Draft Environmental Assessment

Tenmile Creek Water Supply Fuel Reduction Project

Helena, Montana

November 7, 2008

FEMA

Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
Washington, DC 20472

This document was prepared by

URS Group, Inc.
12120 Shamrock Plaza, Suite 300
Omaha, NE 68154

and

200 Orchard Ridge Drive, Suite 101
Gaithersburg, MD 20878

Prepared for

FEMA Region VIII
Denver Federal Center
Building 710, Box 25267
Denver, Colorado 80255-0267

Contract No. HSFEHQ-06-D-0162
Task Order No. HSFEHQ-06-J-0048

15707048.00100

TABLE OF CONTENTS

Tables

Appendices

ASTM	American Society for Testing Materials
BMPs	Best Management Practices
BOR	Bureau of Reclamation
CCC	Civilian Conservation Corps
Census	U.S. Census Bureau
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	Colorado
DEQ	Department of Environmental Quality
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System
Flume	Red Mountain Flume
FONSI	Finding of No Significant Impact
FWP	Division of Fish, Wildlife, and Parks
GYA	Greater Yellowstone Area
Helena	City of Helena
MBTA	Migratory Bird Treaty Act
MINES	Mine Master Index Files
msl	mean sea level
MT	Montana
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966 (as amended)
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PDM	Pre-Disaster Mitigation
REC	Recognized Environmental Condition
ROD	Record of Decision
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SPILLS	Spills or Hazardous Material Spills or Releases Database
T&E	Threatened and Endangered Species
USACE	U.S. Army Corps of Engineers
U.S.C	U.S. Code

USDA	United States Department of Agriculture
USFS	U.S. Forestry Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VA	Veterans Affairs
WWII	World War II

SECTION ONE INTRODUCTION

1.1 BACKGROUND AND HISTORY

The city of Helena (Helena) is located in the eastern foothills of the Rocky Mountains in Lewis and Clark County, Montana (MT). **Exhibit 1** shows the location of Helena, MT. Helena's Water Treatment Division is responsible for supplying the city with safe drinking water and maintaining all water plants, pumping stations, reservoirs, head gates, and other equipment necessary to maintain the water treatment system. The main source of Helena's municipal water is the Upper Tenmile Creek Watershed. The Upper Tenmile Creek Watershed, which is predominantly forested, lies south of U.S. Highway 12 about 7 miles west of Helena. The watershed's most prominent landmark is Red Mountain, which lies in the southeast corner of the watershed and has a summit elevation of 8,150 feet above mean sea level (msl). Total acreage of the Upper Tenmile Creek Watershed is approximately 26,300 acres (Helena 2008).

Helena owns the first and second water rights on Tenmile Creek, which equates to approximately 8.9 million gallons of water per day that can be provided to residents of the city following treatment at the Tenmile Water Treatment Plant. Currently, this is the only source of water the city uses for 9 months of the year. During peak water demand in the summer, additional water is obtained from the Missouri River. The Veterans Affairs (VA), VA Hospital, and Montana National Guard facilities at Fort Harrison rely exclusively on the Tenmile Creek Watershed to fill their water storage tanks needed for fire suppression (Helena 2008).

The Red Mountain Flume (Flume) is a critical portion of the water conveyance system for the Helena's water supply. The Flume starts on the west side of Red Mountain near Banner Creek's confluence with Tenmile Creek and follows the contour of Red Mountain to the north and east for a distance of approximately 4.8 miles to Chessman Reservoir. **Exhibit 2** shows the location of the Flume. The Flume elevation runs from 6,300 feet msl to 6,220 feet msl. The conveyance is comprised of 13,000 feet of open unlined ditch, 11,800 feet of sheet metal Flume, and 500 feet of pipeline. Wood trestles in nine separate sections support approximately 20 percent of the Flume (4,936 feet) at proper elevations for water to flow. **Exhibit 3** shows an example of the trestle sections. Approximately 2.1 miles of the length of the Flume is on private land and 2.7 miles is located on Helena National Forest land (Helena 2008).

Wildland fire is inevitable in this watershed. Fuel, weather, and physical setting determine fire behavior. The combined effects of past fire suppression, heavy fuel loads, an extended drought period, and an active pine beetle infestation have put forests in the Tenmile Creek drainage at risk of a catastrophic wildfire. Approximately 15 percent of the mature Lodgepole pine in the project area has been recently killed as a result of a Western Pine Beetle infestation. The ongoing infestation may result in mortality rates as high as 50 percent over the next 5 years (Montana Prescribed Fire Services, Inc. 2007). The increasing abundance of dead and dying trees contributes to the existing wildfire hazard. Combined effects of a large-scale forest fire in the Upper Tenmile Creek drainage could threaten the major source of Helena's water supply (Helena 2008).

A catastrophic wildfire would destroy the wooden timber and plank trestles of the Flume. Intense heat, fallen burned trees, and other debris would damage the metal Flume, diversions, and waste gates. Sediments and debris would impede water flow. It would also denude the watershed and cause erosion, which would destroy or render the entire Flume useless (Helena 2008).

A severe wildfire in Tenmile Watershed would result in a minimum 23-month loss of water supply from the Tenmile Water Treatment Plant. Municipal water would then need to be supplied by the Missouri River Treatment Plant, which is 50 years old and is only used to supply water for 3 months during peak use. The Missouri River water would have to be purchased from the Bureau of Reclamation (BOR) and would need to be pumped to the city. Helena would need to rely on the Missouri Plant for a minimum of 23 months until the Flume could be replaced with a buried pipeline. Currently, the Missouri Plant has limited capability to provide year-round water to the city (Helena 2008).

Helena has applied for funding through the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation (PDM) Program. This assistance would be used to reduce the fuel load in the Upper Tenmile Creek Watershed along the Flume.

The Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). These regulations, as set forth in Title 40, Code of the Federal Regulations (CFR) Parts 1500-1508, require an investigation of the potential environmental impacts of a proposed Federal action, and an evaluation of alternatives as part of the environmental assessment process. The FEMA regulations that establish the agency-specific process for implementing NEPA are set forth in 44 CFR Subpart 10. This Environmental Assessment (EA) was conducted in accordance with both FEMA and CEQ NEPA regulations.

1.2 PURPOSE AND NEED

The purpose of FEMA's PDM program is to substantially reduce the risk of future damage, hardship, loss, or suffering in communities from natural disasters, including wildfires, by providing the affected communities with cost-share funds to reduce future losses.

Based on the continuing potential for a major wildfire in the Upper Tenmile Creek Watershed that could render the Flume useless, Helena has identified the need to protect the Upper Tenmile Creek Watershed system that supplies water to the Helena area by reducing the fuel load near the Flume.

SECTION TWO ALTERNATIVES

The President's CEQ has developed regulations for the preparation of environmental impact documents in compliance with NEPA. CEQ requires an investigation and evaluation of practicable alternatives as part of the environmental assessment process. The following subsections provide a description of alternatives considered but not retained for further evaluation, as well as alternatives that were considered and retained for evaluation in the EA.

2.1 ALTERNATIVES NOT RETAINED

2.1.1 Fire Suppression

Helena considered fire suppression without any fuel reduction as an alternative. However, there is limited road access to the Flume area. Therefore, fires would have to be fought primarily by hand with water dropped by helicopter. Water would be used because fire retardant cannot be used in a municipal water supply watershed. This alternative was determined to be an ineffective way to protect the Flume from fire, and was removed from further consideration.

2.1.2 Buried Pipeline

Replacing the existing Flume with a buried pipeline was considered as a potential action that would satisfy the purpose and need. This alternative would increase the efficiency of the water system, be less costly to maintain, and have minimal risk from wildfire. However, Helena's long range plan is to use the Missouri River as its primary water source, with the Flume used as a supplemental water source. Therefore, converting the Flume to a buried pipeline has less priority than improvements to the Missouri River System.

Additionally, burying an approximately 5-mile pipeline at an altitude of 6,200 feet in a remote area with limited road access means a short construction season due to heavy snows and frozen ground. The limited road access means that materials would need to be taken to the site via helicopter. It would take 18 months for Helena to obtain funding, project design, environmental reviews, permits, and a contractor before construction could begin on the pipeline. This means that the Tenmile Treatment Plant would not provide sufficient water volume for at least 23 months. Also, Helena would need to lease a mobile water treatment system for 3 months during the peak season to meet demands and to assure fire protection for VA, VA Hospital, and Fort Harrison. Therefore, this alternative was determined to be logistically and fiscally unacceptable.

2.2 ALTERNATIVES CONSIDERED

The potential environmental impacts for two alternatives are evaluated in this report. These alternatives include:

- Alternative 1 – No Action
- Alternative 2 – Tenmile Creek Water Supply Fuel Reduction Project (Proposed Action)

2.2.1 Alternative 1 – No Action

With the No Action Alternative, no action would be taken to protect the Flume. No treatments such as thinning, hand piling, controlled burning, and debris removal would be done. No vegetative treatments would be undertaken to treat stands. The potential for catastrophic wildfire damaging or destroying the Flume would remain, which could severely affect Helena's water

supply. This alternative would include continued maintenance and repair activities on the Flume.

2.2.2 Alternative 2 – Tenmile Creek Water Supply Fuel Reduction Project (Proposed Action)

The project area would include approximately 108 acres of privately owned land in Lewis and Clark County, MT, Township 8 North, Range 5 West, Sections 3, 4, 5, 8, and 9. **Exhibit 4** shows the project area.

The proposed action would involve the removal of dead timber to greatly reduce the fuel load along the trestle sections of the Flume located on privately owned land. This action would emphasize the removal of dead and beetle-infested Lodgepole pine and small diameter trees that contribute to the wildfire hazard. All deadfall (regardless of tree species) would be removed, along with old trestle timbers and planks that have been stacked near the Flume.

The project would be completed in three phases, and activities would occur only on privately owned land. The first phase of the work would occur at the ends of the trestle sections located on privately owned land. Vegetation removal would extend 150 feet beyond the end of the trestle at each location and down slope for 300 feet. This distance would reduce the flame length and rate of spread during a fire and would prevent damage to the trestles. All dead and/or fallen timber 3 inches in diameter or larger and all Lodgepole pine would be removed.

The second stage would concentrate on the length of the Flume on privately owned land. For approximately 100 feet above the Flume, all downed and standing dead timber 3 inches in diameter or larger would be manually cut and removed to reduce fire intensity and to prevent erosion above the Flume. In general, all the removed material would be taken to an area below the Flume to be safely burned. No burning would occur above the Flume except in areas that are predominantly rock.

The third phase would consist of mitigating the fuels for 300 feet below the Flume on privately owned land, connecting with the work previously completed in Phase 1 off the ends of the trestles.

2.2.2.1 Mechanical Clearing

Mechanical mitigation would consist of using a processor that cuts each tree at the base, removing and piling the limbs for burning, and cutting and stacking the stems to be transported by a forwarder. The forwarder is used to remove the tree stems to an area for transportation by truck. Mechanical clearing would occur between mid-October and mid-December, when the ground is frozen and dry. Mechanical equipment would be used only where road or trail access is present. No new permanent or temporary roads would be constructed as part of this project. **Exhibit 5** provides an example of the trails in the project area.

2.2.2.2 Hand Clearing

Hand clearing would be done in areas where road access is limited and/or areas where slopes are over 30 percent grade. Hand crews would be required to walk into the project area from existing roads or trails. Streamside Management Zones would be established adjacent to all streams and associated riparian areas. These are areas that include stream, lake, or other water body and an adjacent area where management strategies are applied to protect water quality and maintain stream temperature. These zones would extend 50 to 100 feet on each side of the streambank.

Hand piles would be built not to exceed 8 feet in diameter on slopes less than 20 percent. The hand piles would be placed on the numerous rock outcroppings and rock scree areas to prevent them from rolling downhill. On some rockslide areas, trees would be cut 12 to 18 inches above the rock surface to avoid erosion. Manual treatment would begin around mid-September and continue through November.

2.2.2.3 Burning

When cut material is to be burned in place, an area would be selected with little or no vegetation at least 100 feet below the Flume. Burning of the piles would take place in the late fall when snow cover is on the ground and in the spring during rainy periods. Additionally, the hand piles would be constructed where the canopy is open to prevent scorching of live trees. As indicated above, most burning would occur below the Flume. However, if necessary, burning may occur above the Flume, but only in areas that are predominantly rock.

2.2.2.4 Maintenance

Montana Prescribed Fire Services, Inc. (2007) recommended that the project site be maintained after 10 years. The maintenance would be at a much lower cost than the original treatment and would extend the life of the project for another 10 years, making the total useful life of the project 20 years.

SECTION THREE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 Baseline Conditions

Red Mountain is located less than 15 miles east of the Continental Divide in the northern Rockies and approximately 7 miles southwest of Helena. The mountain is within the Lewis and Clark Range of the Northern Rocky Mountains, a physiographic region of the Cordilleran orogen. The Cordilleran orogen, which encompasses the western part of the United States, extends north and south beyond the Mexican/Canadian borders and from the offshore continental borderlands of the Pacific as far east as the Black Hills of South Dakota. Physiographically, the area includes high mountains, intervening lowlands, and plateaus. The continental margin containing the Cordilleran orogen originated about 600 million years ago, and has undergone extensive deformation since that time (Burchfiel et al. 1992). Two major uplift events have occurred in the area since the end of Cretaceous time, about 65 million years ago, with significant erosion occurring between the events. The first event was compressive, resulting in northwest trending folds and thrust-faults. The second event occurred from about 30 million to 2 million years ago and resulted in block faulting, causing vertical displacement of the rock thousands of feet. Significant erosion occurred between the two events.

The project area follows the Flume along the contours of Red Mountain. Thus, the area includes some slopes of greater than 30 percent. More level areas occur near Chessman Reservoir. The topography of the area is show in **Exhibit 4**.

The following soils were identified in the project area (USDA 2001):

- Andic Cryochrepts, Moraines
- Typic Cryochrepts, colluvial deposits
- Typic Cryoboralfs, bouldery, granitic substratum
- Typic Cryochrepts-Rubble land complex, steep
- Typic Cryochrepts, bouldery granitic substratum, steep
- Cirqueland
- Typic Cryoboralfs-Typic Cryochrepts complex, granitic substratum

Table 3-1 provides the specific characteristics of these soils.

Table 3-1: Soil Characteristics in the Red Mountain Flume Area

Map Unit Symbol	Map Unit Name	Elevation (feet msl)	Landform	Parent Material	Slope (percent)	Vegetation Classification	Typical Profile
12C	Andic Cryochrepts, Moraines	6,000 to 8,000	Moraines	Glacial till	15 to 40	subalpine fir/smooth wood-rush; subalpine fir-whitebark pine/grouse whortleberry	Very cobbly sandy loam
14	Typic Cryochrepts, colluvial deposits	5,000 to 6,800	Intermontane basins, toes on mountains	Colluvium	25 to 30	spruce/twinflower; subalpine fir/twinflower	Very cobbly loam
36	Typic Cryoboralfs, bouldery, granite substratum	5,000 to 6,400	Upland slopes	Colluvium derived from granite	25 to 40	Douglas-fir/pinegrass; Douglas-fir/snowberry	Coarse sand to gravelly sandy clay loam
56A	Typic Cryochrepts-Rubble land complex, steep	6,000 to 7,000	Mountain slopes	Colluvium derived from granite	40 to 60	Douglas-fir/pinegrass; subalpine fir/grouse whortleberry	Extremely cobbly sandy loam
76	Typic Cryochrepts, bouldery, granitic substratum, steep	6,000 to 7,500	Mountain slopes	Colluvium derived from granite	25 to 50	subalpine fir/beargrass; subalpine fir/menziesia; subalpine fir/grouse whortleberry	Very gravelly sandy loam
80	Cirqueland	6,000 to 9,500	Cirque headwalls; basin floors	NA	NA	NA	NA
120	Typic Cryoboralfs-Typic Cryochrepts complex, granitic substratum	5,000 to 6,000	Mountain slopes	Colluvium derived from granite	10 to 25	subalpine fir/dwarf huckleberry; subalpine fir/beargrass; subalpine fir/grouse whrotleberry	Gravelly sandy loam to very gravelly sandy clay loam

3.1.2 Environmental Consequences

None of the alternatives have the potential to affect geology or topography within or adjacent to the project area.

3.1.2.1 Alternative 1 – No Action

The No Action Alternative does not involve any activities, other than general maintenance and repair of the Flume on an as needed basis. Therefore, the alternative would not have a direct affect on soils in the project area. However, erosion and sedimentation could result from a precipitation event following a future wildfire. Severe wildfires create hydrophobic soils that do not allow water penetration until vegetation and organic matter can be re-established. Therefore, the No Action Alternative has the potential for significant indirect impacts to soils, which could cause the Flume to fail.

3.1.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The project area includes approximately 108 acres of land. No excavation activities would occur with this action. Mechanical equipment would be used where road or trail access is present. No new permanent or temporary roads would be constructed as part of the proposed project. In areas where rockslides are possible, trees would be cut 12 to 18 inches above the rock surface to avoid erosion. The mechanical and hand clearing activities would be completed in accordance with Best Management Practices (BMPs) for Forestry in Montana, thereby reducing the likelihood of impacts to soils.

3.2 LAND USE AND ZONING

3.2.1 Land Use

3.2.1.1 Baseline Conditions

The project area is in the Upper Tenmile Creek Watershed along the Flume. The Flume itself is owned by Helena. However, the land beneath the Flume is owned by Helena, U.S. Forest Service (USFS), and private individuals. The project area specifically is all privately owned land. An easement was not legally required when the Flume was built in 1864 and 1865; however, Helena's "Certificate to Appropriate Water" provides the legal documentation and proof of Helena's easement and access rights for the Flume.

3.2.1.2 Environmental Consequences

Alternative 1 – No Action

With the No Action Alternative, the current land use within the project area would not change. However, if a wildfire occurred and destroyed the Flume, the potential loss of the Flume would adversely affect Helena's water conveyance system.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

Implementation of the Proposed Action would not change the land use within the project area. The area would continue to be used as part of the drinking water supply system for Helena. However, the fuel reduction project would minimize the potential for future wildfires that could destroy the Flume, which would maintain the current and future land use of the area.

3.2.2 Floodplain Encroachment (Executive Order 11988)

3.2.2.1 Baseline Conditions

The project area is located in an area designated as Zone C—areas of minimal flooding by FEMA (FEMA 1985). According to the PDM subapplication submitted by Helena, the area is not located in a 100-year floodplain.

3.2.2.2 Environmental Consequences

The project area is not located within a designated 100-year floodplain or floodway; therefore, no designated floodplains would be impacted by either alternative.

3.2.3 Prime Farmland

The Natural Resources Conservation Service's (NRCS) online soil survey indicated that none of the soils identified in Section 3.1 are considered prime or unique farmland (NRCS 2008). Since no farmland, including prime farmland, is located within either project area, neither alternative has the potential to affect prime farmland and the intent of the Farmland Protection Policy Act is met. Therefore, impacts to prime farmland were not considered further and NRCS Form AD-1006 was not completed.

3.3 TRAFFIC AND CIRCULATION

3.3.1 Baseline Conditions

There are no named roads within the project area. Named roads in the vicinity include Rimini Road, Chessman Road, and Peerless-Jennie Road. In addition, there are several unnamed National Forest roads that provide access to residents and National Forest visitors.

3.3.2 Environmental Consequences

3.3.2.1 Alternative 1 – No Action

The No Action Alternative does not involve any activity other than maintenance and repair; therefore, it would have no impact on the traffic in the study area.

3.3.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

Minor impacts to local traffic may occur during vegetation removal activities due to the influx of mechanical tree removal equipment and trucks. Mechanical equipment would use existing roads such as Remini Road, Chessman Road, or Peerless-Jennie Road and National Forest roads to access the general project area. These are two-lane public roads without shoulders; therefore, the ingress and egress of the mechanical equipment could cause short delays in local traffic as equipment is moved into and out of the area. Both local residents and visitors to the National Forest could be affected by the ingress and egress of the equipment on the public roads. This impact would be minor and limited to the duration of the project activities. Helena would notify residents in the area about the clearing activities via letters to individual residents and a public notice in a local newspaper (Hedstrom 2008).

Within the immediate vicinity of the Flume, Helena would use existing ATV and 4-wheel drive trails to access the project. The movement of equipment on these trails is not expected to have any impact on local traffic.

3.4 PUBLIC HEALTH AND SAFETY

3.4.1 Baseline Conditions

Helena provides water to approximately 68,800 residents in the greater Helena area (Helena 2008). Ensuring access to safe drinking water for residents is a high priority to Helena. For 9 months of the year, water is provided to the city exclusively from the Upper Tenmile Creek Watershed. The Flume is a critical portion of the Upper Tenmile Creek conveyance system.

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1 – No Action

The No Action Alternative would not include any steps to reduce the fuel load in the project area. With the heavy fuel load due to dead and diseased trees, a wildfire in the watershed could result in a stand replacement fire (i.e., loss of all tress) that could potentially damage property, impact air quality, and result in loss of life.

A severe wildfire could also result in substantial damages to Helena's conveyance water system. It is estimated that a wildfire in the Upper Tenmile Creek Watershed that destroyed the Flume would result in a loss of water supply from this watershed for a minimum of 23 months. Helena would be forced to obtain water from the Missouri River. The existing Missouri River Treatment Plant does not currently have the capacity to provide the amount of water necessary to meet the needs of Helena and its residents. Therefore, if a wildfire were to occur within the Flume area and watershed, potential public health and safety impacts could be significant.

3.4.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

Alternative 2 would reduce the fuel load around the Flume, thereby reducing the potential for wildfires and minimizing the risks to the Flume and Helena's water supply. Additionally, the proposed project would reduce the wildfire risks to residents in the surrounding forested area; therefore, having a positive impact on public health and safety in the area.

3.5 SOCIOECONOMICS

3.5.1 Economic Issues

3.5.1.1 Baseline Conditions

Helena became the territorial capital of Montana in 1875 and the State capital in 1894. Montana State Government is the largest employer in the area. Helena acts as an educational, commercial, recreational, cultural, and political center for the entire State of Montana.

According to the 2000 U.S. Census (Census 2000a), the median family income in Helena is $50,018 and the per capita income is $20,020. Of the individuals over the age of 25, approximately 93 percent are high school graduates and 40 percent have received an advanced degree (bachelors degree or higher).

Alternative 1 – No Action

The No Action Alternative could have a significant economic impact on the Helena area. If a wildfire were to destroy the Flume, the Tenmile Treatment Plant would also be out of service at great expense to Helena and its water consumers. Helena would have to purchase water from the BOR and pay to pump it from the Missouri River to the treatment plant (approximately 700 feet

of head). Helena would also need to rent mobile water treatment trailers because the Missouri River Treatment Plant does not have the capacity to meet peak water demands. These actions would be costly to Helena and would result in higher utility fees to consumers.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The proposed action would minimize the immediate wildfire risk to the Flume, which is an integral part to Helena's current water supply. With this action, Helena would have time to make upgrades to the Missouri River Treatment Plant and convert Helena's main water supply from the Tenmile Creek Watershed to the Missouri River, which is part of the city's long-range plans. Making the conversion over a period of time allows Helena to accumulate funds for the changes without putting a financial strain on its citizens. Therefore, the proposed action represents a long-term, positive impact on the economics of Helena and the water consumers.

The Helena area would also experience a short-term economic benefit during the life of the project due to the purchase of goods and services.

3.5.2 Environmental Justice (Executive Order 12898)

3.5.2.1 Baseline Conditions

Executive Order (EO) 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", directs Federal agencies to "make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations".

The 2000 U.S. Census Bureau information was used to characterize the area. Based on this data, Helena has a population of 25,780, of which approximately 95 percent are Caucasian. The largest minority population is American Indian/Alaska Native, which comprises 2.1 percent of the population. Similarly, 95 percent of the county is Caucasian. The largest minority population in the county is also American Indian/Alaska Native, which comprises 2 percent of the population (Census 2000a, 2000b).

As indicated earlier, approximately 68,800 people rely on Helena for their water supply. The demographics of these residents are not available. The project area involves lands owned by 19 different people. The demographics of these residents are also not available.

According to the Census data (Census 2000a, 2000b), Helena has a poverty rate of 9.3 percent for individuals and 14.5 percent for families. Lewis and Clark County has a poverty rate of 10.9 for individuals and 7.3 percent for families.

3.5.2.2 Environmental Consequences

Alternative 1 – No Action

The maintenance and repair activities associated with the No Action Alternative would not disproportionately adversely affect any population, including low-income and/or minorities.

If a wildfire were to occur and damage or destroy the Flume and therefore Helena's water system, all populations, including low-income and/or minorities, would be equally affected.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The proposed action would reduce the risk of a wildfire destroying the Flume; therefore, providing a long-term positive impact to all populations.

This federally-funded proposed project would not create disproportionally high and adverse effects on minority or low income populations.

3.6 VISUAL RESOURCES

3.6.1 Baseline Conditions

Helena is located approximately 20 miles east of the Continental Divide in the northern Rockies. The city is located in the foothills and extends into a large valley.

The project area is located in the Upper Tenmile Creek Watershed southwest of Helena, which is predominantly forested and includes Red Mountain, Colorado Mountain, and Black Mountain. The Flume is located on Red Mountain, which has a summit elevation of approximately 8,150 feet. The Flume is located at approximately 6,250 feet. The area is forested primarily by Douglas fir, Engelmann spruce, and Lodgepole pine. However, the area has been infested with Western pine beetles, and dead Lodgepole pines are readily visible within the viewshed.

The Flume, a City-owned cabin, and the occasional glimpse of a road are the only manmade structures visible within the project area.

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1 – No Action

With the No Action Alternative, the viewshed would not be altered unless a wildfire were to occur in the vicinity of the project area. Such a wildfire would change the forested view to charred mountain slopes with little or no vegetation. This would be a significant impact.

3.6.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The proposed action involves the removal of dead and fallen trees (3 inches in diameter and larger) within approximately 300 feet down slope and 100 feet up slope of the Flume and all Lodgepole pines within approximately 300 feet down slope of the Flume.

The loss of all Lodgepole pine for 300 feet down slope of the Flume would have both a positive and negative impact on the viewshed. The negative impact would be related to the loss of numerous standing trees, thus there would be fewer standing trees visible when looking at the mountainside. However, long term there would be a positive impact on the viewshed, as the removal of dead and fallen trees would make the viewshed look clearer and more attractive. Additionally, the removal of diseased Lodgepole pines would give the appearance of a healthier forest and give new, healthy trees room to grow.

3.7 AIR QUALITY

3.7.1 Baseline Conditions

The National Ambient Air Quality Standards (NAAQS), established by the U.S. Environmental Protection Agency (EPA), define the allowable concentrations of pollutants that may be reached but not exceeded in a given time period in order to protect human health (primary standard) and welfare (secondary standard) with a reasonable margin of safety. These standards include

maximum concentrations for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter (10 microns or less and 2.5 microns or less).

The East Helena area is considered a NAAQS Attainment Area for all air quality parameters, except lead and sulfur dioxide (EPA 2008). The East Helena area is not located within the project area. The rest of the area surrounding the project area is in attainment for all air quality parameters.

Helena and Lewis and Clark County Health Departments and the Montana Department of Environmental Quality (DEQ) have air quality restrictions and require pile burning be done on the best air quality days. The Montana DEQ operates a year-round open burning program and issues air quality open burning permits for specific types of open burning. The burning program and burning restrictions are included in Appendix B.

3.7.2 Environmental Consequences

3.7.2.1 Alternative 1 – No Action

No activities would occur with the No Action Alternative, and air quality would not be affected within either the study area or Helena. However, a wildfire within the area could have a significant short-term negative impact on air quality from smoke and ash.

3.7.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

During vegetation removal activities, the Proposed Action would have temporary, minor impacts on air quality related to increased dust levels generated by the removal of trees. Any adverse impacts would be short-term and localized.

During hand pile burning, Montana DEQ burn plan rules would be followed to minimize air quality impacts. Helena would also need to coordinate with Montana DEQ to determine if the proposed project is a major burn as defined in the Major Open Burning Guidelines. If the project is determined to be a major burn, Helena would need to submit the written request form prior to conducting any slash pile burns. A permit from the USFS would be required prior to doing any burning. It will also be necessary for Helena to inform the Lewis and Clark County Sheriff's Office before performing any burns. Correspondence with these agencies is included in Appendix C.

3.8 PUBLIC SERVICES

3.8.1 Baseline Conditions

Public services and associated providers within the Helena area include:

Water/Sanitary Sewer	Wells and Septic Systems
Telephone	Cell Phones
Electrical Power	Northwestern Energy
Emergency Medical Services	St Peters Hospital
Fire Protection	Helena, USFS, Department of Natural Resources and Conservation, Volunteer Fire Departments

Law Enforcement	
County Sheriff	Lewis and Clark County
State Highway Patrol	State of Montana
Utility Location Service	Utility Underground Location Service

The project area is remote and most residents near the project area are not connected to public utilities. They rely on solar power, private water wells, propane, septic tanks, and satellite for their utility needs. Telephone service is generally through cell phone providers. Utilities Underground Location Center (800-424-5555) provides the utility location service in Lewis and Clark County, MT.

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1 – No Action

If no action is taken to reduce the fuel load along the Flume and a major wildfire occurs in the area, the water supply for Helena and the surrounding areas would be adversely impacted. Loss of the Flume would require Helena to purchase, treat, and deliver water from the Missouri River until the Flume is repaired (up to 23 months).

In addition to adverse impacts on Helena's water supply, a wildfire in the vicinity of the Flume would put a strain on local fire protection resources.

3.8.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

There are no buried or overhead utility lines within the project area. Therefore, the proposed action would not cause interruption of Helena's utility service.

Reducing potential wildfires would have a long-term beneficial impact on Helena's water supply by providing protection to the Flume.

3.9 NOISE

3.9.1 Baseline Conditions

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.). Noise events within the project vicinity are presently associated with climatic conditions (e.g., wind and thunder) and nature (birds). Traffic noise is minimal, as the Flume is located within a sparsely populated area.

There are no sensitive receptors within the project area.

3.9.2 Environmental Consequences

3.9.2.1 Alternative 1 – No Action

With the No Action Alternative, noise levels would not change or be affected.

3.9.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

With Alternative 2, noise levels within the project area would increase during vegetation removal activities. Impacts would be short-term and localized, and activities would be limited to daylight hours (7:00 a.m. to 6:00 p.m.). All mechanical equipment (vehicles, chainsaws, etc.) would be equipped with proper mufflers and/or properly maintained to minimize the noise produced.

These types of noise are not uncommon in a forested area; therefore, the temporary activities associated with the proposed action would not create a significant impact on noise within the project area.

3.10 HYDROLOGY AND WATER QUALITY

3.10.1 Baseline Conditions

The project area is located in the Upper Tenmile Creek Watershed, which encompasses approximately 26,300 acres. There are four perennial streams within 200 feet of the project area: Tenmile Creek, Banner Creek, Beaver Creek, and an unnamed tributary to the Flume. Chessman Reservoir is located at the termination of the Flume.

Tenmile Creek is located west and north of the project area. The creek is approximately 29 miles long and runs from its headwaters in the mountains southwest of Helena to its confluence with Prickly Pear Creek northeast of Helena. Tenmile Creek's designated uses include agriculture, aquatic life, cold water fisheries, drinking water, industrial, and primary contact recreational. The creek is considered impaired for all these uses due to metal contamination, flow alternation, and sedimentation/siltation.

The Flume receives water from Banner Creek, as well as the following non-perennial streams: Lindsay Creek, Eureka Creek, Salle Belle Creek and Wilson Creek. During spring runoff, water from these creeks is diverted into the Flume, which conveys the water to Chessman Reservoir. Chessman Reservoir has no other surface water sources. Banner Creek is a tributary of Tenmile Creek that also starts in the mountains southwest of Helena. The Flume begins at Banner Creek near its confluence with Tenmile Creek on the west side of Red Mountain. Banner Creek was not included on the Montana list of impaired waterways.

The water from Chessman Reservoir is conveyed through Beaver Creek to a headgate located in Remini, MT. At the headgate, water is diverted into a 12-inch, 7-mile-long underground pipe which conveys the water to the Tenmile Water Treatment Facility. The pipeline allows for water collection directly from the Tenmile Creek, Minnehaha Creek, Moose Creek, and Walker Creek. If water in Beaver Creek is not diverted at the headgate, it continues to flow westward to Tenmile Creek. Beaver Creek was not included on the Montana list of impaired waterways.

3.10.2 Environmental Consequences

Neither alternative has the potential to affect the overall hydrology of the streams in the vicinity of the project area; therefore, hydrology is not discussed further in this document.

3.10.2.1 Alternative 1 – No Action

With the No Action Alternative, no changes would occur to the Upper Tenmile Creek Watershed or the streams in the vicinity of the project area. However, if a wildfire were to occur, there could be significant negative impacts on water quality due to the loss of vegetation and the creation of hydrophobic soils resulting in sedimentation rates of 200 to 300 percent greater than normal (Helena 2008).

3.10.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The proposed project would not adversely impact the water quality of any of the previously mentioned creeks or water sources. Mechanical equipment would be used only where road or trail access is present and perennial streams would be crossed only at existing crossings.

Mechanical treatment would be completed on dry or frozen ground. Burning of the hand piles would take place in late fall when snow cover is on the ground and in the spring during rainy periods. These precautions would eliminate or minimize any increased stream sedimentation.

Streamside Management Zones would be established adjacent to all streams and associated riparian areas. These are areas that include stream, lake, or other water body and an adjacent area where management strategies are applied to protect water quality and maintain stream temperature. These zones would extend for 50 to 100 feet on each side of the streambank and no mechanical equipment would be used in these areas. Additionally, Best Management Forestry Practices would be employed during project activities to minimize any environmental impacts to water resources within the project area.

3.11 BIOLOGICAL RESOURCES

3.11.1 Wetlands (Executive Order 11990)

Wetlands provide significant ecological functions which include: (1) providing habitat for numerous aquatic and terrestrial wildlife species; (2) aiding in the dispersal of floodwaters; (3) improving water quality through retention and assimilation of pollutants from storm water runoff; and (4) recharging the aquifer. Wetlands also possess aesthetic and recreational values. EO 11990, entitled "Protection of Wetlands," requires Federal agencies to take action to minimize the loss of wetlands. Activities disturbing jurisdictional wetlands require a permit from the U.S. Army Corps of Engineers (USACE).

3.11.1.1 Baseline Conditions

The U.S. Geological Survey (USGS) National Map indicated the only jurisdictional wetlands and areas containing wetland vegetation are located near Chessman Reservoir. However, the Fuel Mitigation Prescription prepared by Montana Prescribed Fires Services, Inc. (2007) indicated there are approximately five riparian areas that intersect the Flume between Banner Creek and Chessman Reservoir. These areas have a heavy concentration of large, old-growth Engelmann spruce.

3.11.1.2 Environmental Consequences

Alternative 1 – No Action

With the No Action alternative, conditions would not change unless a wildfire would occur which could create hydrophobic soils, resulting in an increase in sedimentation. The sedimentation could significantly impact wetlands.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The USACE was contacted on August 25, 2008, regarding the proposed project and they indicated a 404 Permit would not be required. The USACE also indicated that if temporary roads would need to be constructed across a steam, a crossing permit from the USACE would be required. Currently, the proposed project does not include the construction of temporary roads; therefore, no crossing permit would be required. Correspondence with USACE is included in Appendix C.

3.11.2 Vegetation

3.11.2.1 Baseline Conditions

The project area is located at approximately 6,250 feet msl and vegetation within the project area consists of two basic habitat types: upper, mixed forest and lower, subalpine forest. These habitat types are described in more detail below.

Upper, mixed forest. Upper, mixed forest contains habitat types with forest stands generally comprised of Douglas fir/Lodgepole pine, or a mixture of these species (U. S. Department of Agriculture [USDA] 2001). This habitat type group is extensive at elevations ranging from 4,200 to 7,000 feet above msl, which is generally above the cold limits of Ponderosa pine.

Lower subalpine forest. Lower subalpine forest contains habitat types on which forest stands generally are Lodgepole pine (USDA 2001). This habitat type group is extensive at elevations from 6,000 to 7,200 feet above msl. Douglas fir is not common, although it is sometimes present on southerly aspects at lower elevations. Engelmann spruce and subalpine fir are sometimes dominant in old growth stands.

Ninety-five percent of the timber on the north aspect of Red Mountain is Lodgepole pine, in a variety of age groups. Fifteen percent of the stand is standing dead timber with recent evidence of Western pine beetle infestation, which has the potential to kill over half the remaining timber in the next 5 years. Approximately 30 percent of the stand is deadfall on the forest floor (Montana Prescribed Fire Services, Inc. 2007).

Exhibit 6 shows the Lodgepole pines that have been infested with the Western pine beetle. **Exhibit 7** shows the general vegetation along the Flume.

Spotted knapweed and Russian thistle are considered noxious weeds and have been observed within the project area (Helena 2008).

3.11.2.2 Environmental Consequences

Alternative 1 – No Action

Vegetation/fuel reduction activities would not occur with the No Action Alternative; therefore, no vegetation would be impacted. However, a wildfire could have significant short-term impacts on vegetation within the project area.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

With Alternative 2, approximately 108 acres of vegetation would be affected by project activities. The proposed action would clear dead and/or fallen trees 3 inches in diameter or larger of all species from 300 feet down slope of the Flume to 100 feet above the Flume, and 150 feet beyond the ends of each trestle. Additionally, the project would remove all Lodgepole pine downhill of Flume lengths located on private land. These activities would reduce the existing fuel load and lessen the likelihood of a catastrophic wildfire, which would destroy all vegetation within the fire area. Following a wildfire, the grass and other understory vegetation may return quickly; the trees would take years to replace. Finally, the removal of dead, fallen, and beetle-infested trees would contribute to the maintenance of a healthy forest.

Mechanical clearing would occur only between mid-October and mid-December, when the ground is frozen. This would minimize any impacts to vegetation. Hand clearing would occur

between September and November. Hand clearing is low impact and would minimize damage to surrounding vegetation.

Before any slash piles are burned, Helena will contact the USFS and obtain a burn permit. The permits are issued for a period of time and all permits expire on September 30th of the calendar year. In addition, Helena will contact the Lewis and Clark County Sheriff's Office and inform them that a controlled burn will be performed in the project area.

There is a small possibility of an escaped wildland fire from the debris pile burning. To minimize this threat, burning would be conducted when wildfire risk is low. Cut material would be placed in an area with scant or no vegetation at least 100 feet below the Flume. Numerous rock outcroppings and rock scree areas are available. Hand piles would be built not to exceed 8 feet in diameter on slopes less than 20 percent, to prevent burning material from rolling downhill. Additionally, piles would be constructed where the canopy is open, to prevent scorching live trees.

As part of the proposed project, all guidelines and recommendations for managing noxious weeds in the Helena Open Lands Management Plan would be followed. These include: 1) the Helena Open Lands Advisory Committee weed sub-committee would inventory the project area for noxious weeds; 2) all vehicles and equipment would be power-washed prior to arrival on the property; 3) any thinning activities which disturb mineral soil would be promptly followed by seeding with a native seed mix recommended by the NRCS; and 4) all disturbed areas would be reseeded. Monitoring and follow-up treatment for noxious weeds would continue for 3 years.

With implementation of project activities and the proper mitigation discussed above, the proposed project would have a long-term beneficial impact on the remaining vegetation, helping to create a more healthy forest and reducing the risk of future wildfires.

3.11.3 Terrestrial Wildlife

3.11.3.1 Baseline Conditions

A review of Foresman (2001) revealed 47 mammal species that have been documented in Lewis and Clark County, with 21 additional species that are suspected of occurring in the county. Mammal species likely to occur in the project area include those species associated with conifer forest habitats ranging from the valley foothills to the subalpine habitats on the summit of Red Mountain, such as deer mouse, yellow-pine chipmunk, red-tailed chipmunk, northern flying squirrel, golden-mantled squirrel, red squirrel, bushy-tailed woodrat, short-tailed weasel, long-tailed weasel, mountain cottontail, snowshoe hare, yellow-bellied marmot, porcupine, bobcat, coyote, mountain lion, black bear, moose, elk, mule deer, and white-tailed deer.

The Migratory Bird Treaty Act (MBTA), 16 U.S. Code (U.S.C.) 703 was enacted in 1918. The MBTA prohibits the taking of any migratory birds, their parts, nests, or eggs, except as permitted by regulations, and does not require intent to be proven. The U.S. Fish and Wildlife Service (USFWS) consults on issues related to migratory birds.

3.11.3.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not have any impacts on wildlife or wildlife habitat unless a wildfire were to occur, causing both wildlife and their habitat to be adversely affected or destroyed. For some species it could take years for their habitat to re-establish.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

Conducting fuel reducing activities would have a short-term minor impact on terrestrial wildlife in the area, as the presence of humans may cause some species to vacate the area during project activities. However, wildlife would quickly return to the area when the vegetation management activities have been completed. Additionally, the proposed activities would occur primarily between July and November; therefore, minimizing impacts related to nesting and denning activities by wildlife species.

The Montana Division of Fish, Wildlife, and Parks (FWP) was contacted regarding this project and had no concerns regarding wildlife. This correspondence is included in Appendix C.

3.11.4 Aquatic Wildlife

3.11.4.1 Baseline Conditions

The Flume itself does not contain aquatic habitat. Although there are several creeks and the Chessman Reservoir in the vicinity of the project area, according to Helena, fish are not diverted by the Flume. Additionally, there are no fish in Chessman Reservoir. Montana FWP was contacted regarding aquatic resources within the project area. They indicated that if work was not performed in a perennial stream, permits would not be necessary. Proposed project activities would not be performed in any perennial stream. Montana FWP correspondence is included in Appendix C.

3.11.4.2 Environmental Consequences

Since aquatic habitat does not occur within or immediately downstream of the project area, aquatic resources would not be affected regardless of the alternative selected.

3.11.5 Threatened, Endangered, and Special-Status Species

3.11.5.1 Baseline Conditions

Montana's Natural Heritage Program

A search of the Montana Natural Heritage Program was conducted for the project area. Four species were identified as having the potential to occur within the project vicinity. These species include three mammals (the gray wolf, the Canada lynx, and the wolverine) and one invertebrate (the Agapetus Caddisfly). The gray wolf and Canada lynx are discussed in more detail under federally listed species.

Wolverine

The wolverine is ranked globally as G4 (uncommon, but not rare [although it may be rare in parts of its range], and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern) and in the State of Montana as S3 (potentially at risk

because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas) (Montana Natural Heritage Program 2008).

The wolverine is a bear-like mustelid with massive limbs and long, dense, dark brown pelage, paler on the head, with two broad yellowish stripes extending from the shoulders and joining on the rump. Variable white or yellowish markings are often present on the throat and chest. The tail is bushy. The feet are relatively large (2.5 to 4.5 inches total length) with robust claws. Wolverines weigh between 15.4 and 70.4 pounds and range from 3 to 3.6 feet in length. Females average about 10 percent less than males in linear measurements and 30 percent less in mass (Montana Field Guide 2008b).

Wolverines in northwestern Montana and Alaska tend to occupy higher elevations in summer and lower elevations in winter. Seasonal ranges are all within a large home range; dispersal movements of more than 186 miles are known (Montana Field Guide 2008b).

Wolverines are limited to alpine tundra, and boreal and mountain forests (primarily coniferous) in the western mountains, especially large wilderness areas. However, dispersing individuals have been found far outside of usual habitats. They are usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat. When inactive, wolverines occupy dens in caves, rock crevices, under fallen trees, in thickets, or similar sites. Wolverines are primarily terrestrial but may climb trees (Montana Field Guide 2008b).

In Montana, wolverines occur in medium to scattered timber, while areas of dense, young timber were used least. Wolverines avoid clearcuts and burns, crossing them rapidly and directly when they enter at all. Wolverines in the Northern Rocky Mountain region are associated with fir, pine, and larch. Aspen stands are also used, as are cottonwoods in riparian areas. Ecotonal areas appeared to be important habitat components. Wolverines may not be dependant on any particular vegetative habitat type, but prefer large, isolated tracts of wilderness supporting a diverse prey base. (Montana Field Guide 2008b)

Wolverines are opportunistic. They feed on a wide variety of roots, berries, small mammals, birds' eggs and young, fledglings, and fish. They may attack moose, caribou, and deer hampered by deep snow. Small- and medium-size rodents and carrion (especially ungulate carcasses) often make up a large percentage of the diet. Prey is captured by pursuit, ambush, digging out dens, or climbing into trees. They may cache prey in the fork of tree branches or under snow (Montana Field Guide 2008b).

Wolverines are generally solitary and wide-ranging. They occur at relatively low densities (e.g., 1 per 40 square miles in northwestern Montana). Home ranges of males are larger than those of females, with home ranges of up to several hundred square miles. The mean annual home range of males is approximately 260 square miles in Montana. Female home ranges are approximately 240 square miles in Montana. Males in some areas apparently are territorial, but in Montana there was extensive overlap of the ranges of both the same and opposite sexes. Apparently territory/range size depends on availability of denning sites and food supply. Some individuals travel regularly over the same route. There are no important predators other than humans (Montana Field Guide 2008b).

Agapetus Caddisfly

The Agapetus Caddisfly is an invertebrate that is ranked globally as G2 and in Montana as S2 (at risk because of very limited and/or declining numbers, range, and/or habitat, making it

vulnerable to global extinction or extirpation in the State) (Montana Natural Heritage Program 2008).

The Caddisfly occurs in Idaho, Montana, and Manitoba, and has been reported in Lewis and Clark County. The larvae occur on the upper surfaces and sides of cobbles and boulders in moderate gradient, fast flowing, foothill and mountain streams. This genus inhabits streams with more intermediate characteristics between the higher elevation, cold mountain streams, and the large, warmer transitional rivers downstream. Generally the riparian canopy of the occupied streams is mostly (>50 percent) open, and less shaded than mountain streams. In clear streams and rivers during low flows, it is typical to be able to locate and identify Agapetus larvae on the tops of rocks. (Montana Field Guide 2008a)

Federally Listed Threatened and Endangered Species

According the USFWS Web site (USFWS 2008), five species are federally listed as threatened or endangered in Lewis and Clark County: the grizzly bear, bull trout, black-footed ferret, Canada lynx, and gray wolf. These species are described in the following paragraphs.

Grizzly Bear – Threatened

On September 1, 1975, the grizzly bear was classified as a threatened species by the USFWS throughout its range in the lower 48 States.

The grizzly bear is globally ranked as G4T3T4 (uncommon but not rare [although it may be rare in parts of its range], and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern; with the subspecific taxon ranked as potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas to uncommon but not rare [although it may be rare in parts of its range], and usually widespread). The State of Montana ranks the grizzly bear as S2S3 (at risk because of very limited and/or declining numbers, range, and/or habitat, making it vulnerable to global extinction or extirpation in the State to potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas).

The grizzly bear's historic range covered much of North America from the plains westward to California. Presently, the grizzly bear is found in only about 2 percent of its former range in the lower 48 States. There are five grizzly bear subpopulations in Wyoming, Washington, Idaho, and Montana. According to the USFWS in Helena, the proposed project area is outside the distribution range for the grizzly bear.

Bull Trout – Threatened

The bull trout is a Montana Species of Concern and was listed as "threatened" by the USFWS in 1998. In Montana, bull trout are native to rivers, streams, and lakes in the Columbia (Kootenai, Clark Fork, Bitterroot, Blackfoot, Flathead, and Swan drainages) and Saskatchewan River (St. Mary and Belly drainages) basins.

The bull trout is a long-lived species, generally reaching sexual maturity at 5 years of age. They spawn in small streams between late August and early November, building nests, or "redds," in which they lay their eggs. The hatched fry do not emerge from the redds until the following spring. Bull trout can grow to be greater than 3 feet in length and weigh more than 20 pounds.

Montana bull trout display various life history strategies. Some bull trout are residents, spending their entire lives in a single stream. Other bull trout have migratory life histories, either living in

major rivers as sub-adults and adults and then migrating into smaller tributaries to spawn (fluvial), or living in lakes and reservoirs as sub-adult and adults and migrating into tributaries to spawn (adfluvial). Migratory bull trout can move great distances (>150 miles) in response to environmental changes and spawning cues.

The Bull trout has very specific habitat needs for many of its life stages, making it more vulnerable to environmental degradation than most other salmonids. Adult bull trout require cold water temperatures, clean cobble/boulder substrates, and overhead cover. Spawning redds are only constructed in stream reaches where upwelling ground water is available to aerate the buried eggs. Bull trout eggs are easily smothered by low levels of silt. Emerging fry and juveniles require clean rock stream substrates with sufficient open spaces for them to hide in as they develop into sub-adults.

Declines in bull trout abundance and distribution have been caused by habitat loss and degradation from land and water management practices; population isolation and fragmentation from dams and other barriers; competition, predation, and hybridization with introduced non-native fish species (lake trout, brook trout, northern pike, and others); historical overharvest; and poaching. Although their numbers and distribution have declined from historical levels, bull trout populations exhibiting resident and migratory life histories can be found throughout their historic range in Montana.

The bull trout distribution in Montana is limited to areas west of the Continental Divide. Therefore, bull trout are not located within the project area.

Black-Footed Ferret – Endangered

The black-footed ferret was listed by the USFWS on June 2, 1970. Black-footed ferrets are 20 inches to 24 inches long, including a 6 inch tail, and weigh up to 2.5 pounds. They have a yellowish brown body with a distinctive black mask across the face, black on the feet and the tip of the tail. The related long-tailed weasel is about half the size of the ferret and does not have the distinctive black markings. Black-footed ferrets are primarily nocturnal and are active in winter.

Black-footed ferrets once ranged throughout the Great Plains. Populations declined dramatically in the 1980s. From 1987 until 1991 the black-footed ferret may have been extirpated in the wild. In the fall of 1991, 49 captive animals were reintroduced into the wild in Wyoming. The reintroduced animals were designated an “experimental” population. Additional ferrets have been introduced each year since 1991. Unconfirmed sightings from other areas continue to be reported. There are still about 400 black-footed ferrets in captivity.

The black-footed ferret inhabits short grass prairies, always within close proximity to prairie dog towns. Prairie dogs comprise 90 percent of the diet of black-footed ferrets. A ferret family of 4 will consume an average 763 prairie dogs per year. These animals utilize prairie dog burrows for shelter and raising families. Therefore, prairie dogs are essential to black-footed ferrets.

The rapid decline of black-footed ferrets has been linked to the eradication of prairie dogs. Prairie dogs now occupy less than 1 percent of their historic range. Canine distemper also can threaten ferret populations.

The project area is located within a forested area and contains no prairie dog habitat. As the black-footed ferret inhabits short grass prairies and requires close association with prairie dogs, no black-footed ferrets are expected to occur within the project area.

Canada Lynx – Threatened

The Canada lynx is globally ranked as G5 (common, widespread, and abundant [although it may be rare in parts of its range]. Not vulnerable in most of its range). The Canada lynx is ranked as S3 (potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas) by the State of Montana. On March 21, 2000, the USFWS listed the Canada lynx in the contiguous United States as threatened under the Endangered Species Act (ESA).

The boreal forests of Canada and Alaska are the primary habitat of the Canada lynx in North America. Populations occurring in the western mountains of the conterminous United States occupy peninsular extensions of this distribution. Canada lynx distribution at southern latitudes represents the occupation of marginally suitable habitat that decreases in quality and availability as one moves southward. This pattern of decreasing habitat suitability with decreasing latitude is evident in the Rocky Mountains, with Canada lynx being more common in northwestern Montana, and decreasing in abundance to the south and east.

In the Northern Rocky Mountain Region, the majority of Canada lynx occurrences are in moist sub-alpine forests of Douglas fir, western spruce/fir, and fir/hemlock with a dense understory of woody vegetation. Primary Canada lynx habitat is generally between 4,920 and 6,560 feet above msl.

In Montana, Canada lynx have been documented, historically and currently, throughout the Rocky Mountains, from the Canadian border through the Yellowstone area. Canada lynx presence has also been verified in the majority of the mountain ranges in Montana, including isolated ranges such as the Big Belt, Little Belt, and Crazy Mountains, and trapping records indicate past occupancy in the Big Snowy, Little Snowy, and Highwood Mountains. USFWS has concluded that a resident population of Canada lynx is distributed throughout its historic range in Montana.

Canada lynx lead solitary lives except when rearing young and during a short breeding period from February to March. Lynx seem to prefer to travel through coniferous forests, also using ridges, saddles, and riparian areas. Canada lynx are most active from shortly before dark to shortly after dawn but are sometimes active during daylight hours. They usually bed for the day in, or on the edge of, dense to moderate cover. The home range size of the Canada lynx is 5 to 20 square miles, with reported home ranges of 37 square miles for males and 20 square miles for females.

Canada lynx feed primarily upon snowshoe hares, especially during the winter. Canada lynx also eat other small to medium-sized animals and occasionally larger animals and carrion. The distribution and abundance of lynx are associated with those of their primary prey species, the snowshoe hare. However, the red squirrel is an important alternative prey. In Montana, snowshoe hares are most abundant in young, dense stands of Lodgepole pine.

The project area is located around 6,000 feet above msl and includes stands of Douglas fir, Engelmann spruce, and Lodgepole pine. However, the quality of the forest surrounding the Flume is deteriorating due to pine beetle infestation. Additionally, there are several homes located near the proposed project area.

Gray Wolf – Endangered

On March 11, 1967, the gray wolf was designated as Endangered in the conterminous United States. In April 2003, the gray wolf was reclassified and downlisted from an endangered to a threatened species. However, a recent court ruling has returned the status of the gray wolf from threatened to endangered, for populations outside of the nonessential experimental areas.

The availability of ungulate prey and isolation from human activities are the most important factors that determine suitable wolf habitat. Wolves are highly social animals that form packs of 2 to 20 individuals organized around a breeding pair. Most packs include a pair of breeding adults ("alpha" or dominant), other nonbreeding adults and/or yearlings that may be offspring from previous years, and pups of the year. Depending on the number of wolves in the pack and prey availability, each pack occupies a territory of 50 to 300 square miles.

Wolves are found in varied habitat, including grasslands, sagebrush steppes, coniferous and mixed forests, and alpine areas. Wolves are opportunistic predators and are primarily associated with an ungulate prey base that includes deer, elk, and moose. Wolves prey on ungulates throughout the year, and ungulates account for more than 90 percent of the biomass consumed. Beaver and other small mammals make up a small part of the gray wolf diet.

The gray wolf is ranked globally as G4 (uncommon but not rare [although it may be rare in parts of its range], and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern). The species is ranked by the State of Montana as S3 (potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas).

In North America, the gray wolf ranges from Alaska, across the Northwest Territories, throughout the Canada provinces, with extensions into Idaho, Montana, and the northern Great Lakes region, and remote parts of the southwest and Mexico. Since 1982, several packs have formed in Montana, primarily from Canadian dispersers.

In 1987, the USFWS developed the Northern Rocky Mountain Gray Wolf Recovery Plan for the gray wolf in the northern Rockies that identified northwestern Montana, central Idaho, and the Greater Yellowstone Area (GYA) as the three recovery areas. As part of the recovery plan, the USFWS established a biological goal of at least 10 breeding pairs of wolves in each of these three areas for 3 successive years. On November 22, 1994, the USFWS approved a plan to establish nonessential experimental populations of wolves in central Idaho and Yellowstone National Park. In 1995 and 1996, wolves were reintroduced in the central Idaho and GYA recovery areas. The wolves in the two experimental areas are not classified as Threatened and Endangered (T&E). The Red Mountain Flume project area lies within the Northwest Montana recovery area where the gray wolf is listed as endangered under the ESA.

The Northwest Montana recovery area encompasses an area of more than 19,300 square miles north of Interstate 90 and west of Interstate 15, which is primarily a mixture of public and private land. The proposed project is located entirely within this recovery area.

Based on monitoring work completed by USFWS since 2005, wolves have been reported within the general project area and are likely to occur in the area again because of the close association with the Continental divide. Wolf packs are known to occur north, west, and south of the project area and have moved through the Tenmile drainage in the past.

Communications with USFWS indicated that generally speaking, the type of proposed activity (logging/fuel reduction) would not pose a problem for wolves. Timing and location relative to the denning period could be a consideration/disturbance. If there is a den in the project area, deferring activity until the pack left the den (around mid-June) would be the appropriate mitigation. The proposed project activities are scheduled to occur between July and February.

3.11.5.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not impact any of the threatened and endangered species or their habitat that have the potential to occur in Lewis and Clark County or the project area. However, if a wildfire occurred in the general project area, threatened and endangered species and their habitat could be adversely impacted.

Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The Montana FWP was contacted about the species included in the Natural Heritage search. Montana FWP comments concerning the gray wolf were included with the text and information provided to USFWS and included in FEMA's determination of effects. Montana FWP did not provide any comments or concerns regarding the Canada lynx, wolverine, or caddisfly. Correspondence with Montana FWP is provided in Appendix C.

Table 3-2 summarizes the T&E species that are known to occur within Lewis and Clark County. As indicated in the table, the grizzly bear, bull trout, and black-footed ferret do not occur within the project area. Therefore, the proposed action would have no affect on these species. The Canada lynx and the gray wolf both have the potential to occur within the project area.

Determination of Effects

Based on the information provided above, site reconnaissance of the project area, and discussions with USFWS and Montana FWP, FEMA has determined that the proposed project would have a **MAY EFFECT – NOT LIKELY TO ADVERSELY EFFECT** for the Canada lynx and gray wolf. FEMA also determined that the proposed action would have **NO AFFECT** on the grizzly bear, bull trout, and black-footed ferret. In a letter dated September 16, 2008 (Appendix C), USFWS concurred with FEMA's determination. A summary of the effects determination is provided in Table 3-2.

Table 3-2: Threatened and Endangered Species in Lewis and Clark County

Species	Status	Occurrence	Range-Montana
Grizzly Bear *(Ursus arctos)*	Threatened	Not present in project area	Alpine/subalpine coniferous forest; western Montana
Bull Trout *(Salvelinus confluentus)*	Threatened; Critical Habitat	Not present in project area	Clark Fork, Flathead, Kootenai, St. May, and Belly River basins; cold water rivers and lakes Critical habitat has been designated in portions of rivers, streams, lakes, and reservoirs within 12 Montana counties, including Lewis and Clark
Black-footed ferret *(Mustela nigripes)*	Endangered; Non-Essential Experimental Population	Not present in project area	Prairie dog complexes; eastern Montana
Canada Lynx *(Lynx canadensis)*	Threatened; Critical Habitat	Resident	Western Montana-montane spruce/fir forest Designated critical habitat is not located within Lewis and Clark County
Gray Wolf *(Canis lupus)*	Endangered; Non-Essential Experimental Population	Transient	Forest; western Montana

Table 3-3: Summary of Effects Determination

Species	Summary of Effects Determination
Grizzly Bear (Threatened)	**No Affect**; Project area is outside distribution range.
Bull Trout (Threatened)	**No Affect**; the bull trout range in Montana is limited to west slope streams and rivers. The proposed project area is located on the eastern slope. Therefore, no bull trout occur within the project area.
Black-Footed Ferret (Endangered)	**No Affect**; habitat for the black-footed ferret is limited to the immediate vicinity of prairie dog complexes. No prairie dog complexes occur within the project area. Therefore, no black-footed ferrets are located within the project area.
Canada Lynx (Threatened)	**May Effect, Not Likely to Adversely Affect**; resident**.** This determination is based on the lack of documented lynx use of the project area, no foreseeable change in prey availability during or after the project, and the short-term increase in human activity and related noise associated with the alternative that may temporarily displace lynx.
Gray Wolf (Endangered)	**May Effect, Not Likely to Adversely Affect**; transient (recent sightings verified near project area). This determination is based on the lack of documented den or rendezvous sites near the project area, no foreseeable change to prey availability during or after project activities, and the short-term increase in human activity and related noise associated with the project that may temporarily displace wolves.

3.12 CULTURAL RESOURCES

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA), as implemented by 36 CFR Part 800. Requirements include the need to identify significant historic properties that may be impacted by the Proposed Action or alternatives. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed in or determined eligible for listing in the National Register of Historic Places (NRHP) (36 CFR 60.4).

3.12.1 Baseline Conditions

Archaeological evidence of prehistoric or historic American Indian habitation or use of the Tenmile watershed is scarce. This is probably attributable to lack of survey information, natural processes (flooding and scouring), and historic-modern development. Archaeological sites have been obscured or destroyed. Intact sites may lie buried (or hidden) on higher, less disturbed, terraces and benches on both National Forest and private land. Opportunistic and compliance (project) inventories may eventually yield additional signs of ancient American Indian use, especially given the drainage's proximity to Mullan and Priest Passes—important east-west travel routes in the distant past (Davis 2006).

Historically, the powerful Blackfeet controlled the Helena area until the mid-1700s, having earlier pushed out the Shoshone, Salish, and other western Montana Indian tribes. John Coulter

encountered the Blackfeet in the area in 1807 and 1811. The murder of Malcom Clarke, a prominent Helena Valley rancher, by a member of Mountain Chief's band in 1869 precipitated the Baker Massacre on the Marias River in 1870. The Blackfeet thus relinquished control of the Helena Valley area, easing the way for mining and white settlement. American Indians of different tribal affiliations continued to travel through the Helena Valley area well into the early 1900s, leaving their various Indian reserves in search of game, other foodstuffs, and white goods. The Helena Valley (and Tenmile drainage) area was used over thousands of years by many tribes but it does not lie within ceded treaty lands or reservation boundaries (Davis 2006).

The discovery of gold in Last Chance Gulch created the community of Helena. The Tenmile drainage has served as Helena's water source ever since. William Chessman, seeing the financial benefits of supplying domestic water to the fledging Helena mining community, founded the Helena Water Works in 1864. He then constructed Chessman Reservoir and a series of flumes and ditches. Chessman Dam gave way in 1876, flooding and scouring the Tenmile drainage. In 1886, the various water companies operating in Helena consolidated into the Helena Water Works Company (a New Jersey corporation). In 1911, Helena acquired the company for about $440,000. Tenmile Creek still supplies drinking water to Helena and the water ditch system is perhaps the oldest surviving (major) municipal water system in Montana (Davis 2006).

Table 3-4 summarizes the types of historic activities and surviving historic properties within the Tenmile Watershed.

Table 3-4: Historic Themes and Heritage Property Types in the Tenmile Watershed

Historic Theme	Surviving Historic Properties
American Indian: 12,000 to 1900	Isolated prehistoric artifacts; No archaeological sites identified
White Settlement: 1864-1900	Chessman-Helena water ditch Rimini community Homesteads
Mining: 1864-1950	Placer claims and mines Lode mines and mills Cabins and related ruins
Transportation: 1864-1900	Old Rimini wagon road Helena-Red Mountain Branch Line Montana Central Branch Line County road
Forest Service: 1908-present	Moose Creek Ranger Station Colorado Mountain Lookout Moose Creek Villa tract and cabins Campgrounds and trails
Great Depression and World War II (WWII): 1930-1945	Civilian Conservation Corps (CCC) Camp Rimini CCC trail and other improvements WW II Dog Training Camp

Source: Davis 2006

In a letter dated December 5, 2007, the Montana State Historic Preservation Office (SHPO) indicated that the Red Mountain Flume was part of the Chessman Dam/Reservoir site (24LC0876) and probably used for mining in the area as well as for water for Helena. The site has previously been determined eligible for listing in the NRHP. The Montana SHPO indicated that the proposed project was not likely to impact the Flume or dam.

3.12.2 Environmental Consequences

3.12.2.1 Alternative 1 – No Action

The Flume, eligible for listing on the NRHP, could be affected or destroyed if a wildfire were to occur. Other historic sites could also be negatively impacted.

3.12.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

The 100-year old Flume is eleiglbel for listing on the NRHP. The Flume would not be altered by any of the proposed project activities. The purpose of the project is to reduce the potential for damage to the Flume from wildfire. Activities would occur on the ground surface; therefore, unidentified archeological resources would not be adversely affected. For the proposed project activities, FEMA recommended a "finding of no historic properties affected" in accordance with Section 106 [36 CFR 800.4 (d)]. In a letter dated October 8, 2008, the Montana SHPO concurred with FEMA's finding.

In the unlikely event that cultural resources are encountered during project activities, work would be stopped and the Montana SHPO and FEMA Region VIII Environmental Officer would be contacted. Project activities would not resume until appropriate coordination has been completed.

3.13 RECOGNIZED ENVIRONMENTAL CONDITIONS

The American Society for Testing and Materials (ASTM, 1994) Standard E 1527-94 defines a recognized environmental condition (REC) as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property".

3.13.1 Baseline Conditions

Two Environmental Data Resources (EDR) database searches were completed on August 21, 2008, with an extended search radius to provide adequate coverage of the project vicinity. The EDR searches identified two National Priority List (NPL) sites. The project area is located within the Upper Tenmile Creek Mining Area NPL site. The second NPL site is the Basin Mining Area located in Jefferson County, Montana.

The Upper Tenmile Creek Mining Area is essentially centered on the town of Remini, Montana, which is several miles northwest of the project area. The site itself covers approximately 53 square miles. The main contamination associated with this site is elevated metals concentrations in the surface water of Tenmile Creek. EPA, Montana DEQ, and the USFS have all been involved in resolution of the surface water contamination. A Record of Decision (ROD) was issued for this NPL site in June 2002. Efforts are underway to construct a community water system for the town of Remini. This site was also identified in five other databases including Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); U.S. Engineering Controls; U.S. Institutional Controls; ROD; and Facility Index System (FINDS).

The Basin Mining Area is located near Basin, Montana over 3 miles south of the proposed project area. This site includes the community of Basin and the surrounding watersheds of Basin Creek, Cataract Creek, and part of the upper Boulder River. A ROD for the area around Basin

was completed in March 2001. This site was also identified in five other databases including CERCLIS; U.S. Engineering Controls; U.S. Institutional Controls; ROD; and FINDS.

The EDR also identified one site on Mine Master Index File (MINES) from the Department of Labor, Mine Safety, and Health Administration and one additional FINDS site. These sites are both over 2 miles from the project area.

Two sites were identified on the spills or hazardous material spills or releases database (SPILLS). Both of these sites have been closed under the program and require no further action.

Twenty orphan sites (inadequate address to map the location) were listed in the EDR reports. Based on site reconnaissance and further address investigation, none of the orphan sites appear to be located in or near the project area.

3.13.2 Environmental Consequences

3.13.2.1 Alternative 1 – No Action

With the No Action Alternative, only maintenance and repair activities would occur. These activities would not impact any of the identified REC sites.

3.13.2.2 Alternative 2 – Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)

Although the project area is located within an NPL site, the proposed project activities would not increase the concentrations of metals in Tenmile Creek. Additionally, since all the project activities would be limited to the specific project area, there would not be any impact to the other identified REC sites.

3.14 CUMULATIVE IMPACTS

Section 1508.7 of the CEQ Regulations defines *cumulative impacts* as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions". Cumulative effects are not wholly different effects from direct or indirect effects of an action. Cumulative effects are merely a way of placing seemingly isolated or insignificant direct and indirect effects in context with respect to overall impacts, both over time and in an area larger than that evaluated for direct and indirect effects. Cumulative effects are discussed in terms of being additive, synergistic, or reductive.

Over the past couple of years, Helena has completed a forest land assessment of Helena lands within the Tenmile Creek Watershed to determine the potential for a wildfire in the watershed and possible measures to reduce that risk. Helena has been working with the Tri-County Fire Working Group to establish a plan to minimize the potential for fire in the Tenmile Creek Watershed. Additionally, Helena is working on a resolution to form a committee that would include personnel from Helena, the Helena National Forest, Lewis and Clark County, Montana DEQ, Montana Department of Natural Resources and Conservation, volunteer fire departments, and private citizens. The Tenmile Watershed Collaborative Committee will bring forward recommendations for options for sustainable forest and watershed management that will preserve and protect Helena's water supply. If realized and put into action, these recommendations would have a beneficial long-term impact on the Tenmile Creek Water Supply system.

3.15 COORDINATION AND PERMITS

The following Federal, State, and local agencies were contacted and consulted during the preparation of this EA. Additional coordination and permits that are required prior to implementation of an alternative are also identified.

U.S. Fish and Wildlife Service

No additional coordination or permits will be required regarding threatened and endangered species unless project activities change.

U.S. Army Corps of Engineers

No additional coordination will be required unless project activities change.

U.S. Forest Service

Helena will need to obtain a permit for the controlled burning of the slash piles.

U.S. Environmental Protection Agency

No addition coordination will be required unless project activities change.

Natural Resources Conservation Service

No additional coordination or permits will be required unless project activities change

Montana State Historic Preservation Office

No additional coordination or permits will be required unless project activities change. If cultural resources are encountered during project activities, work will be stopped and the Montana SHPO and FEMA Region 8 Environmental Officer will be contacted. Project activities will not resume until appropriate coordination has been completed.

Montana Division of Fish, Wildlife, and Parks

No additional coordination or permits will be required unless project activities change.

Montana Department of Environment Quality

Helena will coordinate with Montana DEQ to determine if the proposed action is a major burn, as per Montana DEQ's guidelines. If it is determined that the project involves a major burn, Helena will need to submit the required written request form prior to conducting any slash pile burns.

Lewis and Clark County Sheriff's Office

Helena would need to inform the Lewis and Clark County Sheriff's office prior to initialing controlled burns.

SECTION FOUR SUMMARY

Two alternatives were evaluated in this EA. They included: (1) No Action, and (2) Upper Tenmile Creek Watershed Fuel Reduction. Potential environmental impacts for each alternative are summarized in Table 4-1 (page 4-2).

With the **No Action Alternative**, no action would be taken to reduce the fuel load in the vicinity of the Red Mountain Flume.

Alternative 2 would involve the removal of all dead and/or fallen timber 3 inches in diameter or larger and all Lodgepole pine 300 feet down slope from the trestles that support sections of the Flume and 150 feet beyond the end of the trestle at each location. The project would also remove all of the downed and standing dead timber 3 inches in diameter or larger for approximately 100 feet above the Flume. Alternative 2 would include both mechanical and hand clearing, and burning of hand piles.

Table 4-1: Comparison of Alternatives by Environmental Resource

Environmental Resource	Alternative 1 No Action	Alternative 2 Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)
Topography/Geology and Soils	No impact on topography or geology. If a wildfire should occur, project area soils could be converted to hydrophobic soils. This would be a significant impact.	No impact on topography or geology. Clearing of vegetation and removal of trees would not have a significant impact on soils. Helena would implement BMPs for Forestry to minimize impacts to soils.
Land Use and Planning	No direct impact on land use. If a wildfire were to destroy the flume, the project area would no longer be used for water conveyance. No impact on prime farmland or floodplains.	No impact on land use, floodplains, or prime farmland.
Traffic and Circulation	No direct impact. The potential for a wildfire in the area of the flume would remain.	Short-term impacts on traffic during vegetation management activities. Residents in the vicinity of the project area would be notified in advance via individual letters and a public notice in the local paper.
Public Health and Safety	No impact.	A reduction in the potential for a catastrophic wildfire in the area of flume. Long-term positive impact on Helena's water supply.
Socioeconomics	No direct impact. A catastrophic wildfire could result in economic issues for Helena and users of the water supply.	Long-term beneficial economic impact to Helena and the area residents by allowing Helena to maintain an affordable water supply. The purchase of goods and services during the project would have a short-term beneficial effect on local business community. There would be no disproportionate adverse effects on any minority or low-income population.
Visual Resources	No direct impact. However, a wildfire could have a significant impact on the viewshed of Red Mountain and the Flume area.	Short-term negative visual impact related to the loss of trees and other vegetation near the flume. Long-term positive impact on visual resources by reducing the likelihood of a wildfire and providing for a healthier forest near the flume.
Air Quality	No direct impact. A wildfire would have a short-term negative impact on air quality.	Minor, short-term reduction in air quality caused by increased particulates during vegetation management activities and open burns. Requires a permit from USFS, coordination with Montana DEQ, and notification of Lewis and Clark County Sheriff's Office.
Public Services and Utilities	No impact unless a wildfire damages for destroys the Flume.	No impact on public services and utilities in the project area. Long-term beneficial impact on Helena's water supply.

Environmental Resource	Alternative 1 No Action	Alternative 2 Upper Tenmile Creek Watershed Fuel Reduction (Proposed Action)
Noise	No impact.	Short-term increase in noise levels near the project area due to machinery and chainsaws. All equipment would be equipped with proper mufflers and construction would be restricted to daytime hours. With these mitigation measures, the temporary increase would not be considered significant.
Hydrology/Water Quality	No direct impact on hydrology or water quality. However, a wildfire could have a significant impact on the water quality in area streams if hydrophobic soils are created.	No impact on hydrology. Long-term positive impact on water quality by reducing the likelihood of a catastrophic wildfire. BMPs and including Streamside Management Zones would be employed to minimize soil erosion and the transport of sediment. No adverse effect on water quality would be expected with these mitigation measures
Wetlands	No impact.	No wetlands would be impacted by project activities.
Vegetation	No direct impact. However a wildfire would have a significant impact on vegetation.	Long-term positive impact on vegetation in the vicinity of the project. Approximately 108 acres of vegetation would be impacted by project activities. However, the vegetation management activities focus on removing dead, fall, and diseased trees.
Wildlife Resources	No direct impact. However, a wildfire would have short-term negative impact on wildlife.	Short-term minor impact during project activities which may cause wildlife to leave the immediate vicinity of the project area.
Aquatic Resources	No impact.	No impact.
Threatened and Endangered Species	No direct impact. However, a wildfire would have a negative impact on any threatened and endangered species within the fire area.	No impact on the grizzly bear, bull trout, and black-footed ferret. May Affect – Not Likely to Adversely Affect the Canada lynx and gray wolf.
Cultural Resources	No direct impact. A wildfire may have a negative impact on cultural resources within the fire's area.	No impact.
Recognized Environmental Conditions	No impact.	No impact.

SECTION FIVE AGENCIES CONSULTED AND REFERENCES

5.1 AGENCIES CONSULTED

Federal Emergency Management Agency Region VIII; Denver, CO

Ms. Donna Rakocy, Mitigation Environmental Coordinator (303) 235-4750

U.S. Fish and Wildlife Service; Helena, MT

Mr. Mark Wilson, Field Supervisor (406) 449-5225

Ms. Katrina Dixon, Biologist (406) 449-5225

U.S. Army Corps of Engineers; Helena, MT

Mr. Allan Steinle, Regulatory (406) 441-1375

U. S. Forestry Service; Helena, MT

Ms. Molly O'Donnell, Information Assistant (406) 449-5201

U.S. Environmental Protection Agency; Helena, MT

Mr. Mike Bishop, Superfund Project Manager (406) 457-5041

Montana Office of Emergency Management; Helena, MT

Mr. Kent Atwood, Hazard Mitigation Officer (406) 202-0583

Montana Division of Fish, Wildlife, and Parks; Helena, MT

Mr. Steve Dalbey, Fisheries (406) 495-3263

Mr. Martin Miller, Montana Natural Heritage Program (406) 444-3290

Mr. Quentin Kujala, Management Bureau Chief,
Wildlife Division (406) 444-2612

Ms. Carolyn Sime, Wolf Program Coordinator (406) 444-2612

Montana State Historical Preservation Office; Helena, MT

Mr. Josef Warhanks, 106 Compliance Officer (406) 444-7715

Mr. Mark F. Baumler, State Historic Preservation Officer (406) 444-7715

Montana Department of Environmental Quality; Helena, MT

Ms. Debbie Skibicki, Air Quality Program (406) 444-1472

Ms. Julie Merkel, Air Quality Specialist (406) 444-3626

Lewis and Clark County Sheriff's Office; Helena, MT

Ms. Jeanne Welch	(406) 447-8235

City of Helena; Helena, MT

Mr. Donald Clark, Public Works Department	(406) 447-1593
Ms. Keldah Hedstrom, Natural Resource Coordinator	(406) 447-8454
Ms. Amy Teegarden, Director, Parks and Recreation	(406) 447-8462

SECTION SIX REFERENCES

American Society for Testing and Materials (ASTM). 1994. *Standard Practices for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Designation E 1527-94.

Burchfiel, B.C.; P.W. Lipman; and M.L. Zoback (editors). 1992. The Cordilleran Orogen: Conterminous U.S. *The Geology of North America*, Volume 3.

Davis, Carl. 2006. Heritage Resources Report. March 27.

Federal Emergency Management Agency (FEMA). 1985. Flood Insurance Rate Map. Community Panel Number 3000381625D. Revised September 4.

Hedstrom, Keldah. 2008. Personal communication. Natural Resource Coordinator for the City of Helena. August 20.

Helena. 2008. Tenmile Creek Water Supply Fuel Reduction Project PDM Grant Application. January 30, 2008.

Montana Prescribed Fire Services, Inc. 2007. Fuel Mitigation Prescription. Red Mountain Flume/Tenmile Creek Watershed. Prepared by Mike McFerrin.

Montana Field Guide. 2008a. An Agapetus Caddisfly – Agapetus montanus. Web site accessed August 20. http://fieldguide.mt.gov/detail_IITRI33040.aspx

Montana Field Guide. 2008b. Wolverine – Gulo gulo. Web site accessed August 22. http://fieldguide.mt.gov/detail_AMAJF03010.aspx

Montana Natural Heritage Program. 2008. Search for Tenmile Creek Water Supply Project. August 14.

Natural Resources Conservation Service (NRCS). 2008. Soil Data Mart. Lewis and Clark County, Montana. Helena National Forest Area. Web site accessed August 12. http://soildatamart.nrcs.usda.gov/State.aspx

U.S. Bureau of Census (Census). 2000a. Census 2000 Summary File, American FactFinder, Helena, Montana. Website accessed August 13, 2008. http://www.factfinder.census.gov/

U.S. Bureau of Census (Census). 2000b. Census 2000 Summary File, American FactFinder, Lewis and Clark County, Montana. Web site accessed September 16, 2008. http://www.factfinder.census.gov/

U.S. Department of Agriculture (USDA). 2001. Soil Survey of Helena National Forest Area, Montana. United States Department of Agriculture, Forest Service, Natural Resource Conservation Service, and Montana Agricultural Experiment Station.

U.S. Fish and Wildlife Service (USFWS). 2008. Mountain-Prairie Region. Federal endangered and threatened species list. Lewis and Clark County, Montana. Web site accessed August 5. http://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species/countylist.pdf

U.S. Environmental Protection Agency (EPA). 2008. EPA Greenbook Nonattainment Area Map. Last updated in June. http://www.epa.gov/oar/oaqps/greenbk/mapnpoll.html

SECTION SEVEN LIST OF PREPARERS

This EA was prepared by URS Group, Inc., for FEMA Region VIII in Denver, CO.

URS Group staff includes:

Mr. Quentin Bliss, Senior Environmental Planner - Over 37 years of progressive experience in the environmental field and has been involved with NEPA since it was enacted in 1969. Has extensive experience with all aspects of NEPA, including: the scoping process, identification and evaluation of alternatives, identification of appropriate mitigation, and agency coordination. Project experience includes over 100 multidiscipline projects that involved NEPA compliance.

Ms. Susan Volkmer, Environmental Planner I - Over 12 years of experience with environmental assessments involving human and ecological resources. Project experience includes over 60 multidiscipline projects that involved NEPA compliance.

Mr. Brian Osborn, Environmental Planner - Over 8 years of experience in the environmental field. Specialized expertise in environmental planning and NEPA compliance studies, including environmental document preparation. Project experience includes over 40 multidiscipline projects that involved NEPA compliance.

SECTION EIGHT PUBLIC NOTICES

8.1 INITIAL PUBLIC NOTICE

Public notification is hereby given by the Department of Homeland Security's Federal Emergency Management Agency (FEMA) of the intent to prepare an Environmental Assessment (EA) for a proposed project submitted by Helena, Montana to perform vegetation management activities to reduce the risk of damage from wildfire to Helena's Tenmile Creek potable water delivery system. A portion of the funding would be provided by FEMA's Pre-Disaster Mitigation grant program. This program assists state and local governments with implementing cost-effective hazard mitigation planning and project activities that complement a comprehensive mitigation program.

The main source of Helena's municipal water is the Upper Tenmile Creek Watershed. The Upper Tenmile Creek Watershed is predominately forested. The Red Mountain Flume is a critical portion of the water conveyance system for Helena's potable water supply. The Flume starts on the west side of Red Mountain at the confluence of Banner Creek and follows the contour of Red Mountain to the north for a distance of 4.8 miles in an easterly direction to Chessman Reservoir. The Flume elevation runs from 6,300 feet to 6,220 feet. The conveyance is comprised of 13,000 feet of open unlined ditch, 11,800 feet of sheet metal Flume, and 500 feet of pipeline. Trestles that total 4,036 feet in nine sections support approximately 20% of the Flume. The trestles are constructed of wood timbers and planks to hold the Flume at the proper elevation for water to flow. Approximately 2.1 miles of the Flume is located on private land and 2.7 miles is located on the Helena National Forest.

In the case of a catastrophic wildfire, the wooden timber and plank trestles would be destroyed; intense heat, fallen burned trees, and other debris would damage the metal Flume, diversion structures, and waste gates; sediments and debris would impede water flow, all resulting in erosion and likely destruction of the water conveyance system.

The President's Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). These regulations require an investigation of the potential environmental impacts of a proposed federal action, and an evaluation of alternatives as part of the environmental assessment process. FEMA also has regulations that establish the agency-specific process for implementing NEPA. An EA will be prepared in accordance with both FEMA and CEQ NEPA regulations. Two alternatives will be considered in this EA:

The NO ACTION ALTERNATIVE, which considers the consequences of taking no action to reduce the fuel load surrounding the Tenmile Creek Flume.

The PROPOSED ACTION ALTERNATIVE, which would reduce the fuel load around that portion of the Flume located on 2.1 miles of private land, approximately 108 acres, located in Lewis and Clark County. The proposed action would remove all dead and/or fallen timber 3 inches in diameter and larger 100 feet uphill of the Flume, and dead and/or fallen timber 3 inches in diameter and larger plus all Lodgepole pines 300 feet downhill of the Flume. Harvestable timber would be sold. The remaining timber would be cut and piled for burning when climatic conditions are favorable and away from fire hazards and riparian areas.

A second action alternative considered by Helena was the replacement of the century-old Flume with a pipeline, but it was determined it was not feasible at this time because of the difficult terrain and cost.

The President of the Untied States has issued Executive Orders that require Federal Agencies to focus attention on the environment and on human health and safety when considering the funding of an action. Particular attention is paid to Executive Orders 11988 – Protection of Floodplains, 11990 – Protection of Wetlands, and 12898 – Environmental Justice. FEMA also considers the effects of the proposed action and its compliance with the Endangered Species Act and National Historic Preservation Act.

A public comment period related to the alternatives as outlined above or other possible alternatives will remain open for 15 days following publication of this notice. In addition to this initial comment period, a final comment period will be opened for notice of availability of the Draft EA.

Interested parties may obtain more detailed information about the alternatives from Helena by calling Keldah Hedstrom at (406) 447-8454, or by e-mail at khedstrom@ci.helena.mt.us. Additionally, comments or question regarding the EA process can be directed to Donna Rakocy, FEMA Region VIII Mitigation Environmental Coordinator by calling (303) 235-4750 or by e-mail at donna.rakocy@dhs.gov.

8.2 FINAL PUBLIC NOTICE

Notice is hereby given to the public that it is the intent of the Department of Homeland Security-Federal Emergency Management Agency (FEMA) to provide funds to Helena, Montana, to reduce the risk of damage from wildfire to Helena's Tenmile Creek potable water delivery system – the Red Mountain Flume (the Flume).

FEMA is required under the National Environmental Policy Act (NEPA) to consider all reasonable alternatives for protecting the potable water delivery system from damage due to wildfires. The purpose of the proposed action is to reduce the risk of future damage, hardship, loss, and suffering by reducing the fuel load near the Flume. The Draft Environmental Assessment (EA) considered the following two alternatives: 1) a no action alternative, which considers the consequences of taking no action; and 2) reducing the fuel load along the Tenmile Creek water supply.

The President of the United States has issued Executive Orders that require Federal agencies, when considering an action for funding, to focus attention on the environment and human health with respect to Floodplain Management, Executive Order 11988; Protection of Wetlands, Executive Order 11990; and Environmental Justice, Executive Order 12898. Compliance with Executive Orders, other environmental laws, and NEPA has been documented in this Draft EA.

FEMA or the applicant has coordinated with the following agencies: Montana State Historic Preservation Office; Montana Division of Fish, Wildlife, and Parks; Montana Office of Homeland Security/Emergency Management Agency; Montana Department of Environmental Quality; Lewis and Clark County Sheriff's Office; U.S. Fish and Wildlife Service; U.S. Forest Service; and U.S. Army Corps of Engineers.

Based upon agency comments, and the EA process, there does not appear to be any significant environmental impact on the human environment associated with the proposed action if documented mitigation measures and requirements stated in the EA are followed. Therefore, an Environmental Impact Statement will not be prepared, and if no comments are received, a Finding of No Significant Impact (FONSI) will be signed fifteen (15) days from the date of this notice, and the project will proceed.

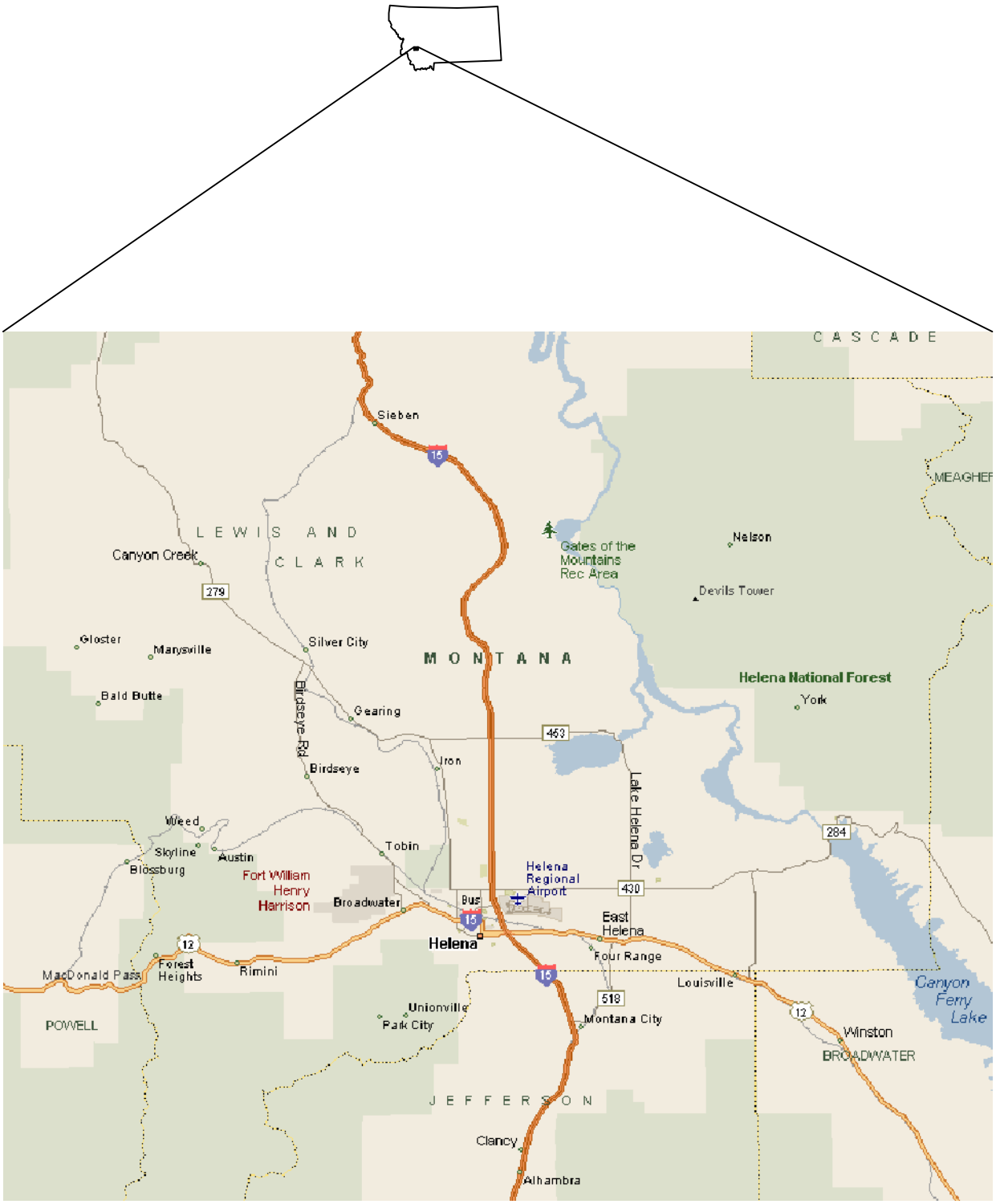
Interested persons may submit comments, request additional information, or request a copy of the FONSI by contacting FEMA's Region VIII Office located at the Denver Federal Center, P.O. Box 25267, Denver, CO, 80225 or by calling (303) 235-4750 between 8:00 a.m. and 4:30 p.m. Mountain Time, Monday through Friday. Comments or requests should be submitted in writing to Ms. Donna Rakocy, Region VIII Mitigation Environmental Coordinator at the above address, or by e-mail at Donna.Rakocy@DHS.Gov

The Draft Environmental Assessment is on repository with Ms. Amy Teegarden at the Parks Department, 316 North Park Avenue, Room 428, Helena, MT. Business hours are 8:00 a.m. to 5:00 p.m. Mountain Time, Monday through Friday. She may also be contacted at (406) 447-8463.

APPENDIX A

EXHIBITS

List of Exhibits

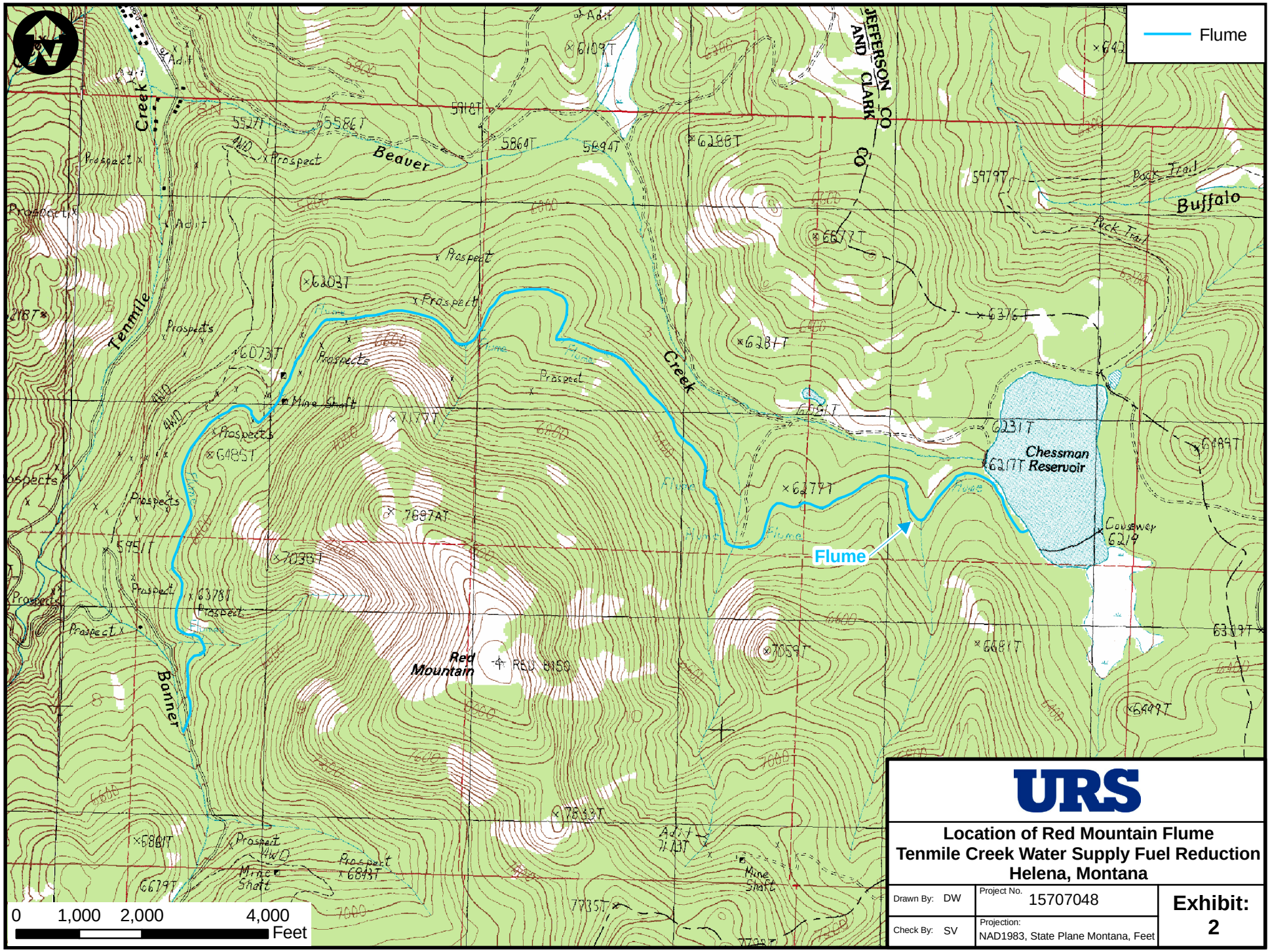


October 09, 2008 1:25:37 p.m.
Drawing: T:\15707048\helina\1.dwg

URS

PROJECT LOCATION
TENMILE CREEK WATER SUPPLY FUEL REDUCTION
HELENA, MONTANA

DRN. BY: DPG	DATE: 10/02/08	PROJECT NO. 15707048	EXHIBIT: 1
CHK'D. BY: SV	REVISION: 0		



URS

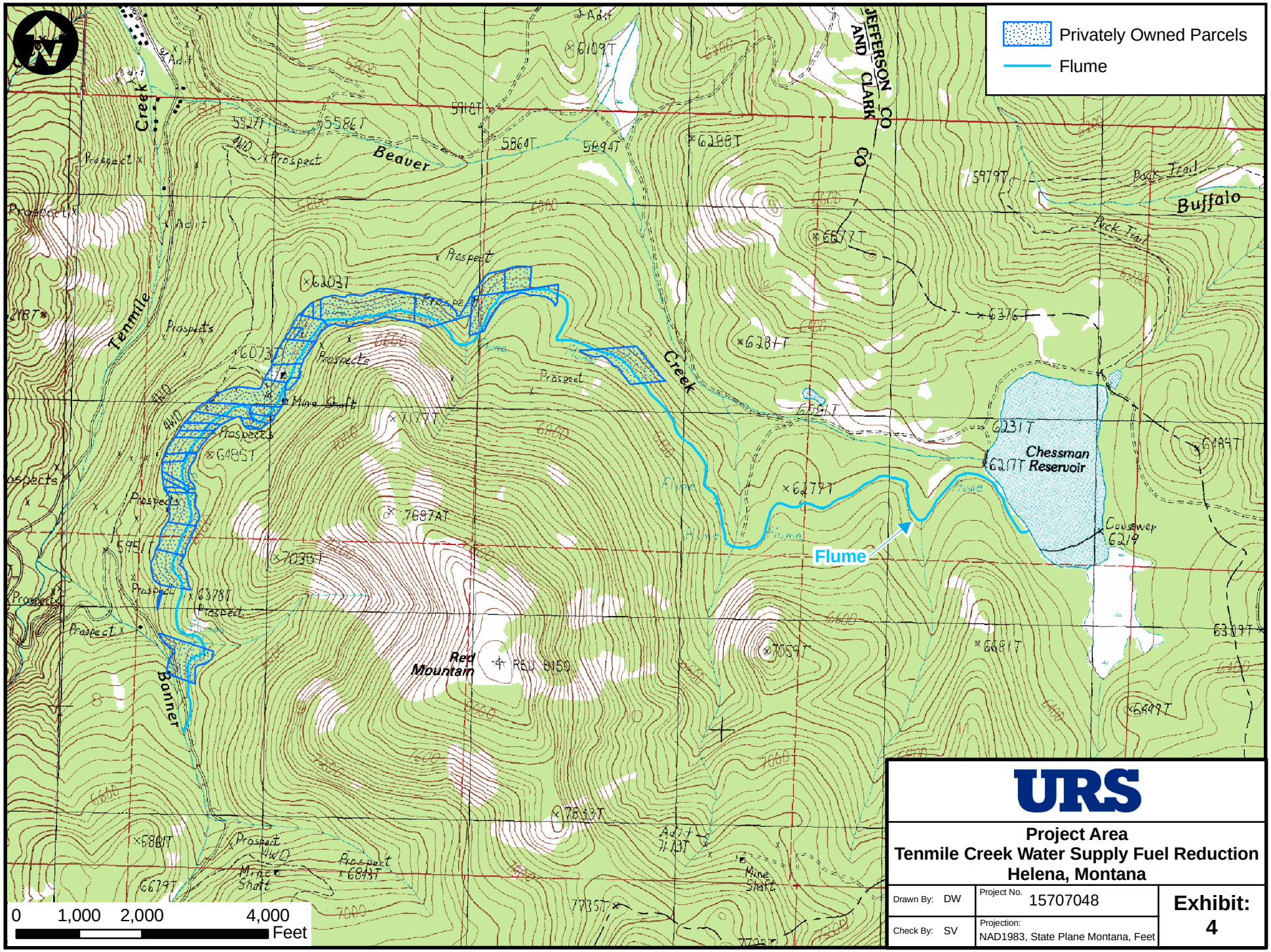
Location of Red Mountain Flume
Tenmile Creek Water Supply Fuel Reduction
Helena, Montana

Drawn By: DW	Project No. 15707048	**Exhibit: 2**
Check By: SV	Projection: NAD1983, State Plane Montana, Feet	

EXAMPLE OF A TRESTLED SECTION OF THE FLUME
TENMILE CREEK WATER SUPPLY FUEL REDUCTION
HELENA, MONTANA

DRN. BY: DPG	DATE: 10/02/08	PROJECT NO. 15707048	EXHIBIT: 3
CHK'D. BY: SV	REVISION: 0		

October 09, 2008 1:28:34 p.m.
Drawing: T:\15707048\helina\4-7.dwg



URS

Project Area
Tenmile Creek Water Supply Fuel Reduction
Helena, Montana

Drawn By: DW	Project No. 15707048	**Exhibit: 4**
Check By: SV	Projection: NAD1983, State Plane Montana, Feet	

URS

EXAMPLES OF TRAILS IN THE PROJECT AREA
TENMILE CREEK WATER SUPPLY FUEL REDUCTION
HELENA, MONTANA

DRN. BY: DPG	DATE: 10/02/08	PROJECT NO. 15707048	EXHIBIT: 5
CHK'D. BY: SV	REVISION: 0		

October 09, 2008 1:28:46 p.m.
Drawing: T:\15707048\helina\4-7.dwg

WESTERN PINE BETTLE INFESTED LODGEPOLE PINE
TENMILE CREEK WATER SUPPLY FUEL REDUCTION
HELENA, MONTANA

DRN. BY: DPG	DATE: 10/02/08	PROJECT NO. 15707048	EXHIBIT: 6
CHK'D. BY: SV	REVISION: 0		

October 09, 2008 1:28:58 p.m.
Drawing: T:\15707048\helina\4-7.dwg

GENERAL VEGETATION ALONG THE FLUME
TENMILE CREEK WATER SUPPLY FUEL REDUCTION
HELENA, MONTANA

DRN. BY: DPG	DATE: 10/02/08	PROJECT NO. 15707048	EXHIBIT: 7
CHK'D. BY: SV	REVISION: 0		

October 09, 2008 1:29:11 p.m.
Drawing: T:\15707048\helina\4-7.dwg

APPENDIX B

MONTANA OPEN BURNING PERIODS

MONTANA OPEN BURNING PERIODS

NOTE: Missoula, Cascade, Lincoln, Flathead and Yellowstone County regulations may differ.

December January February March April May June July August September October November

Open burning generally prohibited
(Dec. 1 – Feb. 28)

Open burning allowed
(Mar. 1 – Nov. 30)

Ventilation Hotline time period
(Sept. 1 – Nov. 30)

BEFORE IGNITING ANY BURN:

1. Contact local fire control and /or law enforcement authorities.
2. Check for good ventilation. September through November, call DEQ ventilation hotline: Call 1-800-225-6779.
3. December through February, seek permission to burn from DEQ. Call: 406-444-4267.
4. Obtain permits from DEQ for major burning and burns for emergencies, firefighter training, trade waste, landfill, Christmas tree waste, and commercial film production. Call: 406-444-4267.
5. In the following counties, contact:

Missoula	406-523-4755
Cascade	406-454-6950
Yellowstone	406-256-6841
Lincoln	406-293-7781
Flathead	406-751-8130

www.deq.mt.gov/airquality/airopenbrn.asp

MONTANA MINOR OPEN BURNING SOURCE REQUIREMENTS

Title 17, Chapter 8, subchapter 6, Administrative Rules of Montana

COUNTY	FALL Sept - Oct - Nov	WINTER Dec - Jan - Feb	SPRING / SUMMER Mar - Apr - May /Jun - Jul - Aug
INSIDE Eastern Montana Open Burning Zone: Big Horn, Blaine, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Garfield, Glacier, Golden Valley, Hill, Judith Basin, Liberty, McCone, Meagher, Musselshell, Park (that portion north of Interstate 90), Petroleum, Phillips, Pondera, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux and Yellowstone. ARM 17.8.601(3).	Burner is required to adhere to DEQ restrictions. Call DEQ hotline prior to ignition. ARM 17.8.606(3).	Burner is required to notify DEQ prior to ignition. Call DEQ hotline to verify ventilation conditions. ARM 17.8.606(4)(b).	Burner may conduct open burning without contacting DEQ. ARM 17.8.606(5).
OUTSIDE Eastern Montana Open Burning Zone: Beaverhead, Broadwater, Deer Lodge, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis & Clark, Lincoln, Madison, Mineral, Missoula, Park (that portion south of Interstate 90) Powell, Ravalli, Sanders, and Silver Bow.	Burner is required to adhere to DEQ restrictions. Call DEQ hotline prior to ignition. ARM 17.8.606(3).	Burner is required to submit to DEQ a written request to burn and receive permission for each burn requested. Burner shall adhere to time periods for burning available by calling DEQ hotline. The request form is available on the web at www.deq.mt.gov/airquality/airopenbrn.asp or call (406) 444-4267. ARM 17.8.606(4)(a).	Burner may conduct open burning without contacting DEQ. ARM 17.8.606(5).

NOTE: **BURNERS MUST CONTACT THEIR LOCAL HEALTH DEPARTMENT, FIRE, OR LAW ENFORCEMENT AUTHORITY BEFORE IGNITION.**

DEQ Open Burning Hotline: 1-800-225-6779

For more information:
Air Resources Management Bureau • Montana Department of Environmental Quality
1520 E 6th Avenue • P. O. Box 200901 • Helena, MT 59620-0901
(406) 444-4267 • www.deq.mt.gov/airquality/airopenbrn.asp

APPENDIX C

AGENCY CORRESPONDENCE

To: "deeda@onewest.net" <deeda@onewest.net>

Date: Thu, 17 Jan 2008 17:37:34 -0500

Subject: RE: City of Helena, Water Treatment Division FEMA Pre-Disaster Mitigation grant application for the Tenmile Water Supply Delivery System

Status: Normal

CC:

From: "Kujala, Quentin" <qkujala@mt.gov>

Reply-to: "Kujala, Quentin" <qkujala@mt.gov>

Deeda--

In response to your query about the presence of federally threatened or endangered species or their critical habitats in T8N R5W sections 2, 3, 4, 9 and 10, be advised the area may entertain some presence of wolf and/or lynx. However, for the location and size of the project and project area relative to overall habitat availability, it seems unlikely the project by itself represents a significant or long-lasting impact to those species or their habitats.

Quentin Kujala
Management Bureau Chief, Wildlife Division
FWP

To: bishop.mike@epa.gov

Date: Wed, 19 Dec 2007 13:05:32 -0500

Subject: City of Helena FEMA grant application for the Tenmile Water Supply Delivery System

Status: normal

From: deeda@onewest.net

Cc:

Reply To: deeda@onewest.net

Attachments:

December 19, 2007

Mike Bishop
EPA Superfund
Upper Tenmile Creek Mining Area Site

RE: City of Helena, Water Treatment Division FEMA Pre-Disaster Mitigation grant application for the Tenmile Water Supply Delivery System

Dear Mr. Bishop:

As per my phone message on 12/14/07, I'm writing in regards to the city of Helena's Tenmile Creek water system wood trestle and ditch. The city of Helena is applying for a FEMA grant to conduct a wildland fire fuel reduction project on private land. To meet FEMA grant requirements, we need to document the following:

First, are there any contaminants (hazardous or toxic materials) in the area that could be affected by the proposed project described below? If so, are there any permits required? Also, are there mitigation requirements or do you have any project design recommendations?

The project location is Lewis and Clark County, Montana, Township 8 north, Range 5 west, sections 2, 3, 4, 9, 10, and 11. The linear length of the flume to be treated is approximately 2.4 miles. The project area is approximately 133 acres.

The following project design was recommended by Mike McFerrin, Montana Prescribed Fire Services, Inc. Ninety-five percent of the timber on the north aspect of Red Mountain is Lodgepole pine in a variety of age groups. In most cases the riparian areas have a heavy concentration of large, old growth Engelmann spruce. Fifteen percent of the stand is standing dead timber with recent evidence of Western Pine Beetle infestation, which has the potential to kill over half the remaining timber in the next five years. Approximately 30% of the stand is deadfall on the forest floor. This creates a fuel-loading situation for a catastrophic fire. Given the timber type and current conditions, when a forest occurs it will be a stand replacement fire and totally destroy the water conveyance system. For these reasons, this mitigation project is stand specific removing Lodgepole pine only. The only exception will be downfall trees of other species.

All downfall and standing dead trees will be removed. Much of the mitigation will be done manually because mechanical mitigation can be safely done only on slopes up to 30%. If cut material is to be burned in place, an area will be selected with scant or no vegetation at least 100 feet below the flume. Numerous rock outcroppings and rock scree areas are available. So burning material doesn't roll downhill, hand piles will be built not to exceed eight feet in diameter on slopes less than 20%. These piles will be constructed where the canopy is open to prevent scorching of live trees. No burning will take place above the flume except in areas that are predominately rock. On some rockslide areas, trees will be cut 12-18 inches above the rock to avoid erosion.

Where applicable, mechanical treatment will be completed after the ground has frozen and before the snow is too deep. This is usually between mid-October and mid-December. Manual treatment will begin mid-September and continue through November. Burning piles will take place in the late fall when snow cover is on the ground and in the spring during rainy periods.

Mitigation work will begin 300 feet down slope from the trestles and 150 feet on each end of the trestles. This distance will reduce the flame length and rate of spread during a fire and will prevent damage to the trestles. Next, mitigation will extend 132 feet above the water conveyance. All downed and standing dead timber will be manually cut and removed to reduce fire intensity and to prevent erosion above the flume. All the removed material will be taken to an area below the flume to be safely burned. The city is considering the option of floating the material down the flume to a landing area at Chessman Reservoir. Material would be cut to a length that would not damage the flume. Floating the material would be done from mid-May until the water is turned off in the flume approximately the end of June. Lastly, fuels will be mitigated for 300 feet below the flume, connecting the work previously done below the trestles.

The grant deadline is January 15, 2008 and again I apologize for the short notice. Thank you for your assistance. Please contact me if you have any questions.

Respectfully,

Deeda Richard
Grant Writing & Consulting, LLC
406-449-6229

To: deeda@onewest.net

Date: Wed, 19 Dec 2007 13:55:08 -0500

Subject: Re: City of Helena FEMA grant application for the Tenmile Water Supply Delivery System

Status: Normal

From: Bishop.Mike@epamail.epa.gov

Cc: jaber@mt.gov

Reply To: Bishop.Mike@epamail.epa.gov

Attachments:

In-Reply-To: <47695d6c.2ce.d84.23933@onewest.net>
Subject: Re: City of Helena FEMA grant application for the Tenmile Water Supply
Delivery System
To: deeda@onewest.net
Cc: jaber@mt.gov

Deeda:
Generally a partial cut, targeting hazard or standing dead would be a good idea. Presumably, your contractor would utilize best management practices used by the logging industry. Considerations would be to skid logs along the contour, limit the number of passes along a skid trail to minimize soil compaction, potentially using high-lead skidding techniques or skidding in the winter over snow and frozen soil. The only mining wastes that I recall along the flume have been removed from the Red Mountain Mine. It would be a good idea for your contract staff to sit down with our contractor, CDM (Neil Marsh, 441-1403) to verify other potential erosion-prone waste piles. This could be done prior to the field season while work plans are being formulated. The Upper Tenmile Watershed is a critical resource for the City of Helena. After the fires of 2000, I witnessed some of the extreme adverse effects of forest fires on runoff volume, sediment transport and soil density/infiltration capacity. I applaud your efforts to reduce the fire hazard proactively before more critical circumstances present themselves. ...Mike

Mike Bishop, Superfund Project Manager
U.S. EPA, Montana Office
10 West 15th Street
Helena, Montana 59626

Office: (406) 457-5041
fax -5056
e-mail bishop.mike@epa.gov

To: "'deeda@onewest.net'" <deeda@onewest.net>

Date: Mon, 07 Jan 2008 16:57:06 -0500

Subject: RE: Tenmile water supply wildfire fuel reduction FEMA grant application

Status: Normal

CC:

From: "Dalbey, Steve" <sdalbey@mt.gov>

Reply-to: "Dalbey, Steve" <sdalbey@mt.gov>

Deeda,
As long as the fuels reduction work will be done according to BMP's for logging, I do not foresee significant impacts to Tenmile or the fisheries. I would request that wood/brush that is in or associated with the stream (could fall in at some point) be left for instream fish structure. Large and small woody debris are critical to stream habitat through the creation of diverse and often limiting habitats (such as over wintering pools). Also, leaving a riparian buffer intact is critical to sediment reduction from any disturbance (also important in the event of a fire and fire related sediment generation).
Thanks for the opportunity to comment,
Steve

Steve Dalbey
Helena Area Fisheries Biologist
Montana Department of Fish, Wildlife and Parks
930 W. Custer
Helena, MT 59620

To: "'deeda@onewest.net'" <deeda@onewest.net> **Date:** Wed, 05 Dec 2007 16:48:35 -0500

Subject: RE: Tenmile Creek water system wood trestle and ditch **Status:** Normal

From: "Murdo, Damon" <dmurdo@mt.gov>

Reply-to: "Murdo, Damon" <dmurdo@mt.gov>

From: "Murdo, Damon"
To: "'deeda@onewest.net'"
Date: Wed, 5 Dec 2007 14:48:35 -0700
Subject: RE: Tenmile Creek water system wood trestle and ditch

December 5, 2007

Deeda Richard
Grant Writing & Consulting, LLC

RE: TENMILE CREEK WATER SYSTEM WOOD TRESTLE AND DITCH. SHPO Project #: 2007120408

Dear Deeda:

I have conducted a cultural resource file search for the above-cited project located in Sections 2, 3, 4, 9, 10, 11, T8N R5W. According to our records there have been several previously recorded sites within the designated search locales. In addition to the sites there have been a few previously conducted cultural resource inventories done in the areas. I've attached a list of these sites and reports. If you would like any further information regarding these sites or reports you may contact me at the number listed below.

The ditch was called the Red Mountain flume, which was part of the Chessman Dam/Reservoir (24LC0876) and probably used for mining in the area as well as for water for the city of Helena. The site has previously been determined eligible for listing in the National Register of Historic Places. We feel that this project proposal is not likely to impact the flume or dam, based on your brief narrative, but whoever is responsible for overseeing the scope of work should contact our office at the appropriate time to consider effects and provide more specific information on the project.

If this project will be occurring on Helena National Forest land we would ask that you contact Carl Davis for any concerns that he may have. He may be reached at 2880 Skyway Drive, Helena MT 59601.

If you have any further questions or comments you may contact me at (406) 444-7767 or by e-mail at dmurdo@mt.gov. Thank you for consulting with us.

Sincerely,

Damon Murdo
Cultural Records Manager
State Historic Preservation Office
1410 Eighth Avenue
Helena MT 59620-1202

File: FEMA/2007

URS

Susan Volkmer/Omaha/URSCorp
08/13/2008 03:18 PM

To qkujala@mt.gov
cc
bcc
Subject Red Mountain Flume project

Quentin,

My name is Sue Volkmer and I work for URS Corporation out of our Omaha office. We have been contracted by FEMA to prepare an EA for a fuel reduction project around the Red Mountain Flume in the Upper Tenmile Creek Watersheld southwest of Helena. The City of Helena and/or its representative contaced you about this project back in January. Your email response was sent 17 Jan 2008. The potential project area includes portions of the following sections: T8N R5W sections 3, 4, 5, 8 and 9. At that time you indicated that the project area might show some presence of the wolf or the Canada lynx. You also indicated that you would not expect the project to adversely impact these species. We would like you to confirm this statement for the EA. If things in the project area have changed and you feel that impacts may occur please indicated so in an email back to me.

One specific question.....Have there been any sightings of lynx or wolf near the project area?

Thanks for your time. Please let me know if you have questions about the project?

Sue Volkmer
Environmental Scientist
URS-Omaha
402.952.2547

TELEPHONE MEMORANDUM

Date 8/13/08 **Time** (am)/ pm) 11:00 **Project Number** 15707048

To (Mr./ Ms.) Martin Miller **Project** Tenmile Creek

From Montana Natural Heritage

Company ↓

Phone Number 406.444.3290

RE Species of concern **Recorded By** SMV

I spoke with Mr. Miller about getting the heritage Program info about the species of concern within the project area. Mr. Miller will send the info to me.

Copy To _____

URS

S:\forms\Telephone Memorandum.doc

Perennial Stream — No permit

No

TELEPHONE MEMORANDUM

Date 02/14/08 **Time** (am) / pm) 10:30 **Project Number** 15707048

To (Mr./ Ms.) _____ **Project** Tenmile Creek Water Supply Fuel Reduction Project

From Steve Dalby

Company Montana Fish, Wildlife & Parks

Phone Number 406 495-3263

RE _____ **Recorded By** SMV

~~Steve~~ I spoke with Steve about the proposed project. Steve indicated that as long as the project did not involve the crossing of a perennial stream or activity within a perennial stream no permit would be required from Montana Dept of Fish, Wildlife, and Parks. Steve indicated that if ~~one~~ any of the proposed temporary roads would cross a stream the City of Helena would need to coordinate with MDFWP to determine whether or not a permit would be required.

Copy To _____

URS

S:\forms\Telephone Memorandum.doc

TELEPHONE MEMORANDUM

Date 8/20/08 **Time** (am / pm) 2:15 **Project Number** 15707048

To (Mr./Ms.) Jeanne Welch **Project** Tenmile Creek Red Mountain Flume

From

Company Lewis & Clark Co Sheriff's office

Phone Number 406.447.8235

RE Burn Permits **Recorded By** SMN

I called the Sheriff's Office to get information about acquiring a burn permit. Jeanne indicated that the Sheriff's Office did not issue the permits, the Dept of Natural Resources and Conservation (DNRC) did. Jeanne also stated that the city would need to call the Sheriff's Office prior to burning to let them know they were doing a controlled burn.

Copy To

URS

TELEPHONE MEMORANDUM

Date 8/20/08 **Time** (am / (pm)) 2:30

To (Mr. / (Ms.)) Molly O'Donnell

From

Company U.S. Forestry Service

Phone Number (406) 449-5201

RE

Project Number 15707048

Project Tenmile Creek
Red Mountain Flume

Recorded By SMV

I spoke with Molly about the protocol for obtaining a permit for controlled burns. Molly indicated the City of Helena would need to call them and provide them with basic info, like who was doing the burn, address of the ~~burn~~ burn location, etc. The permits are issued for a period of time not each specific burn. Molly also indicated that the document should state that the permit is issued by the U.S. Forestry Service.

Copy To

URS

TELEPHONE MEMORANDUM

Date 8/25/08 **Time** (am) / pm 11:00 **Project Number** 15707048

To (Mr.) / (Ms.) Katrina Dixon **Project** Red Mountain Flume Veg Management

From

Company USFWS-Region 6

Phone Number (406) 449-5225 ext 222

RE T & E species **Recorded By** SMV

I spoke with Katrina about the potential for T&E species to occur within the project area. Katrina indicated that the project area was outside the distribution area for the grizzly bear and that there was no habitat for the black-footed ferret in the project area.

Katrina indicated that the area contained appropriate habitat for both the lynx and the gray wolf. Katrina indicated the snowshoe habitat would be a bigger factor for determining the presence of lynx within the project area. She indicated that snowshoes prefer multi-storied habitat and need good understory.

Katrina indicated that the project area was located within the known ranges for three populations of gray wolves - two experimental and on endangered. The experimental populations include the yellowstone and Central Idaho. Katrina suggested I talked to the Helena National Forest people and the state Fish, Wildlife and parks as these agencies have mapped wolf activity.

Copy To

URS

S:\forms\Telephone Memorandum.doc

TELEPHONE MEMORANDUM

Date 8/25/08 **Time** (am / (pm)) 12:30 **Project Number** 15707048

To (Mr./ Ms.)

From Ms. Katrina Dixon **Project** Red Mountain Flume Veg Mon

Company USFWS → Mountain Prairie

Phone Number (406) 449-5225

RE Gray Wolf Distribution **Recorded By** SMV

Katrina called me to correct the population of gray wolves in the project area. Katrina lead me to a map on the internet that shows the project area lies totally within the endangered population area for the gray wolf.

Copy To

URS

S:\forms\Telephone Memorandum.doc

TELEPHONE MEMORANDUM

Date 8-25 **Time** (am / pm) _____ **Project Number** 15707048

To (Mr.) Ms.) Allan Steinle **Project** Red Mountain Flume Veg Mang

From _____

Company USACE - Helena

Phone Number (406) 441-1375

RE 404 permit **Recorded By** SPN

I spoke with Allan regarding the need for a 404 permit based on the project description I provide, Allan also felt a 404 permit would not be necessary. However, if a temporary road were to cross a stream or riparian area, the City would need to obtain a temporary crossing permit from the USACE. As this was the first Allan was hearing about the project, I told him I would send him a project description and location map that way he could review the project and let me know if he wanted to change or add any comments or concerns.

Copy To _____

URS

TELEPHONE MEMORANDUM

Date 08-25-08 **Time** (am / (pm)) 3:35 **Project Number** 15707048

To (Mr./ Ms.) _____ **Project** Red Mountain Flume Veg Mgmt

From Ms. Debbie Skibicki

Company Montana DEQ - Air Program

Phone Number (406) 444-1472

RE Open Burning Permits **Recorded By** SMN

Debbie returned my call about the need for an open burning permit. Debbie indicated that open burning is allowed throughout most of the year without the need for a permit. September through November, the City would need to consult the ventilation hot line prior to burning. ~~An~~ Before doing any open burning Dec - Feb, the City would need to contact the MDEQ and submit a request for an open burn to MDEQ. MDEQ would (in writing) then need to give permission before the burn could occur.

Copy To _____

URS

TELEPHONE MEMORANDUM

Date 8-26-08 **Time** (am) pm 9:40 **Project Number** 15707048

To (Mr.) (Ms.) Julie Merkel **Project** Red Mountain Flume Veg Mang

From

Company MDEQ - Air Program

Phone Number (406) 444-3626

RE Air permits/open burns **Recorded By** SMV

I spoke with Julie about MDEQs regs on open burns. Julie indicated that open burning is only prohibited from Dec - Feb. During those months, the City would need to obtain permission from the MDEQ to burn. From Sept - Nov, the City would need to check the ventilation hotline for the air dispersion in the burn air. However, no laws prohibit burning during these months. Julie also stated that the City would need to determine whether or not they fall under the major open burning source guidelines. Major open burning sources all require an open burning permit from MDEQ. MDEQ regs ~~17.8.601~~ 17.8.604 defines a major source.

Copy To

URS

TELEPHONE MEMORANDUM

Date 8-26-08 **Time** (am) / pm) 10:25 **Project Number** 15707048

To (Mr.) / Ms.) Mike Bishop **Project** Red Mountain Flume Veg Mang

From

Company USEPA

Phone Number 406.457.5041

RE NPL site **Recorded By** SMV

Mike indicated that he was in support of the project, as he has seen the hydrologic impact of resulting from a wildfire. Mike also stated that during part of the cleanup for the Tenmile Creek mining area Site an area near the flume was remediated. Mike is not sure if other mining waste areas are located along the flume; therefore, he cautions the City to do everything they can to limit any soil erosion. Mike also interested to know if removing all the lodgepole pine downslope of the flume was necessary or should they leave the smaller trees. I did not have this info, so I said I would talk to Mike McLemin (at least for starters) and find out.

Copy To

URS

"Sime, Carolyn" <casime@mt.gov>
08/30/2008 05:15 PM

To "'Susan_Volkmer@URSCorp.com'" <Susan_Volkmer@URSCorp.com>
cc "Bangs Ed (E-mail)" <ed_bangs@fws.gov>, "Kujala, Quentin" <qkujala@mt.gov>
bcc
Subject wolf question

History: This message has been replied to.

Hi Sue,

I will be out of the office next week ... thanks for your voice mail. I can only speak to wolf. Quentin can help make sure you get lynx info if someone hasn't contacted you yet.

FWP is the lead agency for many aspects of wolf management through an interagency agreement with USFWS. However, USFWS did not delegate consultation responsibilities as required by ESA to FWP. This project is in the endangered area and more formal consultation may be required with USFWS. Ed Bangs will be able to assist in that regard.

Based on the monitoring work that FWP has done since 2005 - yes, there have been wolf reports in this proposed project area and reports can reasonably be expected in the future given that the continental divide is in this area and there are wolf packs to the north, west, and south of the project area. Wolves have moved through the drainage in the past. There have also been wolf packs with 25-3 miles of the area in prior years, but non presently as of the end of 2007 (we map and report wolf population and pack distribution annually as of December 31 of each year).

Generally speaking, the type of proposed activity (logging / fuels reduction) would not be a problem for wolves. Timing and location relative to the denning period could be a consideration -- disturbance. If there is a den in the project area, deferring activity until the pack left the den (around mid-June) would be the mitigation.

If Ed Bangs (USFWS recovery coordinator) has anything to add, he will. You can find out more about wolves in Montana and see a map of pack locations through the link below. I'll be back in the office September 8 should you have any other questions. c

Carolyn Sime
Wolf Program Coordinator
Montana Fish, Wildlife & Parks
1420 E. 6th Ave
Helena, MT 59620-0701

O: (406) 444.3242
cell: (406) 461.0587
casime@mt.gov
fax: (406) 444.0581

http://fwp.mt.gov/wildthings/wolf/default.html

-----Original Message-----
From: Susan_Volkmer@URSCorp.com [mailto:Susan_Volkmer@URSCorp.com]
Sent: Wednesday, August 13, 2008 2:19 PM
To: Kujala, Quentin
Subject: Red Mountain Flume project

Quentin,

My name is Sue Volkmer and I work for URS Corporation out of our Omaha office. We have been contracted by FEMA to prepare an EA for a fuel reduction project around the Red Mountain Flume in the Upper Tenmile Creek Watersheld southwest of Helena. The City of Helena and/or its representative contaced you about this project back in January. Your email response was sent 17 Jan 2008. The potential project area includes portions of the following sections: T8N R5W sections 3, 4, 5, 8 and 9. At that time you indicated that the project area might show some presence of the wolf or the Canada lynx. You also indicated that you would not expect the project to adversely impact these species. We would like you to confirm this statement for the EA. If things in the project area have changed and you feel that impacts may occur please indicated so in an email back to me.

One specific question.....Have there been any sightings of lynx or wolf near the project area?

Thanks for your time. Please let me know if you have questions about the project?

Sue Volkmer
Environmental Scientist
URS-Omaha
402.952.2547

Carolyn Sime
Wolf Program Coordinator
Montana Fish, Wildlife & Parks
1420 E. 6th Ave
Helena, MT 59620-0701

O: (406) 444.3242
cell: (406) 461.0587
casime@mt.gov
fax: (406) 444.0581

http://fwp.mt.gov/wildthings/wolf/default.html

URS

Susan Volkmer/Omaha/URSCorp
09/05/2008 02:50 PM

To qkujala@mt.gov
cc
bcc
Subject Red Mountain Flume Project

Quentin,

Thanks for passing along my request for information regarding gray wolves to Carolyn Sime. However, I do need so info regarding wolverines and the Caddisfly which were included in some information we got from the Natural Heritage search.

Again, the proposed project is a fuel reduction action near the Red Mountain Flume southwest of Helena, MT. There will be some hand clearing, some mechanical clearing, some temporary road construction, and some slash pile burning. What if any types of comments, concerns, and/or mitigation would Fish, Wildlife and Parks like to be included in the EA.

Thanks.

Sue Volkmer
Senior Environmental Scientist
URS-Omaha

402.952.2547

URS

Susan Volkmer/Omaha/URSCorp
09/16/2008 03:48 PM

To qkujala@mt.gov
cc
bcc
Subject Tenmile Creek Fuel Reduction Project

Quentin,

We seem to keep missing each other on the phone, so I thought I would send you email with the pertinent information enclosed. As indicated in earlier coorespondence, the City of Helena is proposing to do some fuel reduction activities in the area around the Red Mountain Flume southwest of Helena. FEMA is proposing to fund the project. Below find a project description and some information about the wolverine and caddisfly. What I need to confirm is that Montana Fish Wildlife and Parks is still okay with the project. A return email would be acceptable for us.

Tenmile Creek Water Supply Fuel Reduction Project (Proposed Action)

The proposed action would involve the removal of dead timber to greatly reduce the fuel load present in the area of the Red Mountain Flume. This action would emphasize the removal of dead and beetle infested Lodgepole pine and small diameter trees that contribute to the wildfire hazard. All deadfall (regardless of tree species) would be removed, along with old trestle timbers and planks that have been stacked near the Flume.

The project would be completed in three phases and activities would occur only on privately-owned land. The first phase of the work would occur at the ends of each trestle length. Vegetation removal would extend 150 feet beyond the end of the trestle at each location and down slope for 300 feet. This distance would reduce the flame length and rate of spread during a fire and would prevent damage to the trestles. All dead and/or fallen timber 3 inches in diameter or larger and ALL Lodgepole pine would be removed.

The second stage would concentrate on the length of the Flume on privately-owned land. For approximately 100 feet above the Flume, all downed and standing dead timber 3 inches in diameter or larger would be manually cut and removed to reduce fire intensity and to prevent erosion above the Flume. In general, all the removed material would be taken to an area below the Flume to be safely burned. No burning would occur above the Flume except in areas that are predominantly rock.

The third phase would consist of mitigating the fuels for 300 feet below the Flume, connecting with the work previously completed in Phase 1 off the ends of the trestles.

The project area would include approximately 108 acres of privately-owned land in Lewis and Clark County, Montana, Township 8 North, Range 5 West, Sections 3, 4, 5, 8, and 9.

Mechanical Clearing

Mechanical equipment would be used where road or tail access is present. No new permanent or temporary roads would be constructed as part of this project. Mechanical

mitigation would consist of using a processor that cuts each tree at the base, removing the limbs into a pile for burning, and cutting and stacking the stems to be transported by a forwarder. The forwarder is used to remove the tree stems to an area for transportation by truck. Mechanical clearing would occur between mid-October and mid-December when the ground is frozen and dry.

Hand Clearing

Hand clearing would be done in areas where road access is limited and/or areas where slopes are over 30 percent grade. Hand crews would be required to walk into the project area. Streamside Management Zones would be established adjacent to all streams and associated riparian areas. These zones would extend 50 to 100 feet on each side of the streambank. Hand clearing would occur between July and November.

Hand piles would be built not to exceed 8 feet in diameter on slopes less than 20 percent. The hand piles would be placed on the numerous rock outcroppings and rock scree areas to prevent them from rolling downhill. On some rockslide areas, trees would be cut 12 to 18 inches above the rock surface to avoid erosion. Manual treatment would begin around mid-September and continue through November.

Burning

When cut material is to be burned in place, an area would be selected with scant or no vegetation at least 100 feet below the Flume. Burning of the piles would take place in the late fall when snow cover is on the ground and in the spring during rainy periods. Additionally, the hand piles would be constructed where the canopy is open to prevent scorching of live trees. As indicated above, most burning would occur below the Flume. However, if necessary, burning may occur above the Flume, but only in areas that are predominantly rock.

Maintenance

Montana Prescribed Fire Services, Inc. recommended that the project site be maintained after 10 years. The maintenance would be at a much lower cost than the original treatment and would extend the life of the project for another 10 years, making the total useful life of the project 20 years.

Special Status Species

A search of the Montana Natural Heritage Program was conducted for the project area. Four species were identified as having the potential to occur within the project vicinity. These species include the gray wolf, the Canada lynx, the wolverine, and the Agapetus Caddisfly. The gray wolf and Canada lynx have been addressed by the USFWS.

Wolverine

The wolverine is ranked globally as G4 (uncommon, but not rare rare [although it may be rare in parts of its range], and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern) and in the state of Montana as S3 (potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas). The wolverine is a bear-like mustelid with massive limbs and long, dense, dark brown pelage, paler on the head, with two broad yellowish stripes extending from the shoulders and joining on the rump. Variable white or yellowish markings are often present on the throat and chest. The tail is bushy. The feet are relatively large (6.5 to 11.3 centimeters total length) with robust claws. Wolverines weigh between 7 and 32 kilograms and range from 0.9 to 1.1 meters in length. Females average about 10 percent less than males in linear measurements and 30 percent less in mass. (Montana Field Guide 2008)

Wolverines in northwestern Montana and Alaska tended to occupy higher elevations in summer and lower elevations in winter. Seasonal ranges were all within a large home range; dispersal movements of more than 300 kilometers are known. (Montana Field Guide 2008)

Wolverines are limited to alpine tundra, and boreal and mountain forests (primarily coniferous) in the western mountains, especially large wilderness areas. However, dispersing individuals have been found far outside of usual habitats. They are usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat. When inactive, wolverines occupy dens in caves, rock crevices, under fallen trees, in thickets, or similar sites. Wolverines are primarily terrestrial but may climb trees. (Montana Field Guide 2008)

In Montana, most wolverine use occurs in medium to scattered timber, while areas of dense, young timber were used least. Wolverines avoid clearcuts and burns, crossing them rapidly and directly when they were entered at all. Wolverines in the Northern Rocky Mountain region are associated with fir, pine, and larch. Aspen stands were also used, as were cottonwoods in riparian areas. Ecotonal areas appeared to be important habitat components. Wolverines may not be dependant on any particular vegetative habitat type, but prefer large, isolated tracts of wilderness supporting a diverse prey base. (Montana Field Guide 2008)

Wolverines are opportunistic. They feed on a wide variety of roots, berries, small mammals, birds' eggs and young, fledglings, and fish. They may attack moose, caribou, and deer hampered by deep snow. Small and medium size rodents and carrion (especially ungulate carcasses) often make up a large percentage of the diet. Prey is captured by pursuit, ambush, digging out dens, or climbing into trees. They may cache prey in the fork of tree branches or under snow. (Montana Field Guide 2008)

Wolverines are generally solitary and wide-ranging. They occur at relatively low densities (e.g., 1 per 65 square kilometers in northwestern Montana). Home ranges of males are larger than those of females, with home ranges of up to several hundred square kilometers. The mean annual home range of males is approximately 422 square kilometers in Montana. Female home ranges are approximately 388 square kilometers in Montana. Males in some areas apparently are territorial, but in Montana there was extensive overlap of the ranges of

both the same and opposite sexes. Apparently territory/range size depends on availability of denning sites and food supply. Some individuals travel regularly over the same route. There are no important predators other than humans. (Montana Field Guide 2008)

Agapetus Caddisfly

The Agapetus Caddisfly is ranked globally as G2 and in Montana as S2 (at risk because of very limited and/or declining numbers, range, and/or habitat, making it vulnerable to global extinction or extirpation in the state).

The Caddisfly occurs in Idaho, Montana, and Manitoba and has been reported in Lewis and Clark County. The larvae occur on the upper surfaces and sides of cobbles and boulders in moderate gradient, fast flowing, foothills to mountain streams. This genus inhabits streams with more intermediate characteristics between the higher elevation, cold mountain streams, and the large warmer transitional rivers downstream. Generally the riparian canopy of the occupied streams is mostly (>50 percent) open, and less shaded than mountain streams. In clear streams and rivers during low flows, it is typical to be able to locate & identify Agapetus larvae on the tops of rocks. (Montana Field Guide 2008)

Again, if you could send me an email back discussing any special consideration or requirements for the project or confirming that project is not likely to adversely impact wildlife it would greatly help us complete the environmental process.

Thank you.

Sue

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
MONTANA FIELD OFFICE
585 SHEPARD WAY
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

File: M12 FEMA (I)

September 16, 2008

Sue Volkmer
URS-Omaha
12120 Shamrock Plaza, Suite 300
Omaha, Nebraska 68154

Dear Ms. Volkmer:

This is in response to your September 5, 2008 request for U.S. Fish and Wildlife Service (Service) review of the proposed Red Mountain Flume Fuel Reduction project regarding the effects on federally listed threatened and endangered species. The City of Helena is in the process of obtaining funds from the Federal Emergency Management Agency (FEMA) to assist with the proposed project. The project is located along the west and north slopes of Red Mountain in Lewis and Clark County, Montana.

The Service has reviewed the project information and concurs with the determination that the proposed action is not likely to adversely affect the threatened Canada lynx (*Lynx canadensis*) or the endangered gray wolf (*Canis lupus*). Therefore, pursuant to 50 CFR 402.13 (a), formal consultation on these species is not required.

The Service bases its concurrence on the information and analysis prepared by URS Corporation. If the final proposal is changed so as to have effects on threatened or endangered species other than those described, a revised request will be necessary. The Service will then issue a letter of concurrence or non-concurrence on the revised project information.

We appreciate your efforts to ensure the conservation of threatened and endangered species as part of your responsibilities under the Endangered Species Act, as amended. If you have questions or comments related to this issue, please contact Katrina Dixon or me at 406-449-5225.

Sincerely,

R. Mark Wilson

R. Mark Wilson
Field Supervisor

2008090902

U.S. Department of Homeland Security
Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO. 80225-0267

CONCUR
MONTANA SHPO
DATE 10 Oct 08 SIGNED

FEMA

MT-R8

September 26, 2008

RECEIVED
SEP 2 9 2008
BY: SHPO

Dr. Mark F. Baumler, SHPO
State Historic Preservation Office
1410 8th Avenue
P.O. Box 201202
Helena, MT 59620-1202

- Josef
- US/ FEMA
- Tenmile Creek Water System Wood Trestle & Ditch

Attn: Josef Warhank
106 Compliance Officer

Re: Section 106 Consultation - SHPO Project #200712040
Tenmile Creek Water System Wood Trestle and Ditch
PDMC-PJ-08-MT-2008-006

Dear Dr. Baumler:

The City of Helena has submitted an application for funding under the Federal Emergency Management Agency's (FEMA's) Pre-Disaster Mitigation grant program to reduce the threat of wildfire to the City's Tenmile Creek water system. This program allows local jurisdictions to apply for financial assistance to implement mitigation projects. Proposed projects are designed to reduce the impacts of future disasters and make the community more disaster resistant.

FEMA is required under the National Environmental Policy Act (NEPA) to consider the potential environmental impacts of a proposed federal action. In addition to review under NEPA, consideration of impacts to cultural resources is required under Section 106 of the National Historic Preservation Act (NHPA) as implemented by 36 CFR Part 800. Requirements include the need to identify significant historic properties that may be impacted by a proposed action. FEMA has determined that the proposed Federal action is an undertaking as defined in Sec. 800.16(y) that has the potential to cause effects on historic properties.

The Area of Potential Effects (APE), as defined in Sec. 800.16(d) is approximately 108 acres of forested land in Lewis and Clark County, Montana located in T8N, R5W, Sections 3, 4, 5, 8, and 9. The APE comprises 2.1 miles of the Red Mountain Flume's 4.8 mile length that is located on private land and within the City's established easement.

RECEIVED
OCT 15 2008
BY:

Helena's main municipal water source is the Upper Tenmile Creek Watershed. The Upper Tenmile Creek Watershed is predominately forested. The Red Mountain Flume is a critical portion of the water conveyance system for the City's potable water supply. The flume starts on the west side of Red Mountain at the confluence of Banner Creek and follows the contour of Red Mountain to the north for a distance of 4.8 miles in an easterly direction to Chessman Reservoir. The flume elevation runs from 6,300 feet to 6,220 feet. The conveyance is comprised of 13,000 feet of open unlined ditch, 11,800 feet of sheet metal flume and 500 feet of pipeline. Trestles that total 4,036 feet in nine sections support approximately 20% of the flume. The trestles are constructed of wood timbers and planks to hold the flume at the proper elevation for water to flow. 2.1 miles of the flume is located on private land and 2.7 miles is located on the Helena National Forest land.

The proposed project would reduce the fuel load around that portion of the flume located on 2.1 miles of private land by removing dead standing Lodgepole pine trees 3 inches in diameter and larger plus all fallen timber 100 feet uphill of the flume; all dead standing Lodgepole pine trees 3 inches in diameter and larger plus all fallen timber 300 feet downhill of the flume, including 150 feet each end of the flume. In effect, this creates a fuel break on all sides of the water conveyance system that would reduce the flame length and rate of spread during a fire. In addition, all old trestle timbers and planks located below and near the flume would be removed. **Figure 1** shows the location of the flume and the area of privately-owned land within the APE. Harvestable timber would be sold. The remaining timber would be cut and piled for burning when climatic conditions are favorable and away from fire hazards and riparian areas.

As stated, all downfall and standing dead trees would be removed. Much of the work would be done manually because mechanical methods can only be safely used on slopes up to 30%. Cut materials would be burned in place where scant or lack of vegetation exists at least 100 feet below the flume. Numerous rock outcroppings and rock scree areas are available. So that burning material does not roll downhill, hand piles would be built not to exceed 8 feet in diameter on slopes less than 20%. These piles would be constructed where the canopy is open to prevent scorching of live trees. No burning would take place above the flume except in areas that are predominately rock. On some rockslide areas, trees would be cut 12-18 inches above the rock to avoid erosion.

Mechanical equipment would be utilized where existing roads and trails (enclosed photos) are present within the forested project area. Mechanical treatment would be completed after the ground has frozen and before the snow is too deep. Activities would consist of using a processor to cut each tree at the base, remove the limbs and place them in a pile for burning. Stems would be cut and stacked and transported by a forwarder to a truck for transport.

Manual treatment would occur mid-September and continue through November. Mechanical treatment would occur between mid-October and mid-December. Burning piles would take place in the late fall when snow cover is on the ground and in the spring during rainy periods.

FEMA is aware that the 100-year old Red Mountain Flume is eligible for listing on the National Register of Historic Places, and that several other sites in the area are either eligible or potentially eligible for listing. The City of Helena, Water/Wastewater Facility, contacted your office previously regarding this project and at that time the City was informed that the proposed project would not likely impact the Red Mountain Flume or Chessman Dam/Reservoir.

The Red Mountain Flume would not be altered in any way. In fact, the sole purpose of the proposed project is to reduce the potential for damage to the flume from wildfire and protect the City's critical potable water conveyance system. Surface ground activities would occur from manual and mechanical removal of dead or dying trees as well as the controlled burning of small piles when climatic conditions warrant. No project activities are planned at the Chessman Dam/Reservoir.

Because all project activities would occur on the ground surface, with most being performed when the ground is frozen, and no project activities are planned for the Red Mountain Flume structure or at Chessman Dam/Reservoir, FEMA recommends a finding of no historic properties affected in accordance with Section 106 [36 CFR 800.4 (d)] for this undertaking. We respectfully request your concurrence with our finding. If you do not concur with our finding, or if you have questions or require further information, please contact me by email at donna.rakocy@dhs.gov or phone at 303-235-4750. Thank you for your consideration of our request for concurrence.

Sincerely,

Donna Rakocy
Mitigation Environmental Coordinator

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
HELENA REGULATORY OFFICE
10 WEST 15TH STREET, SUITE 2200
HELENA MT 59626

October 23, 2008

Helena Regulatory Office
Phone (406) 441-1375
Fax (406) 441-1380

Subject: **Corps File No. NWO-2008-02288-MTH**
Red Mountain Flume Fuel Load Reduction Project

Ms. Susan Volkmer
URS Corporation
12120 Shamrock Plaza, Suite 300
Omaha, Nebraska 68154

Dear Ms. Volkmer:

Reference is made to your letter requesting comments regarding the Red Mountain Flume Fuel Load Reduction Project, located in Sections 3, 4, 5, 8 and 9, Township 8 North, Range 5 West, in Lewis and Clark County, Montana.

Under the authority of Section 404 of the Clean Water Act, Department of the Army (DA) permits are required for the discharge of fill material into waters of the United States. Waters of the United States include the area below the ordinary high water (OHW) mark of stream channels and lakes or ponds connected to the tributary system, and wetlands adjacent to these waters. Isolated waters and wetlands, as well as man-made channels and ditches, may be waters of the United States, which must be determined on a case-by-case basis. Under the authority of Section 10 of the Rivers and Harbors Act, Department of the Army permits are required for structures or work in, over, under or affecting navigable waters of the United States.

Based on the information provided, it appears that proposed project will affect jurisdictional waters of the U. S. under the authority of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, specifically the temporary road crossings.

Please complete and return the attached application form prior to doing any work. The application can also be found at https://www.nwo.usace.army.mil/html/od-rmt/mthome.htm. Please include a wetland delineation, including datasheets; comparison of the existing and proposed Sand Creek headwall structure; and an overlay of all impacts to aquatic resources associated with the entire project. Photographs of potentially impacted waterways will also be helpful for determining jurisdiction. We will determine the type of permit required, but we will review the proposed work to determine if authorization in accordance with the terms and conditions of Department of the Army Nationwide Permit No. 33 found in the March 12, 2007 Federal Register (Vol. 72, No. 47, 11092), Reissuance of Nationwide Permits is appropriate. Enclosed is a fact sheet that fully describes this Nationwide Permit and lists the General and Regional Conditions that must be adhered to for this authorization to be applicable.

If you have any questions, please call me at (406) 441-1375, and reference File No. NWO-2008-02288-MTH.

Sincerely,

Deborah Blank
Project Manager

Enclosure:
404 Joint Application
NWP 33 Fact Sheet

TELEPHONE MEMORANDUM

Date 10/29/08 **Time** (am)/ pm) 11:50 **Project Number** 15707048

To (Mr./ Ms.) Deborah Blank **Project** Red Mountain Flume Veg Manag

From

Company USACE - Helena

Phone Number 406.441.1375

RE

Recorded By SMV

I contacted Debbie about her Oct 23rd letter that I received regarding the Red Mt Flume project. Letter was in response to information that I had sent Allan Steinle - USACE Helena about the projects need for the construction of temporary roads. This information was provided in late Aug/early Sept. I told Debbie that since that information was provided the City of Helena had reassessed the project area and determined that no temporary roads would need ~~to~~ be constructed. Therefore, the need for a Section 404 permit was no longer necessary. Debbie agreed stating that if there was would be no temporary road crossings no permit (Section 404) would be needed. Also no Section 10 permits would be needed.

I indicated that if the scope of the project changed again and temporary roads would again be part of the project (as the project moved forward and activities occurred) the City of Helena would re-coordinate with the USACE - Helena regarding the permits and pre construction notification.

Copy To

URS

S:\forms\Telephone Memorandum.doc