prefer mature and old-growth forest for nesting and hunting. Winter habitat preference in North America is poorly understood, but data suggests the same habitats can be used year-round, as well as non-forested habitats at lower elevations (Kennedy 2003).
Boreal Owl ( <i>Aegolius funereus</i> )	Occupy boreal and subalpine forests. In the Rocky Mountains, are restricted to subalpine forests. Year-round residents. Nest exclusively in tree cavities or artificial nest structures (Hayward and Verner 1994).
Olive-sided Flycatcher ( <i>Contopus cooperi</i> )	In Colorado, breed in forests between 7,000 to 11,000 feet. Breeding habitat generally is restricted to coniferous or mixed-coniferous forests. Most often associated with forest edges and openings caused by natural or anthropogenic disturbances. Usually do not occur in closed canopy forests and are uncommon in forests in the sapling-pole or mature forest stages that lack gaps or edges. Migrants occur in all types of woodlands in Colorado (Kotliar 2007).
Flammulated Owl ( <i>Otus flammeolus</i> )	Occur during the breeding season in the western U.S., and winter mainly south of the U.S. border. Cavity nester that breeds mainly in ponderosa ( <i>Pinus ponderosa</i> ) and Jeffery pine ( <i>Pinus jeffreyi</i> ) forests (Hayward and Verner 1994). According to the Colorado Wildlife Action Plan, this species primarily is distributed in the Utah High Plateau, southern Rocky Mountains, and Colorado Plateau, but also occur in the Front Range, Utah-Wyoming Rocky Mountains, and Wyoming Basin. Primary habitat in Colorado is aspen and ponderosa pine (CPW 2015).

Species	Distribution, Range, and Habitat
Purple Martin ( <i>Progne subis</i> )	Breed throughout most of eastern North America. Winter in central South American lowlands. In Colorado, are largely restricted to western slope aspen forests. Recent studies have confirmed widespread nesting in western Colorado. Preferred habitat in the Rocky Mountains is mature aspen forest with nearby meadows and open water. Nest in cavities in live aspen trees (Wiggins 2005).
<b>Amphibians</b>	
Boreal Toad ( <i>Anaxyrus boreas boreas</i> )	In Colorado, distributed throughout the Rockies from the northern state border to Mineral and Hinsdale counties in the south at elevations between 7,500 and 12,000 feet (CPW 2017). Inhabit a wide range of habitats in western North America: wetlands, forests, woodlands, sagebrush, meadows, and floodplains in the mountains and valleys. Primarily use wetland habitats, but may be observed in other habitats during dispersal to and from breeding sites (Keinath and McGee 2005).
Northern Leopard Frog ( <i>Lithobates pipiens</i> )	Range encompasses most of the northern states of the U.S. and stretches north into Canada. Have been found up to 11,000 feet in the mountains of southern Colorado. Require a broad range of habitats in close proximity. Major habitat types include: winter (overwintering in lakes, streams, and ponds), summer (feeding by adults in upland areas), and tadpole habitat (up to 3 months spent as tadpoles in shallow breeding ponds) (Smith and Keinath 2007).
<b>Insects</b>	
Western Bumblebee ( <i>Bombus occidentalis</i> )	Formerly widespread throughout its range. Still found in isolated areas, primarily in the Rocky Mountains. They are generalist foragers that require habitats with rich supplies of floral resources with continuous blooming from spring to autumn. Isolated patches of habitat are not sufficient to fully support populations. Primarily nest underground, but can occasionally construct nests on the surface (Evans et al. 2008).
Monarch Butterfly ( <i>Danaus plexippus plexippus</i> )	Breed throughout most of the U.S. and Mexico. Winter in Mexico or California. Spring migration takes place in early March. Fall migration starts in late August and early September in the northern U.S. and southern Canada. Reproduction is completely dependent on the presence of their larval host plants, primarily milkweeds in the genus <i>Asclepias</i> (Commission for Environmental Cooperation 2009).

### 3.6.2 Environmental Effects

#### Proposed Action

##### General Fish, Wildlife, and Avian Species

Construction of the proposed action would continue to support LRMP MA 5.41 by maintaining adequate amounts of forage, cover, and solitude for deer, elk, and other species. Riparian forests are disproportionately beneficial to wildlife (including big game) relative to their size (CSFS 2017). As such, decommissioning and revegetating lower FS 824 along the riparian forest adjacent to Beaver Creek, and moving the road and traffic further from the creek, would be beneficial long term to big game and other wildlife, avian, and aquatic species. Relocating FS 824 to the Beaver

Creek bypass represents a shorter road segment (0.75 miles long) in comparison to the current road segment (0.90 miles long).

The special use guideline in LRMP MA 5.41 discourages special uses that require access during the winter and spring. The new road alignment for the proposed action, however, would only replace the existing alignment, not create a new use. The construction period and road use would be in compliance with the MA 5.43 timing restriction for winter use between December 1 and April 14. The special use guideline for the area would be met because the proposed action would not result in long-term loss of habitat or habitat fragmentation after revegetation of disturbed areas that are not part of the Beaver Creek bypass, road improvements, or Beaver Creek trailhead, and which are offset by high-quality riparian habitat improvement along the decommissioned lower FS 824.

In the short-term, noise, traffic, and increased human presence during project construction may cause wildlife to avoid the area temporarily. Wildlife and birds would be temporarily displaced as vegetative cover and forage is removed. Noise may cause nesting birds to abandon nests if activity occurs during the nesting season. Forest Service authorization for the project would require that CPX comply with requirements of the MBTA to avoid potential effects to bird species covered by the MBTA. Pre-construction nest surveys would ensure that nesting raptors or other migratory birds are not affected by construction activities.

After construction, commercial use of FS 824 would be consistent with current road use. The WRNF Travel Management Plan would continue to be met by closing FS 824 to public motorized winter recreation. In general, short-term, direct effects to wildlife species inhabiting the project area are expected to be less than significant.

Once construction was complete, disturbed areas adjacent to the road and the pipeline corridor would be revegetated. The proposed action would not cross important big game production areas. Long-term effects to wildlife are not anticipated based on the limited amount of habitat that would be affected and the sufficient habitat available in the surrounding forest. In the long-term, wildlife would be expected to continue to use the area following project construction, as evidenced after the end of previous construction activities in the area in 2010. The proposed action may affect individuals during project construction, but would not cause a loss of viability in wildlife populations, given the abundant available habitat surrounding the project area. Implementation of environmental protection measures (listed below) would avoid or minimize effects to wildlife.

Discussion of individual listed species is provided in the sections below.

### ***Threatened, Endangered, Candidate, and Proposed Animal Species***

#### **Colorado River Cutthroat Trout**

The proposed action is consistent with the LRMP standards for Colorado River cutthroat trout by reducing potential for sedimentation from existing roads, maintaining riparian vegetation, maintaining stream habitat, and maintaining or reducing the existing net density of roads (USFS 2002).

The proposed action would avoid or minimize a short-term increase in sediments from reaching Beaver Creek as lower FS 824 is decommissioned through implementation of stormwater BMPs. Stormwater runoff from construction of the Beaver Creek bypass, pipelines, and road improvements also would be controlled by BMPs to avoid or minimize their reaching Beaver Creek. In the long-term, the proposed action is anticipated to be beneficial to cutthroat trout habitat by moving FS 824 out of the riparian corridor and away from Beaver Creek with concurrent decommissioning and revegetation of lower FS 824. Further improvement is anticipated by eliminating the steep switchbacks on FS 824, which are most closely associated with stormwater runoff and fine sediments. As lower FS 824 revegetates, its sediment input to Beaver Creek is expected to slow to a normal background rate, particularly after installation of water bars to better manage stormwater flows. Revegetating the corridor also would increase shade, woody debris, and allochthonous inputs over time (leaves, terrestrial bugs), which are improvements to mountain stream habitat.

Moving the pipeline away from the creek, and converting the above ground temporary pipeline to a buried pipeline further from Beaver Creek reduces the potential for contamination to the creek from pipeline leaks or haul truck spills. Water during construction and revegetation would be brought in by truck from off site with no water depletions from Beaver Creek or its tributaries.

***Determination of Effects.*** Potential for and temporary sediment to reach Beaver Creek during construction or decommissioning of lower FS 824 would not have a measurable effect on cutthroat trout based on the duration and volume of sediment expected. In the long-term, the proposed action is expected to have a beneficial effect to the species. For these reasons, the proposed action may affect, but is not likely to adversely affect green lineage Colorado River cutthroat trout.

### **Canada Lynx**

The Lynx Conservation Assessment and Strategy (LCAS) identified possible risk factors to lynx and lynx habitat (Ruediger et al. 2000). The proposed action would involve risk factors identified by the LCAS as having the potential to affect lynx productivity, namely through human development. The proposed action would not involve risk factors that have the potential to affect lynx mortality or movement, however. The proposed action is consistent with the WRNF LRMP (USFS 2002) and Southern Rockies Lynx Amendment objectives, standards, and guidelines for Canada lynx.

Potential direct and indirect effects to Canada lynx are loss of potential denning habitat and effects from noise and other human disturbance, traffic, and snow compaction. Specific effects are analyzed below.

***Effects to Habitat.*** The WRNF LRMP (USFS 2002) identified Lynx Analysis Units (LAUs) for the WRNF following guidance provided by Ruediger et al. (Ruediger et al. 2000). The action area is located within the Battlement LAU. Approximately 0.2 acres (<0.01 percent) of lynx habitat in the Battlement LAU would be disturbed. All other areas are mapped as lynx “non-habitat.”

Approximately 0.2 acres of the existing road and proposed construction area overlaps or is adjacent to mapped denning habitat (Figure 3-5). Effects in this area comprise 1 percent of the 17-acre denning area. Construction proposed in this area would provide new trailhead access and an expanded trailhead parking and vehicle turnaround area to separate the trailhead from FS 824 traffic.

The mapped denning habitats are at an elevation of 8,700 feet, or less, which is below the lowest elevation range documented for denning in Colorado and below the average elevation of den sites. It is unlikely that the area would be used for denning given its location and the existing level of human activity. The area also is disconnected from mapped areas of suitable lynx foraging habitat. For denning habitat to be functional, it must be in close proximity to large areas of foraging habitat because the female generally hunts in a limited area within approximately 0.6 to 1.2 miles of the den site (ILBT 2013, Merrill and Shenk 2006). For these reasons, it is unlikely that lynx would use the areas affected by the proposed action for denning.

Direct effects to mapped denning habitat would be negligible given that portions of the 0.2-acre area of disturbance in denning habitat is actually within the existing roadway. The probability of

lynx denning in these areas is low, and construction is proposed for late summer/early fall, which are not critical denning or winter periods.

There would be no project related activities in mapped linkage areas or linkage corridors, and no traffic would cross linkage habitat. Habitat connectivity would not be reduced in the long-term once lower FS 824 is decommissioned. The permanent 24-foot-wide Beaver Creek bypass would not impede lynx movement through the area because they can easily move across a road of this width.

**Effects from Noise, Human Disturbance, and Traffic.** The noise and human presence associated with construction has the potential to disturb or temporarily displace lynx that may be using the area. Although individual lynx have been documented using the WRNF, there is no known functional Canada lynx population on this portion of the WRNF. Nearly the entire action area is mapped as non-habitat. The small amount of isolated denning habitat is surrounded by expanses of non-habitat, which reduces the likelihood of lynx using the action area. The forest community within the action area is primarily aspen with some spruce and Douglas fir. Primary habitat for lynx is high elevation spruce-fir forests that are multi-storied and have a high percentage of downed woody debris. These habitat conditions are not found in the action area. The action area is more likely to be used as secondary habitat or during exploratory or dispersal movements as lynx move from core habitat areas in southwestern Colorado. For these reasons, long-term lynx use or denning within the action area is unlikely. Any use of the project area by lynx would be a rare occurrence. Temporary construction activity, road use, and human activity near the trailhead have all occurred historically in the area. Any new activity would primarily occur during daylight hours, whereas lynx are most active at night. After road realignment on upper FS 824, the road would be set back further from mapped denning habitat. Effects from noise or human disturbance during construction and operation are discountable because they are unlikely to affect an individual lynx.

**Snow Compaction.** Winter use of roads creates corridors of compacted snow, which may facilitate access to lynx habitat by predators that otherwise would not be able to navigate efficiently in the deep snow within lynx range. This could result in adverse effects to lynx through competition for prey species. There would be no net increase in snow compaction levels above current conditions, however, because the Beaver Creek bypass represents relocation of an existing road.

**Determination of Effects.** No critical habitat for Canada lynx has been designated in the State of Colorado. The USFWS determined that the southern Rockies do not contain the primary

constituent elements required to meet the definition of critical habitat (USFWS 2014b). Based on the lack of connection between mapped denning habitat and suitable foraging habitat, the probability of lynx occurring in the action area is low. Increases in traffic volume and human presence near mapped denning habitat during construction would be temporary and localized. The proposed action would not have a measurable effect on Canada lynx and would not be a threat to individual lynx that may be in the area. The proposed action may affect, but is not likely to adversely affect Canada lynx.

### ***Forest Service Sensitive Animal Species***

#### ***Hoary Bat***

This species is a solitary rooster and does not form large congregations. Any hoary bats present would occur in small numbers. Removal of trees poses a low risk of death or injury because individuals would readily vacate the roost tree. Increased human activity and noise during construction could affect bats during the 3-month construction period by displacing them from the area. These effects would be temporary and localized and would primarily affect roosting individuals. Construction would be after the critical birthing period. Construction effects to hibernating bats would not occur because the species migrates out of the area in the winter. No effects to foraging bats are expected because construction would take place during daylight hours. Once construction and road decommissioning were complete, noise, traffic, and human activity from road and pipeline operation would be consistent with current activity.

In summary, the proposed action may result in direct effects to hoary bats from removing portions of suitable habitat and indirect effects from noise, traffic, and human activity in the project area. Because the permanent road footprint would be just 24 feet wide, however, there would be abundant forested area surrounding the project area and in the WRNF for the species. The proposed action represents a small amount of habitat loss compared to available acreage on the WRNF. Decommissioning lower FS 824 would help to offset any habitat loss.

***Determination of Effects.*** Habitat loss resulting from the proposed action would be temporary and localized. The number of hoary bats expected to occur in the project area is low, and suitable habitat occurs throughout the planning area. There is a low risk of death or injury to individual bats from tree removal. Noise, traffic, and human disturbance would temporarily increase during construction, but would not occur during critical birthing or hibernation periods. Following construction, noise, traffic, and human activity would be consistent with current conditions. The

proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area, or cause a trend toward federal listing.

### **American Marten**

Density of American marten in the action area is expected to be low because the species is strongly associated with mature coniferous forest. The majority of habitat in the action area where tree removal would occur is aspen and mixed aspen-coniferous forest. Individuals may travel through the area during dispersal or exploratory movements because there is suitable spruce-fir habitat elsewhere on the WRNF. The proposed action may result in direct and indirect effects from habitat loss, noise, traffic, and human activity in the project area. Vegetation removal is expected to have negligible to no effect on individuals or populations of this species because American marten frequently travel long distances, so that an individual moving through the action area would be capable of navigating around the disturbance area. Direct effects to individuals, therefore, are unlikely. Increased noise, traffic, and human activity during construction may displace individual marten from the action area during the anticipated 3-month construction period, but construction would not occur during critical reproductive periods for this species. Once construction and lower FS 824 decommissioning were complete, noise, traffic, and human activity would return to current conditions. Given that occurrences of marten would be rare in the action area and that suitable habitat is limited, effects to individuals or habitat would be negligible.

Because American marten frequent riparian corridors, decommissioning lower FS 824 represents a beneficial long-term effect from the proposed action by improving riparian conditions along Beaver Creek and removing human presence and traffic there.

***Determination of Effects.*** Due to the low probability of occurrence and limited suitable habitat in the action area, the proposed action would have negligible effects to American marten in the action area. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### **Northern Goshawk**

The proposed action may result in direct and indirect effects from habitat loss, noise, traffic, and human activity in the project area. Tree removal in forested areas would be a long-term effect to northern goshawk habitat, but decommissioning lower FS 824 would help to offset any habitat loss, the proposed action is located in or adjacent to areas already disturbed, and there is

abundant suitable forested area throughout the surrounding WRNF. Because northern goshawk is wide-ranging, effects from limited habitat loss are expected to be negligible.

Tree removal and construction noise, traffic, and human presence may displace nesting goshawks if any are present during construction or within a 0.5-mile radius. In Colorado, active northern goshawk nests are buffered by a no surface occupancy (NSO) zone and a timing restriction for a 0.5-mile-wide radius from March 1 to September 15 (CDOW 2008).

Construction is proposed to occur at the end of the breeding season, rather than during the critical period when nests are occupied. Construction could displace fledglings, or foraging or resting adults. Suitable habitat is available in the surrounding area for birds to disperse, however. Long-term noise, traffic, and human activity would return to current conditions. Individuals using the project area likely are habituated to the current level of activity. Overall, disturbance would be temporary and localized. Given the abundance of surrounding suitable habitat, there would be negligible effects to northern goshawk.

***Determination of Effects.*** Habitat loss resulting from the proposed action is expected to be a long-term effect, but decommissioning lower FS 824 would help to offset habitat loss. The proposed action is located in or adjacent to areas already disturbed, there is abundant suitable forested area throughout the surrounding WRNF, and northern goshawks are wide-ranging; therefore, effects from limited habitat loss are expected to be negligible. Noise, traffic, and human activity would temporarily increase during construction, but would not occur during the critical period when nests are occupied. If nests are discovered, the appropriate NSO buffer zone and timing restriction would be applied to protect nesting birds. Use of FS 824 would be consistent with current usage to which northern goshawk are habituated. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area, or cause a trend toward federal listing.

### **Boreal Owl**

The proposed action may result in direct and indirect effects from habitat loss, noise, traffic, and human activity. Density of boreal owl in the action area, however, is expected to be low because this species is strongly associated with high elevation (above 10,000 feet), mature spruce-fir forest. The majority of habitat in the project area is aspen and mixed aspen-coniferous forest below 9,000 feet. Individuals may travel through the area to access suitable spruce-fir habitat elsewhere on the WRNF. Vegetation removal from the proposed action is not expected to affect

individuals or populations of this species. There would be no net increase in road density because the Beaver Creek bypass would be offset by decommissioning lower FS 824. Given that boreal owl would be unlikely in the action area, effects to individuals or habitat would be negligible.

Tree removal and construction noise could result in loss of nesting boreal owl if any were present in the construction corridor or vicinity. In Colorado, active boreal owl nests are buffered by an NSO zone and timing restriction of a 0.125-mile-wide radius from February 1 to September 15 (USFS 2014b).

Increased noise, traffic, and human activity during construction may temporarily displace boreal owl using the action area during the anticipated 3-month construction period. Construction is proposed at the end of the breeding season and would not occur during the critical period when nests are occupied. Fledglings or adults using the action area for foraging or resting could be displaced. Any individuals that currently use the action area likely are habituated to the current level of activity. Disturbance effects would be localized and temporary. When combined with the low likelihood of the species using the action area, potential effects to boreal owl would be negligible. During road use, noise, traffic, and human activity would return to current conditions.

***Determination of Effects.*** The majority of habitat that would be affected by the proposed action is not considered suitable habitat for the species. Given that the species is unlikely in the action area, effects would be negligible. Noise, traffic, and human activity would temporarily increase during construction, but would not occur during the critical period when nests are occupied. If nest cavities are discovered, the appropriate NSO buffer zone and timing restriction would be applied to protect nesting owls. During road use, noise, traffic, and human activity would be consistent with current conditions. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### **Olive-sided Flycatcher**

The proposed action may result in direct and indirect effects from habitat loss, noise, traffic, and human activity. The species may occur in the action area where patches of mixed aspen-coniferous forest are present. The proposed action is located in or adjacent to areas that already see human activity, there is abundant suitable forested area throughout the surrounding WRNF, and the majority of the disturbed area would be revegetated.

Construction is proposed during the nesting season, and tree removal, and increased noise, traffic, and human activity during construction could result in displacement and/or loss of nesting

olive-sided flycatcher if any were present in the construction corridor or vicinity. Any individuals that currently use the action area likely are habituated to the current level of activity. Disturbance effects would be localized and temporary. Given the abundance of surrounding suitable habitat, they would cause minor to negligible effects to olive-sided flycatchers. During road use, noise, traffic, and human activity would return to current conditions.

***Determination of Effects.*** Noise, traffic, and human disturbance would temporarily increase during construction, which could affect nesting and foraging birds. If active nests were discovered, the appropriate NSO buffer zone and timing restriction would be applied to protect nesting birds. Habitat loss would be offset by decommissioning lower FS 824. Post-construction noise, traffic, and human disturbance would be consistent with current levels. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### **Flammulated Owl and Purple Martin**

The proposed action may result in direct and indirect effects from habitat loss, noise, traffic, and human activity. Effects are anticipated to be minor, however, because the proposed action would be located in and adjacent to areas that already are disturbed, much of the newly disturbed area would be revegetated, and there is abundant suitable forest in the surrounding WRNF. Habitat fragmentation would not occur. Tree removal would increase forest openings, which may have a beneficial effect to the species by improving foraging opportunities.

Tree removal and construction noise could result in displacement and/or loss of nesting for flammulated owls if any were present in the construction corridor or vicinity. Construction is proposed to begin at the end of nesting season, but may disturb individuals nesting in the area. In Colorado, active flammulated owl nests are buffered by an NSO zone and timing restriction of a 0.25-mile-wide radius from April 15 to September 15 (USFS 2014b). Any individuals that currently use the action area likely are habituated to the current level of activity. These disturbance effects would be localized and temporary, and would have minor effects to flammulated owl given the abundance of surrounding suitable habitat. During road use, noise, traffic, and human activity would return to current conditions.

***Determination of Effects.*** Noise, traffic, and human disturbance would temporarily increase during construction which could affect nesting and foraging birds. If active nests were discovered, the appropriate NSO buffer zone and timing restriction would be applied to protect nesting birds.

Tree removal would increase forest openings, which may have beneficial effects to the species by improving foraging opportunities. Post-construction noise, traffic, and human disturbance would be consistent with current levels. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### **Boreal Toad and Northern Leopard Frog**

The proposed action may result in direct and indirect effects from potential mortality and habitat loss, including riparian disturbance at four perennial stream crossings for the pipeline and Beaver Creek bypass. Individuals may be affected because the species primarily uses forested habitats, shallow perennial streams, and adjacent wetland habitats. During construction, boreal toads and northern leopard frogs could be crushed by foot or truck traffic, or displaced. The permanent footprint for box culverts along perennial streams could be up to 36 linear feet. Trenching and drainage crossings would be minimized to only the area necessary for placement of pipelines and culvert or CMP. Delineated wetlands would be avoided and surrounded by flagging and erosion control structures to prevent equipment from entering. Areas adjacent to these wetlands may be used by boreal toads and northern leopard frogs during dispersal. The proposed action may result in localized effects to boreal toad individuals and suitable habitat. Decommissioning lower FS 824 would provide greater protection for water quality in Beaver Creek and a beneficial long-term effect for boreal toad and northern leopard frogs.

***Determination of Effects.*** The proposed action may result in temporary, localized, and negligible to minor effects to boreal toad individuals and suitable habitat. Decommissioning lower FS 824 would provide for water quality improvement to Beaver Creek and a beneficial effect to the species. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### **Western Bumblebee**

The proposed action is unlikely to result in habitat loss for this species because it is not known to occur on the WRNF (USFS 2016c). It requires habitats with a rich supply of floral resources with continuous blooming from spring to autumn. Isolated patches of habitat are not sufficient to fully support the population (Evans et al. 2008). Construction would remove portions of aspen and mixed-conifer forest, which contains flowering forbs in the understory. Long-term habitat loss would be limited to the new road alignments and improvements but would be offset by

decommissioning lower FS 824. ROW areas disturbed during construction would be reclaimed. Decommissioning lower FS 824 may create additional floral habitat.

***Determination of Effects.*** The proposed action may result in temporary, localized, and negligible habitat loss. Decommissioning lower FS 824 may have a beneficial effect due to the potential creation of additional floral habitat. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

### ***Monarch Butterfly***

The proposed action is unlikely to result in habitat loss for this species because it is not known to occur on the WRNF (USFS 2016c) since species reproduction is dependent on the presence of larval host plants, primarily milkweeds (Commission for Environmental Cooperation 2009). If milkweed plants did occur, they likely would be along the edges of the existing road or other disturbed areas. Monarchs and milkweeds with eggs could be directly affected (crushed). These effects would be temporary, localized, and negligible.

***Determination of Effects.*** The proposed action may result in temporary, localized, and negligible habitat loss. The proposed action may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

## **No Action**

### ***General Wildlife***

Under the no action alternative, CPX would continue commercial use and maintenance on the existing FS 824. The road would continue to be located adjacent to Beaver Creek. Localized effects from noise, traffic, and human activity would be consistent with current conditions or could increase if CPX transported water and product by truck instead of pipeline.

### ***Threatened, Endangered, Candidate, and Proposed Animal Species***

***Colorado River Cutthroat Trout.*** Under the no action alternative, erosion and sedimentation from use of lower FS 824 would not be addressed or mitigated and could continue to affect Beaver Creek water quality with potential effects to green lineage Colorado River cutthroat trout. The no action alternative, therefore, may affect, but is not likely to adversely affect green lineage Colorado River cutthroat trout.

**Canada Lynx.** Under the no action alternative, localized effects from noise, traffic, and human activity adjacent to mapped denning habitat would be consistent with current conditions. The no action alternative, therefore, may affect, but is not likely to adversely affect Canada lynx.

### **Forest Service Sensitive Animal Species**

#### ***Hoary Bat***

Under the no action alternative, localized effects from noise, traffic, and human activity along the CPX FS 824 road ROW would be consistent with current conditions. The no action alternative, therefore, may adversely impact individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

#### ***American Marten***

Under the no action alternative, localized effects from noise, traffic, and human activity along the CPX FS 824 road ROW would be consistent with current conditions. Habitat suitability along the road is marginal, however. The no action alternative, therefore, would have no effect on this species or its habitat.

#### ***Northern Goshawk, Boreal Owl, Olive-sided Flycatcher, Flammulated Owl, and Purple Martin***

Under the no action alternative, localized effects from noise, traffic, and human activity along the CPX FS 824 road ROW would be consistent with current conditions. The no action alternative, therefore, may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

#### ***Boreal Toad and Leopard Frog***

Under the no action alternative, there would be no new stream crossings and associated localized effects from noise, traffic, and human activity. There also would be no decommissioning of lower FS 824 and associated improvement to water quality and habitat. The no action alternative, therefore, may adversely affect individuals, but is not likely to result in a loss of viability in the planning area or cause a trend toward federal listing.

#### ***Western Bumblebee and Monarch Butterfly***

Under the no action alternative there would be no effect on these species or their habitats.

### **3.6.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to reduce potential adverse effects to wildlife and listed species.

- Surface disturbance will be minimized to only the disturbance area necessary to support construction, operation, and maintenance of the road and pipeline corridor.
- Work will occur during daylight hours. Supplemental lighting is not proposed.
- The construction period will occur outside of the MA 5.43 timing restriction between December 1 and April 14.
- Construction during the nesting period will have a preconstruction nest clearance survey for migratory birds.
- Disturbed areas that are not part of permanent road and trailhead features will be revegetated with a native seed mix approved by the Forest Service.
- Stormwater BMPs will be implemented to avoid or minimize sedimentation to Beaver Creek.

## **3.7 Scenery Resources**

### **3.7.1 Affected Environment**

The area of potential effects for scenery resources extends beyond the project area to include views from potentially sensitive receptors in the surrounding landscape. The sections below describe the existing landscape, explain its scenic quality, and identify potentially sensitive receptors from which the project may be visible. The WRNF uses elements of the Scenery Management System (SMS) to inventory and manage scenic values on NFS land (USFS 1995).

#### **Existing Landscape Character**

Landscape character is defined as the properties that give a geographic area its scenery and cultural image, consisting of the combination of physical, biological, and cultural attributes that make a landscape identifiable and unique (USFS 1995).

The project area is located northeast of Battlement Mesa. The landscape character in this area is steep and sloping to precipitous flat-topped mountains dissected by narrow stream valleys with steep gradients. Elevations rise from north to south, from approximately 5,600 feet to 10,700 feet amsl as the landscape transitions from the flat valley associated with the Colorado River to steeper, rugged slopes and the top of Battlement Mesa (EPA 2010). Vegetation consists of coniferous forest interspersed with aspen groves.

Existing modifications are evident in the landscape. FS 824 bisects the project area (Figure 1-2). TPR's existing above-ground 4.5-inch-diameter natural gas pipeline parallels FS 824. Natural gas well sites and aggregate surfaced access roads are located on private land east and south of the project area. A part-time residence and aggregate surfaced access road is located approximately 0.4 mile west of the proposed Beaver Creek bypass. The Beaver Creek Trail is located east and south of FS 824. Its trailhead is located on upper FS 824, near the TPR gate, with a wider, temporary trailhead on lower FS 824. Other existing infrastructure consists of traffic control signals and property gates on FS 824, and the Summit Midstream Partners, LLC natural gas tie-in at the intersection of FS 824 and CR 317 (Figure 1-2).

### **Landscape Visibility**

Landscape visibility refers to the relative importance and sensitivity of what is seen and perceived in the landscape. It consists of the following three elements: (1) travel ways and use areas, (2) concern levels, and (3) distance zones. Travel ways and use areas include roadways or other facilities from which the forest is viewed by visitors. Concern levels are a measure of the degree of public importance placed on landscapes viewed from travel ways or use areas. Distance zones are used to determine the relative sensitivity of a particular landscape based on its distance from a viewer. The SMS system defines four distance zones from which project features may be viewed (USFS 1995). Visibility in the project area, however, is limited by dense stands of vegetation.

- Immediate foreground (0 to 300 feet)
- Foreground (0 to 0.5 mile)
- Middleground (0.5 to 4 miles)
- Background (4 miles to horizon)

## **Scenic Integrity Objectives**

Scenic integrity is a measure of the degree of the natural visible deviations or physical alterations of the existing landscape character. The SMS uses scenic integrity objectives (SIO) to describe the goals of a landscape relative to its assumed natural state where the degree of alteration is measured in terms of visual contrast with the surrounding natural landscape. The SIOs consist of the following (USFS 1995):

- Very High (unaltered)
- High (appears unaltered)
- Moderate (slightly altered)
- Low (moderately altered)
- Very low (heavily altered)

The LRMP establishes acceptable limits of change for scenic resources for individual management areas (USFS 2002). In MA 5.41, Deer and Elk Winter Range, scenery is managed to provide a range of SIOs from low to moderate. The majority of the project (approximately 87 percent, is located on NFS land with an SIO of moderate. Approximately 13 percent of the project is located on NFS land with an SIO of low (Figure 3-6).

In areas with a moderate SIO, noticeable deviations must remain visually subordinate to the landscape character being viewed. In areas with a low SIO, noticeable deviations begin to dominate the landscape character being viewed. They borrow attributes, however, such as size, shape, edge effect, patterns of natural openings, vegetation type changes, and architectural styles from the area outside of the landscape being viewed. The attributes are compatible or complimentary to the attributes within the landscape being viewed (USFS 1995).

## **Potentially Sensitive Viewing Locations**

Table 3-9 describes potentially sensitive viewing locations (receptors) for the project area based on field reconnaissance and mapping. The viewing perspective of the receptor refers to the location of the receptor in relation to the project. Receptors at higher elevations are in a superior position. Receptors at lower elevations are in an inferior position.

**Table 3-9. Potentially Sensitive Viewing Locations**

Viewpoints	Users	Moving or Stationary	Distance	Viewing Perspective	Visibility of the Proposed Action
Beaver Creek Trail and trailhead	Trail users	Both	Foreground Middle ground	Superior Level Inferior	Visible at the trailhead and on the approach to the trailhead. The proposed action may be visible from the trail but may be screened by vegetation and topography.
Part-time residence	Landowner	Both	Foreground Middle ground	Superior Level Inferior	Not anticipated to be visible from the residence because it will be screened by vegetation and/or topography
FS 824	Motorists	Moving	Immediate foreground	Level Inferior	Visible along FS 824

Figures 3-7 through 3-10 show the year-round limited visibility in the project area due to dense stands of aspen and spruce-fir forest, terrain, and topography.

Figure 3-7: View North on Upper FS 824

Figure 3-8: View Looking Northeast toward Lower FS 824

Figure 3-9: Spruce-Fir Forest on Upper FS 824

Figure 3-10: Mixed Aspen-Coniferous Forest on Beaver Creek Bypass Alignment

### **3.7.2 Environmental Effects**

#### **Proposed Action**

The proposed action is located in a remote, wooded area. Area topography and vegetation, including non-deciduous trees, minimize the new access road from being seen by trail users and from the single, nearby part-time residence. The proposed action would be visible from certain viewing perspectives in the surrounding landscape, as described in Table 3-9, and consistent with the current road. Scenic effects, however, would be less than significant because of the screening experienced from the area’s dense aspen and spruce-fir forest, understory of shrubs and grasses,

steep terrain, and varied topography, which also contribute to obscuring the current man-made features in the landscape.

Short-term scenic effects would be minor and primarily would consist of vehicle and equipment use of FS 824 to support construction. This use is consistent with current commercial use of the roadway. Construction is expected to require 3 months to complete. During project construction and again during decommissioning of lower FS 824, motorists along FS 824 and at the Beaver Creek trailhead would see construction vehicles, equipment, materials, and crews in the foreground. Scenic effects would be intermittent and short-term. They would be limited to the duration of project construction. Laydown areas would be located on CPX private property. Dust suppression during construction would be used for air quality control and would minimize scenic effects from road dust.

Long term, the ROW for the pipeline would be revegetated, leaving an approximately 25-foot-wide area where large diameter trees would not be allowed to become established in order to protect the integrity of the pipeline from tree roots and to provide access for pipeline maintenance. The long-term scenic effect of the Beaver Creek bypass and realignment of an approximately 1,200-foot-long segment of upper FS 824 would look consistent with the existing landscape, which has previously been modified by construction of FS 824. The aggregate surfaced roads would repeat the form, approximate line, color, and texture within the landscape of the existing FS 824. The direct effects, therefore, would be the appearance of a wider road bed, from approximately 15-feet-wide on lower FS 824 to approximately 20-feet-wide on the Beaver Creek bypass. Specified pullout areas also would widen portions of upper FS 824 up to approximately 28 feet. The scenic experience for motorists, however, including the part-time resident located on private land off of FS 824, will be consistent with the current scenic experience because the road would continue to be a dirt road bordered by aspen and spruce-fir forest.

Indirect scenic effects would occur if the project resulted in decreased recreational use of NFS land and the Beaver Creek Trail. Indirect scenic effects for recreational users would be minimal, short term, and are not anticipated to deter visitation by recreational users. Decommissioning lower FS 824 improves the recreational experience for anglers and other forest users along Beaver Creek as the area returns to its natural state, and previously-disturbed areas blend with the natural landscape. Relocating the Beaver Creek trailhead to upper FS 824 eliminates a segment of the trail from paralleling FS 824 along Beaver Creek. In summary, modifications to

the existing landscape would be noticeable but would be visually subordinate to existing man-made modifications and would blend with the existing road network.

### **No Action**

Under the no action alternative, the scenic environment would remain as it is experienced today. The landscape would remain visibly disturbed from existing development, including oil and gas operations, roads, the TPR pipeline, and other human activity.

### **3.7.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to avoid potential effects to scenery resources:

- New disturbance will be limited to only the area necessary to support road construction and operation, and pipeline installation.
- Disturbed areas not needed for operation, maintenance, or access will be revegetated with a Forest Service-approved seed mix.
- Dust suppression will be conducted during construction and maintenance to reduce visible dust.
- Tree removal will be conducted to avoid hard edges. Softened edges will be achieved through selective removal of trees of different ages and heights to produce irregular corridor edges, where possible. The edges of the ROW where vegetation is removed will use a variable density cutting (feathering) technique to create a more natural edge that blends with existing vegetation. Edges will be non-linear, and changes in tree height along the edges of openings will be gradual, rather than abrupt.
- Disturbed areas will be regraded to restore a natural terrain appearance. Site grading will blend disturbed areas into the existing topography to achieve a natural appearance at transitions by minimizing cuts and fills between the graded area and existing terrain. Excess material will be put back in the graded area while maintaining a natural appearance at the transitions.

## **3.8 Cultural Resources**

### **3.8.1 *Affected Environment***

Cultural resources are defined as the remnants of past human activity, which are at least 50 years old. The archaeological record for areas at elevations greater than 8,000 amsl is not well understood because of a lack of both material signature and formal investigation. Adjoining lower elevations, however, generally retain evidence of Paleoindian [ca 12,000-8000 before present (b.p)] through Archaic (ca 8,000-3,000 b.p.) hunter-gather groups, followed by at least part-time agricultural groups (ca post-3,000 b.p.). By the time Europeans entered the region, Native American groups were conducting seasonal sojourns into higher elevations to pursue specific resources or to engage in social and ritual practices. Europeans and Euro-Americans subsequently exploited high elevation portions of western Colorado for homesteading, timber harvesting, livestock grazing, and mining. These human activities left a degree of material signature across the landscape in the form of discarded artifacts and built/modified features.

The LRMP states that management activities on NFS land are to comply with federal, state, and local regulations regarding cultural resources (LRMP 2002). Cultural resources are protected under the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires that federal agencies take into account the effect of undertakings within their jurisdiction on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Project effect considerations include both possible direct and indirect effects to a specific resource. Direct effects are those which would physically alter the cultural resource. Indirect effects are those which would alter the setting in which the resource is located. The area of potential effects (APE) for direct and indirect effects is determined by the Forest archaeologist.

NRHP eligibility is evaluated for the integrity of the resource; its association with historically significant events, persons, or patterns in prehistory and/or history; its engineering, artistic, or architectural values; and information it provides relative to important prehistoric and/or historic research questions. The determination of a project's effect on a cultural resource and its NRHP eligibility is made by the Forest archaeologist, in consultation with the Colorado State Historic Preservation Officer.

Tetra Tech conducted a literature review through the Colorado Historical Society, Office of Archaeology and Historic Preservation (OAHP), Cultural Resource On-line Database (Compass)

in July 2014, September 2015, and again on September 8, 2016, as review of the proposed action developed to ensure that file search results were less than 1 year old, in accordance with USACE Clean Water Act, Section 404, permitting requirements.

The literature review included previously recorded sites and surveys within 1 mile of the APE around the ROW centerline. The research area is located within the North Mamm Peak (1982) quadrangle. Legal locations are listed in Table 3-10.

**Table 3-10. Cultural Resource File Search Sections**

Principal Meridian	Township	Range	Section
6	7S	94W	12-14, 23-26, 35, 36
6	7S	93W	18, 19, 30, 31
6	8S	94W	12
6	8S	93W	6

The Compass database contains records of archaeological investigations that have been conducted and cultural resources (prehistoric and historic) that were previously recorded in the research area. Properties listed on the NRHP are included. Tetra Tech also reviewed historic General Land Office (GLO) records and the Glenn R. Scott Historic Trail Map of the Leadville 1° x 2° Quadrangle, Central Colorado to determine whether vestiges of trails, transportation routes, homesteads, or other historic resources may be present in the research area.

Results of the literature review indicate that eight prior investigations were undertaken in the research area, with nine cultural resources previously recorded. In the project APE, alone, four prior investigation were undertaken, with five sites previously recorded. The prior investigations were pedestrian surveys to support geophysical seismic explorations, pipeline projects, access roads, well locations, and trail inventory projects. Of the nine previously recorded resources in the research area, five are historic road segments, two are historic ditch segments, one is a prehistoric isolated find (IF), and one is a prehistoric lithic scatter. The information is summarized in Tables 3-11 and 3-12.

**Table 3-11. Cultural Resource Class I File Search Data**

Date	Agency	Author	Report	Report Number
1989	Metcalf Archaeological Consultants, Inc. for Northern Geophysical Seismic Explorations	Michael D. Metcalf	A Cultural Resource Inventory of Northern Geophysical Seismic Explorations near Battlement Mesa, Mesa and Garfield Counties,	MC.LM.R16 <sup>1</sup>

Date	Agency	Author	Report	Report Number
	Inc.		Colorado (S#1092)	
2009	Cultural Resource Analysts, Inc. for the White River National Forest	Suzanne Brant and Weston Bacon-Shulte	Class III Cultural Resource Inventory for the Honea Pipeline Project, Garfield County, Colorado	GF.FS.R58 <sup>1</sup>
2008	Alpine Archaeological Consultants, Inc. for the White River National Forest	S. Rheagan Alexander	Cultural Resources Inventory for an Access Road near Rifle for Black Diamond Minerals, Garfield County, Colorado	GF.FS.NR139 <sup>1</sup>
2010	Grand River Institute for the Forest Service	Barbara Davenport	Class III Cultural Resources Inventory for the Honea 19-05B Well Location and Access (1800 Feet) in Garfield County, Colorado for Laramie Energy II, LLC (As Represented by Westwater Engineering) (GRI Project #2010-36, 07/22/2010)	GF.FS.NR143
2001	Grand River Institute for White River National Forest	Carl E. Conner	Class III Cultural Resource Inventory for the Proposed Alternate Access Roads (6600 Feet) to the RU#14-19 Well Location in Garfield County, Colorado for Ballard Petroleum, L.L.C. (GRI No. 2150) (CRR#15-08-16-02)	GF.FS.NR108
1999	Grand River Institute for Barrett Resources Corporation and the White River National Forest	Carl E. Conner	Class III Cultural Resources Inventory of the Proposed RU#14-19 and RU#32-19 Well Locations and Access Routes (7100') in Garfield County, Colorado	GF.LM.R155
2004	White River National Forest	Alice Gustafson	The Cultural Resource Inventory of the Beaver Creek Cooperative Trail, Garfield County, White River National Forest	GF.FS.R38 <sup>1</sup>
2008	Grand River Institute for the BLM, Glenwood Springs Field Office	Carl E. Conner and Barbara Davenport	Class III Cultural Resources Inventory Report for the Beaver Creek Project Area in Garfield County, Colorado for Williams Production RMT (GRI NO. 2849)[Bureau of Land Management (BLM) GSFO #1109-1]	GF.LM.R418

<sup>1</sup>Within APE

**Table 3-12. Cultural Resource Class I Previously Recorded Sites**

Site	Time Period	Type	NRHP Eligibility
5GF.2739.2 <sup>1</sup>	Historic	Beaver Creek Road Segment	Officially Not Eligible
5GF.2739.4 <sup>1</sup>	Historic	Beaver Creek Road Segment	Officially Not Eligible
5GF.3164.1 <sup>1</sup>	Historic	Road Segment	Officially Not Eligible
5GF.4169.1	Historic	Road Segment	Officially Not Eligible

Site	Time Period	Type	NRHP Eligibility
5GF.4170.1	Historic	Logging Road	Officially Not Eligible
5GF.3296.1 <sup>1</sup>	Historic	Ditch Segment	Officially Not Eligible
5GF.4171.1	Historic	Ditch Segment	Officially Not Eligible
5GF.2589 <sup>1</sup>	Prehistoric	IF	Field Not Eligible
5GF.3163 <sup>1</sup>	Prehistoric	Lithic Scatter	Officially Not Eligible

<sup>1</sup>Within APE

The majority of previously-recorded cultural resources in Table 3-12 are historic linear features (roads and ditch segments). Prehistoric cultural material is limited to one IF (5GF.2589), and one site (5GF.3163). All of the cultural resources are recommended and/or determined not eligible for inclusion on the NRHP. Eight are listed as “Officially Not Eligible,” and one is listed as “Field Not Eligible.” Sites listed as not eligible can be disturbed by construction activity after the initial recording and eligibility assessment is complete, as is the case here. As such, no further management is required for these resources.

Results from review of GLO records for Township 7 South, Range 94 West (1890) and Mineral Surveys (1913, 1922, 1923, 1932), Township 7 South, Range 93 West (1893), Township 8 South, Range 94 West (1892), Township 8 South, Range 93 West (1892) GLO Plats, and the National Park Service’s National Historic Trails Map of the Project area are listed in Table 3-13.

**Table 3-13. Cultural Resource Sites Identified by Historic Maps**

Site	Time Period	Site Type	NRHP Eligibility
Trail <sup>1</sup>	Historic	Northeast- to- Southwest-Trending Trail Segment	Not Recorded
Irrigation Ditch*	Historic	Northeast- to- Southwest-Trending Irrigation Ditch	Not Recorded
Mt. Mamm No. 10 Mining Claim	Historic	Mining Claim	Not Recorded
Mt. Mamm No. 11 Mining Claim	Historic	Mining Claim	Not Recorded
Mt. Mamm No. 12 Mining Claim	Historic	Mining Claim	Not Recorded
Mt. Mamm No. 13 Mining Claim	Historic	Mining Claim	Not Recorded
Trail	Historic	North- to- South-Trending Trail Segment	Not Recorded

<sup>1</sup>Within APE

Tetra Tech conducted pedestrian surveys of cultural resources in the project area on September 2, 2014, and October 10, 2016. During individual surveys, the areas covered varied between all

or portions of FS 824, the proposed Beaver Creek bypass and upper FS 824 alignments, the proposed pipeline corridor, and delineated wetlands and WUS to provide detailed information for multiple regulatory uses, including this EA and Clean Water Act, Section 404, permitting. Results were recorded on an OAHF Limited Results Cultural Resource Survey Form because there were no cultural resource finds during the survey. The survey results underscore that the affected area was previously disturbed from road improvements. Specifically, FS 824 previously was re-graded and widened. In addition, because slopes along the proposed Beaver Creek bypass are heavily forested and range from 20 to 30 degrees, it is not likely that the area was regularly used by historic or prehistoric peoples.

### **3.8.2 Environmental Effects**

#### **Proposed Action**

Cultural resource sites (Sites 5GF.2739.2; 5GF.2739.4; 5GF.2589; 5GF3164.1; 5GF3296.1; and 5GF.3163) potentially are located within the APE. These are historic segments of the Beaver Creek Road and a prehistoric lithic scatter. None of the sites were listed as eligible for inclusion on the NRHP. They may have been destroyed from previous ground-disturbing activity from logging or road building, and were not located during the pedestrian surveys. No other previously-identified cultural resources are located in the APE, nor were cultural resources identified during the pedestrian surveys. The area's heavy vegetation and steep terrain suggest that the area is not likely to contain significant historic or prehistoric artifacts. Direct and indirect effects to cultural resources are not anticipated from construction, operation, or maintenance of the proposed action.

#### **No Action**

Under the no action alternative, CPX would continue commercial use of the existing FS 824, which has not previously affected known cultural resources.

### **3.8.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to avoid potential effects to cultural resources:

- Prior to construction, supervisory construction personnel will be instructed on the protection of cultural and paleontological resources inadvertently encountered during

construction and the need to cease work in the location if cultural or paleontological resource items are discovered.

- Personnel will be instructed to leave inadvertent cultural resource discoveries in place, and to notify the Forest Service for consultation with a Forest archaeologist on how to proceed before continuing work.
- In the event that an unanticipated discovery, construction work within a 150-foot-wide buffer area of the discovery will cease until an archaeologist can record the site and make a determination of its significance. Once the site has been recorded, and if the site is assessed as “not eligible” for inclusion into the NRHP, work in that area can resume pending concurrence of the assessment from the Forest Service and OAHP. If the site is assessed as “eligible” for inclusion into the NRHP, a testing and/or mitigation plan will be proposed and sent to the Forest Service and OAHP for review. Work in the area will continue to be halted until the mitigation process is complete and guidelines are met.

### **3.9 Transportation**

#### **3.9.1 *Affected Environment***

Access to the project area from the City of Rifle is provided via CR 320, to CR 317, to FS 824. FS 824 is an approximately 1.7-mile-long aggregate surfaced road from CR 317 in Township 7 South, Range 94, Section 24, south to its terminus at the TPR property boundary in Township 7 South, Range 94, Section 25 (Figure 1-2). The public uses FS 824 to access NFS land, Beaver Creek, and the Beaver Creek Trail. A 60-foot-wide easement for commercial use of FS 824 was issued by the Forest Service to a third-party grantee on December 6, 2007, and was transferred to the current operator. CPX uses FS 824 for TPR-related traffic, such as pickup trucks, water trucks, haul trucks, and equipment used for well drilling and completions. An easement across 0.5 miles of private land in Township 7 south, Range 94 west, Section 24, provides access for public access from CR 317 to NFS lands.

A cooperative agreement between the Forest Service and Garfield County identifies FS 824 as Road Maintenance Level 3 (USFS 2012b). According to Forest Service Handbook 7709.59, Section 62.32, roads in this maintenance level typically are low speed with single lanes and turnouts. Road Maintenance Level 3 designation is assigned to roads maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered

priorities, but users can reasonably drive with expectations of predictable road conditions and can expect warning signs and traffic control devices when hazards are present (USFS 2011a).

The WRNF TMI Action Plan guides travel management implementation decisions on the forest (USFS 2012a). The provision for special use permits in the TMI Action Plan, for example, indicates that management decisions will be made for signage, gates, maintenance, and decommissioning requirements, as well as which parties are responsible for specific tasks. The TMI Action Plan is supplemented by the WRNF Road Management Decision and Design Criteria Worksheet for more specific roadway engineering requirements regarding roadway design, construction, maintenance, and management standards (USFS 2017a).

Representatives from the WRNF conducted a traffic count on FS 824 between August and November 2016 using TrafX traffic counters, which sense magnetic change to count passing vehicles (USFS 2016a). Four traffic counters were placed to distinguish commercial versus non-commercial road use, as follows:

- Counter 1 – located at the north end of FS 824, approximately 500 feet south of the first cattle guard, to capture all road use;
- Counter 2 – located approximately 1,500 feet south of the private inholding at the upper switchback to capture TPR and upper FS 824 recreational road use;
- Counter 3 – located approximately 150 feet south of the CPX gate to capture TPR-only road use; and
- Counter 4 – located approximately 500 feet west of the gate for the private inholding near the upper switchback to capture road use by this private landowner. Data from this counter was estimated when the traffic counter was missing after installation.

The Forest Service concluded that at all times during the summer and fall months, there was a mix of private, recreational, and commercial traffic using FS 824. Recreational use specific to the project area averaged approximately 260 vehicles per month, based on the traffic count. On average, from August through November 2016, approximately 28 percent of the road use on FS 824 was from recreational traffic. Sixty-two percent was TPR road use. An estimated ten percent of the traffic volume was attributed to use by the landowner of the private inholding near the upper switchback (USFS 2016a). During the same study between June and September 2010, the

vehicle counts were 57 percent recreational traffic; 32 percent TPR road use; and 11 percent private landowner use (USFS 2011e).

The information in Table 3-14 supports a low-volume road designation for the Beaver Creek bypass (<400 average daily traffic).

**Table 3-14. Estimated 2010 and 2016 Road Use**

Road Use	Passing Vehicles		
	2010 Percentage	2016 Percentage	2016 Average Daily Trips
Recreational	57	28	8.1
TPR	32	62	17.8
Private land owner	11	10 (est.)	2.8 (est.)

Average daily traffic counts are less than 400 vehicles per day, which supports a low-volume road designation for the Beaver Creek bypass.

According to LRMP Section 5, Travel System Infrastructure, WRNF managers will consider road decommissioning 1) to meet density requirements; 2) when alternative routes may be available; and 3) to protect natural resources. These considerations are consistent with the LRMP standard to maintain or reduce the existing net density of roads in order to restore or prevent alteration of the hydrologic function of the sub-watershed in which Colorado River cutthroat trout are found (LRMP 2002).

The WRNF TMI Action Plan describes engineering methods for decommissioning roads, which are grouped into six categories to define the level of ground disturbance, and are listed in Section 2.1.1 (USFS 2012a). Engineering design for decommissioning a roadway is overseen by the WRNF.

### **3.9.2 Environmental Effects**

#### **Proposed Action**

Under the proposed action, CPX would continue year-round commercial use of upper FS 824. CPX would realign and construct an approximately 1,200-foot-long section of upper FS 824 near the TPR gate; separate upper FS 824 from the Beaver Creek trailhead with a Y-intersection to the trailhead; expand the trailhead parking and vehicle turnaround area; add pullouts and

drainage improvements to upper FS 824; construct the Beaver Creek bypass; and decommission lower FS 824 under the direction of the WRNF. The realigned portion of upper FS 824 and the Beaver Creek bypass would be approximately 24 feet wide. These road alterations would be experienced by the public during travel across NFS land to access the Beaver Creek trailhead. All road surfaces would be aggregate surfaced with a base course thickness of approximately 18 inches above the sub-base.

Road design would conform to the geometric and structural standards in the WRNF Road Management Decision and Design Criteria Worksheet (USFS 2017a), Forest Service Road Preconstruction Handbook (USFS 2011a), and AASHTO Green Book standards for design of low-volume roads. The WRNF standards provide criteria specific to the following:

- Construction plan package
- Construction phasing
- Road prism
- Excavation
- Construction staking and clearing
- Drainage
- Road surfacing

In the short term, road construction and pipeline installation would directly affect use of FS 824 during the approximately 3-month-long construction period. Access to the Beaver Creek Trail would continue during construction of the Beaver Creek bypass by leaving lower FS 824 open during the construction period. Likewise, the existing alignment for upper FS 824 would remain open while construction was occurring for the approximately 1,200-foot-long section proposed for realignment. The public could experience road use delays during this period from construction-related activities. Temporary delays would be minimized because the existing road alignments would remain open while new road alignments were under construction. Exceptions would be delays caused by road widening in select locations on upper FS 824 to provide for vehicle pullouts and drainage improvements, work at the Beaver Creek trailhead, and pipeline installation. Traffic safety controls would be implemented by CPX and its contractors, including flagmen, where

necessary. The estimated commercial road use during project construction and operation is shown in Table 2-2. Construction staging and material laydown would occur off site on CPX private property at each end of the project area. Dragging of pipe would not be considered or allowed.

Once the Beaver Creek bypass and realignment on upper FS 824 were complete, public use of FS 824 would relocate to the new alignments, and decommissioning activity would begin on lower FS 824.

Long-term, CPX would be required to obtain an SUA from the Forest Service to include the newly-constructed portion of FS 824. The authorization would specify terms of use, operation, and maintenance requirements for commercial use of the road, as does the current CPX road use permit and SUA. There would be a performance bond requirement in an amount calculated by the Forest Service. The SUA would contain a requirement to submit an annual operation and maintenance plan to WRNF. Long-term maintenance of the road would be consistent with current use. Maintenance requirements are anticipated to include blading the road as needed; dust abatement; surface rock replacement; snow removal; ensuring debris removal from the roadway; repair of damaged cattle guards, gates, and fences; and ensuring that ditches and culverts are functioning properly.

In the long term, the project represents continuation of an existing use from continued commercial use of FS 824 under a use permit and road maintenance agreement with the Forest Service. New road construction would be offset by decommissioning lower FS 824. There would be no net increase in road density. The Forest Service considers lineal feet, not square feet, when determining compliance with this standard (USFS 2016b). There would be a benefit associated with improved travel safety and from separation of the Beaver Creek trailhead from FS 824 through traffic.

### **No Action**

Under the no action alternative, the existing FS 824 alignment would continue to support all commercial and public vehicle access to NFS land and TPR operations. The steep switchbacks on FS 824 would remain in use. The lower portion of FS 824 would continue to be located adjacent to Beaver Creek and would require traffic control through private lands to provide for traffic safety.

### **3.9.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to avoid potential effects to transportation:

- The contractor will make necessary provision for conformance with traffic safety standards and will perform construction to avoid or minimize obstruction and inconvenience to the traveling public.
- The contractor will provide signage to alert drivers to upcoming construction work and will provide flagmen, as necessary, to provide for traffic safety.
- The civil engineering design will conform to the WRNF Road Management Decision and Design Criteria Worksheet, Forest Service Road Preconstruction Handbook, and AASHTO Guidelines for Geometric Design of Very Low Volume Local Roads (ADT  $\leq$  400), 2001. The engineering design will be reviewed by the Forest Service.
- A traffic control plan will be prepared to ensure public safety during road construction.
- CPX will obtain an SUA issued by the Forest Service with a performance bond requirement.
- CPX will prepare an annual roadway operation and maintenance plan with review and oversight by the Forest Service.

## **3.10 Noise**

### **3.10.1 Affected Environment**

The ambient sound level of an area is defined by the total noise generated within the specific environment and usually is comprised of sounds from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the week. This variation is caused, in part, by changing weather conditions and the effect of seasonal vegetative cover.

Noise is measured in units of decibels (dB) on a logarithmic scale. Because human hearing is not equally sensitive to all frequencies of sound, certain frequencies are given more weight. Hence, the A-weighted decibel (dBA) scale corresponds to the sensitivity range for human hearing. Noise

levels capable of being heard by humans are measured in dBA. A noise level change of 3 dBA is barely perceptible to average human hearing. A change of 5 dBA, however, is clearly noticeable. A change of 10 dBA in noise levels is perceived as a doubling or halving of noise loudness, while a change of 20 dBA is considered a dramatic change in loudness. Table 3-14 shows noise levels associated with common, everyday sources.

**Table 3-15. Common Noise Sources and Levels**

dBA	Typical Sources
100-105	Leaf blower
100-104	Circular saw
84-89	Vacuum cleaner
76-83	Garbage disposal
68-73	Inside car, windows closed, 30 mph
55-65	Normal conversation
50	Background music
40	Living room
28-33	Quiet room

<sup>1</sup>Source: Noise Pollution Clearinghouse 2011.

A noise survey has not been performed for the project area because there currently are few noise-generating uses in the area. Instead, potential background levels are estimated at 34 to 44 dBA based on similar land uses.

The federal Noise Pollution and Abatement Act of 1970 established an Office of Noise Abatement and Control within EPA. Federal agencies have authority to adopt noise regulations related to agency programs. The USFS has not adopted specific noise impact criteria or standards.

### 3.10.2 Environmental Effects

#### Proposed Action

Short-term noise levels from construction equipment are estimated to be in the 75 to 85 dBA range, based on typical noise levels from construction equipment (Table 3-15).

**Table 3-16. Construction Equipment Noise Levels**

Equipment	Typical Noise Levels 50 Feet from the Source (dBA)
Rural area during daytime	40
Residential area during daytime	50

Equipment	Typical Noise Levels 50 Feet from the Source (dBA)
Normal conversation at 6 feet	55-65
Trucks	75
Backhoe	80
Air compressor	81
Mobile crane	83
Concrete mixer	85
Bulldozer	85
Grader	85
Peak combined equipment	89
Lawn mower	90

Source: U.S. Department of Transportation 2006  
 Gray shading indicates reference noise levels

Noise generated from construction may contribute direct, short-term, unwanted noise that is considered a “nuisance.” The proposed action, however, is located in a rural, unpopulated area with few potential noise receptors. There is a single part-time residence located approximately 0.4 mile from the nearest point of the proposed access road. There is intermittent use of the Forest Service trailhead on Beaver Creek and surrounding WRNF. A short-term increase to existing noise levels from project construction would have a minor effect because of the limited number of individuals exposed, the intermittent and short duration of project construction, area topography which provides baffling for noise levels, and the existing commercial use of the area. Noise levels are not anticipated to be high enough to create indirect effects by displacing wildlife, as evidenced by wildlife which continued to use the area following project construction that occurred in 2010 for TPR’s temporary pipeline and road improvements. Likewise, noise levels are not anticipated to discourage recreational use of the area, primarily use of the Beaver Creek Trail, because of the short-term nature of construction, its expected intermittency, and the attenuation of construction noise. Effects to existing noise levels are anticipated to be less than significant from project construction and operation.

Long-term, there would be no noise from the pipelines, and traffic-related noise would be consistent with the current use of FS 824, which is quantified in the CPX and public road use information in Tables 2-2 and 2-3.

**No Action**

Under the no action alternative, existing sources, including CPX-related commercial use and public use of FS 824, would continue to generate noise in the project area.

### **3.10.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to avoid potential effects to transportation:

- Internal combustion engines used for construction will be properly maintained to minimize nuisance conditions created by construction noise.
- A preventative maintenance program for construction equipment will be implemented.
- Trucks will be operated in accordance with posted speed limits.
- Truck engine exhaust brakes will be limited.

## **3.11 Socioeconomics and Community Resources**

### **3.11.1 Affected Environment**

This section discusses demographic and economic characteristics (socioeconomics) in the project area, including population, employment, and housing. The project area for the analysis is considered to be the region of influence (ROI) for socioeconomic factors, in this case the City of Rifle and Garfield County. The discussion includes emergency and community services.

As part of the analysis, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that each implementing agency address, as appropriate, disproportionately high or adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

#### **Population**

Table 3-16 shows historical, current, and projected population data for the ROI, state, and U.S. Between 2010 and 2015, population increased in the ROI. The population of Rifle increased 2.4 percent between 2010 and 2015, according to Colorado Department of Local Affairs (CDLA). The population of Garfield County increased 3.0 percent during the same period. Growth in the ROI is predicted to continue between 2015 and 2050 (CDLA 2017a). U.S. Census Bureau for Census Tract has not been updated since 2010.

**Table 3-17. Population Characteristics**

Location	2010	2015	Percent Change 2010-2015	Projection 2050	Percent Change 2010-2050
City of Rifle	9,136	9,359	2.4	Not Available	Not Available
Garfield County	56,150	58,082	3.0	112,684	50.2
Colorado	5,049,935	5,456,584	8.1	8,541,540	40.9
U.S.	308,758,105	321,418,820	4.1	398,328,000	22.4

Source: CDLA 2017a

### Employment

The largest employment sector in Garfield County in 2014 was tourism, representing approximately 14.6 percent of the workforce. The second largest employment sector in Garfield County was government (10.3 percent), followed by construction (9.5 percent), education and health services (9.2 percent), and mining (6.4 percent) (CDLA 2017b). In 2015, the annual unemployment rate in Garfield County was 4.9 percent, which was slightly above the state rate of 4.5 percent (CDLA 2017b).

Per capita personal income in Garfield County in 2015 was \$27,574, which was below that of the state (\$32,217) (Bureau of Economic Analysis 2016). The estimated median household income for Garfield County in 2015 was \$56,590, which was below that of the state (\$60,629) (U.S. Census Bureau 2015a).

### Housing

The housing occupancy rate for the ROI in 2015 was between 87.3 and 88.8 percent occupied. Garfield County had 1,365 units for rent and 419 units for sale in 2010, the latest year for which data is available. Rifle had 264 units for rent and 71 units for sale during the same period. There were 722 units in Garfield County and 20 units in Rifle available for seasonal, recreational, or occasional use in 2010 (U.S. Census Bureau 2010).

### Emergency and Community Services

Emergency response services in the ROI are provided by Colorado River Fire Rescue, which has six stations to serve the towns of New Castle, Silt, Rifle, and surrounding areas, including the WRNF. Colorado River Fire Rescue provides fire, emergency medical services, and hazardous

materials and rescue response using full- and part-time volunteers. In Garfield County, Colorado River Fire Rescue has four staffed stations providing fire protection, paramedics, and emergency medical technicians. Colorado River Fire Rescue also has one interagency station staffed by the Bureau of Land Management (BLM) and Forest Service and one station used for vehicle maintenance to provide additional support services (Colorado River Fire Rescue 2017).

Law enforcement in the ROI is provided by the Garfield County Sheriff's Office and Rifle Police Department. Emergency medical services are provided at the Grand River Hospital in Rifle.

### **Environmental Justice**

The median household income in Census Tract 9520.02, which encompasses the project area, was \$55,779 in 2015, which is below the Garfield County (\$56,590) and state averages (\$60,629). The estimated poverty rate for individuals in Census Tract 9520.02 was 11.5 percent in 2015, which was above the poverty rate for individuals in Garfield County in 2015 (10.3 percent) and was the same as the state average (11.5 percent) (U.S. Census Bureau 2015b). The percentage of families living in poverty in this Census Tract was estimated at 7.8 percent (U.S. Census Bureau 2015b). The minority population in Garfield County (5.8 percent) was lower than the state average (12.5 percent) in 2015 (U.S. Census Bureau 2015c).

#### **3.11.2 Environmental Effects**

##### **Proposed Action**

The proposed action is not anticipated to disrupt population, economic, or housing trends in the ROI in either the short or long term because the construction and operation workforce (Tables 2-2 and 2-5) would be small compared to the area population and workforce. Local emergency and medical services are adequate to support construction and operation of the project, as evidenced by past TPR operations. It is anticipated that the workforce for both construction and operation would predominantly be comprised of local workers within commuting distance to the project area, with no adverse effect on local housing, schools, or emergency services.

The proposed action would have short-term and long-term economic benefits. Construction would create short-term employment opportunities for the construction workforce (Table 2-5) and long-term employment for workers on TPR. The workforce to support TPR operations is expected to vary between one and as many as 100 workers, depending on operation phase. Between one and two workers are needed onsite for routine operation and maintenance activities for completed

wells. Active periods of well drilling and well completions, however, can require as many as 100 CPX personnel and contractors, or more, spread out over portions of those activities. There would be both short- and long-term financial expenditure in the local economy from the purchase of goods and services.

The project would be built with minimal disruption to recreational users because access to the Beaver Creek Trail and NFS land would be maintained along lower FS 824 during construction, with only periodic road closures or use restrictions. Beaver Creek Trail users typically are already part of the local economy and would be expected to continue to use the trail. No losses from recreation expenditures (e.g., gasoline and food), therefore, is anticipated.

The project would not result in a disproportionate effect to low-income or minority populations relative to the general populations in the ROI.

### **No Action**

Under the no action alternative, there would be no additional employment or local spending and tax revenues associated with the project beyond current operation projections.

#### **3.11.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation measure will be implemented to avoid potential socioeconomic effects:

- Local law enforcement and emergency services will be notified prior to construction and operation of the proposed pipeline and Beaver Creek bypass.

### **3.12 Health and Safety**

#### **3.12.1 Affected Environment**

Non-naturally-occurring health and safety considerations in the project area are construction-related incidents, accidents associated with vehicle use, winter driving conditions, and pipeline operation.

### **3.12.2 Environmental Effects**

#### **Proposed Action**

Short-term construction-related work would be accompanied by health and safety planning for work crews and daily “tailgate” health and safety briefings. Daily briefings are standard practice to provide up to date information on weather and road conditions, work areas, work activity designated for the day, and needed safety measures, such as cones, signage, and flagmen.

Long-term effects are anticipated to provide a health and safety benefit from improving the FS 824 road alignment to eliminate the narrow road sections and steep switchbacks and providing pull outs for safe passing for two-way traffic, including recreational traffic. The improved road engineering would benefit the public from more direct and safer access to the Beaver Creek Trail. Plowing the road in winter would have no effect on public driving conditions and public safety because the road already is closed to motorized winter access.

The buried pipelines located adjacent to FS 824 would be designed to meet or exceed COGCC requirements and ASME Standard B31.8 for natural gas and B31.4 for condensate. Pipeline design and material specifications would be reviewed by the RWPD. Pipeline safety is federally regulated by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration at 49 CFR Parts 190 – 199 for transport of natural gas or hazardous liquids by pipeline. The regulations are intended to prevent releases from natural gas and hazardous liquids pipelines. The CPX pipelines would be remotely monitored to detect large swings in flow or pressure, which could be indicators for the need for repair. Pipeline markers would be installed to ensure awareness of the location of the pipelines. CPX would perform routine inspections of the pipeline ROW, valves, signs, and markers. Pigging the pipelines would be used to monitor pipeline integrity and address blockages, if indicated.

The CPX Spill Response Plan and SWMP would be updated with BMPs implemented for the pipeline and road improvements. CPX would prohibit the storage of flammables or hazardous materials in the project area to avoid or minimize the risk of leaks or spills, such as diesel fuel and hydraulic fluid. CPX would maintain materials (e.g., absorbents) and equipment onsite to respond to spills and would contract with an emergency response company to address incidents that may require support from an outside service provider. New pipelines would be located further from Beaver Creek than the current 4.5-inch-diameter surface pipeline, and buried pipelines would

eliminate the current risk of an accident or spill from transporting product by truck. Significant effects to health and safety are not anticipated.

### **No Action**

The no action alternative would result in continued use of FS 824 for TPR operations. The existing road width and steep switchbacks do not provide for safe public and commercial road, especially under wet or icy conditions and during winter months, or safe passing by two-way traffic. The 4.5-inch-diameter surface natural gas pipeline now supporting TPR operations would remain adjacent to FS 824. A surface pipeline can present a third-party liability from damages caused by non-CPX personnel and contractors.

### **3.12.3 Environmental Mitigation and Other Protection Measures**

The following environmental mitigation and other protection measures will be implemented to avoid potential effects to health and safety:

- A traffic control plan and safety briefings during construction will ensure that public safety requirements are addressed on a daily basis.
- FS 824 will be properly engineered and maintained.
- FS 824 will have a speed limit for construction-related traffic.
- CPX employees and contractors will receive safety awareness training, including safe driving procedures and spill response.
- The buried pipelines will be marked and monitored for large swings in flow or pressure to avoid potential releases from the pipelines.
- The TPR Emergency Response Plan will be updated and used to address the on-site availability of absorbents and other spill cleanup materials and equipment, with outside contractor support, as necessary.

## **4.0 CUMULATIVE EFFECTS**

The CEQ defines cumulative effects as the total effects on a resource, ecosystem, or human community which result from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes the other actions (40 CFR 1508.7). Although the effects of one project may be minor, the additive effects of multiple projects could be significant, according to CEQ.

This section provides discussion of the methodology used to identify past, present, and reasonably foreseeable future projects. It provides a description of the projects and a discussion of potential cumulative effects to resources. The analysis has been conducted in accordance with NEPA regulations and the CEQ handbook, *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ 1997).

### **4.1 Methodology**

The assessment of cumulative effects is based on geographic (spatial) and time (temporal) considerations. Geographic boundaries vary by resource, depending on the time a potential effect would remain in the environment, the extent to which the effect can migrate, and the magnitude of the effect. The timeframe for the analysis considers other past, present, and reasonably foreseeable future projects. How far back the cumulative effects analysis should be conducted can take into account the availability of information and the reasonable cost associated with data collection.

Section 4.2 summarizes potential cumulative effects from the proposed action. Section 4.3 summarizes potential cumulative effects when considering other actions in the project area.

### **4.2 Cumulative Effects Findings for the Proposed Action**

Cumulative effects findings for the proposed action are listed in Table 4-1.

**Table 4-1. Cumulative Effects Findings for the Proposed Action**

Resource	Major Cumulative Effect Findings
Land use and recreation	There would be no net increase in road density after decommissioning of lower FS 824 and the shift to use of the Beaver Creek bypass. Current winter motorized travel restrictions would remain in place with no added winter restrictions. Recreational users would experience an improved Beaver Creek trailhead in summer, and a wider plowed parking area for winter use at the lower forest boundary.
Geology and soils	Further sedimentation in Beaver Creek would be avoided or minimized after relocating FS 824 further from the creek. Construction along the hillside west of FS 824 could be susceptible to further slumps, which would be addressed through appropriate engineering design with review by the Forest Service.
Water quality	Box culverts that may be needed in perennial stream features would require up to 36 linear feet of permanent footings under NWPs administered by the USACE. Water quality would otherwise be improved by decommissioning the current road adjacent to Beaver Creek, which would reduce sedimentation to the creek.
Air quality	Continued potential for fugitive dust from road construction and use would be addressed by posted vehicle speed limits and dust control using hauled water or other dust abatement method.
Vegetation	The estimated 3.08 acres of permanent vegetation removal for the Beaver Creek bypass and road improvements would be reduced to an estimated net permanent impact of 1.42 acres after decommissioning and revegetation of lower FS 824.
Wildlife	No long-term cumulative effects to wildlife are anticipated after the temporary disturbance from construction noise, traffic, and human activity. General wildlife is habituated to current road use. The presence of sensitive species has not been shown in the project area and would be minimized to negligible effects to habitat considering that habitat is largely unsuitable for the species' range and that construction would occur at the end of typical breeding and nesting seasons.
Scenic resources	New road alignments and improvements would blend with existing roads and uses in the project area and would be offset by decommissioning lower FS 824.
Cultural resources	No significant cultural resource finds were identified in the project area so that no cumulative effect to cultural resources is anticipated.
Transportation	Road improvements would continue a trend to improve travel and access on FS 824 while avoiding a net increase in road density and continued impacts to Beaver Creek from sediment runoff.
Noise	After construction, noise levels would be consistent with current road use levels with no cumulative effects from operation of FS 824.
Socioeconomics	There would be no anticipated cumulative effect to local emergency services because buried underground pipelines represent a lower risk of third-party damage. Road construction and operation of TPR provide local employment opportunities and revenue from sale of local goods and services.
Health and safety	There would be a cumulative benefit from improved road safety and buried underground pipelines, which eliminate narrow road sections and the steep switchbacks on FS 824 and lower the risk of a surface spill from haul trucks.

### 4.3 Past, Present, and Reasonably Foreseeable Future Projects

The projects below were identified using publicly-available information, and information provided by the Forest Service, county planning departments, and CPX. Past, present, and reasonably foreseeable future projects are listed in Table 4-2.

**Table 4-2. Past, Present, and Reasonably Foreseeable Future Projects**

Project	County	Description	Timeframe
Oil and gas activity	Garfield	Wells, well pads, surface operations, access roads, pipelines, and tie ins	Historical and current
Grazing operations	Garfield	Cattle grazing on Forest Service and BLM range allotments	Historical and current
Commercial logging	Garfield	Area no longer supports commercial logging industry	Historical
South Rifle Ranger District habitat improvements	Garfield, Mesa	Wildlife habitat improvements on approximately 6,000 acres across the southern portion of the Rifle Ranger District with vegetation treatments totaling 140 acres to increase vegetation and habitat diversity	2014 and 2016
Lower CR 317 road improvements	Garfield	Paving and other road improvements	2013
Upper CR 317 road relocation	Garfield	Relocation to the current CR 317 alignment to provide a setback from Beaver Creek	2009
FS 824 road improvements	Garfield	Curve widening and reinforcements	2010-2011

The analysis below of cumulative effects describes potential cumulative effects on resources by project.

#### 4.3.1 Oil and Gas Activity

Oil and gas activity includes wells, well pads, surface operations, access roads, pipelines, and tie ins. CPX currently has two wells drilled and producing, and completion of a third well is pending. In addition to the CPX operation, the area contains operations developed by Laramie Energy, LLC, Encana Corporation, Terra Energy Partners, a water pipeline crossing Beaver Creek north of the project area developed by Encana Corporation, and a Summit Midstream Partners, LLC (formerly ETC Canyon Pipeline, LLC) pipeline. A ROD for Oil and Gas Leasing on Lands Administered by the White River National Forest was issued on December 3, 2015, allowing the total acreage of land for oil and gas leasing to increase (USFS 2014b). The ROD made 194,100 acres available for leasing, including areas surrounding CPX operations.

The proposed action would have an insignificant cumulative effect because it would be viewed in the context of a landscape already disturbed by the existing FS 824 and surrounding oil and gas development. The proposed action would be offset by decommissioning an existing road so that there is not net increase in road density. It would blend with the existing landscape's surrounding access roads, and the natural landscape would continue to dominate.

#### **4.3.2 Grazing Operations**

Active range allotments on public land surrounding the project area are used for grazing cattle and sheep (BLM 2008). Effects from historical and active grazing operations include vegetation loss, an increase in erosion from reduced vegetative cover, and potential disruption to wildlife habitat and use patterns. The proposed action would avoid or minimize new cumulative effects to vegetation by minimizing the areas of new disturbance and revegetating areas not required for operation and maintenance activities. The 0.90-mile-long lower FS 824 would be revegetated after decommissioning.

#### **4.3.1 Commercial Logging**

Commercial logging occurred in the project area historically. Cumulative effects from logging would be limited to the timber sale associated with tree clearing for the pipeline corridor, Beaver Creek bypass, and upper FS 824 road improvements. No further logging is anticipated once construction is complete.

#### **4.3.2 South Rifle Habitat Improvements**

Past Forest Service habitat improvements on approximately 6,000 acres across the southern portion of the Rifle Ranger District included the following:

- Mechanical treatment of oakbrush and mountain shrub with a hydro-axe to increase age-class diversity
- Sagebrush treatment to remove encroaching pinyon and juniper trees
- Bighorn sheep travel lane mechanical treatment to improve travel habitat
- Prescribed fire to regenerate aspen, pinyon-juniper, and Douglas fir habitat, increase age-class diversity among vegetation, and improve bighorn sheep foraging habitat and sight distances.

Wildlife habitat improvements began in 2014 and work was largely completed in 2016. Mechanical treatment cut vegetation density and create openings in shrubs to increase diversity for mountain shrubs, including oak and serviceberry. Improvements also created a mosaic of different plant species, age classes, successional stages, and changes to vegetation to reduce wildfire intensity (USFS 2014c). Future activity will include up to 1,000 acres of prescribed fire for oakbrush and pinyon juniper. The long-term cumulative effect of approximately 3.08 acres of new permanent vegetation loss from the proposed action (but approximately 1.42 acres of net permanent vegetation loss after decommissioning lower FS 824) is insignificant in comparison to future planned WRNF vegetation changes affecting an additional 1,000 acres of land.

#### **4.3.3 Lower CR 317 Improvements**

Road improvements were completed in 2013 on lower CR 317. The county added 4 inches of gravel and a 4-inch-deep asphalt mat to the road surface. The county also cleaned or replaced culverts and added 2-foot-wide shoulders on each side of the new pavement (Garfield County 2014). The long-term cumulative effects will improve Beaver Creek water quality in conjunction with the proposed action by reducing debris and sedimentation in the creek.

#### **4.3.4 Upper CR 317 Relocation**

A portion of CR 317 was relocated in 2009 to the current CR 317 alignment to provide a setback from Beaver Creek. The work was a condition of the RWPD permit issued to the former ETC Canyon Pipeline, LLC (now Summit Midstream Partners, LLC) (Rifle 2009). The long-term cumulative effects will improve Beaver Creek water quality in conjunction with the proposed action by reducing debris and sedimentation in the creek.

#### **4.3.5 FS 824 Road Improvements**

Curve widening and areas of road reinforcement on FS 824 were completed in 2011. The proposed action would introduce new areas of vegetation removal for construction work. The pipeline corridor would be revegetated, however, and lower FS 824 would be reclaimed and revegetated to minimize cumulative effects to soils, vegetation, habitat, and water quality. Permanent structures needed for water crossings could have up to an estimated 36 linear feet for a box culvert along perennial streams, permitted by a NWP by the USACE, with no obstruction to passage of surface flow or aquatic life. The Beaver Creek bypass is designed to offset the existing lower FS 824 after that segment of road is reclaimed, with no net effects to wildlife, including sensitive species. Recreational use of the FS 824 would be enhanced with improved access and

an expanded trailhead parking and vehicle turnaround area at the Beaver Creek trailhead in summer, and a wider, straighter road alignment that has an unplowed area outside of the driving lane in winter for enhanced skiing and snowshoeing access. The long-term cumulative effect for Beaver Creek would be continued reduced sedimentation and protection of water quality. Other cumulative effects would be less than significant.

#### **4.4 Irreversible or Irrecoverable Commitment of Resources**

Irreversible and irretrievable commitments of resources are those that cannot be recovered or reversed. The losses are permanent. Examples are loss of cultural resources or conversion of wetlands. Such resources effects would not result from the proposed action because the pipelines could, if requested by the Forest Service, be uncovered and removed. The Beaver Creek bypass, upper FS road realignment, and trailhead area, if no longer needed by the Forest Service, could be decommissioned, reclaimed, and revegetated. Associated stream crossings and drainage structures also could be removed.

## 5.0 CONSULTATION AND COORDINATION

### 5.1 List of Preparers

The WRNF Interdisciplinary Team of resource specialists responded to individual public comments received on the September 6, 2016, NOPA for the project. The team provided resource-specific guidance for the EA analysis and contributed reference material to support the analysis. The team consists of the following individuals:

**Table 5-1. White River National Forest Interdisciplinary Team**

Specialty	Resource Specialist
Air	Carmia Woolley
Archaeology/Cultural Resources	Cristina Weinberg and Rebekah Sease
Botany	Kristen Pelz
Engineering	Karla Mobley
Fisheries	Clay Ramey
Fuels	Toni Toelle
Hydro	Thomas Probert
Invasive Species	Hal Pearce
Lands	Rick Haskins
Landscape Architecture/Scenery	Donna Graham
Minerals	Jason Gross
Range	Lydia LaBelle de Rios
Recreation	Robert Rodriguez
Soils	Lynn Khuat
Timber	Chris McDonald
Wildlife	Kim Potter

This EA was prepared by the contractor below under the supervision of White River National Forest:

Tetra Tech, Inc.  
 1100 McCaslin Blvd., Suite 150  
 Superior, Colorado 80027

### 5.2 Agencies and Organizations Contacted

The following agencies and organizations were either contacted directly regarding the proposed action or were part of the general distribution of the September 6, 2016 NOPA.

## **Federal**

Bureau of Land Management, Colorado River Valley Field Office  
U.S. Army Corps of Engineers  
U.S. Environmental Protection Agency, Region 8  
U.S. Fish and Wildlife Service

## **Tribal**

Southern Ute Tribe  
Ute Indian Tribe  
Ute Mountain Ute Tribe

## **State**

Colorado Parks and Wildlife  
Colorado State Forest Service  
Honorable Scott Tipton, U.S. House of Representatives  
Office of Archaeology and Historic Preservation

## **Local**

City of Rifle  
City of Rifle, Parks and Recreation  
Garfield County Commissioners  
Garfield County, Community Development Department  
Rifle Watershed Protection District

## **Organizations**

Biodiversity Legal Foundation  
Center for Native Ecosystems  
Colorado Cattlemen's Association  
Colorado Mule Deer Association  
Colorado Mountain Club  
Colorado Outfitters Association  
Colorado Trout Unlimited  
Colorado Wild

Conservation Colorado  
Defenders of Wildlife  
Grand Valley Citizens Alliance  
High Country 4 Wheelers  
Rifle Snowmobile Club  
Sierra Club, Rocky Mountain Chapter  
Trout Unlimited  
West Divide Cattle Growers Association  
Western Watersheds  
White River Trail Runners  
Wilderness Society  
Wilderness Workshop

## **Media**

Glenwood Springs, Colorado Post Independent

### **5.3 Comments Received on the Notice of Proposed Action**

Comments were received from nine individuals in response to the September 6, 2016, NOPA issued by the Forest Service. A summary of comments is provided in Appendix B. Individual commenters are listed below.

George Bauer  
Terry Broughton  
Craig Bruner  
Steven Fuller  
Peter Hart, Wilderness Workshop  
James Hohenstein, Laramie Energy, LLC  
Genevie and Bobby Hooker  
Charlotte and Kirk Squires  
Tom Vondette

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# **APPENDIX A**

## **FIGURES**

# **APPENDIX B**

## **PUBLIC COMMENTS ON THE NOPA**