



Environmental Assessment



City of Baker City, Oregon

MOUNTAIN LINE REPLACEMENT PROJECT



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ENVIRONMENTAL ASSESSMENT
FOR
MOUNTAIN LINE REPLACEMENT PROJECT

JUNE 2016

Prepared For:
U.S. Forest Service

On Behalf Of:
The City of Baker City, Oregon

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List of Acronyms

°F	Degrees Fahrenheit
AFOLU	Agriculture, Forestry and Other Land Use
AP	Anderson Perry & Associates, Inc.
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
ASR	Aquifer Storage and Recovery
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	Clean Water Act
DBH	Diameter at Breast Height
DEQ	Oregon Department of Environmental Quality
DI	Ductile Iron
DN	Decision Notice
DOGAMI	Oregon Department of Geology and Mineral Industries
DPS	Distinct Population Segment
DSL	Oregon Department of State Lands
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAOSTAT	Food and Agriculture Organization of the United Nations
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FR	Federal Register
GHG	Greenhouse Gasses
GIS	Geographic Information System
gpcd	Gallons Per Capita Per Day
gpm	Gallons Per Minute
GWEB	Governor's Watershed Enhancement Board
INFISH	Interim Strategies for Managing Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada
IPCC	Intergovernmental Panel on Climate Change
LRMP	Wallowa-Whitman Land and Resource Management Plan of 1990
LWD	Large Woody Debris
MA	Management Area
MIS	Management Indicator Species
MSM	Metsulfuron-methyl
NAGPRA	Native American Graves Protection and Repatriation Act

NEPA	National Environmental Policy Act
NFMA	National Forest Management Act of 1976
NHP	National Heritage Program
NHPA	National Historic Preservation Act of 1966
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NPT	Nez Perce Tribe
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System
ODFW	Oregon Department of Fish and Wildlife
OHA	Oregon Health Authority
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
OWEB	Oregon Watershed Enhancement Board
OWRD	Oregon Water Resources Department
PDD	Peak Daily Demand
PDF	Project Design Feature
RACR	Roadless Area Conservation Rule
RHCA	Riparian Habitat Conservation Area
RM	River Mile
ROD	Record of Decision
ROW	Right-of-Way
RWA	Regulated Work Area
SHPO	Oregon State Historic Preservation Office
SOPA	Schedule of Proposed Actions
SWMU	Sumpter Wildlife Management Unit
TCP	Traditional Cultural Properties
TESP	Threatened, Endangered, and Sensitive Plants
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UV	Ultraviolet
WFP	Water Facilities Plan

Executive Summary

Introduction and Background

The City of Baker City, Oregon, operates one of the most unique municipal water systems in the state. The municipal water system is gravity fed from intakes high in the Elkhorn Mountain Range through a water transmission pipeline network to the City's storage reservoirs. The watershed accounts for 88 percent of the municipal water supplied to the City.

Baker City's predecessors developed the early water system in 1862, with the City acquiring the water and rights-of-way (ROW) in 1900 and 1901. From this early beginning, Baker City has actively maintained and upgraded the water collection system to continue serving the municipal needs of the City. However, a century of use has led to decreased efficiency and substantial water loss in many portions of the conveyance system.

This water transmission pipeline (jointly referred to as the Mountain Line) consists of an approximately 23.4-mile concrete and steel line that extends from the Goodrich Creek Mountain Line Intake (T8S, R38E, Section 34) to the Elk Creek settling tank (T9S, R39E, Section 33), where it combines with Elk Creek water and continues to the City's reservoirs and water treatment plant (T9S, R 40E, Section 18). See Figures 1 and 2 for the system location and major features. The City needs to replace the pipeline in order to ensure the continued reliability and safety of the water system serving the needs of the City's approximately 10,000 residents and 590 commercial users. Goals for the reconstruction work include improved water volume and quality, water conservation, improved water system reliability, and reduced maintenance.

The Mountain Line transects both public and private land as it makes its way to the City's reservoirs. Through a Stipulated Judgment issued by the United States District Court, Pendleton Division, the City has access to a 20-foot ROW/easement along the pipeline route for operation and maintenance of the pipeline. However, the replacement of the pipeline is not considered operation and maintenance, and in order to replace the pipeline, the City will need to obtain a Special Use Permit for the construction of the pipeline. The City is requesting a temporary construction access consisting of its existing 20-foot ROW/easement and an additional 20 feet (10 feet on both sides of the ROW/easement for a total of 40 feet) outside its ROW/easement. To replace the pipeline, the City needs approval from both the U.S. Forest Service (USFS) and the Bureau of Land Management.

Findings

The potential impacts of replacing the Mountain Line water supply pipeline have been thoroughly analyzed in this document and are demonstrated to have no significant effects on the human or natural environment. This replacement will provide for a reduction of water loss, reduction of the ability of foreign material/sediment to enter the water supply pipes, and reduction of erosion from water loss. The findings of this document are the opinion of the City of Baker City and do not represent a determination by the USFS. The USFS will use this document to determine if an Environmental Impact Statement (EIS) is needed or if the Environmental Assessment (EA) is adequate. This determination will be documented by the USFS through a Finding of No Significant Impact (FONSI). After the FONSI is prepared, the USFS will issue a Draft Decision Notice.

Summary/Conclusions

Baker City proposes to replace the majority of the Mountain Line. A thorough EA and related information, including multiple Specialist Reports, have been prepared in support of the impending USFS decision. This project is essential to the continued viability of the City of Baker City's municipal water supply.

Section 1 - Purpose and Need

Document Organization

This Environmental Assessment (EA) analyzes the Proposed Alternative (replacement of the Mountain Line) and the No Action Alternative. The document is organized into four main sections:

- Section 1 summarizes the EA, briefly describing the alternatives considered, and provides a list of state and federal requirements for this project.
- Section 2 presents a project description and description of the two alternatives analyzed in this document. It also discusses mitigation measures as they relate to resources.
- Section 3 conducts an environmental analysis of the affected environment, effects, and significant effects related to the Proposed Alternative and No Action Alternative for the individual elements of the human and natural environment. Cumulative impacts are also addressed.
- Section 4 summarizes consultation and coordination efforts.
- The appendices include correspondence; the 60-page detail site plan; no effect documentation; U.S. Forest Service (USFS)-approved Specialist Reports for noxious weeds, rare plants, wildlife, fisheries, riparian areas, water quality, wetland delineation, and inventoried roadless areas; and a copy of the Stipulated Judgment.

Introduction

The City of Baker City is evaluating effects of replacing the municipal water transmission pipeline known as the Mountain Line, located in the Baker City Watershed (see Figure 1, Location and Vicinity Maps, and Figure 2, Current System Map). The purpose of the Proposed Alternative is to replace the Mountain Line, which transports municipal water to the residents and businesses of Baker City. The project is needed to provide the residents and businesses of Baker City with a long-term, reliable, safe source of drinking water that is secure for the future.

The Baker City Watershed is composed of approximately 10,000 acres, located about 6 miles west of Baker City. The watershed is located in the Blue Mountain Range on the eastern slope of the Elkhorn Ridge. Elevations range from 5000 feet above sea level at the lower slopes to 8931 feet above sea level at the Elkhorn Peak above Goodrich Lake. The land has been designated by the USFS as a municipal watershed.

The water system is gravity fed from intakes high in the Elkhorn Mountain Range through a water transmission pipeline network to the City's storage reservoirs. The Mountain Line consists of an approximately 23.4-mile concrete and steel line that extends from the Goodrich Creek Mountain Line Intake (T8S, R38E, Section 34) to the Elk Creek settling tank (T9S, R39E, Section 33), where it combines with Elk Creek water and continues to the City's reservoirs and water treatment plant (T9S, R40E, Section 19) (see Figure 2, Current System Map).

The project area for this EA is generally considered to be inclusive of the City's permanent right-of-way (ROW)/easement along the pipeline route, which is 10 feet on either side of the centerline of the

pipeline (20 feet total) and an additional 10 feet on either side of the ROW/ easement (20 additional feet), for a total of 40 feet in most areas. The project area is extended near the diversion areas to 30 feet on both sides of the pipeline (for a total of 60 feet). For the purposes of clarity, the project area will be referred to as the 40-foot temporary construction easement for the duration of this EA. Figure 3, Aerial Photograph, shows the overview of this area. This easement, along with a view of the entire pipeline, is shown in detail on pages 1 through 60 in Appendix I, Site Plan (SF 299 Application).

Purpose and Need

The City completed a Water Facilities Plan (WFP) in 2000 (Anderson Perry & Associates, Inc. [AP], 2000). The WFP identified the potential for the primary conveyance of the City’s municipal water, the Mountain Line, to become inoperable from increased fractures, root intrusion, and deteriorating joints. The Mountain Line is the main supply line to the City’s municipal reservoirs, conveying water from eleven of the City’s diversions. The City does not have a sufficient backup water supply source to provide water on a permanent basis. The City needs to replace the majority of the Mountain Line in order to ensure the continued reliability and safety of the water system to serve the needs of the City’s approximately 10,000 residents and 590 commercial users.

Baker City lacks water system redundancy and backup, necessitating the continued operation of the Mountain Line. The City’s additional water source is a basalt well that was constructed in 1977. The well produces approximately 1,800 gallons per minute (gpm), only 12 percent of the City’s supply. In addition, the water is warmer than the watershed source, at 60 degrees Fahrenheit, and has high concentrations of iron and manganese.

The City’s Water Management and Conservation Plan, completed in 2012, indicates that the City’s average daily demand is 1,538 gpm with a peak daily demand of 4,821 gpm. The following table describes the demand and capacity of the water system (AP, 2013).

**TABLE 1-1
 YEAR 2011 AVERAGE AND PEAK DAILY DEMAND DATA, BAKER CITY, OREGON**

Parameter	Demand (gpcd) ¹	Demand (gpm)	Percentage of Combined Well and Watershed Capacity (Assume Minimum Fall/Winter Capacity ² of 2,300 gpm and Summer Capacity ³ of 6,650 gpm)
Average Daily Demand	224	1,538	67
Peak Daily Demand (PDD)	702	4,821	72

¹gpcd = gallons per capita per day

²Fall/winter capacity = 1,000 gpm from well and 1,300 gpm from watershed = 2,300 gpm

³Summer capacity = 1,800 gpm from well and 4,850 gpm from watershed = 6,650 gpm

As shown in the above table, using the PDD from past records, the water supply system just meets the demand. The water supplied by the watershed through the Mountain Line is an essential element of the existing water supply sources currently used by the City to meet existing demands. Additionally, the City does not have a backup water supply source of sufficient capacity for the entire year. As such, it is crucial that the Mountain Line be replaced in order to eliminate potential outages and maintain long-term dependability of the City’s municipal water system.

Decision to be Made

The City of Baker City needs to obtain a Special Use Permit from the USFS for construction of the Mountain Line Replacement project. Issuing this Permit is federal action by the USFS and, as such, requires that the USFS consider potential impacts to the environment, in accordance with the National Environmental Policy Act (NEPA). This EA serves as the environmental analysis for the proposed Mountain Line Replacement project on the Wallowa-Whitman National Forest, in accordance with the NEPA. The USFS will use the analysis in this EA to determine if the Mountain Line Replacement Project will have a significant impact on one or more National Forest resources. If the USFS agrees with the finding as outlined in this document, the USFS will issue a Finding of No Significant Impact (FONSI). The FONSI is not a decision document and is always prepared prior to issuing a Decision Notice (DN). A DN will be required for the USFS to make a decision for this project based on the EA.

The evaluation criteria for this proposal are:

- Does the Proposed Alternative have a significant impact on one or more National Forest resources?
- Can the potential impacts from the Proposed Alternative be mitigated or avoided?

Scope of this Environmental Assessment

The scope of this EA consists of descriptions of the Proposed Alternative and No Action Alternative. The impacts analysis covers the project area along the pipeline route (40-foot temporary construction easement and 60-foot wide temporary construction easement in select areas). To evaluate the potential impacts of the Mountain Line Replacement project, the following environmental and social elements were considered:

- Vegetation resources
- Land management
- Wildlife
- Water resources
- Wetlands
- Soil and earth resources
- Road access and control
- Recreation and visual aesthetics
- Air Quality
- Climate change and sustainability
- Cultural and historic resources
- Cumulative effects

The Proposed Alternative (Mountain Line replacement) and the No Action Alternative were the only alternatives reviewed. There are no other practicable alternatives that would replace the Mountain Line and provide water to the City; therefore, no other alternatives were considered (Hall, 2015).

An Operating Plan for conducting the EA was agreed upon by the USFS and Baker City in 2014. The USFS provided a list of required resources to be analyzed including wetlands, cultural resources, fisheries, wildlife, water quality, riparian habitat conservation areas, noxious weeds, rare plants, and inventoried roadless areas. A series of specialist reports was prepared to analyze impacts to these resources, and the USFS-approved Specialist Reports are attached as appendices to this EA. In addition to these required resources for analysis, other relevant resources were also considered for this EA, including land management, soil and earth resources, recreation and visual aesthetics, air quality, climate change, and sustainability. Several resources were considered but not deemed applicable to the project or appropriate for analysis. Resources excluded from analysis include both Coastal Area Protection (Coastal Zone Management Act) and Coastal Barrier Resource Act, as this project is located in northeast Oregon, hundreds of miles from any coastal area. Sole source aquifers, as designated by the U.S. Environmental Protection Agency (EPA), were not considered because the project is located approximately 100 miles from the nearest sole source aquifer, which is the Lewiston Basin Aquifer. Wild and Scenic Rivers were not analyzed because none are located in the project area. The nearest Wild and Scenic River (designated by Congress or the Secretary of the Interior) is an 11-mile reach of the Powder River downstream of the Thief Valley Dam, more than 15 miles northeast of the project area.

Regulatory Requirements

Several management directives and recommendations apply to this project, including management directives from the National Forest Management Act of 1976 (Forest Plan) (NFMA, 1976); the Willamette-Whitman Land and Resource Management Plan of 1990 (LRMP) (USDA, 1990); Interim Strategies for Managing Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH) (USDA, 1995a); and the LRMP Biological Opinions (USDA, 1995b; USDA, 1995c). The NEPA of 1969, the Endangered Species Act of 1973 (ESA) (ESA, 1973), and the Clean Water Act (CWA) (401 certification) are also included in the analysis framework (CWA, 1972).

The legal decision governing the rights and responsibilities of the USFS and Baker City in the potential replacement of the Mountain Line pipeline can be found in the October 14, 2012, Stipulated Judgment for Baker City v. United States, Case Number 2:08-cs-717-SU. This decision affirms the right of Baker City to establish ROW/easements over property owned by the USFS and used by Baker City for its municipal water conveyance system. This decision supports the legality of Baker City working to replace the Mountain Line pipe (Baker City v. United States; 2:08-cs-717-SU).

All actions taken in this project will be in compliance with the Forest Plan and other direction provided by regulatory agencies. This EA is tiered to the LRMP Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) (USDA, 1990) and incorporates by reference the accompanying LRMP, as amended, as permitted by 40 Code of Federal Regulations 1502.20.

This project is being analyzed for consistency with the list of laws, regulations, and policies outlined on Table 1-2 below. This table is intended to provide the reader with clarification on the goals and intent of this EA.

Standards and guidelines come from the Forest Plan and are specific to Management Areas (MAs). All of the Wallowa-Whitman National Forest has been allocated into various MAs. The following MAs are included in the project area:

- 15: Old-Growth Preserve
- 3: Wildlife/Timber (big game winter ranges)
- 3A: Wildlife/Timber (big game summer and winter ranges)

The management guidelines in the Forest Plan relating to these designations are followed in this analysis.

**TABLE 1-2
 LAWS AND REGULATIONS**

Law, Regulation, or Policy	Agency with Jurisdiction	Evaluation/Issue	Statute or Regulation
NEPA	EPA	Ensures compliance with environmental policies, laws, and regulations in the U.S.	42 United States Code 4321, et seq.
National Pollutant Discharge Elimination System Permit, 1200-C	EPA, Oregon Department of Environmental Quality (DEQ)	Stormwater Discharge - Construction Activities.	Oregon Revised Statute (ORS) 468B.050 and Section 402 of the Federal CWA
Executive Order 11988, Floodplain Management	Federal Government Agencies	Considerations and limiting of development in floodplains.	44 Code of Federal Regulations Part 9
National Forest Management Act of October 22, 1976	USFS	Forest land use planning.	Assessment
Wallowa-Whitman LRMP, Final Environmental Impact Statement, and Record of Decision (1990)	USFS	Forest land use planning.	Assessment
ESA of December 28, 1973, Biological Opinion	EPA, U.S. Fish and Wildlife Service (USFWS)	Ensures consideration of endangered species in project design.	Section 7
INFISH (USDA, 1995a)	USFS	The INFISH is an amendment to the Forest Plan. INFISH establishes management direction designed to maintain or restore the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats.	Assessment

Law, Regulation, or Policy	Agency with Jurisdiction	Evaluation/Issue	Statute or Regulation
Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (USDA, 1995d) (Eastside Screens)	USFS	The Eastside Screens focuses on potential impacts of timber sales on riparian habitat, historical vegetation patterns, and wildlife habitat connectivity.	Assessment
Inventoried Roadless Area Conservation Rule (RACR), FEIS, and ROD (66 Federal Register 3244) (USDA, 2000; USDA, 2001)	USFS	Work in an Inventoried Roadless Area: RACR prohibits road construction and road reconstruction in inventoried roadless areas, and cutting, sale, or removal of trees in inventoried roadless areas.	Assessment
Pacific Northwest Region Invasive Plant Program FEIS and ROD (2005)	USFS	Ensures the project does not increase the spread of invasive plants.	Assessment
Erosion and Sediment Control Plan 1200-C Permit	DEQ	Erosion and sediment control due to site construction.	ORS 468B.050 and Section 402 of the federal CWA
Section 404 Permit Removal/Fill Permit Section 401 Water Quality Certification	U.S. Army Corps of Engineers (USACE) Oregon Department of State Lands (DSL), DEQ	Regulation of removal or fill of greater than 50 cubic yards within the ordinary high water elevation of Waters of the State.	ORS 196.795 through 990 and Section 401/404 of the CWA
1200-Z Permit	DEQ	Potential stormwater discharge.	ORS 468B.050 and the federal CWA
Fish Passage Approval	Oregon Department of Fish and Wildlife	Maintain fish passage in areas where passage currently exists.	Oregon Administrative Rule 635-412-0035
Baker City v. United States; 2:08-cs-717-SU	USFS and City of Baker City	This decision affirms the right of Baker City to establish ROW/easements over property owned by the USFS and used by Baker City for its water conveyance system in areas where the access road currently diverges from the pipeline alignment. This decision allows the City to relocate the road to coincide with the pipeline.	Comply with this decision
National Historic Preservation Act of 1966, as amended	State Historic Preservation Office (SHPO), Tribal Governments	Protection of historical and archaeological sites.	Section 106

Overview of Alternatives

The alternatives analysis has been prepared so the USFS has the needed information to determine whether the Proposed Alternative (replacement of the Mountain Line) is preferable to the No Action Alternative. The Proposed Alternative is the preferred alternative and includes replacement of the Mountain Line in a phased sequence over 10 years. The No Action Alternative leaves the Mountain Line in its current condition. As recommended by Mike Hall, USFS, in a phone conversation to Dana Kurtz, Anderson Perry & Associates, Inc., the following two alternatives are being considered for this project (Hall, 2015). These alternatives are described below and in detail in Section 2. No other alternatives were deemed feasible for the project objectives and, therefore, were not considered.

Proposed Alternative: Replace Mountain Line

The phased replacement of the Mountain Line is expected to take place over 10 years. The City plans to bypass water from one diversion at a time and replace that segment of pipe while it is bypassed and not in use. One segment per summer construction window is anticipated to be the approximate rate of construction. The City has recently replaced some sections of the pipeline and plans to complete replacement of the remaining portions of the Mountain Line over the 10-year period using general construction funds. The City will start where the previous work was halted; beginning below the Little Mill Creek intake and working toward City reservoirs until all pipe lengths in that stretch are replaced. Work crews will then return to the Goodrich Mountain Line diversion for the last remaining section between Goodrich Creek and Little Mill Creek (see Figure 2). The majority of the pipeline is located on land owned by the USFS or Bureau of Land Management (BLM), and the replacement work will occur within a 40-foot temporary construction easement that must be granted by both agencies. The City replaced small segments of the pipeline on land owned by the USFS.

No Action Alternative

The No Action Alternative would stipulate that the City leave the Mountain Line in its current condition and does not make any improvements to the municipal water system.

Public Involvement, Consultation, and Coordination

The majority of the Mountain Line replacement project will take place on land owned/managed by the USFS and by Baker City, with one section of the pipeline located on BLM land. In accordance with NEPA, public involvement is required for this process. The primary federal agencies involved are the USFS and BLM. Through consultation between the USFS and BLM, the two agencies agreed that the USFS will be the lead agency for NEPA.

Scoping

The City prepared a site-specific proposal for the project, and the USFS distributed the information in a mailing to adjacent landowners, interested parties, and organizations. The mailing invited interested parties to comment on the project in order to provide the USFS with feedback regarding issues, concerns, and opportunities within the project area. The complete scoping list is available in the USFS project file.

The proposal was listed in the Schedule of Proposed Actions (SOPA) in August 2014 and has been listed on subsequent SOPAs on a quarterly schedule. The scoping letter and maps have also been available on the Wallowa-Whitman website.

A public notice was also posted in the Baker City Herald in Baker City on August 25, 2014, during the scoping period. Materials from scoping (public notice, mailer, and responses) are located in Appendix II, Correspondence.

The USFS received only one comment during the scoping period, which was a letter of support from the Baker County Board of Commissioners, received by the USFS on September 23, 2014. This letter is included in Appendix II, Correspondence.

The Baker City Council also approved the Baker City Watershed Management Plan in 2014, which recommended replacement of the Mountain Line (AP, 2014).

Public Involvement

Adjacent landowners were contacted directly, and scoping notices were placed in visible locations for the public to view. When permits are applied for, all mandated public comment periods will be followed. In a separate Oregon Health Authority - Drinking Water Services-funded, EPA-directed process, Baker City updated its Watershed Management Plan and received public involvement on the process through a public meeting and opportunity to comment on the Plan. Landowners will be notified if this project is approved by the USFS. This EA will be made available for public comment and will comply with all statutory review periods.

Coordination and Treaty Rights

The USFS, through the Secretary of Agriculture, is vested with statutory authority and responsibility for managing resources of national forests. Commensurate with the authority and responsibility to manage is the obligation to consult, cooperate, and coordinate with Indian tribes in developing and planning management decisions regarding resources on USFS lands that may affect tribal rights.

The Mountain Line Replacement project planning area is within the interest areas of the Nez Perce Tribe (NPT) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).

Elements of respective American Indian cultures, such as tribal welfare, land, and resources, were sometimes entrusted to the United States government as a result of treaties. Trust responsibilities resulting from treaties dictate, in part, that the United States government facilitate the execution of treaty rights and traditional cultural practices of American Indians by working with them on a government-to-government basis in a manner that attempts a reasonable accommodation of their needs without compromising the legal positions of the respective tribes or the federal government. Specific treaty rights applicable to the land base managed by the Wallowa-Whitman National Forest are generally articulated in Article III of the 1855 Nez Perce Treaty:

“The exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians: as also the right of taking fish at all usual and accustomed places in common with citizens of the territory, and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”

Specific treaty rights applicable to the land base managed by the Wallowa-Whitman National Forest are also generally articulated as part of Article I of the 1855 Walla Walla, Cayuse, and Umatilla Treaty:

“Provided, also, that the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians, and at all other usual and accustomed stations in common with citizens of the United States, and of erecting suitable buildings for curing the same; the privilege of hunting, gathering roots and berries and pasturing their stock on unclaimed lands in common with citizens, is also secured to them.”

At the time this report was prepared, all coordination on the EA has been informal. The USFS is the point of contact for all such coordination efforts. The SHPO, NPT, and CTUIR have been contacted.

The USFS hosts joint annual meetings with organizations including the NPT and CTUIR. The USFS has engaged in informal consultation during joint annual meetings with the NPT and CTUIR since 2009 regarding this project. The project was listed in the 2015 booklet of projects during the joint meeting. AP conducted a cultural resource inventory for this project and prepared a cultural resources report. Copies of the cultural resources report were sent to the NPT, CTUIR, and SHPO by the USFS on May 22, 2015, along with a government-to-government scoping letter describing the project. No concerns were received from tribal staff members.

Because tribal trust activities often occur in common with the public, the USFS will strive to manage tribal ceded land to enable the execution of tribal rights, as far as practicable, while still providing goods and services to all people.

Agency Consultation

The USFS has been in consultation with the BLM. The USFS will consult with the USFWS regarding Section 7 ESA consultation. ESA Documentation has been prepared and is included in this EA (Appendix III). The USFS will consult with the DEQ and other agencies if needed.

Section 2 - Project Description and Alternatives

Background

The City of Baker City, Oregon, operates one of the most unique municipal water systems in the state. The municipal water system is gravity fed from intakes high in the Elkhorn Mountain Range through a water transmission pipeline network to the City's storage reservoirs. The watershed accounts for 88 percent of the municipal water supplied to the City.

Baker City's predecessors developed the early water system in 1862, with the City acquiring the water and rights-of-way (ROW) in 1900 and 1901. From this early beginning, Baker City has actively maintained and upgraded the water collection system to continue serving the municipal needs of the City. However, a century of use has led to decreased efficiency and substantial water loss in many portions of the conveyance system.

The City began replacing the line in 2008 and completed approximately 1,000 feet near Little Mill Creek before being notified by the USA that a permit was required for construction/reconstruction activities across federal lands. In an effort to adjudicate the City's claimed 1866 ROW under Revised Statute 2339, Baker City filed suit in the U.S. District Court against the USA under the Declaratory Judgment Act (28 U.S.C. Sec. 2001) and the Quiet Title Act (28 U.S.C. Sec. 2409a) to establish a ROW and/or easements over property owned by the USA and used by Baker City for its water conveyance system. In October 2012, a Final Stipulated Judgment was issued, with agreement that Baker City holds a permanent valid 20-foot wide ROW across USA lands for operation and maintenance of Baker City's water conveyance system. Regular operation and maintenance activities associated with the pipeline can occur within this ROW without further fee; however, the activities are subject to reasonable regulation by the USA. The Stipulated Judgment also states that the United States shall issue a Special Use Permit (U.S. Forest Service [USFS]) or short-term ROW (Bureau of Land Management [BLM]) for the replacement of the existing pipe. This is to facilitate the continuation of pipeline construction/reconstruction activities in areas outside of the adjudicated ROW.

In order to meet the project purpose and need, the City is planning to replace a large portion of the pipeline. The City anticipates using City crews to perform the work. Due to the amount of pipe to be replaced and limited access to the watershed due to harsh winter weather conditions during several months of the year, construction in the project area will be completed over a period of 10 years.

Pipeline Condition

Two main sections of the Mountain Line are being considered for this project (see Figure 1, Location and Vicinity Maps, and Figure 2, Current System Map), including Section A (Goodrich Mountain Line Diversion to Elk Creek settling tank) and Section B (Elk Creek settling tank to the City Reservoir).

Section A

In the 1800s and early 1900s, this section of the Mountain Line was converted from an open ditch to a flume, from a flume to a pipeline, and then to an improved pipeline. It currently

consists of 12- to 18-inch diameter pipe. The majority of this section of line to be replaced is located on USFS land with a few intermixed private allotments. Most of the piping is concrete with some short sections of steel and ductile iron (DI) pipe. There is a little less than 94,000 linear feet of gravity pipe from Goodrich Mountain Line Diversion to the Elk Creek settling tank. The City inspected much of the line in 2000 and found that the majority of the pipeline was beginning to show major signs of fracturing. Substantial lengths of the line have little to no cover, which has increased loading on the pipe and has caused accelerated deterioration. In addition, a 15,700-foot section from Marble Springs to Big Salmon Creek has large cracks and root intrusion.

In 2000, water loss from pipeline wear and damages was estimated to be in excess of 300 gallons per minute (gpm). Additionally, the line is undersized and is capable of transmitting only 2,600 gpm of the available 5,300 gpm. Root intrusion and sediment buildup have further reduced this capacity.

Section B

Water from Section A is combined with the Elk Creek Pipeline flows and carried to the City's reservoirs via this section of the Mountain Line. This line, approximately 30,000 feet long, was constructed over the same periods as Section A. The line consists of 12- to 20-inch diameter steel and cast iron, 12-inch diameter vitrified clay, and 15- to 20-inch diameter concrete pipe. This portion of the line has the same problems as the upper section with fractures, root intrusion, and lack of cover.

The City has replaced approximately 18,400 feet of this line with 18- to 20-inch diameter DI pipe. The remaining 11,600 feet of line, which transects mostly USFS and BLM land, remains to be replaced. This line is 12- to 13-inch diameter vitrified clay. Current pipe sizing through this section substantially limits the capacity of the entire system.

Area of Impact

The majority of the pipeline is located in steep, forested terrain. The average cross slope is approximately 60 percent along much of the route, with the pipeline alignment following elevation contours. Figure 4, Mountain Line Typical Section, shows a typical section within the 40-foot temporary construction easement and its relationship to the pipeline and road. The land is zoned Prime Forest and Secondary Forest (see Figure 5, Baker County Zoning Map). Land ownership is shown on Figure 6, Property Ownership.

All of the Wallowa-Whitman National Forest has been allocated into various Management Areas (MAs). The following MAs are transected by the project area:

- 15: Old-Growth Preserve
- 3: Wildlife/Timber (big game winter ranges)
- 3A: Wildlife/Timber (big game summer and winter ranges)

Standards and guidelines come from the Forest Plan and are specific to MAs. The management guidelines in the Forest Plan relating to these designations are followed in this analysis. All of the

Forest Plan Standards and Guidelines for each MA are addressed in this Environmental Assessment (EA).

Section A of the Mountain Line is located entirely within forested land with pipeline grades generally less than 1 percent descending toward the Elk Creek settling tank. A total of 92,660 feet of the pipeline will be replaced, with 79,200 feet being within USFS land. Most of the existing pipeline is directly under an existing unimproved road, which was originally a ditch cut from the steep bank. Approximately 2,250 feet of the pipeline is located adjacent to the road. The road will be relocated over the pipe after construction and the existing roadway will be reclaimed.

The portion of Section B that will be replaced as part of this project is located within a transitional zone from forest to rangeland. The slopes and pipeline alignment within this section range from 2 to 25 percent. A total of 11,160 feet of pipeline will be replaced in this section, with 3,710 feet on USFS land, 6,055 feet on BLM land, and the remaining 1,395 feet on a short stretch of private land. Much of the pipeline alignment is separated from the existing roadway in this section. Following construction, the roadway will be relocated over the pipe as reasonably as is possible, with the abandoned roadway sections reclaimed. The abandoned portions of the roadway do not fall within the defined project area; however, impacts to these areas have been considered as part of this EA. Table 2-1, Summary of Impact Area, lists the length and acres of the project impact.

**TABLE 2-1
 SUMMARY OF IMPACT AREA**

		Length (feet)	Acres Impacted
Section A	USFS	93,920	74.1
Section B	USFS	3,710	3.9
	BLM	6,055	6.4

Project Evaluation Criteria and Alternatives

The following evaluation criteria are based on the project purpose and need and potential environmental impacts associated with the project. In summary, the purpose of the Proposed Alternative is to replace the Mountain Line, which transports municipal water to the residents and businesses of Baker City. The project is needed to provide the residents and businesses of Baker City with a long-term, reliable, safe source of drinking water that is secure for the future.

**TABLE 2-2
 ALTERNATIVE EVALUATION CRITERIA**

Alternatives Evaluated	Alternative Evaluation Criteria		
	Ability to Minimize Environmental Disturbance	Ability to Provide Long-term, Safe, Reliable Drinking Water	Meets Purpose and Need
Proposed Alternative: Replace Mountain Line	+	+	+
No Action Alternative: Leave Mountain Line in current condition	+	-	-

Note: +: Meets criteria
 -: Does not meet criteria

The table above illustrates the criteria for selecting the Proposed Alternative. A (+) indicates that the alternative meets the evaluation criteria, while a (-) indicates that the alternative fails to meet the criteria. The Proposed Alternative meets all three evaluation criteria. The No Action Alternative meets one of three evaluation criteria. A more detailed description of each alternative evaluation is provided in this section.

Alternative Development and Screening Process

Evaluation criteria were developed on the basis of providing the USFS the opportunity to determine whether action was preferable for environmental and human health to no action.

Description of the Proposed Alternative

Overview

The Proposed Alternative consists of systematically replacing a large portion of the Mountain Line. City crews will rely on recent experience acquired from their replacement effort on non-federal portions of land to complete federal portions.

The phased replacement of the Mountain Line is expected to take place over 10 years. The City plans to bypass water from one diversion at a time and replace that segment of pipe while it is out of service. One segment per summer construction window is anticipated to be the approximate rate of construction. The City has recently replaced some sections of the pipeline and plans to complete replacement of the remaining portions of the Mountain Line over the 10-year period using general construction funds. The City will start where work was halted in 2008, beginning below the Little Mill Creek intake and work toward City reservoirs until all pipe lengths in that stretch are replaced. Work crews will then return to the Goodrich Mountain Line diversion for the last remaining section.

Most of the existing pipeline is located under an existing National Forest System road that will be used to access the Mountain Line. The pipeline road is narrow and will require widening in some areas. Excavated materials will be used for pipe cover. Construction materials will be stored in a staging area on private property near the valley floor prior to construction. While most of the pipe will be staged along the pipeline route during construction, additional staging areas will be located throughout the project area in appropriate locations adjacent to the work area (and within the 40-foot temporary construction easement). Best management practices (BMPs) will be implemented to ensure work is carried out in the most environmentally protective manner practicable.

Once the USFS and BLM issue their decisions on the EA and the City has all necessary permits in place, the City will begin replacing the pipeline. The USFS and BLM will each make its own decisions regarding the effect of this project. Construction is scheduled to begin in June 2016 and be completed by 2026.

The construction sequence is anticipated to be as follows*:

- Year 1: Little Mill Creek Diversion to Mill Creek Diversion
- Year 2: Mill Creek Diversion to Little Marble Creek Diversion
- Year 3: Little Marble Creek Diversion to Marble Creek Diversion
- Year 4: Marble Creek Diversion to Camper Springs Diversion
- Year 5: Camper Springs Diversion to Salmon Creek Diversion

Year 6: Salmon Creek Diversion to Little Salmon Creek Diversion

Year 7: Little Salmon Creek Diversion to Elk Creek settling tank

Year 8: Goodrich Creek to Little Mill Creek Diversion

Years 9 and 10: Miscellaneous repairs and project closeout

**The schedule is tentative and may change due to budget constraints, environmental constraints, or other unforeseen circumstances.*

The City will use a log truck trailer to haul pipe and an excavator to complete the work. Existing pipe will be replaced by uncovering and removing the pipe. The old concrete pipe will be crushed on site to be used as bedding material for the new pipe. In order to lay the new pipe and provide sufficient cover, in some areas the City may need to make a cut ranging in width up to a maximum of approximately 10 feet in the uphill side of the bank. See Figure 4, Mountain Line Typical Section, which depicts the anticipated cut and fill activity associated with this replacement.

Where required, material will be cut from the uphill side of the bank to provide increased work area as well as approximately 2 feet of cover over the new pipeline. The bank will be cut as minimally as possible and will be graded to match the existing slope. If trees need to be removed in order to complete this project, the number of trees removed will be kept to a minimum. It is not expected that slash will be created from the incidental removal of trees. If slash is generated, it will be incorporated into site restoration efforts or removed from the project area into an approved disposal location. Following construction, the City will seed and replant the banks with native vegetation as agreed upon with the USFS and BLM.

An undisturbed vegetative strip will be maintained along the downhill edge of the work area, and applicable BMPs will be employed. The final road surface will be graded and a toe drain placed on the uphill side of the road surface to provide stormwater control.

Steps for Mountain Line Pipeline Construction

The following is the general construction sequence the City will use to replace the pipeline. The City intends to construct approximately 2 miles of pipeline during the construction season, which runs from May through mid-October.

1. The survey crew will set construction stakes for road widening.
2. The construction crew may fell trees if they pose a safety risk or if felling is unavoidable for project implementation. Interim Strategies for Managing Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH) standard RA-2 states that "Trees may be felled in RHCA's when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives." Therefore, trees will be left within the riparian habitat conservation area (RHCA) whenever possible (USDA, 1995a).
3. In some areas, the existing pipeline will be taken off line, as the concrete pipe will be smashed by heavy equipment.
4. The existing road will be widened where needed, with excavated material placed on top of the existing road. A minimum work surface width of 18 feet is needed. A D8 dozer and a large excavator (70,000 pounds) will be used to excavate the slope.

5. The survey crew will set alignment and grade stakes after the work surface is finished.
6. The pipe crew will haul pipe from the staging area located close to the valley floor. A road grader will be used to pull a pipe trailer. Pipe will be off-loaded, spreading the pipe along the downhill side of the road. The pipe will be 20-inch diameter from Little Mill Creek to Big Mill Creek, at which point the pipe will transition to 24-inch diameter. The pipe will be polyvinyl chloride C905 SDR 25 in 14-foot lengths above the Elk Creek settling tank. Twenty-inch diameter DI pipe will be used in the pressurized section downstream of the Elk Creek settling tank.
7. A track-mounted excavator (70,000 pounds) will be used to excavate a trench approximately 4 feet wide and 3 to 5 feet deep. The trench material will be screened in a screen plant if the native material is unsuitable to use as bedding or pipe zone material. The portable screen plant will usually be within 50 feet of the excavator in the roadbed. A second excavator, approximately 40,000 pounds, will be located at the other end of the excavation and will be used to finish covering the pipe because the larger excavator bucket arm cannot reach far enough. The smaller excavator can also be fitted with a breaker (jackhammer) to remove rock the larger excavator cannot dig.
8. Pipe will be placed in the bedded trench, set to grade, and backfilled with engineer-approved material. A hand-operated compactor will be used to compact alongside each side of the pipe. Any excess fill material will be placed along the road toe of the newly excavated slope.
9. The pipe will be pressure tested, chlorinated, and connected to the old Mountain Line.
10. Slopes that are not vertical and are not rock will be seeded with approved native grass seed and/or forbs.

It is anticipated that most stream crossings will be dry at the time of construction (during the in-water work window). If water is present during construction, it is anticipated that BMPs will help minimize turbidity impacts. In the event that a stream crossing does result in turbidity impacts, it is conservatively estimated that an associated plume would extend no more than 500 feet downstream.

The construction sequence for crossing all streams, except Salmon Creek, is as follows:

1. The upstream end of the work area will be blocked off with a cofferdam.
2. A pump with a fish screen on the intake location or a culvert will be set up to allow water to bypass the work area.
3. The reach will be seined from the upstream end to the downstream end of the work area to facilitate any fish to volitionally leave the work area. One or more additional passes with dip nets will be conducted after seining is complete.
4. The downstream end of the work area will be blocked off with a cofferdam.
5. The construction area will be dewatered.

6. The excavator will be used to excavate the pipeline trench.
7. Pipe will be placed in the bedded trench, set to grade, and backfilled with approved material. The top 2 feet of backfill will be native streambed material with fines washed into the material until water pools on the surface.
8. The cofferdams will be removed.
9. The pump and tube will be disconnected and flow restored to the channel.
10. The site will be restored through revegetation.

Due to concerns about the potential presence of federally listed bull trout at the Salmon Creek crossing, the pipeline replacement in the vicinity of Salmon Creek will be accomplished without disturbing the existing culvert or the streambed by installing the new pipeline in the existing road fill above the existing culvert (see attached Design Drawings in Figures 7A and 7B in Appendix VIII, Fisheries Specialist Report). BMPs, including erosion control measures, will be implemented to prevent sediment from entering Salmon Creek. No impacts to Salmon Creek stream flows or channel substrate are anticipated.

Numerous mitigation measures are inherent in the overall project design. The replacement of damaged sections of pipe will reduce water loss, reduce erosion from lost water running down slopes, and provide enhanced water quality for aquatic species utilizing the creeks. The new pipe will be placed as close as possible to the existing pipe trench so as to reduce impacts on the surrounding area. All applicable BMPs will be followed during construction.

Description of No Action Alternative

Under the No Action Alternative the pipeline would not be replaced, leaving the pipeline in its existing condition, which would allow it to continue to deteriorate. Accordingly, this alternative does not meet the project purpose and need to replace the Mountain Line to provide the residents and businesses of Baker City with a long-term, reliable, safe source of drinking water that is secure for the future. No construction activities would occur along the pipeline; therefore, there would be no need for a Special Use Permit to be issued by the USFS. This alternative would alleviate potential negative temporary impacts to the environment from the construction activities associated with the pipeline replacement.

Comparison of Alternatives

Table 2-3 presents a comparison of the Preferred Alternative and the No Action Alternative. The (+) symbol indicates a positive impact, the (-) symbol indicates a negative impact, and the (o) symbol indicates a neutral impact.

**TABLE 2-3
 COMPARISON OF ALTERNATIVES**

	Proposed Alternative	No Action Alternative
Vegetation Resources	-	-
Land Management	o	o
Wildlife	o	o
Water Resources	+	-
Wetlands	-	o
Soil and Earth Resources	-	-
Road Access and Control	+	o
Recreation and Visual Aesthetics	o	o
Air Quality	o	o
Climate Change and Sustainability	o	o
Cultural and Historic Resources	o	o
Cumulative Effects	o	o

Key Findings Supporting the Preferred Alternative

The City of Baker City has a responsibility to its taxpayers to ensure a reliable and safe source of municipal water. The Mountain Line is the oldest and most important source of municipal water for the City and is in desperate need of replacement in order to maintain its reliability. The majority of the pipeline is located on land owned by the USFS or BLM and the replacement work will occur within a 40-foot temporary construction easement that must be granted by both agencies.

The City recognizes the importance of balancing environmental concerns with the needs of the project, as well as meeting the regulatory requirements of the agencies. The City has retained a qualified environmental consultant to complete an EA and other required environmental documents so the federal agency can make an informed decision on whether to allow this project to move forward.

The analysis summarized in this EA indicates that the Proposed Alternative will have no significant impacts on the environment and will fulfill the project’s purpose and need; therefore, a Finding of No Significant Impact is the recommended decision. The following mitigation measures section illustrates how this project is able to prevent significant impacts and restore incidental disturbances to pre-construction conditions.

Mitigation Measures

This section summarizes and identifies mitigation measures for environmental impacts of the proposed project. Types of measures to avoid or reduce adverse environmental impacts resulting from the project as presented in this EA include: (1) measures inherent to the project including required Forest Plan Standards and Guidelines, (2) Best Management Practices (BMPs) and Project Design Features (PDFs) incorporated in construction and design, and (3) mitigation measures for construction.

The items listed below under General Mitigation Measures are mitigation measures that generally apply to all resources. The mitigation measures listed under the Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures are applicable to a single resource and address how the project will meet the federal, state, and local requirements outlined in the regulations and laws that govern this project, as shown on Table 1-2. Because the project occurs on federal land, many of these mitigation measures are

specific to this project and are shown separately to make it easier for the reader to ascertain how the project addresses these regulations and laws.

General Mitigation Measures

- Prior to moving equipment on site or beginning any work, Baker City staff and the Project Engineer will meet on site to ensure that all parties understand the locations of sensitive biological sites and the measures that shall be taken to protect them.
- Areas for storage of equipment and vehicles, other than track-mounted vehicles, during non-work hours will be located at least 150 feet away from the Regulated Work Area (RWA) (portions of the project area that fall within U.S. Army Corps of Engineers/Oregon Department of Station Lands jurisdictional waters), or as far as is feasible given the confined nature of the project area.
- Prior to operating within 150 feet of the RWA, equipment cleaning, maintenance, and refueling will be completed. Storage of fuels and other potentially hazardous materials will be placed 150 feet or more from the RWA, or as far as is feasible given the confined nature of the project area.
- Biodegradable lubricants will be used on equipment operating within 150 feet of the RWA.
- All work below the ordinary high water elevation will be completed during the Oregon Department of Fish and Wildlife (ODFW) in-water work window of July 1 to October 31 for all drainages south of Hibbard Gulch, and July 1 to August 31 for all drainages north of and including Hibbard Gulch.
- Contaminated or sediment-laden water, or water contained within an isolation barrier, will not be discharged directly into any Waters of the State until it has been satisfactorily treated (e.g., by bioswale, filter, settlement pond, pumping to a vegetated upland location, bio-bag, or dirt-bag).
- For track-mounted equipment and other equipment with limited mobility making it impractical to move for refueling, precautions will be taken to minimize the risk of fuel reaching the RWA. Spill prevention measures and fuel containment systems designed to completely contain a potential spill, as well as other pollution control devices and measures (such as diapering, parking on absorbent material, etc.) adequate to provide containment of hazardous material will be implemented.
- Visual water quality monitoring will occur during construction. If excessive turbidity downstream of the project area is noticed, work will be stopped until BMPs are adjusted to ensure water quality is maintained. Excessive turbidity, for the purposes of this project, is a defined plume exceeding 100 feet in length.
- All removal of bank slope material will be undertaken cautiously and erosion control measures such as silt fencing will be used to ensure that minimal sediment is released from the site. No fish salvage is anticipated to be needed for this project; however, work area isolation procedures will include seining and, when necessary, one or more additional passes with dip nets to ensure fish are removed from the project area.
- All areas of disturbance will be restored and revegetated after construction.

- Tree felling will be avoided to the maximum extent possible and, if possible, any trees that must be incidentally felled will be left in the project area to provide habitat.

Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Vegetation Resources - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Prior to construction, the City will draft a Revegetation Plan for this project to mitigate for the impact to vegetation resources. The following is a suggested Revegetation Plan.

Suggested Revegetation Plan

Following construction, all disturbed areas of the site will be treated with soil stabilization measures and will be seeded with native species. A 6-inch minimum depth of native soil will be placed in fill areas for native vegetation planting and seeding. Riparian plantings (if needed) will be performed within select areas to restore native vegetation along streambanks.

All disturbed areas will be revegetated with native species only. No new bare ground will be created as a result of this project. When possible, species used will be native to this forest and, ideally, seed sources will be from the project area but may also be obtained from similar habitats in this ecoregion. The revegetated species are not limited to grass species and may include pollinator-friendly forbs. These include many disturbance-tolerant species good for revegetation, such as goldenrod, showy aster, fireweed, pearly everlasting, corn lily, river mallow, and royal penstemon. If revegetation is by seed, seed bed preparation and proper timing and rate of seed application will be managed to ensure the best chances of success. The best time for seeding is late fall. Invasive species, if discovered within undisturbed portions of the project area, will be tagged for the USFS to remove, ideally before seeding. Plants, particularly in wet areas, will be salvaged and replanted when possible. City crews will be responsible for revegetation, and the revegetation budget will be allocated through City funds.

Seeding of Disturbed Areas

The following table outlines the seed mixture required for seeding all disturbed upland areas.

**TABLE 2-4
RECOMMENDED SEED MIX**

Botanical Name (Common Name)	Seeding Rate Lbs./PLS/Ac
Bluebunch wheatgrass (<i>Pseudoroegneria spicata</i>)	6
Idaho fescue (<i>Festuca idahoensis</i>)	3
Basin wildrye (<i>Leymus cinereus</i>)	2
Big bluegrass (<i>Poa ampla</i>)	3
Tufted hairgrass (<i>Deschampsia cespitosa</i>)	2

Seeds will be covered with weed-free hay to ensure they are protected and to prevent erosion.

Planting of Disturbed Areas

Collection and planting of cuttings will occur in the fall after the trees have gone dormant and lost leaves. Maintenance will be ongoing until plants are established.

The following describes a suggested planting method for this project. The City will provide a final Revegetation Plan prior to the start of construction.

1. Select individual planting spots on a site-specific basis.
2. Remove debris and competing vegetation from each planting spot. Clear down to bare mineral soil.
3. Collect cuttings in the fall or early spring after the plants have gone dormant and prior to bud break. Cuttings should be 6 to 10 feet long, or long enough to reach the mid-summer water table, and at least 3/4 inch in diameter, depending on species.
4. Handle cuttings carefully. Keep in cooler storage until ready to plant. Keep cool, moist, and covered during storage and transport. Do not allow cuttings to dry out. Ideally, the cuttings should be soaked for 10 to 14 days prior to planting.
5. Plant in the fall as soon as the trees have gone dormant for the winter and lost their leaves. Plant prior to ground frost.
6. If possible, do not plant when air temperatures are higher than 65 degrees Fahrenheit (F), or when humidity is less than 50 percent.
7. Insert cuttings into moist soil with two to three buds showing above ground. Ensure that the bottom of the cutting will be below groundwater level during active growing season.
8. Preferred species for planting Include: Coyote willow (*Salix exigua*) or other locally adapted willow, Red osier dogwood (*Cornus sericea*), and Black cottonwood (*Populus balsamifera*).

Plant Material Collection and Storage

- Preference is for local sources of cuttings in the riparian, wetland, or upland areas.
- Cuttings should be collected while the plants are dormant and buds are set.
- Cuttings should be at least 6 to 10 feet long (long enough to reach the mid-summer water table) and 3/4 inch or larger in diameter.
- Plant immediately if possible. If not, store in a cooler kept at 33 to 40 degrees F.
- Pre-soak stored cuttings 10 to 14 days before planting, if possible.

- Red osier dogwood cuttings should be wounded with a knife or scraping through the bark in several locations to enhance rooting and establishment.

Planting Method

- Plant live stakes using a stinger, auger, or planting bar. The hole should be only slightly larger than the pole.
- No matter what planting method is used, it is essential to have good contact between the cutting and the soil for roots to sprout.
- When possible, vegetation will be salvaged and replanted in disturbed areas.

Monitoring and Maintenance

The City will monitor revegetated areas as part of the operation and maintenance of the pipeline. Project reseeding and replanting will be monitored for problem areas and non-native infestation. If necessary, these areas will be replanted or reseeded.

Riparian Habitat Conservation Areas - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

- Wallowa-Whitman Land and Resource Management Plan (LRMP) has numerous requirements for Riparian Habitat Conservation Areas (RHCAs). The following requirements are applicable to the RHCAs within the project area:
 - Riparian habitat must be maintained and enhanced in the forest.
 - Timber harvest is prohibited within 100 feet of the OHWE of Class 1 and 2 streams.
 - No roads will be constructed in the RHCAs.
 - Avoid use of heavy equipment in the RHCAs, if necessary, mitigation measures must be implemented to avoid adverse effects.
 - The goal for riparian cover is 60 to 100 percent shade on live streams for 80 percent or more of the total length of stream.
 - Maintenance and rehabilitation of roads is specifically allowed in the LRMP in riparian areas when it is justified to be the best alternative.
 - The LRMP allows for actions that are taken to ensure public health and safety.
- As proposed, the project will implement BMPs that allow the project to be in compliance with these requirements. Additional mitigation measures include:
 - Tree felling and vegetation removal will be limited and selective.
 - Disturbed riparian areas will be restored after construction to maintain or improve the existing riparian cover on streams.
 - Use of heavy equipment within the RHCAs will be avoided when possible.
 - No new roads will be constructed within the RHCAs.

- The replacement of the pipeline is necessary to protect the health and safety of the residents of Baker City and provide a safe supply of drinking water for the future. Additionally, the LRMP specifically allows for the maintenance and rehabilitation of roads in riparian areas; therefore, this project meets the requirements outlined in the LRMP for RHCAs.
- **Endangered Species Act** - The Endangered Species Act of 1973 (ESA) requires consultation if federally listed species are impacted by a project. An ESA evaluation was completed and a No Effect Biological Evaluation Document was prepared to address the ESA consultation (see Appendix III).
- **INFISH** - Although no bull trout or anadromous fish are known to be located in the immediate project area, numerous RHCA standards relate to this project. Because elements of this project take place within RHCAs, the analysis in this EA represents a detailed screen of the action (USDA, 1995a). This screen determined if actions within the RHCAs are permitted based on standards and guidelines from the INFISH, specifically RF-4 and RF-5, which allow for improvements to stream crossings, such as installing new culverts and repairing a leaking water pipe (USDA, 1995a). These guidelines also allow for projects that improve fish passage. Any culvert replacements required by the Mountain Line replacement will comply with current fish passage standards, which means the existing conditions will be improved or remain the same as a result of this project. Trees may be felled in RHCAs when such an action protects health and safety.

The INFISH also establishes eight riparian goals aimed at protecting and enhancing riparian areas. RHCAs were delineated for Category 1 through Category 4 waterbodies in every USFS and BLM watershed within the geographic range of bull trout and other inland native fish. Timber harvest/timber sales are prohibited in RHCAs except "where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions..." (USDA, 1995a). The project is allowable under this condition because the pipeline is currently leaking, resulting in degraded riparian conditions, which replacement of the pipeline would rectify. INFISH also requires that roads in riparian areas be carefully considered. This project does not construct new roads, and so meets this objective. Extra care will be taken when using existing roads to prevent sediment release into waterways. Additionally, INFISH requires fish passage be maintained when there are known or potential fish-bearing streams. Fish passage will be maintained during construction and the completed project will maintain existing levels of fish passage, allowing the project to meet this objective. Any trees felled during construction will be left on site when possible.

- **Eastside Screens** - Eastside Screens was intended to reduce logging of old growth trees to protect habitat, states that trees greater than 21 inches in diameter at breast height (DBH) are prohibited from being cut down in national forests (USDA, 1995d). Eastside Screens also prohibits timber sales within RHCAs and established parameters for maintaining wildlife habitat options associated with old growth forests. Eastside Screens does make exceptions for certain activities such as timber sales to "protect health and safety" (USDA, 1995d). The replacement of the pipeline is necessary to protect the health and safety of the residents of Baker City and to provide a safe supply of drinking water for the future. Therefore, any incidental

felling of trees as a result of this project would be permitted under Eastside Screens (USDA, 1995d). Based on a cursory geographic information system analysis of the USFS RHCA layer and a tree count conducted by Sue Brady, Anderson Perry & Associates, Inc., biologist, along the pipeline road (including trees 20 feet on either side of the road), it appears approximately 158 trees may be within designated RHCAs. Of those 158 trees, approximately 20 have a DBH greater than 21 inches. Some of these trees could potentially be subject to incidental felling if avoidance is not possible. Trees will be left on site if incidental felling occurs.

Noxious Weeds - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Weed-free hay, mulch, and seed mixes will be used for erosion control and site restoration.

If noxious weeds are observed during construction, they will be flagged and the USFS noxious weeds contact will be notified.

- ***Pacific Northwest Region Invasive Plant Program Final Environmental Impact Statement and Record of Decision*** (ROD) (USDA, 2005) requires that weed-free seed, hay, and mulch be used; equipment be cleaned before entering the site; and invasive species be controlled through a coordinated approach. This project includes BMPs that meet these objectives and will help minimize the spread of noxious weeds as a result of the project.

Rare Plants - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Plants will be left undisturbed to the maximum extent possible. If issues arise, qualified USFS personnel would evaluate any specific concerns .

- ***LRMP*** - The LRMP focuses on managing trees and has standards and guidelines for wildlife habitat, vegetation coverage of bare ground, riparian vegetation, weeds, rare plants, and range condition. This project does not alter forest management practices, increase bare ground areas, impact weeds or rare plants, or alter range conditions. The project will have temporary impacts on wildlife habitat during construction due to noise and construction activities. It is anticipated that these impacts will be temporary and that wildlife will return to the area after construction is completed, as vegetation cover will not be impacted; therefore, the project is in compliance with these guidelines.

Land Management - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Mitigation measures during construction include removing only the minimum amount of soil necessary and stockpiling only in designated areas to minimize disturbance of land use in the area. When possible, disturbed areas will be restored to existing conditions through reseeded and replanting where necessary. Equipment will operate within designated work areas and during normal business hours as not to impact recreation activities or disturb other land uses within the project area.

Fish and Wildlife - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

BMPs will be used to minimize impacts to wildlife within the project area. When possible, trees and habitat will remain intact. Where disturbance occurs, reseeding and site restoration will occur as quickly as possible to minimize the duration of impact to habitat. Where possible, the site will be restored to pre-existing conditions after construction is complete.

- **LRMP** - The LRMP requires that wildlife be managed responsibly and that the forest be managed to provide habitat and minimize adverse impacts to wildlife. The LRMP also requires 30 percent of forest land in a timber sale project area be maintained with appropriate cover for wildlife. No timber sales are planned for this project, but select trees along the pipeline route may be felled, which could impact wildlife habitat. This project impacts less than 1 percent of the total habitat available in the Baker City Watershed. The project does not impact protected habitat as described in the LRMP and will return habitat, where possible, to pre-existing conditions after construction. BMPs will be used to minimize disturbance to species in the area.

The LRPM requires that streams be protected from detrimental changes in temperature and sediment deposits that adversely affect water quality and fish habitat. The LRMP also requires that fish be managed to support a minimum number of reproductive individuals. Because the project has only temporary impacts and no work will be conducted within Salmon Creek where there is the potential for bull trout to be present, there is no risk for the project to impact the number of reproductive individuals. The project will use BMPs to isolate work areas and avoid impacts where possible. BMPs allow the project to be in compliance with this policy.

- **ESA** - The ESA requires consultation if federally listed species are impacted by a project. An ESA evaluation was completed and a No Effect Document was prepared to address the ESA consultation (see Appendix III).
- **Eastside Screens** - Eastside Screens was intended to reduce logging of old growth trees to protect habitat, states that trees greater than 21 inches DBH are prohibited from being cut down in national forests (USDA, 1995d). Eastside Screens also established parameters for maintaining wildlife habitat options associated with old growth forests. There are no species that specifically require old growth trees in the project area, and the project is not located in the special management units to be managed as an old growth forest (USDA, 1990) Eastside Screens does make exceptions for certain activities such as timber sales to "protect health and safety" (USDA, 1995d). The replacement of the pipeline is necessary to protect the health and safety of the residents of Baker City and allow them to have a safe supply of drinking water for the future. Therefore, any incidental felling of trees over 21 inches DBH as a result of this project would be permitted under Eastside Screens (USDA, 1995d). Tree felling will be avoided to the maximum extent possible. If felling of trees greater than 21 inches DBH is necessary, proper approvals will be obtained before work commences, and mitigation will occur if required.
- Any trees felled will be assessed for minimum habitat impacts; trees will be replanted if needed; and down wood, if moved, will be relocated to preserve this habitat type.

- Mitigation measures for fish impacts will include standard BMPs for construction projects near water, including using straw bales and other turbidity reduction measures to minimize sediment release into the water. All in-water work areas will be blocked off and flows will be bypassed around the work area. The reach will be seined from the upstream end to the downstream end of the work area to facilitate any fish to voluntarily leave the work area. All in-water work will be conducted during the ODFW preferred in-water work window.
- **INFISH** - The INFISH requires a screen for each action and its effects on bull trout and native fish. Bull trout are not present in the immediate project area and no federally listed species will be impacted by the proposed action. In addition, the location and size of project impacts are minimal in the context of the entire Forest Plan and will have minimal impacts on native fish populations. The proposed BMPs will further reduce risk to native fish. This project upholds this standard from the INFISH by screening intakes and ensuring fish passage is restored to pre-construction levels after the work is complete.
- **Oregon Revised Statute (ORS) 468B.050 and Section 402 of the Clean Water Act (CWA)** require a National Pollutant Discharge Elimination System (NPDES) 1200-C Permit to prevent stormwater impacts from a construction site. A Stormwater Management Plan, including an Erosion and Sediment Control Plan, will be developed and a NPDES 1200-C Permit will be obtained prior to the start of construction in order to minimize impacts to fish habitat from construction stormwater runoff (CWA, 1972).
- **Fish Passage Regulations (Oregon Administrative Rule 635-412-0035)** require that fish passage be maintained for anadromous fish. The construction sequence complies with this law; no anadromous fish are located in the project area and passage will be restored to pre-construction levels after the work is complete (ODFW, 2015).
- **ODFW** - All in-water work will be conducted during ODFW preferred in-water work windows as outlined in the *Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources*.

Water Resources - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Mitigation measures include conducting pipeline replacement efforts at stream crossings during the ODFW preferred in-water work window as outlined in the *Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources* and implementation of BMPs, including buffering stream-side construction with straw bales, wattles, silt fencing, and/or other methods to control sediment transport. If work occurs in flowing streams, the stream will be blocked off and flows will be bypassed around the work area. The reach will be seined from the upstream end to the downstream end of the work area to facilitate any fish to voluntarily leave the work area. All equipment will be inspected prior to entering the watershed to reduce the chances of leaks and spills. Spill kits will be maintained on site, and disturbed areas will be reseeded/replanted after construction, as needed. Water quality monitoring will be conducted as necessary.

- **LRMP** - The LRMP requires that streams be protected from detrimental changes in temperature and sediment deposits that adversely affect water quality and fish habitat

and that surface water quality meet the water quality standards for the State of Oregon. The LRMP notes that projects like the Mountain Line Replacement project may temporarily increase turbidity for a few days, which is acceptable with proper mitigation and monitoring. Because the project has only temporary impacts, restores riparian vegetation after construction, and includes water quality monitoring, BMPs allow the project to be in compliance with this policy.

- **ORS 468B.050 and Section 402 of the Federal CWA** require an NPDES 1200-C Permit to prevent stormwater impacts. A Stormwater Management Plan will be developed and a NPDES 1200-C Permit obtained prior to the start of construction in order to minimize impacts to water quality through stormwater runoff (CWA, 1972).

Wetlands - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Any necessary permits will be obtained prior to construction.

Soil and Earth Resources - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

An Erosion and Sediment Control Plan will be prepared prior to construction and will be implemented throughout the project to prevent soil erosion.

Road Access and Control - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

- Mitigation measures include reducing the number of trips for vehicles, using only the minimum number of vehicles for each part of the work, informing the City crews that they are working in an inventoried roadless area with special conditions, and repairing any inadvertent damage to the road that occurs as a result of normal wear and tear during construction activities.
- The project will be designed to avoid felling trees to the maximum extent possible. If it is necessary to fell trees to complete this project, it will be noted that this project is essential for health and safety of the Baker City community. The tree felling will be documented and approved by the BLM or USFS before the work takes place.
- No new roads will be constructed in the roadless areas; only the existing road will be used.

[REDACTED]

Roadless Area - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Roadless Area Conservation Rule (RACR) (USDA, 2000; USDA, 2001) requires that no trees be felled in roadless areas, except under certain criteria, including threats to public health and safety and preserving outstanding water rights. The project meets both of these criteria. Tree felling will be avoided to the maximum extent possible, but if tree felling is necessary, BLM or USFS approval will be obtained before work commences. The RACR further specifies that an exception for cutting timber in a roadless area is permitted if "the cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited by this subpart" (USDA, 2001). The RACR further defines that road maintenance is allowable in an inventoried roadless area for two criteria that this project meets:

- "A road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property" (66 FR 3244). The pipeline is leaking water and could cause damage if left unchecked. Additionally, the water source for the 10,000 residents and businesses of Baker City is under constant threat of being interrupted for a long period of time by a catastrophic pipeline failure or compromised with turbidity and other water quality limiting factors. For example, Baker City now has a break in the line between Salmon Creek and Little Salmon Creek caused by a runaway boulder, causing days of turbidity issues in the water for all municipal water users. Safe drinking water is a priority public health issue and is under imminent threat until the pipeline is replaced.
- A road is also allowed if it "is needed pursuant to reserved or outstanding rights" (66 FR 3244). Baker City has water rights that cannot be maintained without the pipeline replacement, associated road repair, and incidental tree felling.

Recreation and Visual Aesthetics - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Mitigation measures include limited stockpiling of materials, conducting construction on only one diversion area per year to minimize impacts to other areas, and placing materials and equipment in the least visually noticeable areas.

Air Quality - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

Temporary increases in air emissions from construction equipment will be mitigated by using well-maintained equipment that complies with all state and federal requirements for emissions. When possible, workers will carpool to the site.

Climate Change and Sustainability - Specific Measures

Mitigation measures to reduce emissions include using only vehicles that pass state and federal emissions standards, turning off construction vehicles when not in use, storing them on site when possible to reduce trips, and carpooling to the site. In terms of sustainability, the project itself is a mitigation measure to mitigate the current loss of water from the system.

Cultural and Historic Resources - Specific Standards, Guidelines, BMPs, PDFs, and Mitigation Measures

- A cultural resources inventory has been conducted to determine the location of any culturally or historically significant resources. The USFS determined that the project would have *no adverse effect* on historic properties. As of the writing of this report, concurrence from Oregon State Historic Preservation Office (SHPO) is in the process of being obtained.
- No new impacts to eligible or unevaluated cultural resources are anticipated. If a cultural or historical resource is in proximity to the work area, its boundary will be flagged to ensure avoidance.
- Archaeological monitoring will occur during construction in proximity to one specific site. If cultural resources are discovered within the project area during monitoring, avoidance or mitigation will take place. In the event that an archaeological resource is discovered during project operations, work will cease in that area and SHPO and the Commission on Indian Services will be notified regarding the discovery. If human remains are found, the Oregon State Police will also be contacted.
- An Unanticipated Discovery Plan has been developed for this project and will be on site during construction.

Section 3 - Affected Environment and Environmental Consequences

This chapter describes the environmental effects of implementing the Proposed Alternative and the No Action Alternative for the Mountain Line Replacement project. The analysis covers the project area that is composed of the 40-foot temporary construction easement and the few select areas that encompass a larger width than 40 feet, and studies the current conditions and potential impacts of the alternatives for each of the following resource areas:

- Vegetation resources
- Land management
- Fish and wildlife
- Water resources
- Wetlands
- Soil and earth resources
- Road access and control
- Recreation and visual aesthetics
- Air quality
- Climate change and sustainability
- Cultural and historic resources
- Cumulative effects

Each section of this analysis is organized by discussing the background conditions of the watershed in general and then specifically within the project area. The affected environment, effects from the Proposed Alternative and the No Action Alternative, and any significant unavoidable impacts that would be caused by the Proposed Alternative will be identified.

This section's analysis of direct, indirect, and cumulative effects associated with the proposed U.S. Forest Service (USFS) Special Use Permit is intended to assist the USFS in determining whether a Finding of No Significant Impact (FONSI) is appropriate. The findings of this document are the opinion of the City of Baker City and do not represent a determination by the USFS. The USFS will use this document to determine if an Environmental Impact Statement (EIS) is needed or if the Environmental Assessment (EA) is adequate. This determination will be documented by the USFS through a FONSI. After the FONSI is prepared, the USFS will issue a Draft Decision Notice (DN).

Because the National Environmental Policy Act (NEPA) requires federal agencies to prepare an EIS only for "major federal actions significantly affecting the quality of the human environment," an agency will typically first prepare an EA to determine if an EIS is required. If it is determined that an EIS is not required, the federal agency may then issue a FONSI (NEPA, 1969). In evaluating whether a FONSI is appropriate, an agency considers the action and the mitigation that an applicant will undertake and

determines whether the federal action, as mitigated, rises to the level of significance. USFS NEPA regulations are to be used "in conjunction with" Council on Environmental Quality (CEQ) regulations summarized at 40 Code of Federal Regulations (CFR) Part 1500 et seq.

The CEQ regulations define "direct effects" as effects that are "caused by the action and occur at the same time and place" (40 CFR 1508.8). CEQ regulations define "indirect effects" as those effects "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8). Finally, CEQ regulations define "cumulative impacts" as "the impact on the environment which results from incremental impact of the action when added to other past, present, and reasonably foreseeable future action regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Cumulative effects from this project will only be considered in conjunction with existing recreational use of the project area for hunting, as requested by the USFS (Tomac, 2015).

Short-term impacts are defined as impacts occurring during construction (temporary impacts) and up to one year after construction. Intermediate impacts are defined as impacts lasting between two and nine years after construction. Long-term impacts (permanent impacts) are defined as impacts lasting more than 10 years after construction.

Vegetation Resources (Noxious Weeds and Rare Plants)

The following evaluates the existing conditions and potential impacts to noxious weeds and rare plants.

Background

The vegetative cover of the area includes three broad groupings: Principal Forest Zone, Subalpine Zone, and Alpine Zone. In the Principal Forest Zone, canopy cover varies between 40 to 80 percent with plants including alders, willows, snowberry, and other native shrubs. The canopy cover in the Subalpine and Alpine Zones consists of ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), Douglas fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), and western larch (*Larix occidentalis*) (see Figure 7, Mountain Line Project Area Vegetation).

With the exception of the portion of the watershed located on private land, there has been very little forest-stand management activities in the past few decades.

In the 1950s through the 1960s, a few ridges accessible from the Pipeline Road (7140200) (the road located primarily over the Mountain Line) were harvested to the level of "light partial harvest and salvage." Less than 10 percent of the entire area has ever been commercially harvested (USDA, 1995b).

In 1995, the USFS issued a Record of Decision (ROD) on the Washington/Watershed Project Final Environmental Impact Statement (FEIS) (USDA, 1995c). This project covered 14,000 acres, including the Baker City Watershed. Alternative 4A was chosen, which included a mix of commercial and non-commercial treatments as well as elimination of the Washington Gulch cattle and horse domestic grazing allotment. This alternative was chosen to work toward returning forest conditions to their normal range of variability, protect water quality, and reduce fire risk in the watershed. Projects implemented through this EIS included the Washington Timber Sale, Washington Watershed

Thinning, Wilson Timber Sale, Hibbard Thinning, Pilot Thinning, and Elk Creek Fuels Reduction. In these projects, 1,340 acres were commercially thinned and harvested, 1,250 acres were pre-commercial thinned then piled and burned, and 700 acres of prescribed under-burning was accomplished (USDA, 1995c).

In 2004, the U.S. Department of Agriculture (USDA), USFS, and U.S. Department of the Interior (USDI) signed the Decision Memo for Categorical Exclusion for Foothills Fuels Reduction Project. This decision approved the commercial thinning, pre-commercial thinning, whip felling, mechanized slash treatment, hand piling, pile burning, and under-burning on the 2,160 acres at the interface of USFS land and private land along the base of the Elkhorn Mountains west of Baker City (USDA, 2004). Some helicopter logging occurred as part of this project. This project was designed to continue activities planned under the Washington/Watershed EIS (USDA, 1995b). The intent of these continuing activities was to protect the watershed from high-intensity wildfires.

On the private portion of the watershed, more thinning efforts have occurred. In 2006, a report on the effectiveness of thinning activities was prepared with the title "GWEB Project #98-039 Baker City Watershed Forest Health Project Compliance Monitoring Report." The author was able to identify and document positive effects from the project funded by a Governor's Watershed Enhancement Board (GWEB) grant. The project included cutting, piling, and burning fuels to substantially reduce fuels and to increase fuel breaks. A hand crew selectively thinned and burned small slash piles in a few high risk places from 1997 to 2000. Tree and brush cutting was done by USFS employees. Piling of cut trees and brush was done by Powder River Corrections inmate crews. The project received considerable media attention. The total cost of the project was \$63,320.11; the report indicated that approximately half of the areas identified as needing thinning had actually been thinned (OWEB, 2006). Figure 8, Mountain Line Project Area Fuel Management Areas, shows all known areas where thinning has occurred in relation to the project area.

Invasive Species/Noxious Weeds

Overview of Noxious Weeds in Baker County

Invasive plants are defined as non-native plants whose introduction cause, or are likely to cause, economic harm to livestock or other agriculture, environmental harm to native plant communities and wildlife, or harm to human health. Invasive plants are distinguished from other non-native plants by their ability to spread rapidly and invade native ecosystems. Noxious weeds are defined by USFS policy as "...plants designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof" (USDA, 2005).

Invasive Plant is also a legal term used by state and county agencies to mean "any non-native plant classified by the Oregon State Weed Board that is injurious to public health, agriculture, recreation, wildlife, or any public or private property" (USDA, 2005) Many other undesirable non-native plant species are or can be weedy pest species that cause unwanted impacts. However, these species may not be as high a priority for management and, therefore, are not designated as noxious. The Pacific Northwest Region Invasive Plant FEIS for Preventing and Managing Invasive Plants ROD (USDA, 2005) was developed to cover non-native invasive plants,

not just "noxious weeds." It directs that weeds must be considered under all planning efforts, not just ground-disturbing actions. The Wallowa-Whitman National Forest Invasive Plant EIS (in revision) is more site-specific and gives more detail regarding resource conditions within the forest and herbicide use.

In this document, the terms "noxious weed" and "invasive plant" may be used interchangeably to represent undesirable plant species of concern.

The Tri-County Cooperative Weed Management Area and the Baker County Weed Department have been active in invasive plant/weed management in the area. As part of their management, invasive plants located within Baker County are rated and classified at the county level. They are prioritized according to their invasive qualities. The Baker County Weed Department compiles an annual weed list based on these priorities. The following describes the categories for species of concern:

1. "A"-listed invasive plants are weeds of known economic importance that occur in the state in small enough infestations to make eradication or containment possible, or are not known to occur in the state but whose presence in neighboring states make future occurrence in Oregon seem imminent. In Baker County, these weeds fall under mandatory control County-wide.
2. "B"-listed invasive plants are weeds of economic importance that are regionally abundant, but that may have limited distribution. Baker County defines these plants as widespread and/or of high concern.
3. "C"-listed invasive plants are designated by Baker County as widespread and/or of moderate concern.
4. "T"-listed invasive plants are those designated by Baker County as target species for eradication.
5. "Watch List" invasive plants occur in a few known sites in Baker County and are controlled by the weed supervisor County-wide.

The Baker County Weed List was used for discussion of invasive plants in this document.

Noxious Weeds in the Project Area

The Baker City Mountain Line is located along the east-facing slopes east of Elkhorn Ridge in Baker County (T8S, R38E, Sections 34 and 35; T9S, R38E, Sections 2, 11, 12, 13, and 24; and T9S, R39E, Sections 7, 17, 18, 20, 21, 22, 23, 27, 28, 29, 32, and 33). Past activities in the project area include homesteading, mining, logging, and some grazing. Effects of these activities are still evident today throughout the area and have affected the suitability of the area for noxious weeds. There are scattered infestations of invasive plants as a result of these past activities (see Figure 7, Mountain Line Project Area Vegetation, and the Noxious Weeds Specialist Report in Appendix IV. Appendix A of that Specialist Report contains additional noxious weed maps and lists, including the federal, state, and Baker County noxious weeds lists).

Present inventories have not documented any state-listed "A" weeds within the 40-foot temporary construction easement and other easement areas; however, Baker County has designated several state-listed "B" plant species in the area as "A" within Baker County. These include diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea stoebe ssp. micranthos*), and tansy ragwort (*Senecio jacobaea*). In addition, infestations of common St. Johnswort or klamathweed, gypsyflower or houndstongue, Canada thistle, and sulfur cinquefoil, all of which are designated by the state and county as "B"-listed weeds, also exist within the 40-foot temporary construction easement and other easement areas. The majority of these sites are located in close proximity to the riparian areas or in areas of disturbance such as an old homestead present near the project area and water development sites.

The ability of a plant to colonize or spread is unique to each species, although all weeds are considered to be potentially highly invasive. The ability for weeds to spread is affected by weed species' seed production and dispersal mechanisms, potential propagule movement vectors, and the proximity of the existing weed patch to the area of disturbance. Once established, weeds can persist on a site.

Introduction of noxious weeds results in an increased competition with protected species (i.e., plants on the federal or state list of endangered or threatened species), native vegetation, agricultural species, and other desirable species. The existing plant community also provides a level of competition with potential invaders. The ecological condition of vegetation subject to annual grazing disturbance events affects the degree to which the community will be resilient to weed invasion and its ability to recover.

At present, quantifying any of these factors at the scale of this analysis is not possible, and any attempt to quantify effects would be highly speculative. Still, a clear difference exists between species in the relative potential risk of weed spread from project implementation. The following discussion attempts to evaluate the potential relative difference in the risk of introducing or spreading selected invasive plant species as a proxy for quantifying the difference in actual spread or introduction by each alternative. See Figure 7, Mountain Line Project Area Vegetation, for approximate locations of known noxious weeds.

The following noxious weeds have been identified in, or adjacent to the project area:

- Diffuse knapweed - This invasive plant was introduced from the Mediterranean region to the Pacific Northwest at the turn of the 20th Century. It is considered widespread in the counties to the north, but has limited occurrences in Baker County itself. Diffuse knapweed is a single-stemmed plant with numerous lateral branches and white, rose, or purplish flowers, and forms dense stands on open ground. It is spread by seed, aided by the tumbling of windblown mature plants. It grows under a wide range of conditions, including riparian areas, sandy river shores, gravel banks, rock outcrops, rangelands, and roadsides.
- Spotted knapweed - This plant was introduced from Europe to the Pacific Northwest. It has limited occurrences in Baker County. It is a multi-stemmed plant with several stems arising from a crown, and purple or, occasionally, cream-colored flowers. The tips of the flower head bracts are usually black, thus the name "spotted." The seeds of spotted

knapweed are dispersed by wind, animals, and people. Spotted knapweed is one of the dominant weed species in the western United States.

- Tansy ragwort - This weed is native to Europe and Asia and was introduced to Multnomah County, Oregon, in 1922. It is considered widespread on the west side of the state but still has limited occurrences in eastern Oregon. Tansy ragwort has dark green, deeply lobed leaves. It has numerous seed heads, each with multiple yellow, multi-rayed flowers. It reproduces by seed only, but can regenerate vegetatively if grazed or mowed and moisture conditions are right. It is prolific in pastures, clear cuts, and disturbed roadside areas.
- St. Johnswort or klamathweed (*Hypericum perforatum*) - St. Johnswort is native to Europe and was first introduced to Oregon in 1877. It is considered widespread throughout the state. St. Johnswort has erect stems that are numerous, branched, rust-colored, and woody at their base. Its leaves are oblong and covered in transparent dots. It has numerous bright yellow flowers with five petals and occasional small black dots around the edges, which are carried in flat-topped cymes. Its stamens are numerous and arranged in three groups. Infestations of St. Johnswort spread rapidly on disturbed, well-drained sites such as roadways, trails, overgrazed range, and logged areas.
- Gypsyflower or houndstongue (*Cynoglossum officinale*) - This plant was introduced to North America in the late 1800s. It is considered widespread in Baker County and the counties to the north. Gypsyflower forms rosettes the first year and sends up a flowering stalk the second year. Its leaves are alternate, rough, and hairy (resembling a hound's tongue). Its flowers are reddish purple and terminal. It has small, barbed seeds that adhere easily to hair, clothing, wool, and fur. It is often associated with disturbed areas such as roads, trails, logging areas, and abandoned cropland.
- Canada thistle (*Cirsium arvense*) - Canada thistle is native to Eurasia and was introduced to the United States in the 1600s. It is considered widespread throughout the state. Canada thistle has wavy leaves that are margined to lobed, up to 6 inches long, and armed with yellowish spines. It has small purple to white flowers in clusters. It also has an extensive deep-seated root system that spreads horizontally. It produces a large quantity of seed, but a low percentage of viable seed. Canada thistle can be found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns, gardens, roadsides, and waste areas.
- Sulfur cinquefoil (*Potentilla recta*) - Sulfur cinquefoil was first documented in Oregon in 1978. It is considered widespread in Baker County and the areas immediately to the north and west. Its leaves are compound, with five to seven leaflets on each leaf, and its flowers are light yellow with five petals. It occurs in disturbed areas, especially roadsides and pastures.

Current Treatment Status

The majority of weeds within the project area are located in riparian and/or disturbed areas such as travel routes or developed sites. Current weed monitoring and treatment efforts have been limited.

There have been no treatments conducted on a regular basis by the City of Baker City. Limited treatment in the project area has been conducted by the USFS. In 2014, four locations of houndstongue and Canada thistle were treated using the herbicides Clopyralid, Metsulfuron-methyl (MSM), and Clorsulfuron. Clorsulfuron was used on only one treatment site. This comprised a total of nine treated acres (Schaefer, 2014). Table 3-1 summarizes all noxious weed sites known to be located near the Mountain Line. See the Noxious Weeds Specialist Report in Appendix IV for locations of the site numbers.

**TABLE 3-1
 MOUNTAIN LINE PROJECT AREA WEED TREATMENTS**

Site No. (Last three numbers)	Species	Acres	Treatments (Only Four Sites Treated)
346	HYPE	18	
347	CYOF	3.6	
348	CYOF	2	
349	CIAR4	4	
350	HYPE	11.7	
351	HYPE	1.3	
352	CIAR4	1.6	
353	HYPE	0.4	
354	CIAR4	0.9	
355	CEDI3	0.9	
356	CEDI3	1.3	
357	CEBI2	1.3	
358	HYPE	0.9	
359	HYPE	1.8	
360	CIAR4	1.8	
361	HYPE	0.9	
362	HYPE	1.8	
363	CIAR4	1	
304	CIAR4	3	
273	HYPE	1.9	
089	CYOF	3	
305	CYOF	3.3	
073	CIAR4	1.7	2014/Clopyralid and MSM
074	CYOF	3.1	2014/Clopyralid and MSM
010	CIAR4	1.2	2014/ Clopyralid and MSM
099	CYOF	3	2012, 2013, 2014/Clopyralid, MSM, and Clorsulfuron
294	CIAR4	5.5	

HYPE - St. Johnswort

CYOF - Houndstongue

CIAR4 - Canada thistle

CEDI3 - Diffuse knapweed

CEBI2 - Spotted knapweed

(Schaefer, 2014)

Due to the lack of detailed historic reference conditions relative to noxious weed occurrence in the analysis area (over time), the current existing condition will be used as the reference baseline for the comparison of alternatives.

Affected Environment/Environmental Consequences

Vegetation communities in the project area have the potential to be affected by the replacement of the Mountain Line. The affected environment includes all areas that may be disturbed by construction activities, including site access and staging areas.

Repairing the pipeline may have the following environmental consequences related to noxious weeds:

- **Displace Stable Populations of Native Plants and Increase Disturbed Habitat:** Noxious weeds tend to outcompete native species in disturbed areas; disturbed areas will be present during and immediately after the pipeline repairs occur. Best management practices (BMPs) will be used to minimize disturbance, and disturbed areas will be promptly reseeded with native species following construction, but increasing noxious weeds is a potential environmental consequence of the project.
- **Introduce New Noxious Weeds:** BMPs will be used to ensure construction equipment is cleaned prior to entering the project area; however, there is a small chance that new invasive species could be introduced as a result of the project.
- **Spread Existing Noxious Weeds:** BMPs will be used to minimize the chances of spreading invasive species; however, by using heavy equipment and disturbing site soil, the project could facilitate the spread of invasive species.

Effects of Proposed Alternative

Direct effects on noxious weeds from replacing the Mountain Line may include the inadvertent introduction and/or spread of invasive species. Indirect effects may include creating new areas of disturbance along the road over the pipeline route, which could increase favorable conditions for noxious weeds to thrive. Cumulative effects from the disturbance of replacing the Mountain Line considered with the disturbance from hunting in the watershed could create a risky situation for the spread of noxious weeds. However, this impact is not quantifiable and, because of the minimal presence of weeds in the project area and the proposed mitigation measures, it is not considered a significant impact.

Effects of No Action Alternative

If the pipeline is not replaced, there would be no new direct, indirect, or cumulative effects on noxious weeds. The current level of infestation and spreading of noxious weeds associated with ongoing operation and maintenance of the Mountain Line would remain constant.

Summary of Effects

Due to disturbance from the Proposed Alternative, noxious weeds may have a slightly increased risk of spreading; however, because of the scale of the replacement project in relation the size of the watershed, as well as the mitigation measures to ensure noxious weeds are not spread or introduced, the Proposed Alternative would have no significant effect on noxious weeds.

The No Action Alternative would have no effect on noxious weeds.

Sensitive Plants

Appendix V is a record of the approved Rare Plants Specialist Report. An Oregon Biodiversity Information Center (ORBIC) database search in 2015 revealed a total of 12 records of tracked rare plant species within a 2-mile radius of the project, including one federally listed species (ORBIC, 2015).

**TABLE 3-2
 RARE PLANT SPECIES WITHIN A 2-MILE RADIUS OF THE MOUNTAIN LINE PROJECT AREA**

Group	Species	Federal	State	NHP List	State Rank
Forb	Salt heliotrope (<i>Heliotropium curassavicum</i>)	-	-	2	S2
	Howell's spectacular thelypody (<i>Thelypodium howellii</i> ssp. <i>spectabilis</i>)	Threatened	Listed Endangered	1	S1
	Davidson's rockcress (<i>Arabis davidsonii</i>)	-	-	2	S1
Fern	Green spleenwort (<i>Asplenium viride</i>)	-	-	2	S1
Moss	Moss (<i>Orthotrichum pellucidum</i>)	-	-	3	S1
	Moss (<i>Mnium blytii</i>)	-	-	3	S1
	Moss (<i>Mielichhoferia elongate</i>)	-	-	3	S1
	Moss (<i>Anomobryum julaceum</i>)	-	-	3	S1
Liverwort	Liverwort (<i>Preissia quadrata</i>)	-	-	2	S2
	Liverwort (<i>Peltolepis quadrata</i>)	-	-	2	S1
	Liverwort (<i>Lophozia gillmanii</i>)	-	-	2	S1
	Liverwort (<i>Jungermannia polaris</i>)	-	-	2	S1

National Heritage Program (NHP) List: 1 = threatened or endangered throughout range, 2 = threatened or endangered in Oregon but more common elsewhere, 3 = Review List (more information is needed), 4 = Watch List (currently stable)

State Rank: S1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with five or fewer occurrences; S2 = imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6 to 20 occurrences.

The USFS Special Status Species and Natural Resource Information System (NRIS) Threatened, Endangered, and Sensitive Plants (TESP) List was also reviewed. This list, along with the habitat findings, is included in the Rare Plants Specialist Report in Appendix V.

A wetland delineation was performed by a staff biologist of Anderson Perry & Associates, Inc. (AP) in October 2013. None of these rare species were observed during this or other site visits in the project area, although intensive surveys for the mosses and liverworts were not included in the project scope. The only state and federally listed species, Howell's spectacular thelypody, would be unlikely to be present near the road because it is not the preferred habitat of this species.

According to the U.S. Fish and Wildlife Service (USFWS), the following federally listed threatened, endangered, or candidate species may occur in the area (see the species list in Appendix A of Appendix V):

**TABLE 3-3
 FEDERALLY LISTED PLANT SPECIES IN BAKER COUNTY**

Species	Status	Potential Effect
Whitebark pine (<i>Pinus albicaulis</i>)	Candidate	None. None known to be present in the project area.
Howell's spectacular thelypody	Threatened	None. No suitable habitat in the project area; no open mesic alkaline meadows and grasslands are present.

These species were not observed during surveys of the project area. Visual surveys along the pipeline corridor were conducted, inclusive of the 40-foot temporary construction easement and other easement areas. Figure 1, Location and Vicinity Maps, shows a map of this area. Additional detail on the vegetation in the project area can be found in the Wetland Delineation Report (see Appendix VI).

The entire pipeline corridor (including the 40-foot temporary construction easement and other easement areas) was surveyed for this project. Desktop and field surveys were completed for this evaluation by Sue Brady, AP biologist. Field surveys were conducted for federally listed species. All wetland areas and waterways were delineated (October 2013 and July 2014) and recorded in the Wetland Delineation Report, which was shared with the USFS. A desktop review of all species on the most recent Region 6 and NRIS TESP List was conducted to determine whether suitable habitat may be present in the project corridor. This list and determinations are included in the revised report in Appendix V: Rare Plants Specialist Report, Appendix A: Species Lists.

Affected Environment/Environmental Consequences

Plants present within the 40-foot temporary construction easement and other easement areas may be affected through soil disturbance and trenching required for the replacement of the Mountain Line. While no threatened or endangered plants have been observed within the project area, there could be effects to unknown species. This project primarily involves uncovering and replacing a pipeline. There should be no habitat-type conversion, except in areas where the pipe and road may be relocated. Post-construction restoration should return habitat to preconstruction conditions. In areas where the pipeline and/or road are relocated, the abandoned alignment will be restored to match the habitat in the surrounding areas. The few areas where relocation occurs are in close proximity to the current pipeline location.

Replacement of the Mountain Line has the potential to have the following environmental consequences to plants in the project area:

- Erosion/soil loss. Some of the pipeline route traverses areas with steep slopes; it is possible, even with BMPs for erosion control, that some material may be lost. In some areas, it may also be necessary to cut back the uphill slope to provide an adequate work area. This would decrease viable plant habitat until the slope stabilizes.
- Habitat disturbance. Felling of trees will be avoided to the maximum extent practicable. Trees may be felled in a few portions of the pipe replacement route. This may alter shading patterns, which could decrease habitat quality for certain plants. The site will be reseeded after construction; however, there may be associated temporal impacts during regrowth.
- Permanent removal or injury to plants. Some species will be removed as a result of the pipeline excavation and bank cutting. BMPs will be used to minimize this, but it is still a potential consequence of the Proposed Alternative.

Effects of Proposed Alternative

Direct effects on vegetation of repairing the pipeline include erosion, habitat disruption, potential damage or removal of plants and trees, and loss of shading. There is no evidence that any plants in the area are of special concern. Impacts to habitat are expected to be temporary and of short duration. Indirect effects may include the continued reduction of habitat from the operation and maintenance of the Mountain Line. Cumulative effects of the Mountain Line replacement and recreation in the watershed could include the risk of damage to rare plants; however, due to the lack of evidence of rare plant presence in the watershed, this is a minor impact and is not quantifiable.

Effects of No Action Alternative

If the pipeline is not replaced, there would be no direct, indirect, or cumulative effects to plants in the area. Negative impacts that are not quantifiable for this analysis include the erosion and reduction of habitat from washouts and leaking associated with the deteriorating pipeline, and localized disturbance from maintenance and repairs, which would likely increase in frequency.

Summary of Effects

The Action Alternative is preferred and, with proper BMPs and site restoration, would have no significant effect on plants.

The No Action Alternative would have no effect on plants other than the increased potential for erosion caused by the leaking pipeline and localized disturbance from subsequent repairs.

Land Management

This section discusses range land, farmland, and general landscape management impacts from the project.

Background

The USFS is the primary landowner of the project area. There is no plan for development of this area, except for the replacement of the Mountain Line. There are no residential, commercial, or

industrial developments in or near the watershed. Small portions of the watershed are owned by private parties and Baker City, and a small section is owned by the Bureau of Land Management (BLM) (see Figure 6, Property Ownership).

Because of the necessity to keep the watershed pristine and free of outside contaminants, access to the project area is limited. Multiple uses are designated for the watershed by the USFS. Domestic water supply is the main use, although some areas are also allowed to be used for logging, roads, livestock, and recreation. On the federally owned portions, only people with hunting permits are allowed within the gated watershed boundaries. They are allowed to bring one companion. Motorized vehicles are heavily restricted within the watershed boundaries (see Figure 9, Mountain Line Project Area Inventoried Roadless Areas). Cattle grazing occurs on the privately owned sections of the watershed downstream of the diversions (USDA, 2014). Adjacent range allotments (Stovepipe and Blue Canyon) are fenced off from the watershed (see Figure 10, Mountain Line Project Area Adjacent Range Allotments and Fences). The City has agreements in place with private landowners within the watershed for watershed access, use, and maintenance. There are no regularly conducted landscape management activities in the project area. The City water specialist conducts patrols in the watershed on a weekly basis during the summer and as needed in the winter.

Farmland

Any potential farmland soil types do not occur in large enough tracts to facilitate farming, and no farming is permitted in the watershed. See the Soil and Earth Resources discussion (later in this section) for more information. There will be no effect on farmland.

Range Land - Livestock and Agriculture

With the exception of the private portion of the watershed, livestock is not allowed within the boundaries of the watershed. Preventative measures have been instituted to reduce incidence of straying within the watershed. These measures include fence construction and maintenance and discussions with landowners. Cattle grazing in the private portion of the watershed located below the Elk Creek intake line does not influence any water entering the municipal reservoir. The Stovepipe allotment and the Blue Canyon allotment are adjacent to the watershed and grazing occurs on these areas. Table 3-4 details the allotments adjacent to the watershed. The boundaries and fencing of these allotments can be seen on Figure 10, Mountain Line Project Area Adjacent Range Allotments and Fences. Grazing right holders are responsible for construction and maintenance of structural improvements for range rehabilitation. Only small, fenced portions of these allotments are adjacent to the project area, and none are contiguous with the 40-foot temporary construction easement or other easement areas.

**TABLE 3-4
 WATERSHED ADJACENT GRAZING ALLOTMENTS**

Allotment Name	Season of Use	Livestock Class	Number	Expiration
Stovepipe	June 1 through September 30	Cow/calf pair	266 (Term Grazing Permit)	December 31, 2025
Blue Canyon	June 1 through September 30	Cow/calf pair	107 (Term Grazing Permit) 27 (Private Land Grazing Permit) 11 (BLM Grazing Permit [billed by the USFS])	December 31, 2016

Agricultural practices are not permitted within the Baker City Watershed or in the project area. There are no agricultural lands present above the watershed, so nutrient/pesticide runoff is not of concern.

Affected Environment/Environmental Consequences

The affected environment includes the 40-foot temporary construction easement that encompasses the project area and other easement areas for staging/diversions. Vegetation in this area ranges from trees, shrubs, and herbaceous vegetation to bare rock. Habitat types include forest, wetland, and sagebrush steppe. There is no rangeland, farmland, or general landscape management occurring within the project area, except for the grazing of cattle that are excluded from the pipeline buffer area by a fence, but are allowed on private property and BLM land.

Effects of Proposed Alternative

The Mountain Line replacement would temporarily disturb existing land use within the project area; however, no permanent changes to land use would occur because the top of the pipeline would be buried 3 feet deep in trenches, similar to current conditions. The Proposed Alternative would have no effects on land use.

Effects of No Action Alternative

The No Action Alternative would result in no change to land use in the project area.

Summary of Effects

There would be no significant unavoidable impacts to range land, farmland, or general landscape management activities from the Proposed Alternative

The No Action Alternative would have no effect on land use.

Fish and Wildlife

This section discusses the presence and project impacts on wildlife, including listed species and migratory birds. Appendix VII includes the approved Wildlife Specialist Report and Appendix VIII includes the approved Fisheries Specialist Report.

Background

Because the project area is primarily a 40-foot corridor surrounding the Mountain Line and other wider specific easement areas, no data was available about what species of wildlife were specifically using this exact portion of land, so less granular data were used to describe general conditions of the Baker City Watershed as a whole. It should be noted that the project area is composed of some of the least desirable habitat in the watershed due to the relatively high level of disturbance from the pipeline access road.

Terrestrial Wildlife

The watershed is located in the Sumpter Wildlife Management Unit (SWMU). Wildlife populations are under management of the USFWS and Oregon Department of Fish and Wildlife (ODFW) in the watershed. Within the watershed boundaries there may be mountain goats, elk, deer, coyotes, bears, cougars, wolves, foxes, bobcats, wild turkeys, woodpeckers, song birds, and many raptors such as red tail hawks, rough-legged hawks, and bald eagles. Source habitat for the pileated woodpecker, goshawk, and American marten is located in the watershed. Pileated woodpecker USFS management areas are also located in the watershed (see Figures 11A and 11B, Mountain Line Project Area Wildlife). Lynx have reportedly never been sighted in the watershed.

Forest Plan Management Indicator Species (MIS) include Rocky Mountain elk, pileated woodpecker, goshawk, pine marten, steelhead, and resident trout. The habitat areas for MIS that overlap with the project area include Rocky Mountain elk, pileated woodpecker, goshawk, and pine marten (see Figures 11A and 11B, Mountain Line Project Area Wildlife).

The following information represents ODFW data collection efforts in the watershed and SWMU as a whole.

Bear Data

As black bears are not densely populated in the watershed, ODFW does not track this population. Data collection efforts include tagging bears with tetracycline and later evaluating whether the teeth of killed bears have tetracycline markers in them. No locational data are available (Ratliff, 2014).

Deer and Elk Data

ODFW tracks deer and elk data for winter range use only. There are no deer and elk in the watershed during the winter. The only population-level data estimates available are for summer use of the entire SWMU, of which the watershed is a small part (Ratliff, 2014). Although the watershed comprises approximately 0.1 percent of the SWMU, the area may receive disproportionate use due to the high quality of the habitat and low disturbance. The management objective for deer is 7,000 animals in the SWMU, and the management objective for elk is 2,000 animals in the SWMU. Table 3-5 shows deer and elk population estimates for the SWMU. These are post-winter population indices, which are derived from direct/trend/count data or population modeling from composition data, harvest data, and winter severity estimates.

**TABLE 3-5
 SWMU DEER AND ELK POPULATION ESTIMATES 2004 THROUGH 2014**

Year	Deer (Management Objective = 7,000)	Elk (Management Objective = 2,000)
2004	6,720	1,680
2005	5,740	1,800
2006	6,510	1,760
2007	5,950	1,600
2008	5,670	1,580
2009	5,880	1,440
2010	5,180	1,520
2011	4,550	1,420
2012	5,040	1,440
2013	4,830	1,580
2014	5,930	1,580

Goat Data

Populations of mountain goats in the watershed are healthy enough that between 2001 and 2012, ODFW trapped 226 goats and kids to start or reestablish populations in other areas of their native habitat. Point counts of goat populations have been conducted in the watershed near Goodrich Lake.

Elkhorn mountain goat populations between 2004 and 2014 are shown on Table 3-6 (Ratliff, 2014). This represents the minimum population that the information from point count surveys confidently predicts; however, it is likely that approximately 10 to 30 percent more individuals are present.

**TABLE 3-6
 ELKHORN MOUNTAIN GOAT POPULATION ESTIMATES 2004 THROUGH 2014**

Year	Total
2004	133
2005	157
2006	192
2007	174
2008	242
2009	199
2010	302
2011	268
2012	263
2013	142
2014	176

Figure 11A shows the mountain goat range in the SWMU within the watershed boundary.

A search of the ORBIC database indicated records of five rare wildlife species within a 2-mile radius of the project (ORBIC, 2015), as shown on Table 3-7.

**TABLE 3-7
 RARE WILDLIFE SPECIES WITHIN A 2-MILE RADIUS OF THE MOUNTAIN LINE PROJECT AREA**

Group	Species	Federal Status	State Status
Bird	Northern goshawk (<i>Accipiter gentilis</i>)	Species of Concern	Sensitive Vulnerable
	Swainson's hawk (<i>Buteo swainsoni</i>)	-	Sensitive Vulnerable
	Golden eagle (<i>Aquila chrysaetos</i>)	-	-
	Lewis's woodpecker (<i>Melanerpes lewis</i>)	Species of Concern	Sensitive Critical
Butterfly	Johnson's hairstreak (<i>Callophrys johnsoni</i>)	-	-

According to the USFWS, the following federally listed threatened, endangered, or candidate species of wildlife may occur in the area (see the species list in Appendix VII, Wildlife Specialist Report).

**TABLE 3-8
 FEDERALLY LISTED WILDLIFE SPECIES WITHIN THE MOUNTAIN LINE PROJECT AREA**

Species	Status	Potential Effect
Greater sage-grouse (<i>Centrocercus urophasianus</i>) Columbia Basin Distinct Population Segment (DPS)	Candidate	None. No suitable habitat.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>) Western U.S. DPS	Threatened	None. No suitable habitat.

The USFWS list also identified 23 migratory birds of concern that may be affected by the project. These are listed in the table below.

**TABLE 3-9
 MIGRATORY BIRDS OF CONCERN POTENTIALLY LOCATED IN THE MOUNTAIN LINE PROJECT AREA**

Species Name	Bird of Conservation Concern	Seasonal Occurrence in Project Area
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Yes	Year-round
Brewer's sparrow (<i>Spizella breweri</i>)	Yes	Breeding
Calliope hummingbird (<i>Stellula calliope</i>)	Yes	Breeding
Cassin's finch (<i>Carpodacus cassinii</i>)	Yes	Year-round
Eared grebe (<i>Podiceps nigricollis</i>)	Yes	Breeding
Ferruginous hawk (<i>Buteo regalis</i>)	Yes	Breeding, Year-round
Flammulated owl (<i>Otus flammeolus</i>)	Yes	Breeding
Fox sparrow (<i>Passerella iliaca</i>)	Yes	Breeding
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Yes	Year-round
Green-tailed towhee (<i>Pipilo chlorurus</i>)	Yes	Breeding
Lewis's woodpecker (<i>Melanerpes lewis</i>)	Yes	Breeding
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Yes	Breeding

Species Name	Bird of Conservation Concern	Seasonal Occurrence in Project Area
Long-billed curlew (<i>Numenius americanus</i>)	Yes	Breeding
Olive-sided flycatcher (<i>Contopus cooperi</i>)	Yes	Breeding
Peregrine falcon (<i>Falco peregrinus</i>)	Yes	Breeding
Rufous hummingbird (<i>Selasphorus rufus</i>)	Yes	Breeding
Sage thrasher (<i>Oreoscoptes montanus</i>)	Yes	Breeding
Short-eared owl (<i>Asio flammeus</i>)	Yes	Year-round
Swainson's hawk (<i>Buteo swainsoni</i>)	Yes	Breeding
Upland sandpiper (<i>Bartramia longicauda</i>)	Yes	Breeding
White-headed woodpecker (<i>Picoides albolarvatus</i>)	Yes	Year-round
Williamson's sapsucker (<i>Sphyrapicus thyroideus</i>)	Yes	Breeding
Willow flycatcher (<i>Empidonax traillii</i>)	Yes	Breeding

None of these birds are federally listed or have habitat ranges specific to the project area.

Affected Environment/Environmental Consequences

Any wildlife located in the 40-foot temporary construction easement and other easement areas that comprise the project area may be temporarily impacted during construction by noise, vehicle traffic, limited tree felling, ground disturbance, and other construction-related actions. Although bird species may be permanently impacted by tree felling and terrestrial species may be permanently impacted through a loss of habitat, the area that will be impacted has previously been disturbed and is of lower quality habitat than other areas of the watershed. The affected environment includes the existing pipeline alignment and access road, the locations of road widening and disturbance, and the staging areas.

This project has the potential to have the following environmental consequences on wildlife:

- Temporary disturbance of habitat located in the project area. Noise and activity associated with construction may cause wildlife to use other areas of the forest and avoid the active parts of the project area during construction. This is expected to be temporary and of short duration.
- Felling of vegetation and trees. The felling of some trees is anticipated during construction, reducing the amount of wildlife habitat immediately adjacent to the road. This is a minor impact because there are large areas of undisturbed habitat outside the project area. Felling of trees will be avoided to the maximum extent practicable. The sites will be reseeded and replanted after construction; however, there may be associated temporal impacts during regrowth.

Effects of Proposed Alternative

Direct effects on wildlife from replacing the pipeline include habitat disturbance, potential habitat loss, behavioral modification, area avoidance, and stress from increased activities in the project area. Indirect effects could include the continued impact to riparian habitat and stream flows from the existence of the pipeline. Cumulative effects could potentially be an issue if the impacts of repairs and ongoing operation and maintenance of the Mountain Line are considered in conjunction

with current use of the watershed for recreation, which would increase disturbance and stress to wildlife.

Effects of No Action Alternative

If the pipeline is not replaced, there would be no direct effects to wildlife. There would be indirect effects from allowing the current conditions to continue, with possible impacts on the aquatic and riparian environment. The continued leaking of water from the pipe and associated erosion are long-term and permanent impacts that would worsen over time, and necessitating increased repair efforts. In addition, water would continue to be withdrawn from the streams at a higher volume than required to compensate for the leaking pipeline. These effects are not quantifiable.

Summary of Effects

Although some minor and temporary habitat disruptions may occur during project construction, there would be no significant effects on wildlife from the Proposed Alternative.

There would be no effect from the No Action Alternative.

Fish

The Baker City Watershed is a priority watershed to which the Interim Strategies for Managing Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH) standards and guidelines apply. Several streams in the watershed cross the Mountain Line project area. These include Goodrich Creek, Little Mill Creek, Mill Creek, Little Marble Creek, Marble Creek, Salmon Creek, and Little Salmon Creek. All waterways present within the project area are listed below and shown on Figure 12, Mountain Line Wetlands and Waterways.

**TABLE 3-10
 WATERWAYS PRESENT WITHIN THE MOUNTAIN LINE PROJECT AREA**

Name	Waterway Type	Width¹ (feet)	Linear Feet in Project Area
South Prong Washington Gulch	Seasonal ²	2	49
Unnamed Spring No. 1	Spring	1	56
Middle Prong Washington Gulch	Seasonal	2	82
North Prong Washington Gulch	Seasonal	2	75
Hibbard Gulch	Seasonal	1	71
Little Salmon Creek	Perennial	3	101
Little Salmon Spring	Spring	1	71
Finley Spring	Spring	1	75
Henry Spring	Spring	1	91
Salmon Creek	Perennial	2	108
Camper Spring	Spring	1	56
Marble Creek	Perennial	2	135
Little Marble Creek	Perennial	2	108
Hawk Spring	Spring	1	89
Unnamed Spring No. 2	Spring	1	46
Unnamed Spring No. 3	Spring	1	70
Mill Creek	Perennial	3	177

Name	Waterway Type	Width ¹ (feet)	Linear Feet in Project Area
Little Mill Creek	Perennial	5	105
Bear Creek	Seasonal	2	52
Goodrich Creek	Perennial	8	119
Total			1,736

¹ Stream width at the upstream side of the project area.

² "Seasonal" denotes an intermittent or ephemeral waterway.

Currently, there are numerous cracks and holes in the pipeline. This condition results in substantial leakage from the pipeline, causing water to pool on the road and possibly increase erosion on the steep slopes downhill of the access road/pipeline. This negatively impacts slope stability and could be deleterious to fish health, as it may increase turbidity in the waterways. The cracks in the pipeline also increase water loss from the system; therefore, more water is diverted from the streams than is needed due to water leaking from the pipe. As these cracks continue to leak, pipeline failure is an increasing risk.

The operation of the current system has effects on fish through the diversion of water; however, no new effects would result from the project.

According to the USFWS, the following federally listed threatened, endangered, or candidate fish species may occur in the area (see the species list in Appendix A of Appendix VIII, Fisheries Specialist Report):

**TABLE 3-11
 FEDERALLY LISTED AQUATIC SPECIES THAT MAY OCCUR IN THE MOUNTAIN LINE PROJECT AREA**

Species	Federal Status	State Status	Potential Effect
Bull Trout (<i>Salvelinus confluentus</i>) Columbia River DPS	Threatened	Sensitive Critical	None. No known presence in the stream reaches crossed by the project.

An ORBIC database search in 2015 revealed a total of 19 occurrences of tracked species within a 2-mile radius of the project, including one record of bull trout in Salmon Creek (ORBIC, 2015).

According to StreamNet (2015), bull trout use an approximately 1-mile reach of Salmon Creek, downstream of the confluence with Little Salmon Creek, for spawning and rearing; however, this range does not include the project area. The mapped usage area is located approximately 1.6 river miles (RM) downstream of the pipeline crossing of Salmon Creek and 1.1 RM downstream of the pipeline crossing of Little Salmon Creek (see Figure 13, Mountain Line Project Area Fish Distribution). None of the streams in the project area are included in the designated bull trout critical habitat (75 FR 63898).

The USFS systematically surveyed the distribution and relative abundance of bull trout and other fish in Salmon Creek and part of Marble Creek in 2013 and 2014, by electrofishing 100 meters per kilometer (3,280 feet) of stream upstream of the USFS boundary. Thirteen redband trout were found in Marble Creek and eight redband trout were found in Salmon Creek, all downstream of the project area and outside of the watershed boundary (Howell and Archuleta, 2014). Bull trout and rainbow trout were found near the upper limit of distribution shown on Figure 13, and bull trout were also found at higher densities at the next sampling station approximately 1 kilometer upstream. No fish were found at the third site, 1 kilometer farther upstream, located below the diversion structure at the watershed

boundary; however, there was no flow in the stream channel below the diversion structure at the time of sampling. Thus, it may be inferred that the distribution of bull trout extends upstream in Salmon Creek to within approximately 1 kilometer of the watershed boundary (Howell and Archuleta, 2014). Information used to conclude that the presence of bull trout should not be assumed in this stream reach includes the following:

- USFS surveys found bull trout approximately 1 kilometer downstream of Salmon Creek (outside of the project area).
- USFS surveys did not find any bull trout in the segment immediately below the diversion (the start of the project area). This segment was dry during the survey. The survey occurred in August, during the in-water work window. It is assumed that flows would be similar (non-existent) during construction and that bull trout would not be present.
- Because the nearest bull trout population is assumed to be about 1 kilometer downstream of the project area and plumes of turbidity are expected to have a maximum extent of 500 feet (if water is present), this project would not have direct or indirect water quality effects on bull trout.
- Most of the waterway crossings along the access road do not currently provide fish passage, and it is unlikely that fish regularly use the stream reaches in the immediate vicinity of the project area given the steep gradient, lack of access, and seasonally shallow nature of the waterways at this elevation.

No other federally listed fish species have been identified in the watershed basin or creeks (AP, 2007). Four species of anadromous salmon were extirpated from the Powder River basin by the construction of the Thief Valley Dam in 1932, as well as the construction of the Brownlee, Oxbow, and Hells Canyon Dams on the Snake River (DEQ, 2013). None of the streams in the project area are designated as Essential Fish Habitat or Essential Salmonid Habitat.

Native fish that may be present in the Powder River system include redband trout, rainbow trout, white sturgeon, mountain whitefish, bull trout, mottled sculpin, slimy sculpin, torrent sculpin, shorthead sculpin, Paiute sculpin, northern pikeminnow, chiselmouth, peamouth, longnose dace, speckled dace, redband shiner, largescale sucker, mountain sucker, and bridgelip sucker. Introduced fish that may be present in the watershed include brook trout, lake trout, carp, black crappie, white crappie, largemouth bass, smallmouth bass, and walleye (DEQ, 2013; NWPCC, 2004).

StreamNet (2015) shows redband trout presence but unknown usage in all major streams in the project area but only downstream of the Mountain Line pipeline and access road (see Figure 13, Mountain Line Project Area Fish Distribution). Inland Columbia Basin redband trout is listed as a sensitive vulnerable species in Oregon. Most of the waterway crossings along the access road do not currently provide fish passage, and it is unlikely that resident game fish regularly use the stream reaches in the immediate vicinity of the project area given the steep gradient, lack of access, and seasonally shallow nature of the waterways at this elevation.

There are no Oregon Department of Environmental Quality (DEQ) 303(d) listed streams in the project area or potentially impacted by the project area. The Powder River and Elk Creek are the closest streams to the project area that are on the Oregon Department of Environmental Quality (DEQ) 303(d) list of

impaired streams. These are approximately 2.8 and 0.8 miles from the closest part of the project area, respectively.

Affected Environment/Environmental Consequences

Any fish located in waterways that will be crossed by the project have the potential to be affected by the replacement of the Mountain Line. The affected environment includes not only the stream channel itself but also the riparian corridor, as riparian vegetation filters surface runoff and provides shade, nutrients, and cover for aquatic organisms.

Construction activity at each stream crossing has the potential for the following environmental consequences:

- Erosion of the bank into the streambed. This has the potential to cause increased turbidity and deposit increased fines to the riverbed substrate, which can have deleterious effects on fish located in the project area. BMPs should eliminate turbidity events. If a turbidity event occurs, the maximum extent of the turbidity plume is conservatively estimated to be 500 feet downstream of the project area. Given the gradient in the project area, it is unlikely that there will be turbidity effects upstream of the project area. These environmental consequences will be mitigated through the use of erosion control measures such as silt fencing and straw bales during construction and remediation of impacted areas after construction.
- Temporary disturbance of in-stream fish habitat. It is anticipated that most stream crossings will be dry at the time of construction (during the in-water work window). If water is present during construction, trenching and work site isolation/dewatering will cause a temporary disturbance of in-stream fish habitat. Fish passage will be restored and the site will be fully restored or improved after construction is complete. This disturbance is not likely to exceed a few hours per site. The maximum extent of the turbidity plume, if it occurs, is conservatively estimated to be 500 feet downstream of the project area.
- Felling of trees and riparian vegetation. Felling of trees will be avoided to the maximum extent practicable. Some locations may require the felling of trees, removal of brush, and other riparian vegetation that provides shade, cover, and other habitat benefits for fish. These sites will be expeditiously reseeded and replanted after construction; however, there may be associated temporal impacts during regrowth.
- Death or injury of fish. During in-water work there is potential for fish to become caught in the isolation nets and injured. No fish salvage is planned for this event, and by allowing fish to voluntarily leave the project area during construction, chance of injury is reduced; however, it is still a potential consequence of the Proposed Alternative.

Effects of Proposed Alternative

No impacts to bull trout will occur from this project. Salmon Creek is the only waterway in the project area known to support bull trout, and although the presence of bull trout in Salmon Creek near the project area cannot be ruled out, no impacts to the creek will occur during project construction. The new pipeline will be installed in the existing road fill, above the existing culvert and diversion drain. The existing culvert and stream channel at the Salmon Creek pipeline crossing

will not be disturbed during construction (see attached Design Drawings in Figures 7A and 7B in Appendix VIII, Fisheries Specialist Report). No work below the ordinary high water elevation is necessary at this crossing, and BMPs will be employed to prevent any sediment from entering Salmon Creek.

Additionally, the reach of Salmon Creek immediately downstream of the project area (including the culvert under the road) will be dry at the time of construction, since the City normally exercises its full water right on Salmon Creek during late summer and diverts all available flows at the Big Salmon diversion (McBroom, 2015). Therefore, even if bull trout may be present in Salmon Creek close to the project area during some times of the year, none will be present during the construction period. No direct, indirect, or cumulative impacts to bull trout or other fish species in Salmon Creek will occur as a result of this project.

For streams other than Salmon Creek, direct effects to fish from the Proposed Alternative include potential sedimentation and increased turbidity during construction, as well as behavioral disruption from work area isolation, noise disturbance, and stress. These impacts are temporary and will end when the project is complete. Indirect effects include impacts to riparian vegetation during and after construction. Replacing the Mountain Line would eliminate the leakage from the pipeline and could potentially result in a smaller volume of water diverted from the streams. This effect is not quantifiable. Cumulative effects will be insignificant because recreation does not occur in waterways impacted by the Proposed Alternative. This analysis is not intended to analyze the current operations of the pipeline, only to review the effects of the replacement efforts detailed in the project description. It is unknown how much water savings will occur as a result of the project. It is likely that streams with increased volumes of water will have lower temperatures; however, this effect has not been quantified as a part of this analysis.

The only federally or state-listed species to potentially occur in the project area is redband trout (state-listed as sensitive vulnerable). All work will be completed within the ODFW in-water work window of July 1 to October 31 for all drainages south of Hibbard Gulch, and July 1 to August 31 for all drainages north of and including Hibbard Gulch to minimize disturbance to redband trout (see Appendix III, Endangered Species Act Documentation).

Effects of No Action Alternative

If the pipeline is not replaced, there would be no direct effects to fish. There would be indirect effects from allowing the current conditions to continue, with possible unquantifiable impacts on the aquatic environment. The continued leaking of water from the pipe and associated erosion are long-term, permanent impacts that would worsen over time. Baker City's water quality will be severely degraded if the Mountain Line is not replaced. For example, Baker City currently has a break in the line between Salmon Creek and Little Salmon Creek from a runaway boulder. This has caused days of turbidity issues in the water for all municipal water users. In addition, water would continue to be withdrawn from the streams at a higher volume than required to compensate for the leaking pipeline until repairs could be made. These impacts have not been quantified as a part of this analysis.

Summary of Effects

With proper use of BMPs and site restoration, the Proposed Alternative would have no significant effect on fish.

The No Action Alternative would have continued effects on water quality and quantity that negatively impact fish due to cracks in the pipeline that have caused extensive leakage, increased the water withdrawal requirement from the diversions, and increased erosion and sediment delivery into the streams. The No Action Alternative may have a negative effect on fish due to water loss, but this is not a quantifiable impact and would likely not be significant.

Water Resources (Riparian Habitat and Water Quality)

This section includes riparian habitat and conservation areas (RHCAs), water quality, streamside habitat, floodplains, and water rights. Appendix IX includes the approved Riparian Areas Specialist Report and Appendix X includes the approved Water Quality Specialist Report.

Background

Riparian Habitat Conservation Areas

Several streams in the watershed cross the Mountain Line project area. These include Goodrich Creek, Little Mill Creek, Mill Creek, Little Marble Creek, Marble Creek, Salmon Creek, and Little Salmon Creek, as well as several smaller waterways and springs. All waterways present within the project area are listed on Table 3-10 and are shown on Figure 12, Mountain Line Wetlands and Waterways.

Currently, there are numerous cracks and holes in the pipeline, which results in substantial leakage from the pipeline, causing water to pool on the road and possibly increase erosion on the steep slopes downhill of the access road/pipeline. This negatively impacts slope stability and could be deleterious to fish health, as it may increase turbidity in the waterways. The cracks in the pipeline also increase water loss from the system; therefore, more water is diverted from the streams than is needed due to water leaking out of the pipe.

INFISH defines streams by category, with Category 1 streams defined as fish-bearing, Category 2 defined as non-fish-bearing perennial, Category 3 defined as ponds or wetlands greater than 1 acre, and Category 4 defined as intermittent. RHCAs were developed by the USFS by designating stream buffers as follows (buffers describe buffering for one side of a stream, so for a 300-foot buffer, the total would be 600 feet): 300-foot buffers on perennial fish-bearing streams (Category 1), 150-foot buffers on perennial non-fish-bearing streams (Category 2), 150-foot buffers for ponds and wetlands greater than 1 acre (Category 3), and 100-foot buffers on intermittent streams (Category 4) (USDA, 1995a). See Figure 14, Mountain Line Project Area RHCA Intersections, for streams with RHCA buffers, as well as where the pipeline intersects these RHCA buffers.

Although no bull trout or anadromous fish are known to be located in the immediate project area, numerous RHCA standards relate to this project, because INFISH applies to all native inland fish. Because elements of this project take place within the 300-foot buffer on each side of the

RHCAs, the analysis in this EA represents a detail screen of the proposed action (USDA, 1995a). Based on a cursory geographic information system (GIS) analysis of the USFS RHCA layer and a tree count conducted along the pipeline road (including trees within 20 feet of the road on either side of the road), it appears approximately 158 trees may be within the designated RHCAs. Of those 158 trees, approximately 20 have a diameter at breast height (DBH) of greater than 21 inches. Some of these trees may potentially be felled if avoidance is not possible. Trees will be left on site where felled when possible. No changes to in-stream large woody debris (LWD) are anticipated from the project. If LWD is removed from streams to facilitate construction, it will be replaced once construction of that stream crossing is complete.

Water Quality

The Baker City Watershed includes diversions at the upper reaches of several creeks that ultimately drain into the Powder River. The Powder River is a water quality limited stream with total maximum daily load limits under development. Generally, the Powder River flows north through the Baker Valley, then southeast through the Keating Valley into the Brownlee Reservoir and the Snake River. The total length of the Powder River is approximately 114 miles (DEQ, 2013).

Water quality within the Baker City Watershed is excellent. All waterways present within the project area are shown on Figure 12, Mountain Line Wetlands and Waterways. None of the streams are on the DEQ 303(d) list for any parameters within the watershed. Elk Creek, which is located out of the watershed boundaries, is on the DEQ 303(d) list due to high water temperatures. It was placed on the list in 1998 (DEQ, 2013) (see Figure 15, Mountain Line Project Area 303(d) Listed Streams).

Watershed supply source bacteria testing occurred in the summer of 2013, (before municipal water supply ultraviolet [UV] treatment was in place) when a *Cryptosporidium* outbreak caused the City to sample at each intake location in an attempt to determine the source of the contamination. *Cryptosporidium* is a single-cell parasite spread through fecal contamination. When ingested through drinking water, the primary symptom is acute diarrhea, which, in rare cases, can be life threatening. During the outbreak, the City took direct samples from each diversion location, including the Elk Creek Diversion, Mill Creek, Little Mill Creek, Goodrich Creek Diversion, Little Marble Creek, Marble Springs, Salmon Creek Diversion, and several locations in the City. The cause of the outbreak was not positively identified; however, the species *Cryptosporidium parvum* is commonly found in cattle, although no positive samples from cattle in the area were found (OHA, 2014). The City now treats all municipal water with UV light, a practice that inactivates the parasite and renders it harmless.

Water Supply

Water supply, defined as the volume of water withdrawn from the major and minor sources, varies depending on the time of year. As outlined on Table 3-12, fall through early spring is when the water supply is at its lowest, and spring and early summer is when the water supply is at its highest. The watershed has a substantial amount of water available in late summer because the Goodrich Creek Diversion is used primarily during this time of the year. This water supply originates from stored water within Goodrich Reservoir.

All diversions, with the exception of Goodrich Creek and Elk Creek, flow directly to the Auburn Line (the historic pipeline from the Goodrich Creek Diversion to the Elk Creek settling tank; see Figure 2,

Current System Map) and then to the City reservoir via the Elk Creek settling tank and Elk Creek Line. Water from Goodrich Creek, stored in Goodrich Reservoir, flows directly to the City reservoir via the Goodrich Municipal Aqueduct. Water from the Elk Creek diversion flows through the Elk Creek Line to the Elk Creek settling tank and the City reservoirs. Table 3-12 outlines supply at each diversion.

**TABLE 3-12
 WATERSHED WATER SUPPLY**

Waterway	Water Supply (gpm)			Pipeline	
	Spring	Early Summer High	Fall (October 1 through December 1)	Main Line	Bypass Line
Major Sources:					
Goodrich Reservoir	0	0	0	Goodrich Pipeline	
Little Mill Creek	600	600	200	Auburn Line	Goodrich Pipeline via Marble Creek Pipeline
Big Mill Creek	1,600	1,600	200	Auburn Line	Goodrich Pipeline via Marble Creek Pipeline
Little Marble Creek	300	200	100	Auburn Line	Goodrich Pipeline via Marble Creek Pipeline
Marble Springs	1,500	1,000	400	Auburn Line	Goodrich Pipeline via Marble Creek Pipeline
Salmon Creek	1,500	1,000	200	Auburn Line	
Elk Creek	1,000	1,000	200	Elk Creek Sub Line	
Subtotal	6,500	5,400	1,300		
Minor Sources:					
Camper Springs	0	100	0	Auburn Line	
Henry Springs	0	100	0	Auburn Line	
Finley Springs	0	100	0	Auburn Line	
Little Salmon	0	100	0	Auburn Line	
Subtotal	0	400	0		
Total	0	5,800	1,300		

gpm = gallons per minute

Water Rights

The City of Baker City has a primary certified water right issued by the State of Oregon Water Resources Department (OWRD) for all watershed water sources that have a priority date of 1862 through 1901. This certificate accounts for 28 separate water sources for an allowable flow of approximately 23,590 gpm (52.9 cubic feet per second [cfs]). There is also an additional certified water right for the Powder River for 279 gpm (0.625 cfs). Goodrich Reservoir has a certified water right of 4,817 gpm (10.8 cfs) and a certified water right to store 233.2 acre-feet. The City also has a certified water right for the aquifer storage and recovery (ASR) well that includes 2,364 gpm (5.3 cfs) (AP, 2007). The ASR well groundwater right priority date is 1977.

Floodplains

There are no floodplains within the project area (see Figure 16, Floodplain Map). No impacts are anticipated to occur in floodplains from the Mountain Line Replacement project.

Affected Environment/Environmental Consequences

The affected environment is the 40-foot temporary construction easement and other easement areas. This includes some riparian habitat conservation areas, as listed above, but does not include any floodplains or stream sections with listed fish species. Potential increases in turbidity during construction could temporarily affect water quality in those streams.

Riparian Habitat Conservation Areas

Every perennial stream crossing will occur within the 300-foot buffer required on perennial fish-bearing streams. These crossings will involve disturbance of soil, vegetation, and habitat in the RHCA's.

Construction activity in the RHCA at each stream crossing has the potential to have the following environmental consequences:

- Sediment release into the waterway. It is anticipated that most stream crossings will be dry at the time of construction (during the in-water work window). If water is present during construction activities involving disturbance of the streambanks and streambed, this may cause increased turbidity and deposit fines to the stream substrate, which can have deleterious effects on fish located in the project area. The maximum extent of the turbidity plume, if it occurs, is conservatively estimated to be 500 feet downstream of the project area. Given the gradient in the project area, it is unlikely that there will be turbidity effects upstream of the project area. These environmental consequences will be mitigated through erosion control measures like silt fencing and straw bales during construction, visual turbidity monitoring, and remediation of impacted areas after construction.
- Temporary disturbance of riparian habitat. In areas where stream crossings occur, trenching and work site isolation/dewatering will cause a temporary disturbance of riparian habitat. Fish passage will be restored and the site will be fully restored or improved after construction is complete. Disturbance is not likely to exceed a few hours per site.
- Felling of trees and riparian vegetation. Felling of trees will be avoided to the maximum extent practicable. Some locations may require the felling of trees, brush, and other riparian vegetation that provide shading, cover, and other habitat benefits for aquatic species. The sites will be expeditiously reseeded after construction; however, there may be associated temporal impacts during regrowth. When possible, trees will be left onsite where felled.

Water Quality

The proposed construction will occur along the pipeline alignment and in the existing roadway, and will require work in the stream channel and associated riparian area.

Soil disturbance resulting from excavation and replacement of the pipeline and pipeline crossings of waterways have the potential to cause water quality impacts during construction. It is anticipated that most stream crossings will be dry at the time of construction (during the in-water work window). Environmental impacts may include temporary increases in turbidity, reduction in riparian vegetation, and possible introduction of fuels or other contaminants into the project area if there is a spill. The trench and each stream crossing have the potential for the following environmental consequences:

- Sediment release. Erosion of the bank, soil disturbance caused by excavation, and disturbance of the streambed during construction may cause some release of sediment into the waterway, increasing turbidity and negatively affecting water quality. The maximum extent of the turbidity plume, if it occurs, is conservatively estimated to be 500 feet downstream of the project area. Given the gradient in the project area, it is unlikely that there will be turbidity effects upstream of the project area. This will be mitigated through the installation of erosion control measures like silt fencing and straw bales during construction, visual monitoring of waterborne silt loads, and remediation of impacted areas after construction. Stormwater runoff from the hillsides into trenched areas after construction also has the potential to impact water quality, because vegetation will take time to recover in the area. Vegetative strips on the downhill side of the slope will minimize disturbance from runoff, and in high erosion potential areas wattles may be placed on the uphill side of the slope to prevent stormwater runoff. A 1200-C Erosion and Sediment Control Plan will be prepared to detail these features.
- Felling of trees and riparian vegetation. Felling of trees will be avoided to the maximum extent practicable. Some locations may require the felling of trees, brush, and other riparian vegetation that provides shade, cover, and other habitat benefits for aquatic species. The sites will be expeditiously reseeded after construction; however, there may be associated temporal impacts during regrowth.
- Operation of equipment near waterways increases the risk of fuel or other chemical contaminants entering the waterways. This risk will be minimized through the use of biodegradable lubricants in equipment operating in or near the waterways, maintaining a spill kit on site, and placing fueling and equipment storage locations 150 feet from the waterways whenever practicable. It is anticipated that most stream crossings will be dry at the time of construction (during the in-water work window).

Effects of Proposed Alternative

There may be temporary turbidity increases in streams adjacent to the construction area, and some riparian vegetation would be impacted. Every effort would be taken to avoid impacting riparian habitat. Riparian habitat would be restored after construction in the area is complete.

If the Mountain Line is replaced, direct effects to the RHCA's would include soil disturbance to approximately 4 feet wide and 3 to 5 feet deep as trenches are excavated to place pipe, vegetation

removal, and potential tree/sapling felling. Indirect effects include leaving areas in the stream crossings with temporarily reduced vegetation coverage after construction, which has the potential to cause erosion. Cumulative effects include increased pressure on vegetated riparian habitat areas if vegetation management actions, such as thinning, occur in the watershed in the future.

Temporary direct effects on water quality caused by replacing the Mountain Line include potential increases in turbidity from erosion caused by activities near waterways and the increased risk of a spill of fuel or other contaminants from construction equipment. These impacts are temporary and would end when the project is complete. Indirect effects include impacts to riparian vegetation during and after construction. Repairing the pipeline would eliminate leakage and could potentially result in a smaller volume of water diverted from the streams. Other temporary effects include potential erosion of soil due to stormwater runoff. This impact would be mitigated with vegetative strips, wattles, revegetation methods, and other BMPs that will be detailed in the 1200-C Erosion and Sediment Control Plan. Cumulative effects could potentially be an issue if the impacts of replacing the Mountain Line are considered in conjunction with future vegetation management in the watershed and along the pipeline corridor. This analysis is not intended to analyze the current operations of the pipeline, only to review the effects of the replacement efforts detailed in the project description. It is unknown how much water savings would occur as a result of the project. It is likely that streams with increased volumes of water would have lower temperatures; however, this effect has not been quantified as a part of this analysis.

Effects of No Action Alternative

The No Action Alternative of not replacing the Mountain Line would not cause direct impacts to riparian habitat except for the continuing issues of the leaking pipe that is currently transporting hillside sediment to the streams in some areas.

If the Mountain Line is not replaced, there would be no direct effects to RHCAs. These areas will remain undisturbed. There will be indirect effects from allowing the current conditions to continue, with possible impacts to the RHCAs. The continued leaking of water from the pipe and associated erosion are long-term, permanent impacts that would tend to be cumulative and worsen over time. In addition, water would continue to be withdrawn from the streams at a higher volume than required to compensate for the leaking pipeline.

If the Mountain Line is not replaced, there would be no direct effects on water quality, because there will be no temporary disturbances, increases in turbidity, or potential fuel spills. There will be indirect effects from allowing the current conditions to continue, with possible impacts to water quality, including temperature. The continued leaking of water from the pipe and associated erosion are long-term, permanent impacts that would worsen over time. Baker City's water quality will be severely degraded without replacing the Mountain Line. For example, Baker City currently has a break in the line between Salmon Creek and Little Salmon Creek from a runaway boulder. This has caused days of turbidity issues in the water for all municipal water users until repairs could be made. In addition, water would continue to be withdrawn from the streams at a higher volume than required to compensate for the leaking pipeline. These impacts have not been quantified as a part of this analysis.

Summary of Effects

Because restoration to existing conditions is expected after construction is accomplished, no significant unavoidable impacts are anticipated for water quality or riparian areas. All minor temporary impacts will be mitigated as described in the mitigation portion of this Report.

The Proposed Alternative is preferred because, with proper use of BMPs and site restoration, the Mountain Line replacement would have negligible temporary effects on water quality.

The No Action Alternative would have continued negative effects on water quality and quantity due to cracks in the pipeline that have caused extensive leakage, increased the water withdrawal requirement from the diversions, and increased erosion and sediment delivery into the streams. These impacts are not quantifiable, but are likely to be insignificant; therefore, the No Action Alternative would not have an effect on these resources.

Wetlands

This section discusses wetlands found in the project area. It includes information from the 2015 Wetland Delineation Report for the Mountain Line EA prepared by AP. Seven wetlands and 22 waterbodies were identified within the project area and are shown on Figure 12, Mountain Line Wetlands and Waterways. See the Wetland Delineation Report in Appendix VI for additional details.

Background

The wetland investigation was conducted by Sue Brady, AP biologist, on October 8, 2013. The stream characterization was conducted by Sue Brady on July 25, 2014. Based on the results of site investigations conducted on October 8, 2013, AP confirmed the presence of seven wetland areas totaling approximately 0.097 acre within the project area. Twenty non-wetland water bodies were mapped in the project area during the July 25, 2014, site visit.

Affected Environment/Environmental Consequences

The affected environment is the 40-foot temporary construction easement and other easement areas and any wetlands or waterbodies that intersect with these areas where construction will take place.

Effects of Proposed Alternative

Repairing the pipeline would cause temporary impacts to the seven wetlands, totaling 0.097 acre within the project area, as well as temporary impacts to the 22 waterbodies, totaling 1,736 linear feet in the project area. Temporary impacts associated with construction include excavation of material and accompanying soil disturbance, sediment introduction to waterbodies, and restriction of water flow. Because the pipeline would be buried below ground and the site will be restored after construction, no permanent impacts to wetlands are likely to occur.

Effects of No Action Alternative

Wetlands and waterbodies would not be impacted by the No Action Alternative, because the project would not occur.

Summary of Effects

There would only be temporary impacts in a small portion of the project area and the sites would be returned to pre-construction conditions after pipeline replacement activities are complete; therefore, there would be no significant unavoidable impacts.

Soil and Earth Resources

Background

Soils and Erosion

The watershed primarily consists of rocks of the Permian and Upper Triassic age. In the central part, much of the exposed rocks are sedimentary. A mixture of volcanic rocks, including old basaltic and andesitic lava flows and gabbroic and dioritic intrusive bodies, is found to the north and south. The upper-most parts of the main creeks (north-central part of the watershed) are remnants of glacier-carved cirques. Slopes exceed 35 degrees and lack vegetation. The glacial moraines consist of unconsolidated and poorly sorted deposits of boulders, gravel, sand, and silt from the Quaternary age. The geologic features of the watershed have also been subject to small gold mines and prospects (Baker City, 1991).

There are 38 different soil and rock map units within the Baker City Watershed, 28 of which are found along the Mountain Line project area. Most soils are non-hydric, with the exception of a small area near Goodrich Creek. The vast majority of soil types are moderately deep (20 to 40 inches to bedrock) or very deep (over 60 inches to bedrock) and consist of colluvium, residuum, or glacial till over argillite or granite bedrock. The watershed area soils typically have soil textures of silt loam, loam, or sandy loam with over 35 percent rock fragments (skeletal) by volume, and have volcanic ash incorporated into the soil profile. Soil and rock map units are shown on Figure 17, Mountain Line Project Area Soil and Rock Map Units (Trochlell, 2014; NRCS, 2014).

The following soils occur along the Mountain Line.

**TABLE 3-13
SOIL UNITS OF THE MOUNTAIN LINE PROJECT AREA**

Map Unit Symbol	Map Unit Name
6C	Ateron very stony loam, 2 to 12 percent slopes
7D	Ateron very stony loam, 12 to 35 percent south slopes
9D	Ateron-Roostercomb extremely gravelly clay loams, 12 to 35 percent south slopes
39D	Crackler-Rouen gravelly silt loams, 2 to 30 percent north slopes
39E	Crackler-Rouen gravelly silt loams, 30 to 50 percent north slopes
42D	Derringer-Harlow complex, 12 to 35 percent south slopes

Map Unit Symbol	Map Unit Name
74E	Highhorn-Huntrock very gravelly silt loams, 30 to 50 percent south slopes
87D	Klicker stony silt loam, 12 to 35 percent south slopes
167D	Top-McGarr complex, 12 to 35 percent north slopes
0803CS	Inkler-Twocolor complex, 30 to 60 percent south slopes
0808CN	Bulgar cobbly ashy silt loam, 30 to 60 percent north slopes
0815CS	Muddycreek-Angelbasin complex, 30 to 60 percent south slopes
0817CO	Bucketlake-Marblepoint complex, 30 to 60 percent slopes
7709BO	Bluecanyon-Ironside complex, 15 to 30 percent slopes
7709CS	Bluecanyon-Ironside complex, 30 to 60 percent south slopes
7713AO	Analulu-Vogel complex, 0 to 15 percent slopes
7713CS	Analulu-Vogel complex, 30 to 60 percent south slopes
7714DS	Analulu-Vogel-Rock outcrop complex, 60 to 90 percent south slopes
7717CN	Gutridge-Pasturecreek complex, 30 to 60 percent north slopes
7718DN	Pasturecreek-Gutridge-Rock outcrop complex, 60 to 90 percent north slopes
7725CO	Vandamine-Fruitcreek-Rock outcrop complex, 30 to 60 percent slopes
7727DN	Bordengulch-Angelpeak-Vandamine complex, 60 to 90 percent north slopes
7732DO	Ironside-Analulu-Vogel complex, 60 to 90 percent slopes
7736BO	Gutridge-Threecent complex, 15 to 30 percent slopes
7760CO	Vogel-Ironside-Rock outcrop complex, 30 to 60 percent slopes
7806CO	Angelpeak-Vandamine complex, 30 to 60 percent slopes
9412DO	Angelbasin-Marblepoint-Bucketlake complex, 60 to 90 percent north slopes
9959RO	Typic-Xerorthents, 2 to 12 percent slopes

Hydrophobicity is the inability of soils to absorb waters after a fire. In the watershed, the steepness of the slopes, high organics, and organic ash in surface layers have the potential to indicate hydrophobicity problems. However, the surface layers of the soils are internally well drained due to the 25 percent rock fragments, which help to mitigate the hydrophobicity.

There are inherent features of steep and very steep slopes (30 to 60 percent and 60 to 90 percent) that create conditions that are very different from other areas. Approximately 93 percent of the watershed area is sloped between 30 and 90 percent. The Elkhorns have these characteristics (see Figure 18, Mountain Line Project Area Slopes and Hydrology).

The Elkhorn Mountains are characterized by low precipitation, high natural fertility, and high volcanic ash in surface layers. Erosion is important because it can multiply the after-effects of fire. Erosion is listed at a moderate risk level near the Goodrich Creek intake area in the Source Water Assessment Summary provided by the DEQ (DEQ, 2003). A fire could create an increased risk of landslides; however, well-drained soils are resistant to this and are typically associated with a low transmission of sediments. Additionally, the high volcanic ash content in soils is important to the system to provide a good basis for rapid regrowth after disturbance.

The importance of minimizing soil erosion is critical within the Baker City Watershed and the Mountain Line project area. In the areas within the Mountain Line that are used by animals or humans, there are risks associated with soil erosion. Hunting activities, roads, hiking trails, and

other recreation may create disturbed areas that can provide transportation pathways for sediment into the streams above the diversions. The areas adjacent to stream banks are more sensitive than where surface runoff does not flow directly into streams. Surface erosion risks are highly dependent upon physical and climatic characteristics, including soil type, underlying basalt geology, degree of slope, soils with high infiltration capacity, rainfall intensities, and density of forest canopy or other vegetation. In addition to the limited areas affected by humans and animals, other potential high soil erosion areas would include recent landslides or recent harvest areas where vegetation has not yet re-established. These Zones of Influence, identified as Category A (within 500 feet of a stream upstream of a diversion) are sensitive areas that must receive increased attention for stabilization and minimizing soil erosion from all potential sources.

Minerals and Mining

Mining claims have been maintained on some properties, but there has been little or no production for decades. A search of BLM records in the LR2000 system for the following locations was conducted: Meridian 33 (Willamette Meridian), T8S, R38E, Sections 33, 34, and 35; T9S, R38E, Sections 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24, 25, 26, and 36; and T9S, R39E, Sections 7, 17, 18, 19, 20, 29, 30, and 31. There were a total of six unique active claims within the watershed boundaries. The mining claims on Marble Creek are owned by Blue Mountain Lime Company.

There are several test mine pits (likely for gold) throughout the watershed that are largely overgrown and historical in nature. The Oregon Department of Geology and Mineral Industries (DOGAMI) identified a gold placer operation within the watershed boundary that was exempt from the permitting process because the site was less than 5 acres and produced less than 5,000 cubic yards of material in any 12-month period. The contact is Paul Malstrom for the site located in T9S, R39E, Section 32. A check of LR2000 on September 4, 2014, indicated all mining claims held by Paul Malstrom are closed. The DOGAMI file was closed due to inactivity in 2005.

There are two larger mines in the watershed. One historic gold lode mine is the Stub Mine, located in T9S, R39E, Sections 20 and 29, W.M. It was inventoried in 1968 but did not appear active, and there was no production information. However, a mine tunnel is described as "several hundred feet long," which would indicate there may be waste rock dumps at the surface. No mine drainage was described. Even with mine waste piles with no activity at the surface, the potential for sediment release from these piles is low because the site would have self-reclaimed since the 1960s. There was no current owner listed. It is not in a drainage from which the City takes water and it lacks processing facilities. It has not operated for several decades and water quality impacts are negligible and ever decreasing (Baker City, 1991).

The larger mine is the Monarch Marble Mine, which is located in T9S, R38E, Sections 13 and 14, W.M. This was the only large scale operation in the watershed. It produced limestone from 1958 to 1965 without "any noticeable detrimental effect on the water quality" (Baker City, 1991). According to the best records available, a decommissioning of the quarry (in later years called the Marble Creek Quarry) appears to have occurred in 1992. All structures, including scaffolding, storage tanks, and buildings, were removed. The Marble Creek Quarry location can be seen on Figure 7, Mountain Line Project Area Vegetation (includes mines and invasive species). It is on the east side of the watershed, approximately in the center and is the largest watershed mine.

Affected Environment

The affected environment is the 40-foot temporary construction easement and other easement areas. In some places this may include small former mining test pits and steep soil types. There are no large former mines next to portions of the Mountain Line to be replaced except the section near the marble quarry, which has already been replaced. Erosion of soil may affect the environment.

Effects of Proposed Alternative

Soil erosion is a potential direct impact of the pipeline repair. In sections of the project area where the Mountain Line is located on the edge of a steep slope, the trench excavation has the potential to cause material to fall down the slope, thus creating the process of erosion. With silt fencing, buffering, and other mitigation tools, this effect is expected to be controllable. No indirect effects are anticipated. Cumulative effects include increased erosion from construction and recreation. This effect is likely to be insignificant and is not quantifiable because the amount of erosion caused by hunters and those recreating in the project area is unknown.

Effects of No Action Alternative

The No Action Alternative would allow the current soil erosion from the leaking pipeline to continue to occur. This condition would not be mitigated and would continue to transport silt to waterbodies. This effect is not quantifiable and is likely to be insignificant.

Summary of Effects

No significant unavoidable impacts are anticipated for the Proposed Alternative. Erosion is anticipated to be a minor and temporary impact that will be mitigated to the fullest extent possible.

There would be no significant effects to soil or erosion from the No Action Alternative.

Road Access and Control (Inventoried Roadless Area)

The following includes a discussion of the inventoried roadless area, access issues, any traffic issues, and impacts on the transportation system. For more information see the Inventoried Roadless Area Specialist Report in Appendix XI.

Background

Entry to the watershed is highly restricted to recreational users. Hikers are allowed on developed USFS trails located on the ridges on the west boundary of the watershed. No camping is permitted. Hunters are allowed into the watershed during deer and elk seasons if they obtain an entry permit from Baker City. The City issues permits to hunters with valid tags. Tags are good for the individual plus one companion only during the specific season. The Public Works Department keeps those records. Tags are issued only if the fire danger is low enough. Less than 10 percent of SWMU hunters seek to use the watershed for hunting. Camping is not permitted for hunters. With the exception of USFS Road 6510, which bisects the watershed and is open to the public, motorized vehicles are not allowed within watershed boundaries. Enforcement of the restrictions against all-terrain vehicles (ATVs) is difficult (see Figure 9, Mountain Line Project Area Inventoried Roadless

Areas). To deter hunters from bringing vehicles into the watershed, the City offers the service of hauling an animal out of the watershed if the hunter brings it to the road. Non-point source impacts from recreation could include erosion of the road, fires, and impacts to water quality through improper use.

Baker City Ordinance No. 3273, which prohibits entry to the watershed, was updated in 2007 (as provided by Oregon Revised Statutes 448.305 and 448.320). The current regulation is provided in Baker City Municipal Code Section 130.11, shown below. This ordinance makes it unlawful for any person to enter City-owned lands in the watershed without permission from the City Manager and USFS.

Federal and state regulations apply to the watershed as well. Secretary's Regulation 36, CFR 261.53 (a), and Forest Order Number 233, signed September 1, 1991, was applied by the USFS to all national forest lands within the City's watershed boundaries to prohibit public entry, except by permission of the USFS. Appendix J of this order notes that the Baker City Watershed is closed year-round to all public access, except for entry routes designated below (Baker City, 1991).

1. BAKER CITY WATERSHED The area east of the Elkhorn Crest from Goodrich Creek to Elk Creek beginning at Marble Pass Trailhead and proceeding northwest along the top of the Elkhorn ridge to Elkhorn Peak; thence north and east along the ridge top between Pine Creek and Goodrich Creek to the Wallowa-Whitman National Forest boundary at the Pipeline Road 7140200; thence south and east along the Pipeline Road, crossing Marble Creek Road 6510, to a gate near Little Salmon Creek; thence east, south and west following the section lines between Sections 20 and 17, 21, 29 to Section 30; thence south along the line between Sections 30 and 29 to Elk Creek; thence southwest along a fence line on the ridge in Section 31 to Road 7220088 on Elkhorn Ridge; thence northwest along Elkhorn Ridge to Marble Pass Trailhead, the point of beginning.

OPEN ROUTES: Road 6510, and 7140220 to the Road Closed sign. (Baker City, 1991)

Within the watershed, there are no major roads that are publically accessible. Except for Marble Creek Road (Road 6510), all existing roads are gated and used by the City water system specialist and a few other authorized users. Marble Creek Road is open to the public to allow access to the Elkhorn Crest National Recreation Trail southwest of the watershed. The area is signed to warn the public to stay on the road to protect the watershed.

There are no plans to develop future roads within the watershed and no new roads will be constructed as a result of this project. If roads are constructed, they will be created with care to minimize impacts to water quality. Select roads are available for wildfire control and other forest health purposes when needed (Baker City, 1991).

History of Inventoried Roadless Areas

There are two inventoried roadless areas generally adjacent to the project area: the Twin Mountain Inventoried Roadless Area and the Marble Point Inventoried Roadless Area. Both were identified in the Wallowa-Whitman National Forest Review of Areas with Wilderness Potential, dated March 2010. An FEIS was completed in 2000 (USDA, 2000). Both areas are Inventoried Roadless Areas and are, therefore, protected under the USFS 2001 Inventoried Roadless Area Conservation Rule (USDA, 2001). The Roadless Rule was adopted in January 2001 to protect the social and ecological values

and characteristics of inventoried roadless areas from road construction, reconstruction, and certain timber harvest activities. Inventoried roadless areas provide large, relatively undisturbed blocks of important habitat for a variety of terrestrial and aquatic wildlife and plants; contribute to healthy watersheds and clean drinking water; and provide extensive opportunities for outdoor recreation and tourism. The Twin Mountain Inventoried Roadless Area contains approximately 57,730 acres of USFS land and the Marble Point Inventoried Roadless Area contains 7,180 acres of USFS land. Both inventories list the Baker City Watershed as a special use.

Both inventoried roadless areas contain patented mining claims, private land, and associated access roads. The Twin Mountain Inventoried Roadless Area is credited with 200 mining claims, and the Marble Point Inventoried Roadless Area lists the Stub Mine and the "old Minersville district" as mineralized areas. Private land is listed as 1,300 acres for the Twin Mountain Inventoried Roadless Area and 168 acres for the Marble Point Inventoried Roadless Area. Other uses common to both inventoried roadless areas include hiking, hunting, fishing, sightseeing, and limited motorized use. Additionally, selected portions of both inventoried roadless areas are open to cattle grazing.

The eastern borders of the inventoried roadless areas generally follow the Mountain Line access road, which is more or less coincident with the municipal water line. Although it appears the inventoried roadless areas' boundaries were intended to match the access road, there are some minor areas where the Baker Mountain Line pipeline and/or access road intersect the inventoried roadless areas (see Figure 9, Mountain Line Project Area Inventoried Roadless Area).

Approximately 1.8 acres of the existing 20-foot right-of-way and maintenance easement appear to intersect the inventoried roadless area. The area increases to approximately 2.3 acres for the 40-foot temporary construction easement. This EA considers impacts to the entire 2.3 acres of the 40-foot temporary construction easement. It should be noted that exact legal boundaries of the roadless area are unclear, as AP was not provided with actual survey data to substantiate the boundary and the boundary was determined through a mapping exercise. Representatives of the USFS confirmed that the inventoried roadless areas were intended to border the pipeline road and this overlap is a result of imprecise mapping. The USFS is working to address this issue, but for the purposes of this project the intersection area will be considered as the area of affect.

Affected Environment/Environmental Consequences

The affected environment includes the area where the Twin Mountain Inventoried Roadless Area and the Marble Point Inventoried Roadless Area intersect the project area. Construction vehicles will be driven in the inventoried roadless areas but only along the pipeline route at the extreme edge of the roadless areas. Only the existing road and 40-foot temporary construction easement where the inventoried roadless areas intersect the project area will be affected, the rest of the inventoried roadless areas will remain intact.

There are an estimated 876 trees within the 40-foot temporary construction easement along the entire pipeline road. Of these, an estimated 115 have a DBH greater than 21 inches. Some of these may be located in the portion of the inventoried roadless area that is mapped to overlap with the Mountain Line.

No new roads will be constructed and there will be no permanent change in road coverage. Within the designated inventoried roadless areas, there will be approximately 2.3 acres of both temporary

and permanent impacts. This will only result in minor temporary impacts to any existing inventoried roadless area characteristics in the project area. The intensity of the impact is considered medium to low because the impacts to the inventoried roadless areas are mostly temporary, cover a small area, and generally improve the condition of the environment, which is currently negatively impacted by the leaking pipe. The permanent impact will be the felling of trees in the inventoried roadless areas if it cannot be avoided. When possible, trees will be left on site in the general area where felled.

Work within the inventoried roadless areas has the following potential environmental consequences:

- Vehicles in inventoried roadless areas. To replace the pipeline and reconstruct the road, it will be necessary for vehicles to operate in inventoried roadless areas, although the vehicles will use the existing road. Vehicle use is a short duration impact. This increased use could cause erosion and may have a temporary effect on inventoried roadless area conditions.
- Excavation and replacement of the pipeline. This work will require earthmoving equipment and ground disturbance, which could cause erosion. All material will be replaced, and the road will be returned to preconstruction conditions. Excavation is a short duration impact; actual impacts will occur only during construction and the period of regrowth of the vegetative community. All existing roadless characteristics will be maintained or restored after the completion of the project.
- Potential tree felling. There is the potential for trees to be felled within the inventoried roadless area in order to complete the project. This will be performed in a way as to cause the minimal amount of effect on the surrounding area as possible, and all necessary approvals from the USFS or BLM will be obtained before trees are felled. This could potentially reduce habitat near the road. There are an estimated 876 trees within the 40-foot temporary construction easement along the entire pipeline road. Of these, an estimated 115 have a DBH greater than 21 inches. Using USFS GIS mapping for a cursory review, of the 876 trees counted within the 40-foot temporary construction easement, 199 appear to be within the inventoried roadless area. Of these, only 40 appear to be greater than 21 inches DBH. It is possible that these larger trees are all outside of the area where the inventoried roadless area intersects the project area, but extra care will be taken during construction to avoid impact to these trees. Felling trees is a medium-duration impact, because it will take several years for vegetative cover to be restored.
- Effects to wilderness characteristics. Because the inventoried roadless area is a wilderness area, it should embody the wilderness characteristics of the Wilderness Act of 1964 including:
 - "(1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
 - "(2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
 - "(3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and
 - "(4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value" (Wilderness Act, 1964).

The existing wilderness characteristics of this inventoried roadless area are diminished due to the presence of a road and pipeline located in the area. Construction of the project may temporarily affect the opportunities for solitude in the location of the road; however, there are adjacent less-disturbed areas with higher quality wilderness characteristics than the project area. There will be no permanent impacts to wilderness characteristics because no new roads are being built; only the pipeline is being replaced.

Effects of Proposed Alternative

To accommodate the construction work, there is potential for some tree felling, removal of other vegetation, and some slopes will be cut back. Tree and vegetation removal would be minimized to the maximum extent practicable. Cut slopes will be stabilized and reseeded so appropriate vegetation and stable slopes result.

Reconstruction work would also generate noise, dust, and equipment exhaust. However, areas disturbed by the work would be small, and the amount of machinery would be limited because of the limited work areas available. Work days would be limited and machinery would be equipped with standard noise-limiting devices such as mufflers.

Impacts would be temporary and controlled. Access by vehicle to the inventoried roadless area would remain restricted and only necessary vehicles would be used for the pipeline replacement work.

Direct effects on the inventoried roadless areas as a result of the Proposed Alternative include temporary effects to roadless conditions including vehicles in the inventoried roadless areas, noise, dust, exhaust, presence of construction workers, disturbance of wildlife, disruption of some wilderness characteristics, and displacement of recreational opportunities. Permanent direct effects may include the felling of trees and the removal of other vegetation, and some uphill slopes would be cut back to accommodate the construction work, affecting the overall aesthetics of the inventoried roadless areas within the project area. Tree and vegetation removal would be minimized to the extent practicable.

During construction, indirect effects to the inventoried roadless areas from the Proposed Alternative may include effects to inventoried roadless area conditions from construction activities in adjacent construction areas. Once completed, the replacement of the pipeline would have indirect positive effects on inventoried roadless areas, as the access road would be built to a higher-than-existing standard that would mitigate mud and wet spots and assure that stormwater, including spring snowmelt runoff, drains away from the road in a more stable fashion with less potential for catastrophic erosion points. Additionally, a reliable, properly operating pipeline would minimize pipeline maintenance work and reduce the overall impact on inventoried roadless areas from the intrusion of maintenance activities.

The cumulative effects of the Proposed Alternative could include impacts to inventoried roadless areas, conditions such as disturbance to recreation and wildlife from the ongoing operation and maintenance of the pipeline, as well as existing use of the project area for recreation.

Effects of No Action Alternative

If the No Action Alternative is implemented and the Mountain Line is not replaced, the result would be continued degradation of road conditions due to the leaking of the pipes, but vehicles would be kept out of the area except for routine maintenance visits and spot repairs, when required.

If the pipeline is not replaced, there would be no direct effects to inventoried roadless areas. There would be indirect effects from allowing the current erosion to continue, with possible impacts on the integrity of the road. The continued leaking of water from the pipe and associated erosion is a long-term, permanent impact that would worsen over time. These impacts are not quantifiable and are likely to be insignificant.

Summary of Effects

The Proposed Alternative is preferred. When reviewing the Mountain Line pipeline and access road for impacts to the Wallowa-Whitman National Forest, the Twin Mountain Inventoried Roadless Area, and the Marble Point Inventoried Roadless Area, the following information was considered to determine the effects:

- The Baker Mountain Line has been in continuous operation (in various forms) since 1862.
- No modifications of the general operation and use of the watershed will result from the replacement work.
- Previously replaced sections of the Baker Mountain Line and the associated access road provided an improved road surface with positive drainage.
- The intersection of the Baker Mountain Line's 40-foot temporary construction easement and inventoried roadless areas is estimated at 2.3 acres, representing about 0.02 percent of inventoried roadless areas within the Baker City Watershed.
- Permissible uses in inventoried roadless areas include hiking, fishing, hunting, mining, ATV travel, and access to private land holdings. Most of these uses do not apply to the Baker City Watershed, however, since public access is restricted.
- Approximately 10,000 residents and 590 commercial users rely on the Baker City Watershed for municipal water. The project is necessary to protect the public health and safety of these users.

When considering the above information, it was determined that the Proposed Alternative would have no significant long-term adverse effects to the Twin Mountain Inventoried Roadless Area or Marble Point Inventoried Roadless Area.

The No Action Alternative would have no direct effect on inventoried roadless areas, but insignificant, indirect effects may occur from allowing the current erosion to continue and potentially worsen in the future.

Recreation and Visual Aesthetics

This section discusses recreation opportunities and visual aesthetics in the project area and potential effects to these features.

Background

While there are many opportunities for recreation in the Elkhorn Mountains, few are specific to the project area. People are allowed into the watershed on a very limited basis. However, the maximum number of people allowed (City permit holders and one guest) has reached 500 in previous years. Hikers are allowed to use one trail that traverses the watershed, and Marble Creek Road is open to the public to allow access to the Elkhorn Crest National Recreation Trail southwest of the watershed. The area is signed to warn the public to stay on the road to protect the watershed.

Visual impacts are based not only on the resources themselves, but also on the viewers of those resources. Viewer responses are evaluated based on exposure, frequency, and sensitivity. Viewer exposure considers the number of viewers, duration of view, viewer distance, etc. Frequency is based on the number of times a viewer sees the view. Viewer sensitivity is dependent largely on the type of viewers and the scenic integrity of the landscape. The process is described in the U.S. Department of Transportation, Federal Highway Administration "Visual Impact Analysis for Highway Projects," published in 1988 (FHWA, 1988).

Affected Environment/Environmental Consequences

The impact to visual aesthetics and recreation would be in the 40-foot temporary construction easement and other easement areas. These impacts would be temporary, would occur for the duration of construction, and would be negligible. Exposure is limited to the 500 people maximum per year who are legally allowed to enter the watershed, frequency would be limited to 3 months of each year when construction could occur, and sensitivity is low because the landscape is already marked with a road and materials related to the Mountain Line.

Effects of Proposed Alternative

The replacement of the Mountain Line would temporarily create visual impairments in the form of trucks and construction vehicles disturbing the view for anyone allowed to be in the watershed while the project is occurring. The project would have no impact on the visual environment following construction, because the pipeline would be buried and any repaired diversion structures are pre-existing.

Effects of No Action Alternative

The No Action Alternative would allow the views in the watershed to remain free of construction vehicles; however, exposed areas of the pipe would remain as visual impairments. There would be no effect if the No Action Alternative is selected.

Summary of Effects

Current and potential visual and aesthetic qualities have been evaluated, and it was concluded that construction would temporarily impact the small percentage of the population using the watershed for recreation during the project, but these effects are outweighed by the permanent effects that are beneficial, including a safer road, less erosion, and less impeded views. Therefore, the Proposed Alternative would have no significant unavoidable impacts for visual aesthetics.

The No Action Alternative would have no effects on visual and aesthetic quality.

Air Quality

This section discusses the current and potential impacts on air quality, noise, and artificial lighting.

Background

Currently, the project area has good air quality conditions. The following portion of this Report discusses how these conditions may be temporarily affected by the construction associated with replacing the Mountain Line.

Air pollution in the U.S. is regulated through both national and state regulatory programs that establish ambient air quality standards and rules designed to achieve those standards through the regulation of emission sources. It is expected that emissions from construction equipment would be produced during construction.

The U.S. Environmental Protection Agency (EPA) has promulgated New Source Performance Standards to regulate emissions from specific sources of criteria pollutants and greenhouse gases. Due to the acute and chronic health impacts associated with hazardous air pollutants, the EPA has promulgated both source and pollutant-specific National Emission Standards for Hazardous Air Pollutants, a subset of which are referred to as Maximum Achievable Control Technology standards. The EPA has also promulgated construction permitting (New Source Review) and operation permitting (Title V) programs for the largest stationary sources of air pollutants. The EPA regulates on-road mobile sources (e.g., diesel trucks).

The CEQ's Regulations for Implementing the Procedural Provisions of the NEPA are contained in Title 40 Part 1500-1508 of the CFRs. Per these regulations, the consideration of an impact's significance requires an understanding of both context and intensity of the impact. The emissions from the construction of this project are expected to be well below regulatory limits and are not expected to meet the impact significance threshold. Baker County is not located in a DEQ non-attainment area for air quality and EPA Air Quality Index for Baker County was 94.9/100 for 2014.

Affected Environment/Environmental Consequences

The affected environment includes areas where construction vehicles would be located. This includes the air above the 40-foot temporary construction easement and other easement areas.

Effects of Proposed Alternative

During construction, localized air quality may be negatively impacted from additional emissions from vehicles; these emissions would be well below any regulatory limits. This is a direct effect. No indirect or cumulative effects are likely to occur.

Effects of No Action Alternative

The No Action Alternative would have no effects on air quality.

Summary of Effects

The effects of the Proposed Alternative are temporary and minor but are, to some extent, unavoidable impacts of construction work. No significant impacts to air quality are anticipated as a result of this project.

Climate Change and Sustainability

The proposed action would affect 78.0 acres of USFS managed lands within the 84.4-acre project area boundary. Tree felling in this project is expected to be incidental only as the project would be designed to avoid felling trees to the maximum extent possible. This scope and degree of change would be minor relative to the amount of forested land in the watershed as a whole. Climate change is a global phenomenon because major greenhouse gasses (GHG) mix well throughout the planet's lower atmosphere (IPCC, 2013). Considering emissions of GHG in 2010 were estimated at 49 ± 4.5 gigatonnes globally (IPCC, 2014) and 6.9 gigatonnes nationally (EPA, 2015), a project of this magnitude makes an infinitesimal contribution to overall emissions. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to GHG and climate change would be negligible.

In addition, because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global GHG and climate change would also be negligible.

The Intergovernmental Panel on Climate Change (IPCC) has summarized the contributions to climate change of global human activity sectors in its Fifth Assessment Report (IPCC, 2014). In 2010, anthropogenic (human-caused) contributors to GHG emissions came from several sectors:

- Industry, transportation, and building - 41 percent
- Energy production - 35 percent
- Agriculture - 12 percent
- Forestry and other land uses - 12 percent

There is agreement that the forestry sector contribution has declined over the last decade (IPCC, 2014; Smith et al., 2014; FAOSTAT, 2013). The main activity in this sector associated with GHG emissions is deforestation, which is defined as removal of all trees, most notably the conversion of forest and grassland into agricultural land or developed landscapes (IPCC, 2000).

This municipal waterline replacement does not fall within any of these main contributors of GHG emissions. Forested land will not be converted into a developed or agricultural condition.

Cultural and Historic Resources

The following describes and summarizes archaeological and cultural resources within the 40-foot temporary construction easement and other easement areas, identifies potential impacts to these resources, and identifies mitigation measures to minimize those impacts. An impact will be considered significant if it degrades, threatens, or eliminates archaeological, cultural, or historic features beyond threats that existed prior to implementation of the project and cannot be mitigated.

In June and July 2014, AP, utilizing a registered professional archaeologist, conducted a cultural resource survey for the City's proposed municipal pipeline replacement. The survey was implemented at the request of Michelle Owen, Public Works Director. The land status for the project area inventoried is federal (both USFS and BLM) and private.

Cultural resource sites were located; however, based on avoidance strategies and eligibility determinations, a determination of "no historic properties adversely affected" was made, pursuant to 36 CFR 800.

Background

Historic Preservation Criteria

The traditional cultural significance of a historic property is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

One way historic properties can be preserved is through listing in the National Register of Historic Places (NRHP). This list, authorized under the National Historic Preservation Act of 1966 (NHPA) and administered by the National Park Service, is intended to "coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources" (NPS, 2002).

To be considered eligible, a property must meet the NRHP Criteria for Evaluation. This involves examining the property's significance, age, and integrity. Significance involves consideration of whether the property is associated with events, activities, or developments that were important in the past; with the lives of people who were important in the past; with significant architectural history, landscape history, or engineering achievements; or if the property has the potential to yield information about our past through archeological investigation. Age and integrity involve consideration of whether the property is old enough to be considered historic (generally at least 50 years old) and whether it still looks much the way it did in the past (NPS, 2002).

Specifically Required Disclosures

National Historic Preservation Act

Heritage surveys have been completed. State Historic Preservation Office (SHPO) consultation was conducted under the Programmatic Agreement among the USFS Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation, and SHPO regarding Cultural Resource Management on National Forests dated 2004. Sites found Unevaluated or Eligible are protected within the Mountain Line project area. Heritage resources would not be affected by proposed activities under any action alternative; therefore, there would be no effect to any historic property listed in or eligible for the NRHP. A finding of "no historic properties adversely affected" was determined (Project Record).

Consultation with Indian Tribes/Protection of Treaty Resources

Potentially affected tribes were contacted during the analysis process (see Section 1, Public Involvement, Consultation, and Coordination).

Certain rights and privileges were reserved by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Confederated Tribes of the Warm Springs Reservation, and Nez Perce Tribe (NTP) by virtue of the treaties of 1855. These treaties resulted in cession by the tribes to the United States of a large territory that includes approximately two-thirds of what is now the Wallowa-Whitman National Forest. The treaties provide that the tribes will continue to have the rights of taking fish in streams running through and bordering the reservations and at all other usual and accustomed stations in common with other citizens of the United States. Further, the tribes retain the right of erecting suitable or temporary buildings for fish curing as well as the privilege of hunting, gathering roots and berries, and pasturing stock on unclaimed lands. These rights remain unaffected and were considered in the development of this project.

Applicable Regulations

National Historic Preservation Act

Section 106 of the NHPA requires review of any project funded, licensed, permitted, or assisted by a federal agency for impact on significant historic properties. The agency must allow the applicable SHPO and the Advisory Council on Historic Preservation to comment on a proposed project. During the review process, the agency must determine if historic properties exist within the project area. If so, the agency must determine the effects on those properties and seek ways to avoid or reduce any negative effects. In the case of the Mountain Line Replacement project, the USFS is the lead federal agency that will initiate Section 106 consultation with SHPO.

Tribal consultation is required in all steps of the Section 106 process when an undertaking by a federal agency may affect historic properties that are (1) located on tribal lands, or (2) when any Native American or Native Hawaiian organization attaches religious or cultural significance to the historic property, regardless of the property's location (NHPA, 1966).

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) provides a process for museums and federal agencies to return certain Native American cultural items, including human remains, funerary objects, sacred objects, or objects of cultural patrimony, to lineal descendants and culturally affiliated Native American and Native Hawaiian organizations. The NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and tribal lands, and penalties for noncompliance and illegal trafficking (NAGPRA, 1990).

Archaeological Resources Protection Act of 1979

The Archaeological Resources Protection Act of 1979 (ARPA) was enacted "to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals" (ARPA, 1979).

Agency and Tribal Consultation

In order to aid in the understanding of potential concerns, the USFS has coordinated with representatives of the following state and tribal offices to discuss the project.

State of Oregon

The USFS sent a copy of the Cultural Resources Inventory Report to SHPO on May 22, 2015. Cultural resource sites that were unevaluated and not eligible for the NRHP were reported. SHPO and the USFS communicated regarding survey of private lands and previously determined site eligibility. SHPO acknowledged that survey was complete, but requested that four sites be considered unevaluated rather than not eligible. With this recommendation, however, project determination remains "no historic properties adversely affected." Cultural resource sites in the project area will be avoided entirely or will be impacted only within the existing disturbance footprint from original road and pipeline construction.

Tribal

The USFS sent a copy of the Cultural Resources Inventory Report to the CTUIR and NPT on May 22, 2015.

The project was presented at the following consultation meetings:

- October 13, 2015 - USFS and CTUIR Wildlife and Cultural Committees/Program of Work Staff Meeting
- July 10, 2015 - USFS and CTUIR Natural Resource Committee/Program of Work Staff Meeting
- February 11, 2015 - USFS and NPT Staff/Program of Work Staff Meeting
- September 19, 2014 - USFS and CTUIR Board of Trustees/Government-to-Government Meeting
- July 15, 2014 - USFS and CTUIR Wildlife and Cultural Committees/Program of Work Staff Meeting
- June 4, 2014 - USFS and CTUIR Natural Resource Committee/Program of Work Staff Meeting

No concerns about the project were expressed by the tribes.

Affected Environment

The area of potential effect (APE) is located west of Baker City on the eastern slopes of Elkhorn Ridge, Baker County, Oregon. The legal description is T8S, R 38E, Sections 34 and 35; T9S, R 38E, Sections 2, 11, 12, 13, and 24; and T9S, R 39E, Sections 7, 17, 18, 20, 21, 22, 23, 27, 28, 29, 32, and 33, Willamette Meridian (see Figures 1 through 6). A total of 92.3 acres was inventoried, 65.2 of which occur on USFS land (Wallowa-Whitman National Forest, Whitman Ranger District), 6.6 of which occur on BLM-administered land (Baker Resource Area Field Office), and 20.5 of which occur on privately owned land.

The project area is generally considered the 40-foot temporary construction easement and other easement areas. The APE included an additional 10-foot buffer to ensure all potential resources were inventoried.

Part of the proposed undertaking is located on federal land and, as such, the potential impacts to historic properties on federal land must be considered as part of the NHPA, NEPA, the Archaeological and Historic Preservation Act of 1974, ARPA, and the American Indian Religious Freedom Act of 1978.

Cultural Resource Sites

Cultural resource sites were identified in the APE and are detailed in the Cultural Resources Inventory Report. Historic and archeological sites that have been either determined to be not eligible or non-contributing will be avoided by new impacts except within the existing disturbance footprint from the original road and pipeline construction, or will be avoided entirely during construction.

No NRHP-eligible sites were located within the APE.

Effects of Proposed Alternative

Construction Impacts

Archaeological Sites

Construction would not impact any eligible or unevaluated cultural sites, because all sites would be avoided by new impacts except within the existing disturbance footprint from the original road and pipeline construction, or would be avoided entirely during construction.

Traditional Cultural Properties

No information on potential traditional cultural properties (TCPs) in the project area was received from tribes or other interested parties. USFS files were reviewed and there are no known TCPs in the project area. There are no anticipated impacts to TCPs.

Direct Effects

The only potential direct impacts would be during construction; once the pipeline replacement is complete, no impacts would occur.

There would be no impacts to known archaeological, cultural, or historic sites as a result of the continued operation of the Mountain Line pipeline.

Indirect Effects

No indirect impacts are expected.

Cumulative Effects

Continued recreation in the project area has the potential to have cumulative effects on undiscovered cultural resource sites; however, replacement of the Mountain Line would have the potential to make the area safer and reduce the chances of inadvertent discovery of resources. Therefore, cumulative impacts are not expected to be significant.

Effects of No Action Alternative

Under the No Action Alternative there would be no impact to historical or cultural resources, because no construction would occur.

Summary of Effects

Impacts to Cultural and Historic Resources from the replacement of the Mountain Line are not anticipated to be significant, as all sites in the project area would be avoided by new impacts except within the existing disturbance footprint from the original road and pipeline construction, or would be avoided entirely during construction.

Sites were located; however, based on avoidance strategies and the eligibility determinations, a determination of "no historic properties adversely affected" is proposed for the project, pursuant to 36 CFR 800.

There are no anticipated significant, unavoidable, or adverse impacts to cultural resources as a result of the Proposed Alternative.

There would be no effect from the selection of the No Action Alternative.

Summary of Cumulative Effects

Background

This analysis of cumulative effects employs the definition of cumulative effects found in the CEQ's regulations implementing NEPA: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions" (40 CFR 1508.7). Cumulative effects result when the effects of an action are added to or interact

with other effects in a particular place and within a particular time. Cumulative effects are most likely to arise when a proposed action is related to other actions that could occur in the same location or at a similar time. Actions geographically overlapping or close to the proposed action would likely have more potential for a relationship than those farther away. Similarly, unrelated actions coinciding in time with a proposed action would have a higher potential for cumulative effects. Conclusions regarding potential impacts are the professional opinion of the preparer and are presented herein for consideration by the USFS.

Cumulative effects were assessed by combining the potential environmental impacts of the Mountain Line replacement project with the impacts of ongoing recreation (including hunting and hiking) in the watershed and project area. No other cumulative impacts were considered because no other projects or policies are reasonably foreseeable enough to warrant analysis, according to the USFS (Hall, 2015). There are also no ongoing or past projects in the area that could be reasonably considered to contribute to cumulative effects.

In general, the analysis of cumulative effects in this section follows the process recommended in the CEQ handbook *Considering Cumulative Effects Under the National Environmental Policy Act*. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies along with credible media sources were the primary sources of information for identifying potential impacts of reasonably foreseeable actions on resources, ecosystems, and human communities. Coincident effects would be possible if the geographic and time boundaries for the effects of the project and past, present, and reasonably foreseeable future actions overlapped. In some instances for which an action may be reasonably foreseeable, quantitative estimates of impacts are not possible because the action is in its early stages.

The following steps were taken to analyze the potential for cumulative effects:

- Analyze the existing condition of each potentially affected resource and how it has been affected by other actions (public or private). This is described in Section 3, Affected Environment/Environmental Consequences, Effects of Proposed Alternative and Effects of No Action Alternative for each resource issue.
- Identify other present actions and reasonably foreseeable future actions and their possible impacts on each resource issue.
- Summarize impacts from the Proposed Alternative.

Identify the potential cumulative effects on that resource, including special designations or standards that relate to the resource, ongoing regulatory authority, policies, or plans that may add protection to the affected resource.

Past and Present Actions

Analysis of past and present actions follows the 2005 CEQ Guidance on the Consideration of Past Actions in Cumulative Effects Analysis. Known past and present actions that might result in cumulative effects are all activities that have occurred in the Baker City Watershed. Past and present actions also include maintenance activities, diversion and flowscreen repairs, fencing repairs, and other maintenance activities. The effects of such actions have been incorporated into the analysis as

part of the baseline conditions in the affected environment under each resource issue. However, an overview of noteworthy events that have shaped the baseline environment follows:

- The land was designated as a municipal watershed in the 1912 Cooperative Agreement between Baker City and the Secretary of Agriculture (USDA, 1990).
- A Memorandum of Understanding from 1991 between the City of Baker City and the USFS has provided regulatory guidance to control and respond to impacts to the watershed.
- The pipeline was originally constructed in the early 1900s. Additions, alterations, repairs, and replacements have been conducted up to the present time.
- In the 1950s through the 1960s, a few ridges accessible from the Pipeline Road (7140200) (the road located primarily over the Mountain Line) were harvested to the level of "light partial harvest and salvage." Less than 10 percent of the entire area has ever been commercially harvested (USDA, 1995b).
- In 2004, the USDA (USFS) and USDI signed the Decision Memo for Categorical Exclusion for Foothills Fuels Reduction Project. This decision approved the commercial thinning, pre-commercial thinning, whip felling, mechanized slash treatment, hand piling, pile burning, and under-burning on the 2,160 acres in the interface of USFS land and private land along the base of the Elkhorn Mountains west of Baker City (USDA, 2004).
- Currently, the City water specialist and other key personnel patrol the watershed and use roads, including the road over the pipeline. There is limited public access to the watershed, including the road to Marble Pass and hunting access when permitted by the City.

None of these past actions were considered significant enough to be evaluated through this cumulative impacts analysis. Multiple actions were recommended as a part of Baker City's Water Management Plan; however, none are scheduled to be implemented or have definitive start dates.

Future Proposed Actions

No other major projects are planned to occur in the watershed at this time. Only ongoing public recreation access to the watershed is considered as proposed future actions in this analysis. This decision was confirmed in a February 19, 2015, call to Mike Hall, USFS, from Dana Kurtz, AP (Hall, 2015).

Specific Cumulative Effects

Vegetation Resources

The Proposed Alternative would have no cumulative effects on vegetation resources (noxious weeds or rare plants) because the activities associated with this project would be sequenced so activity in each area is of a limited duration and effects would not be measurable or interact with recreation access in the watershed. The only potential effect would be to limit recreation in the watershed in the areas where construction is occurring, which would not have a measurable effect.

The No Action Alternative would have no cumulative effects on vegetation resources (noxious weeds or rare plants).

Land Management

The Proposed Alternative would have no cumulative effects on land management because no farmland would be taken out of production, no wetlands would be permanently impacted, and land management would not change as a result of replacing the pipeline.

The No Action Alternative would have no cumulative effects on land use.

Fish and Wildlife

The Proposed Alternative may have minor cumulative effects on wildlife, as there would be temporary disturbance associated with construction that, coupled with disturbance from recreational use of the watershed, may cause wildlife to avoid the area. These impacts are considered insignificant because of the short duration of effect of construction and low numbers of watershed recreational users as well as sufficient area adjacent to the project for wildlife. No significant or unavoidable cumulative impacts would occur to fish and wildlife.

The No Action Alternative would have no cumulative effects on fish and wildlife.

Water Resources

Cumulative effects of the Proposed Alternative could potentially be an issue if the impacts of replacing the Mountain Line are considered in conjunction with future vegetation management in the watershed and along the pipeline corridor. This analysis is not intended to analyze the current operations of the pipeline, only to review the effects of the replacement efforts detailed in the project description. It is unknown how much water savings would occur as a result of the project. It is likely that streams with increased volumes of water would have lower temperatures; however, this effect has not been quantified as a part of this analysis. No significant or unavoidable cumulative impacts would occur to water resources.

The No Action Alternative would have no cumulative effects on water resources.

Wetlands

The Proposed Alternative would have no cumulative effects on wetlands, because all impacts would be temporary and not during times of the year when areas are frequented by recreational users.

The No Action Alternative would have no cumulative effects on wetlands.

Soil and Earth Resources

The Proposed Alternative may have effects on soil resources in relation to regrading and replacing the road with hard-packed soil. Recreational use of roads may be improved due to the project; however, this is not quantifiable. No significant or unavoidable cumulative impacts would occur to soil and earth resources.

The No Action Alternative would have no cumulative effects on soil and earth resources.

Road Access and Control

The Proposed Alternative and any other vehicle-based project in the watershed would increase the use of the roads in this inventoried roadless area of the watershed. Mitigation and limiting vehicle use has been proposed for the project, so it is determined that this temporary use would not have significant cumulative impacts.

The No Action Alternative would have no cumulative effects on road access and control.

Recreation and Visual Aesthetics

The Proposed Alternative would have cumulative effects on recreational activities in the watershed, because roads would be repaired when disturbed with the pipeline replacement and would improve the quality of the roads. This may increase the use of the watershed in a limited way, but only on Marble Pass Road where through travel is permitted. This increase in recreation is not quantifiable and would be insignificant and would not require mitigation.

The No Action Alternative would have no cumulative effects on recreation and visual aesthetics.

Air Quality

The Proposed Alternative would have no cumulative effects on air quality because all work would be temporary and the finished project (consisting of the replaced pipeline and access road) would not increase emissions or impacts to the air.

The No Action Alternative would have no cumulative effects on air quality.

Climate Change and Sustainability

The Proposed Alternative would have no cumulative effects with the minimal amount of recreational activities that are ongoing in the project area because the project would not alter the long-term factors that affect climate. There may be some slightly positive cumulative effects on sustainability because of the reduction of leaking water from the pipeline that could cause waste in conjunction with recreational uses; however, this is not quantifiable and would not require mitigation.

The No Action Alternative would have no cumulative effects on climate change or sustainability because no changes to the existing system would take place.

Cultural and Historic Resources

The Proposed Alternative may have cumulative effects on cultural and historic resources when evaluated in conjunction with existing recreational use of the watershed and project area because it may increase the chance of a cultural or historic resource being inadvertently discovered by a pedestrian in the area while construction is ongoing (especially if the resource is flagged for avoidance). This is unlikely and unquantifiable. Because of the protective measures that would be implemented during construction, no further mitigations are required for this potential cumulative impact.

The No Action Alternative would have no cumulative effects on cultural and historic resources because all potential cultural sites and historic properties would be left intact and undisturbed.

Summary of Cumulative Effects for Proposed Alternative versus No Action Alternative

The No Action Alternative would have no cumulative effects on any resource.

The Proposed Alternative would have some potential cumulative on resources; however, most impacts are insignificant, not quantifiable, and would be mitigated during construction. No significant or unavoidable cumulative impacts would occur to resources as a result of the Proposed Alternative.

Section 4 - Consultation and Coordination

Introduction

This section provides a list of preparers, agencies, and references consulted during the development of this Environmental Assessment.

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