

**United States Department of the Interior  
Bureau of Land Management  
and  
United States Air Force  
Mountain Home Air Force Base**

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DOI-BLM-ID-B011-2017-0002-EA

***Draft  
Environmental Assessment***

***Establishment of a Sustainable Water Supply  
for Mountain Home Air Force Base  
Mountain Home, Idaho***

July 2017

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**Bureau of Land  
Management**



**Mountain Home  
Air Force Base**



**Idaho Water Resource  
Board**



**It is the mission of the 366th Fighter Wing at Mountain Home AFB to prepare mission-ready Gunfighters to fight and win today's war and the next.**

**It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.**

**It is the mission of the Idaho Water Resources Board to formulate and implement a state water plan, finance water projects, and operate programs that support sustainable management of Idaho's water resources.**

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# 1. PURPOSE AND NEED FOR ACTION

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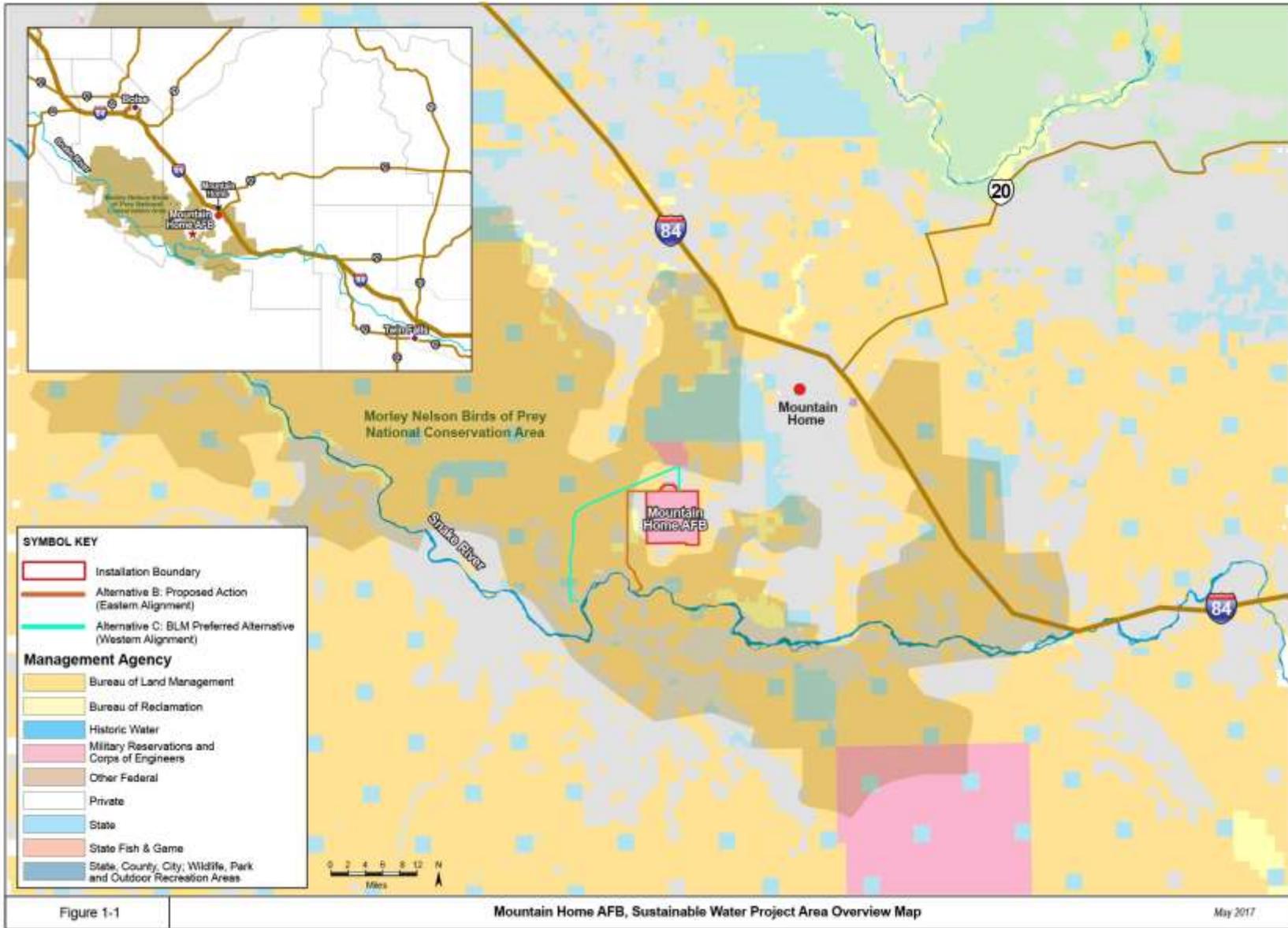
## 1.1. Background

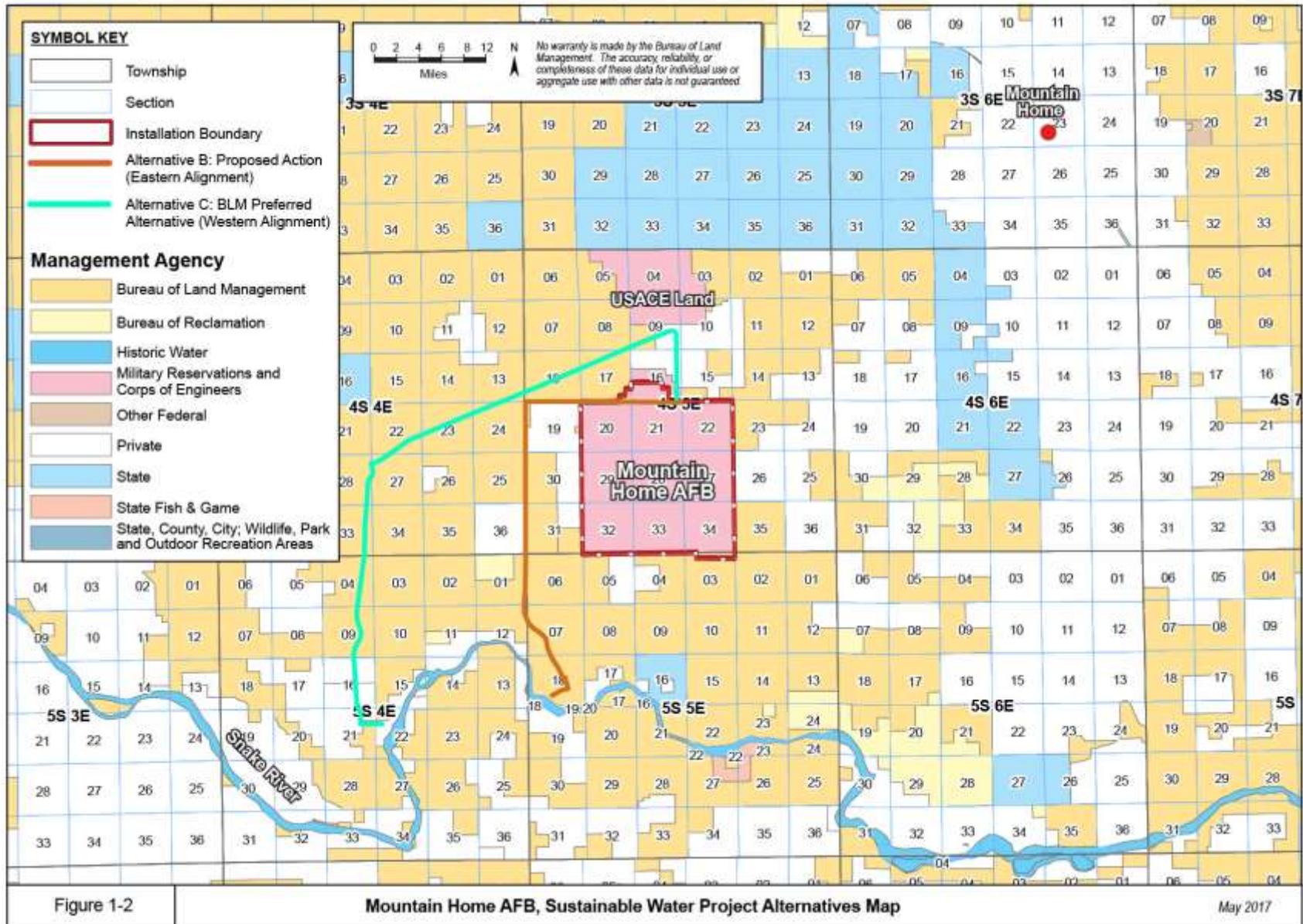
The Idaho Water Resource Board (IWRB) has submitted an application for and is seeking approval of a right-of-way (ROW) grant from the Bureau of Land Management (BLM) under the Federal Land Policy Management Act of 1976, as amended (FLPMA) for the construction, operation, maintenance, and termination of a water system to convey, treat, and provide water from the CJ Strike Reservoir to Mountain Home Air Force Base (AFB).

Mountain Home AFB comprises approximately 6,844 acres and is located on the Snake River Plain in southwestern Idaho, approximately 44 miles southeast of Boise and 5 miles southwest of the City of Mountain Home. The elevation is approximately 2,996 feet above mean sea level (msl; Figure 1-1). Through this project, Mountain Home AFB is seeking an alternate and sustainable water source.

The majority of the acreage affected by the project is under the management jurisdiction of the BLM as the Morley Nelson Snake River Birds of Prey National Conservation Area (NCA; Figure 1-2). Established in 1993 with the enactment of Public Law (P.L.) 103-64, the Morley Nelson Snake River Birds of Prey NCA is located in southwestern Idaho, comprising more than 483,000 acres and including portions of Ada, Canyon, Elmore, and Owyhee counties. The purposes for which the NCA was established and is managed are to provide for the conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values of the public lands in the conservation area.

Based on the need for close coordination between the two agencies, the U.S. Air Force (USAF) and BLM entered into a Memorandum of Understanding (MOU) in November 2016 to act as Joint Lead Agencies in the preparation of this Environmental Assessment (EA). As such, this EA is being prepared in accordance with regulations issued by the Council on Environmental Quality (CEQ); 40 Code of Federal Regulations (CFR) 1500-1508; Air Force Instruction (AFI) 32-7061 as promulgated in 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*; U.S. Department of Interior (DOI) regulations for Implementation of the National Environmental Policy Act of 1969 (NEPA), as amended (43 CFR Part 46); and BLM *National Environmental Policy Act Handbook* (H-1790-1) to evaluate the potential environmental impacts associated with the implementation of the proposed sustainable water supply project at Mountain Home AFB.





In 2014, the IWRB purchased senior Snake River agricultural water rights of approximately 2,500 acre feet per year (afy) from Simplot Corporation (a multinational agribusiness) and proposes to draw water from the CJ Strike Reservoir, located on the Snake River, for distribution to the base. The objective is to have the project fully operational by no later than February 2021 (see Section 2.3 for additional information).



*CJ Strike Reservoir on the Snake River*

## **1.2. Purpose and Need for Action**

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### **1.2.1. USAF Purpose Statement**

The *purpose* of the Proposed Action is to establish a long-term, sustainable water supply for Mountain Home AFB, which supports an average population of approximately 7,000 military and civilian personnel, as well as 800 military families.

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### **1.2.2. BLM Purpose Statement**

The *purpose* of the Proposed Action is to provide IWRB access to BLM-managed lands for the construction, operation, and maintenance of a water pipeline from the CJ Strike Reservoir on the Snake River to Mountain Home AFB. This water service facility would replace groundwater wells currently being used to supply water to the base.

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### **1.2.3. USAF Need Statement**

The *need* for the Proposed Action is to establish a long-term, sustainable water supply for the base, necessary because of declining water levels in regional aquifers and concerns regarding nitrate contamination in base wells (IWRB 2016a).

The new water supply would support the population and mission of Mountain Home AFB, and transitioning the base's water supply to a surface water source would alleviate stresses faced in the Mountain Home Groundwater Management Area, which was established in 1982. Mountain Home AFB currently relies on groundwater resources for its drinking and irrigation water supply. However, regional aquifers from which the base currently extracts and distributes its water supply have been declining at a rate of approximately 2 feet per year, which is not sustainable. Further, since 1980, eight wells at the base have had to be closed and in some cases decommissioned (i.e., plugged) based on concerns related to nitrate contamination (Mountain Home AFB 2017c). Studies conducted and reports prepared by the Idaho Department of Water Resources (IDWR) have further documented these issues, and reports

prepared by IWRB indicate that drawing water from the CJ Strike Reservoir and treating it for Domestic, Commercial, Municipal, and Industrial (DCMI) purposes at the proposed Water Treatment Facility is a feasible solution (IWRB 2016b).

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### **1.2.4. BLM Need Statement**

The *need* for the Proposed Action is established under BLM's responsibility under FLPMA and BLM ROW regulations to respond to a request for a ROW grant for legal access.

## **1.3. Decision to be Made**

A NEPA-compliant EA must be prepared prior to final decisions regarding this proposed project and the document must be made available to relevant regulatory agencies, identified stakeholders, and the public. This EA presents findings of analyses evaluating the potential environmental impacts associated with the establishment of a long-term, sustainable water supply for Mountain Home AFB.

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### **1.3.1. USAF Decision to be Made**

Based on analyses conducted for this EA, the USAF will decide on one of two courses of action, either: 1) select one of the presented alternatives that satisfies the purpose and need of the project and sign a Finding of No Significant Impact (FONSI) that will allow implementation of one of the project alternatives; or 2) initiate the preparation of an Environmental Impact Statement (EIS) if the findings of the EA identify significant impacts (or controversy) that would result from implementation of one of the project alternatives.

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### **1.3.2. BLM Decision to be Made**

The BLM will decide whether to deny the proposed ROW, grant the ROW, or grant the ROW with modifications. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest, and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). In the decision process, the BLM must consider how the BLM's resource management goals, objectives, opportunities, and/or conflicts relate to this non-Federal use of public lands.

## **1.4. Conformance with Applicable Land Use Plan(s)**

Land use plans (LUP) relevant to the Proposed Action primarily include those established by the BLM, and include Resource Management Plans (RMPs) and NCA guidance developed to ensure the appropriate protection and management of resources located on the affected land areas. Alternatives analyzed in this EA are in conformance with the Snake River Birds of Prey NCA RMP and Record of Decision (2008).

Specifically, the Proposed Action is provided for in the following LUP decisions:

- P. 2-15 Management Objective: “Meet the needs of the public in a manner that minimizes impacts on resources consistent with NCA legislative requirements”

P. 2-15 Management Action: Include in all BLM authorizations permitting surface disturbing activities (non-grazing), requirements that (1) affected areas be reseeded with a perennial vegetative cover, and (2) surface disturbing activities be located at least a half-mile from occupied sensitive plant habitat.

Land use plans and designations developed by other relevant entities (e.g., Elmore County, Idaho Power, etc.) have been evaluated in this document, and the compatibility of the Proposed Action with existing and planned land use activities and other resource management procedures have been carefully evaluated during development of the EA. According to the Future Land Use Map presented within the Elmore County Comprehensive Plan, there are no changes or developments proposed or anticipated within or adjacent to either alignment under consideration (Elmore County 2017). Further, according to information available from Idaho Power, no changes within the project area are currently forecast or proposed (Idaho Power 2017).

## 1.5. Relationship to Statutes, Regulations or Other Plans

This EA is prepared in accordance with NEPA and complies with applicable regulations and laws passed subsequent to the Act. The Proposed Action and alternatives would comply with relevant Federal, state, and local regulations, plans, and policies.

**Title V of FLPMA, sec. 501. [43 USC 1761]** (a) The Secretary, with respect to the public lands (including public lands, as defined in section 103(e) of this Act, which are reserved from entry pursuant to section 24 of the Federal Power Act (16 USC 818)) [P.L. 102-486, 1992] and, the Secretary of Agriculture, with respect to lands within the National Forest System (except in each case land designated as wilderness), are authorized to grant, issue, or renew rights-of-way over, upon, under, or through such lands for— (1) reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other facilities and systems for the impoundment, storage, transportation, or distribution of water.

**43 CFR §2800** It is BLM's objective to grant rights-of-way under the regulations in this part to any qualified individual, business, or government entity and to direct and control the use of rights-of-way on public lands in a manner that:

- (a) Protects the natural resources associated with public lands and adjacent lands, whether private or administered by a government entity;
- (b) Prevents unnecessary or undue degradation to public lands;
- (c) Promotes the use of rights-of-way in common considering engineering and technological compatibility, national security, and land use plans; and
- (d) Coordinates, to the fullest extent possible, all BLM actions under the regulations in this part with state and local governments, interested individuals, and appropriate quasi-public entities.

**Public Law (P.L.) 103-64: Establishment of the Snake River Birds of Prey National Conservation Area.** P.L. 103-64 was enacted in 1993 to establish the Snake River Birds of Prey NCA for the purpose of managing the “conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values of the public lands in the conservation area.” The Act permitted continuation of uses of the public lands within the conservation area.

**Section 404 of the Clean Water Act (CWA), and Executive Order (EO) 11990, Protection of Wetlands** regulate development activities in or near streams or wetlands. Section 404 also regulates development in streams and wetlands and requires a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands. EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* amends EO 11988, *Floodplain Management* with the intent of improving resilience of communities and Federal assets against the impacts of flooding, which is anticipated to intensify over time due to the effects of climate change and other threats. Federal agencies are directed to consider the proximity of their actions to or within floodplains. In the case of this Proposed Action – as water resources are the focal point of the project – the USAF will work particularly closely with the IWRB, Idaho Department of Environmental Quality (IDEQ), and other relevant agencies, as appropriate.

**Cultural Resource Laws and Executive Orders.** Overarching federal laws and executive orders (EO) pertaining to cultural resources on federal landholdings generally include: the Archaeological Resources Protection Act of 1979 (ARPA), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), the American Indian Religious Freedom Act of 1979 (AIRFA), the National Historic Preservation Act of 1966 (NHPA), and EO 13007, Indian Sacred Sites.

The primary driver for the proposed undertaking is Section 106 of the NHPA, as amended, and associated implementing regulations (36 CFR 800). Section 106 requires federal agencies to consider the effects of their undertakings on historic properties and seek ways to avoid, minimize, or mitigate any adverse effects to those properties. “Cultural resources” is an umbrella term for the multiplicity of resource types (e.g., buildings, structures, objects, archaeological sites, and traditional cultural properties) that become historic properties if determined eligible for listing, or listed in, the National Register of Historic Places (NRHP). Section 106 also mandates consultation with stakeholders in the identification of historic properties, including federally recognized Indian tribes. Consultation with Indian tribes on the proposed undertaking is concurrently being conducted with the Shoshone-Bannock and the Shoshone-Paiute in accordance with BLM Manual Handbook H-8120-1, *General Procedural Guidance for Native American Consultation* and AFI 90-2002 and 32-7065. The Air Force is also required to consult with Native American tribes in accordance with AFI 90-2002, *Air Force Interactions with Federally-Recognized*

*Tribes*. Both the Air Force and the BLM are committed to compliance with Section 106 and will execute BLM protocols for meeting Section 106 requirements in accordance with the BLM's 2012 National Programmatic Agreement (NPA) and their 2014 State Protocol Agreement with the Idaho State Office of Historic Preservation (SHPO). The State Protocol notes at I. B. (1), that BLM will follow Regulations 336 CFR 800 while acting as the lead agency responsible for Section 106.

**Biological / Natural Resources.** The Morley Nelson Snake River Birds of Prey NCA supports the largest and most dense population of nesting raptors known to occur in North America, and several sensitive bird species have been observed in the project area, including the Golden Eagle (*Aquila chrysaetos*) and Prairie Falcon (*Falco mexicanus*). Other known species include Ferruginous Hawks (*Buteo regalis*), Marsh Hawks (*Circus cyaneus*), and Burrowing Owls (*Athene cunicularia*). The Piute ground squirrel (*Urocyon mollis*) and Davis peppergrass (*Lepidium davisii*) are other sensitive species historically found in the project area.

**Endangered Species Act of 1973, Section 7, as amended (ESA).** The ESA outlines the procedures for Federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) states that “each federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of their habitats.” For the purposes of this assessment, an important listed species evaluated is the slickspot peppergrass.

**The Bald and Golden Eagle Protection Act of 1940, as amended.** This act prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle . . . [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

**The Migratory Bird Treaty Act of 1918 (MBTA).** The MBTA was passed to put an end to the commercial trade in birds and their feathers that, by the early years of the twentieth century, had severely impacted the populations of many native birds. The MBTA protects all migratory birds and their parts (including eggs, nests, and feathers). The MBTA is a domestic law that enforces treaties between the United States, Mexico, and Canada for the protection of a shared migratory bird resource. EO 13186, enacted in 2001, requires Federal agencies to consider the effect of projects on migratory birds with emphasis on species of concern. Species of concern are described by the U.S. Fish and Wildlife Service (USFWS) in *Birds of Conservation Concern* (2008). Land administered by the BLM Four Rivers Field Office (FRFO) – which includes the Morley Nelson Snake River Birds of Prey NCA – occurs within either the Great Basin or Northern Rockies Bird Conservation Regions. Impacts to migratory birds are described under the impacts section of this document (see Map A-2).

**Air Resources.** The Clean Air Act (CAA) (42 USC §§ 7401–7671, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter, and lead (Pb). The Act also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, Federal agencies are required to determine whether their undertakings are in conformance with the applicable SIP and demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The USEPA has set forth regulations 40 CFR 51, Subpart W, that require the proponent of a proposed action to perform an analysis to determine if its implementation would conform with the SIP. If calculations conducted indicate that de minimis thresholds could be exceeded, a General Conformity Determination would be required to ensure compliance with the General Conformity rule, which implements 40 CFR Part 51, Subpart W, as adopted in 1994 and revised in 2010.

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## **1.6. Scoping, Public Involvement, and Issues**

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### **1.6.1. Lead Agencies**

Because the majority of the acreage affected by the Proposed Action is under the management jurisdiction of the BLM, the USAF and BLM entered into a MOU to act as Joint Lead Agencies, and the two entities have been engaged since the initiation of the EA process.

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### **1.6.2. Interagency and Intergovernmental Coordination and Consultation**

An important element of the NEPA-compliant documentation process consists of a thorough interagency outreach and coordination effort. Per the Intergovernmental Cooperation Act of 1968 (42 U.S. Code [USC] 4231[a]) and as outlined in EO 12372, *Intergovernmental Review of Federal Programs*, requests have been made for agency input addressing sensitive resources in the project area, as well as information on any known planned actions in the region. Federal, state, and local agencies with jurisdiction that could be affected were notified of the action, and offered an opportunity to provide input to the process. Agencies consulted include the US Fish and Wildlife Service (USFWS), US Environmental Protection Agency, and the Idaho State Historical Society (see Section 4 and Appendix D).

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### **1.6.3. Public and Agency Review**

NEPA, 40 CFR §§1500-1508, 32 CFR Part 989, DOI NEPA regulations at 43 CFR 46.235, and BLM NEPA Handbook require a scoping process to identify potential significant issues in preparation for impact analysis. The goals of scoping are to identify issues and determine the scope of analysis for those

issues. A Public Scoping Meeting was announced via a formal USAF News Release on January 3, 2017 (see Appendix D); the Public Scoping Meeting was held on January 17, 2017 at the Mountain Home Public Library. Attendees included representatives from BLM, Mountain Home AFB, IWRB, Idaho Power, City of Mountain Home, and Mountain Home News (local media). No substantive issues were raised during this meeting. Additional information is available on the BLM's ePlanning site <http://bit.ly/2pOqmd4>.

The USAF distributed the Draft EA on May 22, 2017, and announced its availability for a 30-day public review period in the *Idaho Statesman* and *Mountain Home News* on May 24, 2017 (this review period was subsequently extended to June 30, 2017). After identifying and resolving internal agency comments requiring resolution – and in order to facilitate a review of the Draft FONSI – a second 30-day review period was initiated on July 12, 2017. Digital copies of the Draft EA were provided at eight (8) public libraries in the region and the document was available on websites hosted by both the USAF and the BLM.

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#### **1.6.4. Issues to be Analyzed**

The following issues were identified during internal scoping as potential issues of concern for the proposed action. These issues will be addressed in this EA.

- Wildlife – Will sensitive species (e.g., golden eagles, prairie falcons) or their habitat be adversely affected?
- Vegetation – What level (e.g., acreage) of disturbance will result from project implementation?
- Special Status Plants – How will the project impact Davis peppergrass?
- Noxious Weeds – What risks of introducing noxious weed species will result from project implementation?
- Water Resources – What impact to water levels in the CJ Strike Reservoir will result from project implementation?
- Cultural Resources – Will any cultural resource sites that are eligible for the NRHP within the Area of Potential Effect (APE) be adversely affected?
- Visual Resources – What level/magnitude of visual contrast will result within the viewshed from the river/reservoir?
- Livestock Grazing – Will any management difficulties result from project implementation?
- Transportation and Travel – How many miles of new road would be established as a result of project implementation?

- Land Use Authorizations – Will any compatibility issues result with regard to other ROWs in the project area?
- Public Health and Safety – What risks to public health and safety would occur during project implementation and under subsequent operations?
- Social and Economic Conditions – What social and/or economic benefits or hardships would result from project implementation (or selection of the No Action Alternative)?
- Air Resources – How would dust and equipment emissions associated with the proposed project impact air resources?

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### **1.6.5. Issues Considered but Not Analyzed**

The following issues were identified during scoping as resources/issues that would not be impacted by the proposed action or that have been covered by prior environmental review. These issues are not analyzed in detail in this EA.

#### **Noise**

Noise characteristics and potential impacts are not carried forward for detailed analysis for several reasons, including: 1) a lack of sensitive receptors in the vicinity of the Proposed Action given the areas remote and rural setting; 2) the short-term nature of any measureable noise effects, which would occur only during construction; and 3) the absence of potentially substantial sources of noise under operational conditions.

#### **Special Status Species**

Slickspot peppergrass is a small annual or biennial species with small white flowers. Its habitat is limited to semi-arid sagebrush-steppe ecosystems, and it grows primarily within slickspots – unique microenvironments that comprise bare areas that temporarily pool water and provide soils significantly higher in sodium and clay content. The range of slickspot peppergrass is known to be Idaho’s western Snake River Plain and neighboring foothills in Owyhee, Payette, Gem, Canyon, Ada, and Elmore counties (Mountain Home AFB 2012b). While known to occur in the region, field surveys conducted on 22 March 2017 determined that neither specimens nor suitable habitat for this species occurs along the proposed Eastern Alignment (Alternative B). However, while no specimens were observed, a small amount of low-quality habitat does occur approximately 1,000 feet west of the Western Alignment (Alternative C) in T4S-R4E-Sec 23 (BLM 2017b).

A summary of sensitive species with the potential to occur in the vicinity of Mountain Home AFB is provided in Table 3-1.

## 2. PROPOSED ACTION AND ALTERNATIVES

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The proposed project consists of establishing a new sustainable water supply conveyed via predominantly linear underground infrastructure to a proposed Water Treatment Facility that would be established within the base boundary. The USAF and BLM have collaborated to prepare an EA that accommodates directives of both organizations (e.g., 32 CFR 989, *Environmental Impact Analysis Process*, and 43 CFR 46, *Implementation of the National Environmental Policy Act of 1969*).

This EA analyzes the following alternatives:

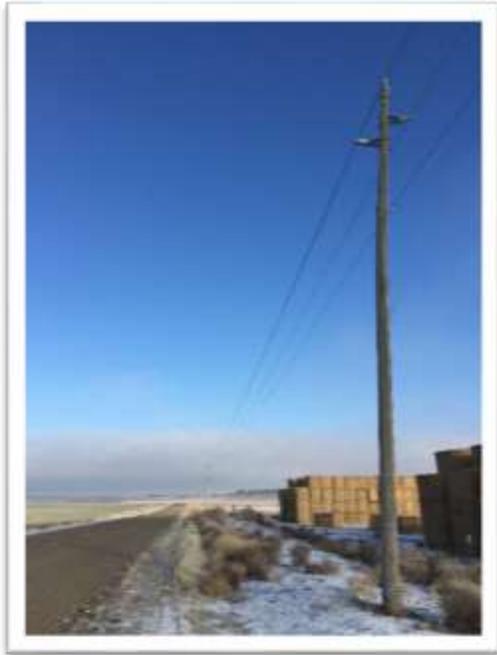
- Alternative A: No Action
- Alternative B: Proposed Action (Eastern Alignment)
- Alternative C: BLM Preferred Alternative (Western Alignment)

The CEQ requires an assessment of potential adverse and beneficial environmental consequences that could result from implementation of potentially effective and reasonably feasible alternatives that would achieve the purpose and need of the Proposed Action, and that the No Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented.

Details related to the Proposed Action and its alternatives, including the No Action Alternative, are provided below.

### 2.1. USAF Selection Standards

This section outlines the alternative selection standards that were used to develop and analyze the range of reasonable alternatives that would meet the purpose of and need for the Proposed Action consistent with 32 CFR 989.8. Alternatives selection standards are used by the USAF to help determine feasibility of alternatives, potential project siting / routing locations, and the extent to which project alternatives would fulfill the purpose, need, and objectives identified in Section 1.2, *Purpose and Need for the Proposed Action*.



*Looking South along CJ Strike Dam  
Cutoff Road*

**Right-of-Way Availability.** The selected alternative route (or *alignment*) must be accessible to IWRB and free of significant physical or legal barriers to establishment of a predominantly underground water supply line. If compatible with the conveyance system, the presence of existing roads and/or utilities would be considered a benefit, facilitating relative ease of access and demonstrating some level of past disturbance / development of environmental resources.

**Environmental Considerations.** The site planning process considers the location of facilities and infrastructure and archaeological sites on, or eligible for, the NRHP; cultural and natural resources; floodplains and wetlands; threatened and endangered species and their habitats; environmentally impacted sites (e.g., Environmental Restoration Program [ERP] sites); noise-

sensitive receptors; and similar issues. The USAF and BLM strive to avoid or minimize environmental impacts through siting and design features whenever possible. The project area (i.e., area of potential effects) encompasses a large area, including the Morley Nelson Snake River Birds of Prey NCA, established by P.L. 103-64. Therefore, the USAF and BLM are working closely with the appropriate agencies to ensure environmental siting constraints are carefully considered and evaluated.

**Land Use.** Establishment and construction of project components must be compatible with the designated land uses and consistent with land use policies in the region (e.g., the BLM's Morley Nelson Snake River Birds of Prey NCA). Project sites or scenarios that do not conform to applicable plans and guidance for compatible land use have not been carried forward for further analysis.

**Suitable Water Source.** Proximity to and availability of a suitable water supply source for the base is the key consideration in identifying alternatives that meet the USAF's Purpose and Need for the Proposed Action. The Snake River is one of the few – if not only – surface water resources located feasibly close enough to the base that has available capacity to provide water for conveyance. Other water sources (e.g., alternate aquifers) were considered but – based on their characteristics (e.g., current usage, location, access, etc.) – were determined to not be feasible. For example, the aquifer beneath the one currently used by the base contains water of poor quality, and the groundwater source more shallow than that currently used comprises randomly distributed, perched deposits that would not provide sufficient volume to accommodate identified water requirements. Further, given the breadth of the Mountain Home Groundwater Management Area, the next-closest groundwater sources are too remote to be feasible.

## 2.2. USAF Screening of Alternatives

Based on these site selection standards, alternative project scenarios were evaluated in an effort to ensure feasible alternatives are carried forward for full analysis (Figure 2-1). The following matrix briefly summarizes this evaluation process, and a detailed presentation of alternative scenarios is presented in Section 2.4, *Proposed Action*.

**Table 2-1. Comparison of Alternative Development Scenarios using Site Selection Standards**

Alternatives Under Consideration	Does Alternative Meet Site Selection Standards? (refer to Section 2.1)			
	ROW Availability	ERP Considerations	Land Use	Suitable Water Source
Alternative A: No Action Alternative	N/A	N/A	N/A	N/A
Alternative B: Proposed Action (Eastern Alignment)	Yes	Yes	Yes	Yes
Alternative C: BLM Preferred Alternative (Western Alignment)	Yes	Yes	Yes	Yes
Original Eastern (Dismissed)	Yes	No	Yes	Yes
Original Eastern, Modified (Dismissed)	Yes	No	Yes	Yes
Water Treatment Facility	Yes	Yes	Yes	Yes
Alternate Groundwater Source	Yes	Yes	Yes	No

## 2.3. Best Management Practices

IWRB would adhere to all Conditions of Approval (COAs). The following general design features and best management practices (BMPs) would also be implemented.

### Control of Waste

- Portable toilets will be provided and maintained during construction, as needed.
- Any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.
- Garbage, trash, and other waste materials will be collected in a portable, self-contained, and fully enclosed trash container during project construction. Accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.

- Immediately after removal of heavy equipment, all debris and other waste materials not contained in the trash container will be cleaned up and removed.
- No chemicals subject to reporting under the Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed annually in association with the Proposed Action.
- No extremely hazardous substances (as defined in 40 CFR 355) in threshold planning quantities will be used, produced, stored, transported, or disposed in association with the Proposed Action.
- As necessary, berms will be constructed around all equipment staging and storage facilities sufficient in size to contain the storage capacity of tanks. Berm walls will be compacted with appropriate equipment to assure containment.

### **Protection of Paleontological Resources**

- If a paleontological site is discovered, the BLM would be notified and the site would be avoided by all personnel, personal vehicles, and company equipment. Workers involved in the project would be informed that it is illegal to collect, damage, or disturb such resources, and that such activities are punishable by criminal and/or administrative penalties.
- Any paleontological resource discovery shall be immediately reported to the Authorized Officer. All operations shall be suspended in the immediate area of such discovery until given written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. IWRB will be responsible for the cost of the evaluation. The results of further investigation will dictate site-specific stipulations for avoidance or salvage of any potentially significant paleontological resources. Any decision as to proper mitigation measures will be made by the Authorized Officer.
- If substantial paleontological resources are discovered during initial earthwork, it may become necessary to retain the services of a qualified monitor/ paleontologist for the remainder of construction activities.

### **Protection of Cultural Resources**

All BLM and USAF cultural resources stipulations will be followed. These stipulations may include, but are not limited to temporary or permanent fencing or other physical barriers, monitoring of earth-disturbing construction, reduction and/or specific construction avoidance zones, and employee education. All employees, contractors, and sub-contractors of the project will be informed by the project proponent that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. All employees, contractors, and sub-contractors of the project will also be informed that it is illegal to collect,

damage, or disturb cultural resources and that such activities are punishable by criminal and/or administrative penalties under the provisions of the ARPA. In the event of a discovery during construction, the project proponent will immediately stop all construction activities in the immediate vicinity of the discovery and immediately notify the archaeological monitor, if present, or the BLM depending on surface ownership. The BLM will then evaluate or cause the site to be evaluated. Should a discovery be evaluated as significant (e.g., National Register, Native American Graves Protection and Repatriation Act, ARPA), it will be protected in place until mitigating measures can be developed and implemented according to guidelines set by the BLM.

## **Protection of Flora and Fauna**

All vegetation removed during site preparation and construction activities, including trees that measure less than 3 inches in diameter (at ground level) and slash/brush, will be chipped or mulched and incorporated into the topsoil as additional organic matter. Based on field observations, trees are limited in the proposed ROW; however, if trees are present, all trees 3 inches in diameter or greater (at ground level) will be cut to ground level and de-limbed. Tree trunks (whole) and cut limbs will be stacked. Subsurface portions of any trees (i.e., stumps) will be hauled to an approved disposal facility.

If any vegetation-disturbing activities are scheduled to occur between May 15 and July 31, a migratory bird nest survey will be conducted, to include the Project area plus a 300-foot buffer. The survey must be conducted by a BLM-approved biologist using a survey protocol developed and provided by the BLM/FRFO. If active nests are located within the Project area, an appropriate buffer (ranging from 50-300 feet) will be implemented, as determined by a BLM/FRFO biologist.

All construction activities will avoid playas occupied by Davis Peppergrass Elemental Occurrence 64 and areas immediately adjacent to those playas to eliminate the potential for disturbance. This includes activities such as driving and staging construction equipment and supplies within or immediately adjacent to the playas.

Backfilling operations will be performed within a reasonable amount of time to ensure that trenches are not left open for more than 24 hours. If a trench is left open overnight, it will be temporarily fenced or an overnight monitor will be present. The excavated soils will be returned to the trenches, atop the pipe, and compacted to prevent subsidence. The trenches will be compacted after approximately 3-4 feet of fill is placed over the pipe.

To the extent practicable, established livestock and wildlife trails will be left in place as crossovers. In areas where active grazing is taking place, escape ramps/crossovers will be placed every 500 feet. Crossovers will be a minimum of 10 feet wide and will not be fenced.

During construction, any open ends of the pipe will be plugged or covered overnight to prevent animals from crawling in. Before the trench is closed and the pipe is covered, it will be visually inspected for

animals. Any trapped wildlife or livestock will be promptly removed and released at least 150 yards from the trench.

### **Livestock Grazing**

All affected grazing permittees will be notified when construction is scheduled to begin. All potential hazards to livestock will be fenced or contained.

All existing improvements (e.g., fences, gates, and bar ditches) in the Project area will be repaired to pre-construction conditions. Any fence lines needing to be cut will first be tied to H-braces and openings will be protected as necessary during construction in order to prevent the escape of livestock. A temporary closure will be installed the same day the fence is cut. Following reclamation, the fence will be reconstructed to BLM specifications. Existing livestock grazing allotments are shown in Map A-4.

### **Protection of Topsoil**

Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments will be added to the topsoil as advised by the BLM.

### **Protection of the Public**

The hauling of equipment and materials on public roads would comply with all Department of Transportation regulations. Further, no toxic substances would be stored or used within the proposed project area. IWRB would have monitors present during construction, and any accidents involving persons or property would immediately be reported to the BLM and the USAF. IWRB would notify the public of potential hazards by posting signage, as necessary.

### **Prevention and Control of Weeds**

Prior to initiating construction activities in the project area, all construction-related vehicles and heavy equipment would be inspected for noxious weeds and cleaned off-site, as necessary.

It would be IWRB's responsibility to monitor, control, and eradicate all invasive, non-native plant species within the proposed project area throughout the life of the project, in accordance with BLM requirements regarding weed-control methods. As applicable, IWRB would be required to submit a Pesticide Use Proposal for the project area prior to any pesticide application. Any use of pesticides would comply with Federal and state laws, and applications – if any – would be summarized in quarterly Pesticide Use Reports (PURs).

### **Protection of Air Resources**

BMPs for dust abatement and erosion control will be implemented to reduce fugitive dust for the duration of construction activities, as necessary. Water application, using a rear-spraying truck or other suitable

means, will likely be the primary method of dust suppression along the road. A summary of criteria pollutants, associated risks, and important thresholds is provided in Section 3.14.1.

## Reclamation Framework

A revegetation plan, including information about native plant seed mixtures, watering requirements, etc. will be developed and implemented in order to offset impacts resulting from project construction and in an effort to rehabilitate the landscape using native plants and replacing native topsoil, to the extent practicable (IWRB 2017).

## 2.4. Project Elements Common to All Action Alternatives

The following project elements would apply to both alternatives:

- a dedicated vertical turbine pump station and intake structure located at the CJ Strike Reservoir;
- a pressurized conveyance feature (pipe) extending from the CJ Strike Reservoir to Mountain Home AFB, predominantly through land administered by the BLM, though some smaller parcels of private (non-Federal land) may be crossed by the system;
- a Water Treatment Facility with ancillary elements, including: 1) a 7-acre-foot raw water reservoir; 2) water treatment processing equipment; 3) sludge drying beds; and 4) disinfection processing equipment;
- two-track roadways requiring temporary and permanent easements; and
- a connection to the existing water storage and distribution system within the base.

The siting and development of the proposed Water Treatment Facility would occur within the fenceline of Mountain Home AFB, near the northeastern corner of the base boundary.

Upon project completion, the IWRB would be the Owner of all infrastructure associated with the project, and would be responsible for operating and maintaining facilities constructed to support implementation of this project. These operations and maintenance services will be contracted to a third party via a contract that would be administered by the IWRB. In effect, Mountain Home AFB would be a “utility customer” of the IWRB. Via the Water

Treatment Facility, 2,500 acy originally designated for agricultural use would be converted to / treated for



*Existing Intake Structure and Pump Station at CJ Strike Reservoir, Operated by Simplot Corporation*

DCMI use (IWRB 2016b). It is important to note that Idaho Power controls the surface level of the lake, and that the withdrawal of water to support Mountain Home AFB would not affect these management operations (IWRB 2017).

### **Intake and Pump Station**

A pump station located along the shoreline of CJ Strike Reservoir would draw water from a submerged intake structure located between 10 and 15 feet below the water's surface. A submerged suction pipeline would then connect the intake structure to high lift pumps contained in the pump house. The pump house would have necessary electrical components to operate the high lift pumps that would serve the conveyance system to the Water Treatment Facility. The pump station would be the first component designed and constructed as part of this project. Auxiliary facilities required to construct the intake and pump station include access roads and power supplies. Sections 2.5 and 2.6 describe power supplies for each alternative.

Construction of the pump station would include improvements to an existing two-track roadway to allow for delivery of construction equipment and access for construction personnel. Where roadway improvements would be necessary on existing two-track roads, the road would be constructed with a suitable crushed aggregate and would be crowned and ditched to facilitate drainage (IWRB 2017).

The pump house site would be excavated to the designed sub-grade elevation to place the foundation and install any buried utility conduits (including the suction pipeline to the intake structure) under the building. Once the utility conduits and suction pipeline are installed, crushed aggregate would be placed to stabilize the sub-grade and be prepared to receive the finished surface of the pump house floor. Site grading would occur around the site to meet the designed finished grade elevations and conform to the storm water design plan proposed by the design-builder.

### **Concrete Placement/Flatwork**

Concrete would be placed on the foundation system to develop the floor of the pump house. Once the concrete has cured to sufficient strength, the pump house building walls and roof construction would begin.

During this phase of construction, the design-builder may need to place a temporary construction pad to stage a crane that will be used to raise/place walls of the building and roof. This temporary concrete pad could also be used by the crane to place the intake structure into the CJ Strike Reservoir. If possible the temporary construction pad could be used to place the standby generator or the fuel vessel/container for the standby generator.

The location and plan for concrete washouts would be identified in the Storm Water Pollution Prevention Plan (SWPPP).

## **Pump House Structure**

The pump house structure would be either stick built (i.e., wooden framing, largely pre-assembled offsite) or constructed with masonry; roofing material would be either composition or metal.

Equipment that would be housed in the building would include high lift stage pumps, electrical control panels, variable frequency drives, lights, fans, air conditioning unit, heating unit, and metering equipment.

## **Auxiliary Generator to the Pump House**

In the event power is lost to the pump house, there would be an auxiliary generator powered by an independent fuel source (e.g., gasoline). The auxiliary components would be housed outside of the pump house. The auxiliary generator would provide reassurance that the high lift pumping would operate during periods of loss of power. The fuel source would be placed away from the building to meet building code rules for fuel sources located near buildings. The design-builder would provide details of the auxiliary generator to the BLM for review and concurrence.

## **Fencing**

The pump house area, generator, and independent fuel source would be secured by a 9-ft tall chain link fence. The ends of fence would terminate a gate which would be located across the road providing access to the pump house site.

## **Equipment List for Constructing the Intake and Pump Station**

The following is a list of the equipment that would be needed to construct and place the intake and pump house component for this project. The numbers of vehicles are estimates at this time.

**Table 2-2. Equipment List for Intake & Pump Station**

Project Component	Activity	Equipment	
Staging/Site Preparation	Roadway Enhancement	Type	Quantity
		Dump Truck	4
		Grader	1
		Bulldozer	1
	Powerline Installation	Low Boy	4
		Skid Steer	1
		Auger	1
		Excavator	1
Surface Disturbing Activities	Excavation to sub-grade, Conduit Installation, Placement of Base Material	Personnel Vehicles	3
		Excavator	1
		Dump Trucks	6
		Bulldozer	1
		Grader	1
Concrete Placement	Installation of foundation, floor, and temporary crane pad or generator pad	Vibratory Roller	2
		Pumper Truck	1
		Concrete trucks	9
		Crane	1
Pump House Structure	Construction of the building and placement of equipment including installation of auxiliary components	Personnel Vehicles	10
		Crane	1
		Skid Steer	1
		Hoist/forklift	2
		Personnel Vehicles	10

Source: IWRB 2017.

### **2.4.1. Conveyance System**

The conveyance system will consist of a pipeline connecting a pump station located along the CJ Strike Reservoir to the Water Treatment Facility. The pipeline will follow the contours of the ground along the prescribed alignment and will have various ancillary support features that will safeguard the pipeline from collapsing and air locking while in operation. Construction of the pipeline will begin in conjunction with the pump station and continue throughout the entire duration of the project.

#### **Staging Site Preparation**

A site-specific SWPPP would be prepared to identify surface disturbing activities, parking areas, equipment/materials storage locations, truck turnaround areas, and best management practices intended to minimize the generation of storm water and contain / direct storm water generated during site preparation activities. The SWPPP would be reviewed and approved prior to any earth-disturbing activities occurring. Once approval of the SWPPP is given, surface disturbing, staging, and site preparations could commence.

Proposed staging areas and temporary construction access points/roadways would be identified and submitted to BLM for review and concurrence. Temporary construction access and roadways would be located within an easement prescribed by the BLM. Staging areas would be planned for each mile for the convenience of storing equipment, materials, vehicles, and construction trailers. Staging areas would be necessary at the top and base of the canyon slope adjacent to CJ Strike Reservoir to facilitate installation of the water conveyance pipe.

Mobile generators would be used to operate construction equipment as necessary and to power construction trailers that would be located within temporary staging areas. Installation of temporary power lines from existing power distribution systems for staging this work would not be necessary.

Once the staging areas have been identified, approved by the BLM, and prepared for usage, temporary access roads (as needed) would be graded inside the prescribed easement to accommodate material-hauling trucks.

### **Surface Disturbing Activities**

While the materials are being staged on site, earth-disturbing activities would commence. Surface-disturbing activities could include grading, excavating (both rotary and conventional), and blasting for the purposes of transporting, staging, and installing the water conveyance pipeline and its ancillary support features. Temporary stockpiling of material adjacent to trenches or blasted areas would occur. Materials comprising these temporary stockpiles would be used as backfill in their source locations; no stockpiles would remain after construction completion. The excavated trench depths are expected to be 6.5 feet.

### **Pipe Sizing and Layout**

Pipe sizes would include a series of 8-inch suction pipes or pressurized pipes submerged at the edge of CJ Strike Reservoir that would feed a pipe header that, in turn, would connect to the main water conveyance pipe to the Water Treatment Facility. The main pipe connecting the pump station to the Water Treatment Facility would be 28 inches in diameter.

The alignment of the pipe between the pump station and Water Treatment Facility would require horizontal and vertical bends to match the existing surface topography. The bends would require thrust restraints to restrict movement of the pipe and would be sized by the design-builder. Thrust restraints would also be used at locations where pipe diameters are reduced.

The pipe would be set to enable placement of at least 3 feet of cover over the top of the pipe to ensure it is beneath the frost zone.

## Ancillary Support Features

The water conveyance pipe would have various support components to protect its integrity and to allow for regular maintenance. These support features are described below, and construction equipment is listed in Table 2-3.

**Table 2-3. Equipment List for Pipeline Construction**

Project Component	Activity	Equipment	
Staging/Site Preparation	Prep Staging Areas and Mobilizing Materials	Fleet Dump Truck	6
		Grader	1
		Low Boy	1
		Skid Steer	1
		Personnel Vehicles	3
Surface Disturbing Activities	Excavation of the trench, Stockpiling, Placement of Bedding Material, Compaction of Backfill	Excavator	2
		Dump Trucks	4
		Grader	1
		Vibratory roller	2
		Hoist/fork lift	2
		Skid Steer	1
Concrete Placement	Installation of thrust blocks	Concrete trucks	2
		Personnel vehicles	6
Ancillary Support Features	Installation of shut-off valves, air release valves, meters, and location devices	Skid Steer	1
		Hoist/fork lift	1
		personnel vehicles	3

Source: IWRB 2017.

### **Shut-Off Valves**

Shut-off valves would be used to isolate ancillary support features for replacement and regular maintenance. The design-builder would specify whether or not shut-off valves would be necessary on the main water conveyance pipe for operational and installation needs.

### **Air Release Valves/Vacuum Release Valves**

Air release/vacuum release valves would be placed along the water conveyance pipe alignment at high points to assist with venting the pipe of any air that may accumulate. The design-builder would strategically locate the air release valves at grade break locations where air may accumulate. Air release valves would be located aboveground and fenced for protection.

### **Blow-off Stations**

Blow-off stations would be located at low points along the water conveyance pipe and would be used to flush any sediment build-up in the pipe that may occur. Water discharged from blow-off assemblies would be contained in an open-air pit chamber.

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## **2.4.2. Operations and Maintenance**

### ***Intake System***

Gates, motors, and screens associated with the intake structure would require periodic exercising, lubricating, and occasional replacement of components such as seals, motor bearings, and gate stems. Screens covering suction lines would protect pump components by minimizing potential entrainment of debris from the reservoir. Screens may be fitted with compressed air spargers or automatic cleaning rakes to remove debris from the screen openings. Material cleaned from the intake screens would be hauled offsite and disposed of in accordance with Elmore County landfill rules. The frequency at which the operator would maintain the intake system would be identified through the design and construction of the facility (IWRB 2017).

### ***Pump Station***

Pumps, exposed piping, and building support systems (ventilation equipment, electrical heating systems, lighting, and air conditioning) would require periodic maintenance activities. Those activities include lubrication of the motor and bearings, electrical load checks, and building support system diagnostics, and renewing pipe coating on exposed pipes. As they reach the end of their useful lives, pumps and building support systems would be replaced by the operator (IWRB 2017).

### ***Conveyance System***

The pipe, air release valves, and blow-off assemblies would require periodic corrosion testing, leak detection, internal pipe inspection and cleaning, and exercising of air release valves and blow-off assemblies. Silts or debris cleaned out of the conveyance system would be collected and disposed of by the operator and handled in accordance with Elmore County landfill regulations (IWRB 2017).

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## **2.4.3. Reclamation Framework**

A revegetation plan, including information about native plant seed mixtures, watering requirements, etc. will be developed and implemented in order to offset impacts resulting from project construction and in an effort to rehabilitate the landscape using native plants and replacing native topsoil, to the extent practicable (IWRB 2017).

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## **2.4.4. Construction Requirements**

Common construction elements of all action alternatives include:

- a trench approximately 5 feet in width and 6.5 feet in depth (within which the pipe would be placed);
- a stockpile area for temporarily removed materials anticipated to be approximately 10 feet wide on either side of the trench; and
- a 50-ft wide pipe and bedding staging and maneuvering area adjacent to the trench.

The minimum ROW needed during construction within the alignment of the water conveyance system would be 75 feet, though in some areas this may extend to 100 feet by 100 feet in order to accommodate staging areas, materials storage, equipment maintenance, and other related activities; therefore, the ROW requested in the application is for 100 feet (IWRB 2017).

The water conveyance line would comprise a 28-inch pipe, as follows: a 22-inch diameter high-pressure carbon steel line from the shore of the CJ Strike Reservoir to the canyon rim, and a 28-inch diameter high-density polyethylene (HDPE) line from the canyon rim to the Water Treatment Facility. With the exception of a portion of the alignment from the shore to the canyon rim, the entire length of the water conveyance system would be buried at a depth greater than 4 feet (to ensure it is below the frost zone). A two-track, unpaved access road would be established to enable access by maintenance crews for the conduct of routine inspections of the alignment.

## 2.5. Alternative A: No Action

If this alternative were selected, a ROW grant would not be authorized and Mountain Home AFB would continue to rely on groundwater sources; declines in groundwater levels would continue, and contamination concerns would likely force closure of additional water wells on base until another solution – currently infeasible for logistical and economic reasons – could be identified and implemented.

## 2.6. Alternative B: Proposed Action (Eastern Alignment)

Under this alternative, water drawn from the CJ Strike Reservoir would be conveyed a total distance of approximately 7.8 miles (approximately 6.54 miles less than under Alternative C). In an effort to identify a route that would require a less invasive scenario, approximately 93% of this route would be along an existing road (e.g., associated with Nielson Road and a two-track dirt road that continues south, toward the river). Further, there is a “notch” at the top of the canyon within the Eastern Alignment – where the existing road crests the rim – and power is readily available at the site, via an existing north/south distribution line that crosses the reservoir. However, the location of the proposed intake valve and pump station, at the shoreline of CJ Strike Reservoir, is currently undeveloped.



*Approximate Location of Proposed Eastern Intake / Pump Station*

Under the Eastern alignment alternative, there would be a total of approximately 36 acres of surface disturbance, based on a pipeline length of 7.8 miles, an average depth of 6.5 feet, and an average

disturbed area width of 30 feet. Similar to Alternative C (Western Alignment), much of the affected area of the Eastern Alignment has been previously disturbed (i.e., trenching would be within or immediately adjacent to established roads). However, portions of the existing roads would need to be widened, resulting in an additional 80 acres of disturbance (BLM 2017b).

Surface disturbing activities could include grading, excavating (both rotary and conventional), and blasting to be used for the purposes of transporting, staging, and installing the associated pipeline and its ancillary support features.

On-site power would be needed to support construction. Power is currently expected to be aboveground and would originate from a distribution line near the canyon rim and/or via the existing north/south distribution line that crosses the reservoir. (Aboveground lines were chosen based on reduced environmental disturbance and simplified logistics.) It would be necessary to install poles that would support the power line and the line would terminate in a junction box until it is needed. This power source would serve as both temporary and permanent power supplies for construction and operation of the pump station.

## 2.7. Alternative C: BLM Preferred Alternative (Western Alignment)

Under this alternative, water drawn from the CJ Strike Reservoir would be conveyed a total distance of approximately 14.34 miles (the greatest distance among the alternatives). The entire route would be aligned along existing roads (e.g., Highway 167 [Grandview Highway] and CJ Strike Cutoff Roadway) and no segments of these roads would require widening or improvement (IWRB 2017). Further, the proposed intake valve and pump station would be collocated with an existing intake valve, pump station, and power source at the shore of the reservoir that is owned, operated, and maintained by Simplot, and where utilities (e.g., electricity) are readily available. This power source would serve as both temporary and permanent power supplies for the construction and operations of the pump station.

Under Alternative C, there would be a total of approximately 52.15 acres of surface disturbance, based on a pipeline length of 14.34 miles, an average depth of 6.5 feet, and an average disturbed area width of 30 feet. Much of the affected area under this alternative has been previously disturbed during development of existing



*View of Existing Utility Lines and "Notch" at Canyon Rim through Which Existing Simplot Waterline Passes*

infrastructure (i.e., trenching would be within or immediately adjacent to the established CJ Strike Cutoff Roadway).

Under Alternative C, it is anticipated that no blasting would be required, primarily because existing infrastructure (i.e., associated with Simplot) is in place and the necessary crossing of the canyon rim was previously accomplished. Based on visual observations during a site visit, the “notch” in the canyon wall would be sufficient to accommodate a second water conveyance line. Where geological barriers are present elsewhere in the project alignment, the ROW would be cleared using up to three excavation techniques: 1) conventional excavation with a bucket; 2) rotary excavation; and/or 3) jack hammering (techniques will be dependent on subsurface geological conditions).

*Best Management Practices detailed in Section 2.3 would also be applied if Alternative C were selected.*

## **2.8. Alternatives Considered but Eliminated from Detailed Study**

As shown on Figure 2-1, two alternative alignments were initially considered but have been eliminated from detailed evaluation in this EA. The decision to dismiss these alternatives was based on multiple factors, but primarily based on concerns related to the possibility of this alignment coming in contact with or otherwise exacerbating an existing asbestos-related ERP site near the eastern boundary of the base. As such, these alternatives were inconsistent with the basic policy objectives for the management of the base. Other considerations included the greater likelihood of their implementation in resulting in significant environmental impacts based on the relatively undisturbed conditions along their routes, and in particular at the shore of the reservoir and at the canyon rim.

*Original Eastern Alignment.* The proposed ROW for this alternative would have required establishment of a new intake / pump station, installation of waterline up a steep canyon wall, crossing of the rim where no “notch” currently exists, installation of pipe in relatively undisturbed areas south of the base, and then running the line parallel to the eastern base boundary. Concerns related to the possibility of this alignment coming in contact with or otherwise exacerbating an existing asbestos-related ERP site resulted in it being dismissed from further consideration and analysis.

*Original Modified Eastern Alignment.* Similar to the Original Eastern Alignment, the ROW for this alternative would have required establishment of a new intake / pump station, a steep waterline route from the reservoir to the canyon rim, installation in relatively undisturbed areas south of the base, and then parallel to the eastern base boundary. Concerns related to the possibility of this alignment coming in contact with or otherwise exacerbating an existing asbestos-related ERP site caused it to be dismissed from further consideration and analysis.

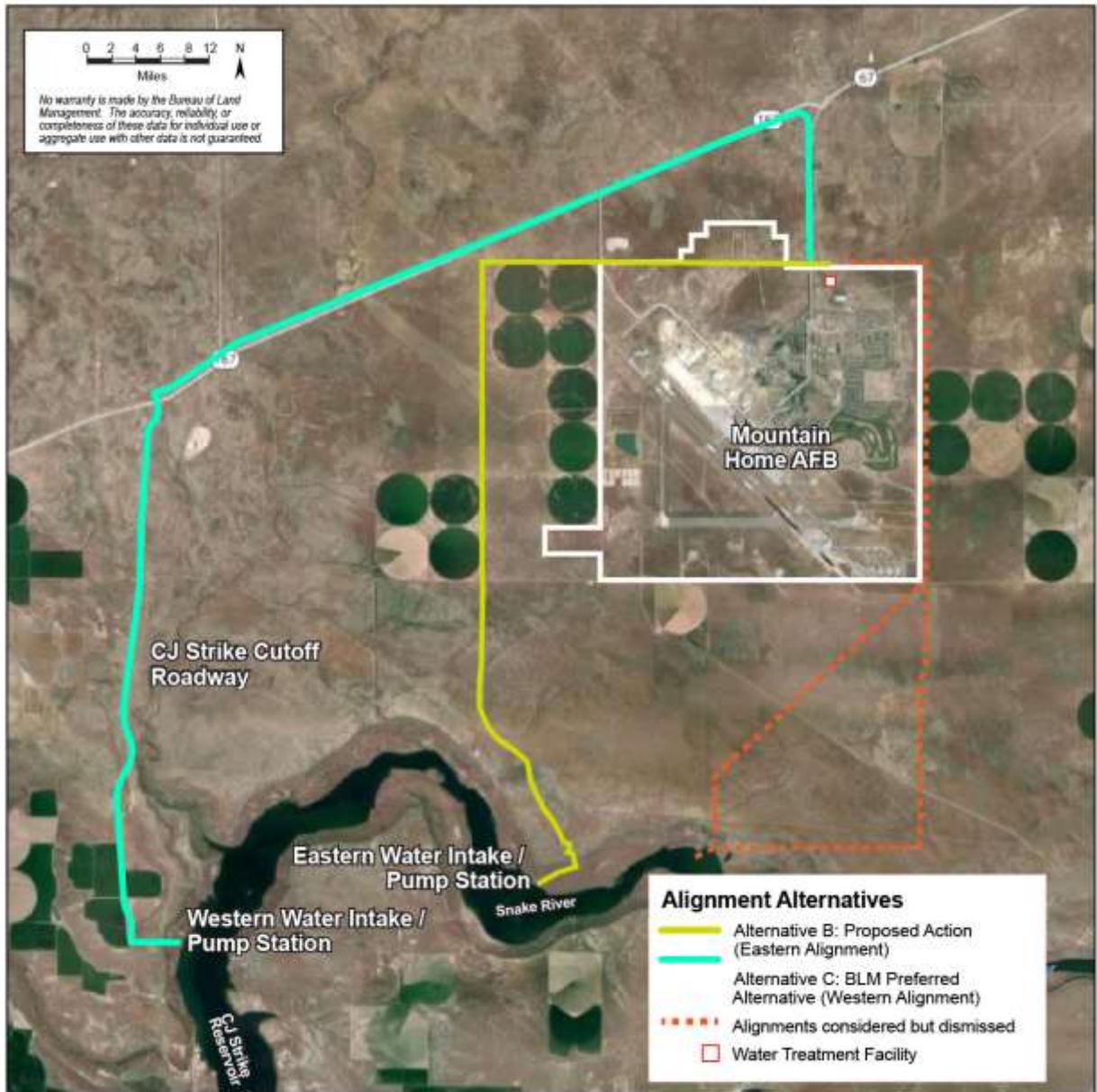


Figure 2-1

Sustainable Water Supply Project for Mountain Home AFB – Alternative Alignments

May 2017

## 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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### 3.1. Methodology

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#### 3.1.1. *Direct and Indirect Impacts*

This section describes the environment that would be affected by implementation of the alternatives described in Chapter 2. Aspects of the affected environment described in this chapter focus on the relevant major resources or issues, as determined during preliminary interagency coordination and scoping.

If the No Action Alternative were selected, current land use and resource conditions would continue, and there would be no environmental impacts associated with establishment of a new water supply system connecting Mountain Home AFB to the CJ Strike Reservoir or the Snake River. As such, the No Action Alternative reflects the current situation within the project area and serves as the baseline for comparing the environmental impacts of the analyzed alternatives.

For the purposes of this analysis, the proposed project area is considered to comprise the following key elements:

- The shoreline area of CJ Strike Reservoir at which the new pump station would be established;
- The linear corridor extending from the shore of the reservoir to Mountain Home AFB; and
- The footprint of the proposed Water Treatment Facility, immediately inside the base boundary.

In addition to these primary project features, other areas (e.g., staging and equipment storage areas) are evaluated in order to identify potential short-term, temporary actions associated with the construction phases of the alternatives. Existing environmental conditions within the project area are described in detail for each resource in the following sections. Effects have been analyzed assuming design features and Best Management Practices listed in Section 2.3 will be implemented to reduce severity and duration of impacts.

The air quality impact analysis methodology is in accordance with AFI 32-7040, *Air Quality Management Program*, which mandates all USAF air quality assessments be conducted using the guidance in the Air Force Air Quality EIAP Guide and using the Air Conformity Applicability Model (ACAM). Under the USAF guidance, a Net Change Emissions Assessment is required which compares all net (increases and decreases caused by the federal action) direct (caused by the action and occurring at the same time and location of the action) and indirect (caused by the action but occurring at a different time or location than the action) emissions against general conformity *de minimis* values as thresholds for nonattainment /

maintenance areas and as indicators of significance for attainment areas. The Net Change Emissions Assessment is automated with the USAF's ACAM application

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### **3.1.2. *Impacts Resulting from Alternative A: No Action Alternative***

For nearly all resource areas, if the No Action Alternative were selected, current land use and resource conditions would continue, and there would be no environmental impacts associated with establishment of a new water supply system connecting Mountain Home AFB to the CJ Strike Reservoir or the Snake River. For example, the No Action Alternative falls entirely within Elmore County, which is currently in attainment for all National Ambient Air Quality Standards (NAAQS) and selection of this alternative would not have the potential to change attainment status in the region. As such, the No Action Alternative reflects the current situation within the project area and serves as the baseline for comparing the environmental impacts of the analyzed alternatives.

(The exception to this would be within Social and Economic Conditions, where selection of the No Action Alternative would limit Mountain Home AFB's viability as a long-term contributor to the regional economy, within which it currently generates approximately \$1 billion in annual revenues via incomes and direct and indirect spending.)

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### **3.1.3. *Cumulative Impacts***

The purpose of the cumulative impact analysis is to identify any project-related impacts that when combined with past, present, and reasonably foreseeable future actions (RFFAs) may result in adverse impacts. These actions include current and projected area development, management activities, and authorizations on public or private land, land use trends, and applicable industrial / infrastructure components.

The analysis of cumulative impacts in this EA employs the definition of cumulative impacts in CEQ regulations (40 CFR 1508.7), "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs regardless of what agency (Federal or non-Federal) or person undertakes such actions." In many cases, quantitative impacts of cumulative impacts are not possible, and qualitative assessments are provided. The Affected Environment section describes the results of past and present actions on the relevant resources. As such, the Cumulative Impacts sections will focus on the combined impacts from the project and RFFAs.

Based on information readily available and on communication with other regional entities (e.g., Idaho Power and the Mountain Home Highway Division), no substantial RFFAs are proposed within the project area (IPCo 2017; IWRB 2017).

## **Past Activities**

*Mountain Home AFB.* No substantial projects have been recently completed at the base that warrant consideration with regard to cumulative impacts. Construction activities, including establishment of airfield pavements and interior roads, were largely completed during the 1940s and 1950s, though infrastructure upgrades, and facilities expansion, improvement, and demolition continue to occur as needed, driven primarily by changes in the base's mission and population (Mountain Home AFB 2017).

*Morley Nelson Snake River Birds of Prey NCA.* Past actions within the NCA include livestock grazing, wildland fire, and the issuance of ROWs, including development on those ROWs (e.g., roadways and utilities transmission lines). A summary of existing ROWs relevant to the project area is provided in Appendix E.

## **Present Development**

*Mountain Home AFB.* There is currently only one substantial project pending at the base – beginning in summer 2017, one of the facility's large aircraft parking aprons (Bravo Ramp) will be repaired. It is anticipated that the project's schedule will extend from initiation in May 2017 through completion in October 2018 (Mountain Home AFB 2017).

*Morley Nelson Snake River Birds of Prey NCA.* Ongoing actions within the NCA include livestock grazing, wildland fire, and the issuance of ROWs.

## **Anticipated Future Activities**

*Mountain Home AFB.* One currently contemplated RFFA for Mountain Home AFB is a potential increase in the number of F-15 aircraft stationed at the base in support of the Republic of Singapore's Air Force. The F-15 aircraft inventory dedicated to this training program would increase from 14 to 20; however, the project is still in the planning phase, and environmental impact assessment has not begun. Other reasonably foreseeable projects associated with the base would involve proposed modifications to the special use airspace associated with the base; however, these actions would have no ground-based elements and would be implemented largely within areas located distant from the base itself. No other Military Construction (MILCON) projects are currently envisioned at Mountain Home AFB; therefore, currently anticipated future projects would not have the potential to contribute to cumulative impacts associated with activities at or in the vicinity of the base (Mountain Home AFB 2017).

*Morley Nelson Snake River Birds of Prey NCA.* Three RFFAs are currently anticipated by the BLM that are relevant to the NCA, including: 1) a ROW in support of a new road proposed by the Idaho Army National Guard (IDARNG); 2) a Programmatic Weed Treatment program proposed by the Boise District; and 3) a land exchange proposed by the Idaho Department of Lands (IDL). The IDARNG project is still in the planning phase, and the EA evaluating the weed treatment program has not yet been released for public review (BLM 2017). The IDL has proposed a land exchange with BLM in an effort to consolidate its

existing land holdings. The specific parcels to be considered for exchange have not been finalized; however, IDL has expressed interest in consolidating lands around the large State-owned parcel north of Mountain Home AFB. While that area is within the area of analysis for this EA, it does not include either of the alternative alignments under consideration for establishment of the new Mountain Home AFB water supply infrastructure. Given the early stage of this proposal, no land use conflicts or cumulative impacts have been identified (BLM 2017).

*City of Mountain Home / Elmore County.* The City of Mountain Home and Elmore County have approached the IWRB about the possibility of developing a sustainable water supply similar to the proposed action. At this time, details of the County/City project are unavailable and are still being formulated; however, it is possible that a pump station and pipeline could be routed through alignments parallel to those proposed in support of this action. While the County/City applied to BLM for a ROW on April 28, 2017, the exact location and scope of their proposed water project remains unclear. The County/City ROW would also be subject to compliance with the NEPA process based on the Federal nexus resulting from engagement with the BLM. Because the City is farther from the Snake River than Mountain Home AFB, the pipeline would have to be at least 6 miles longer (depending on route and location of a Water Treatment Facility, both of which are unknown at this time). Environmental consequences for this initiative could be similar to the proposed action, with increased ground disturbance proportionate to an additional 6 miles of pipeline construction.

## **3.2. Wildlife**

The analysis area for impacts to wildlife includes the Snake River Arm of CJ Strike Reservoir and the adjacent upland habitats that the proposed water conveyance system would traverse (refer to Figures 1-2 and 2-1). The impact indicators for the analysis are the number golden eagle, prairie falcon, and ferruginous hawk nests that would be potentially impacted by activities associated with water conveyance system construction and connected actions. Additional indicators include the acres of ground-nesting bird and Piute ground squirrel habitat that would be impacted by water conveyance system construction activity.

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### **3.2.1. Affected Environment**

The general project area falls within the Morley Nelson Snake River Birds of Prey NCA, which supports one of the world's densest population of breeding raptors. Annually, more than 700 pairs of raptors representing 16 species that occupy the area to nest and raise young (refer to Table 3-1). The area also supports winter and migration stopover habitat for eight additional species including bald eagle, peregrine falcon, and rough-legged hawk. Many other wildlife species including badgers, coyotes, pronghorn antelope, and a suite of amphibians and reptiles inhabit the NCA throughout their annual lifecycles.

Within the NCA, the immediate project area is located in the CJ Strike Reservoir of the CJ Strike Wildlife Management Area (see Map A-8). The wildlife impact analysis focuses on key raptor species known to nest in the area including prairie falcons, and BLM Type 2 Sensitive Species (golden eagles and ferruginous hawks). Home ranges of breeding prairie falcons and golden eagles cover large areas; prairie falcons in the NCA are known to forage 23 miles from nesting territories (Marzluff 1997). Although the proposed actions would affect foraging habitat within raptor home ranges, the total acreage would be insignificant relative to the total available foraging habitat within home ranges. Therefore, the wildlife analysis area focuses on raptor nesting habitat within CJ Strike Reservoir and adjacent upland habitats, as opposed to the entire home range of nesting raptors.

The upland habitats encompassing the canyon support habitat for several ground nesting species including BLM Type 2 Sensitive Species burrowing owl and long-billed curlew. These uplands also support habitat for Piute ground squirrels, a key prey item for nesting raptors, as well as other small mammals (e.g., pocket gophers and kangaroo rats). Other BLM Sensitive Species that have been documented or could potentially occur in the analysis area are listed in Table 3-1.

**Table 3-1. Special Status Species <sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
<b>Mammals</b>				
Big Brown Bat – <i>Eptesicus fuscus</i> (2/S)	Roosting; hibernation: Snags or living trees, cave and mine entrances; caves, mines, human structures Foraging: Juniper, sagebrush, particularly around clearings and lake edges	Yes	Probable	Yes
Bighorn Sheep – <i>Ovis canadensis spp.</i> (2/S)	Rugged desert canyonlands and mountains in sagebrush steppe/grassland habitat	Yes	Possible	No
Canyon Bat – (formerly Western Pipistrell) – <i>Parastrellus hesperus</i> (2/S)	Roosting; Hibernation: rock crevices, caves, mines, and human structures; non-migratory Foraging: Canyon areas near water.	Yes	Probable	Yes
Kit Fox - <i>Vulpes macrotis</i> (2/S)	Inhabits arid and semiarid regions encompassing desert scrub, chaparral, halophytic, and grassland communities. Loose textured soils may be preferred for denning.	Yes	Possible	No
Little Brown Bat – <i>Myotis lucifugus</i> (2/S)	Roosting; Hibernation: forested areas with snags; mines and caves Foraging: variety of areas near water where aquatic insects important diet component	No	Probable	No
Long-eared Myotis – <i>Myotis evotis</i> (2/S)	Roosting: forested areas in exfoliated bark and cavities but also in human structures, rock crevices and mines Foraging: over water or among trees	Yes	Probable	Yes
Long-legged Myotis – <i>Myotis volans</i> (2/S)	Roosting; Hibernation: forested areas in exfoliated bark and cavities, human structures, rock crevices, cracks in the ground; caves and mines Foraging: variety of areas near open water	Yes	Probable	Yes
Pallid Bat – <i>Antrozous pallidus</i> (2/S)	Roosting: rock crevices, mines, tree cavities, and vacant buildings;	Yes	Probable	Yes

**Table 3-1. Special Status Species<sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area (Continued)**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
	Foraging: visual and aural hunters of mostly ground dwelling arthropods			
Pygmy Rabbit – <i>Brachylagus idahoensis</i> (S/2)	Throughout much of the Great Basin; relatively large areas of tall/dense sagebrush and deep soils. In Idaho, closely associated with large stands of sagebrush; prefers areas of tall, dense sagebrush cover with high percent woody cover.	No	Improbable	No
Silver-haired Bat – <i>Lasionycteris noctivagans</i> (2/S)	Roosting; Hibernation: forested areas in exfoliated bark and cavities; caves and mines Foraging: variety of areas over open water, forest canopies, and shrubs	No	Improbable	No
Townsend’s Big-eared Bat – <i>Corynorhinus townsendii</i> (2/S)	Roosting; Hibernation: caves, abandoned mines, buildings, bridges, and hollow trees; caves and mine tunnels Foraging: mesic and xeric shrublands, forest uplands, most needleleaf forests	No	Improbable	No
Western Small-footed Myotis – <i>Myotis ciliolabrum</i> (2/S)	Roosting; Hibernation: rock crevices, under rocks, exfoliated bark, and buildings; caves and mines Foraging: along cliffs and rocky slopes Wide variety of habitats, it is most commonly associated with arid, rocky areas, such as canyons, cliffs, rock outcrops, and badlands, within a variety of habitats, such as montane forest, juniper woodlands, sagebrush steppe	Yes	Probable	Yes
Yuma Myotis – <i>Myotis yumanensis</i> (2/S)	Roosting: Crevices in cliffs, old buildings, mines, caves, bridges, and abandoned cliff swallow nests Foraging: Closely associated with streams and other open water	Yes	Probable	Yes

**Table 3-1. Special Status Species<sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area (Continued)**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
<b>Birds</b>				
Bald Eagle – <i>Haliaeetus leucocephalus</i> (2/S)	Restricted to large rivers and water bodies near mixed conifer forest, occasionally sagebrush foothills. Nest in oldest trees in the stand. Always associated with aquatic forage area. Winters along the Snake River in the NCA.	Yes	Yes	No
Black-throated Sparrow – <i>Amphispiza bilineata</i> (2/S)	Open areas with scattered shrubs and trees including deserts and semi-desert grasslands	No	Possible	No
Brewer's Sparrow – <i>Spizella breweri</i> (2/S)	Nest in canopies of sagebrush and occasionally other shrubs. Use a wide variety of shrub cover levels, but decline with increasing tree density.	No	Probable	Yes
Burrowing Owl – <i>Athene cunicularia</i> (2/S)	Sagebrush steppe and grasslands, typically use natural burrows excavated by American badgers	Yes	Yes	Yes
Ferruginous Hawk – <i>Buteo regalis</i> (2/S)	Arid to semi-arid regions, grasslands and agricultural areas	Yes	Yes	Yes
Golden Eagle – <i>Aquila chrysaetos</i> (2/S)	Open habitats in mountains and hill country, prairies and other grasslands. Open sagebrush areas adjacent to nesting cliffs. Found on prairies, tundra, open wooded country, and barren areas, especially in hilly or mountainous areas. In Idaho, prefers open and semi-open areas in deserts and mountains.	Yes	Yes	Yes
Grasshopper Sparrow – <i>Ammodramus savannarum</i> (2/S)	Sagebrush, sagebrush steppe, riparian areas	Yes	Possible	Yes
Greater Sage-grouse – <i>Centrocercus urophasianus</i> (2/S)	Sagebrush, sagebrush steppe, riparian areas	No	No	No
Green-tailed Towhee – <i>Pipilo chlorurus</i> (2/S)	mixed-species shrub communities, including open sagebrush steppe, montane shrubland, and successional growth in disturbed coniferous forest	No	Improbable	No
Lewis' Woodpecker – <i>Melanerpes lewis</i> (2/S)	Open woodland and forests, including riparian woodland	No	Improbable	No

**Table 3-1. Special Status Species<sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area (Continued)**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
Loggerhead Shrike – <i>Lanius ludovicianus</i> (2/S)	Open country with scattered trees and shrubs, in savannas, desert scrub, and occasionally, in open juniper woodlands.	Yes	Probable	Yes
Long-billed Curlew – <i>Numenius americanus</i> (2/S)	Open short-grass or mixed-prairie habitat with level to slightly rolling topography, and generally avoid areas with trees, high-density shrubs, and tall, dense grasses, and tall noxious weeds	Yes	Yes	Yes
Northern Goshawk – <i>Accipiter gentilis</i> (2/S)	Deciduous and coniferous forest, along edges and in open woodlands. In Idaho, summers and nests in coniferous and aspen forest; winters in riparian and agricultural areas. Do not breed in the NCA; have been observed during fall and spring migration.	No	Improbable	No
Olive-sided Flycatcher – <i>Contopus cooperi</i> (2/S)	Mixed-conifer forest edges and openings caused by natural or anthropogenic disturbances, including small forest gaps resulting from tree death in old-growth forests, or along the edges of early successional forests.	No	Improbable	No
Sage Sparrow – <i>Amphispiza belli</i> (2/S)	Sagebrush obligate; nest on the ground or in shrubs using a wide range of shrub cover and height. They favor sagebrush shrublands, use woodland edges, but avoid dense woodlands.	No	Probable	No
Sage Thrasher – <i>Oreoscoptes montanus</i> (2/S)	Sagebrush obligate that needs large continuous stands of sagebrush or sage steppe.	No	Probable	Yes
Short-eared Owl – <i>Asio flammeus</i> (2/S)	Sagebrush steppe and grasslands.	Yes	Probable	Yes
Willow Flycatcher – <i>Empidonax traillii</i> (2/S)	Found in thickets, scrubby and brushy areas, open second growth, swamps, and open woodlands. In Idaho, associated with mesic and xeric willow (riparian) habitats.	No	Improbable	No
Yellow-billed Cuckoo – <i>Coccyzus americanus</i> Note: Designation of CH pending (1/T)	Large tracts of cottonwood and willow habitats with dense sub-canopies; restricted to Snake River.	No	Improbable	No

**Table 3-1. Special Status Species<sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area (Continued)**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
<b>Reptiles</b>				
Longnose Snake – <i>Rhinocheilus lecontei</i> (2/S)	Found in desert lowland areas that have sandy or loose soils and numerous burrows.	Yes	Probable	Yes
Great Basin Black-collared Lizard – <i>Crotaphytus bicinctores</i> (2/S)	Associated with low elevation arid habitats, with sparse vegetation and the presence of rocks and boulders.	Yes	Probable	Yes
Ground Snake – <i>Sonora semiannulata</i> (2/S)	Desert habitats with loose or sandy soils.	Yes	Probable	Yes
<b>Amphibians</b>				
Northern Leopard Frog – <i>Lithobates pipiens</i> (2/S)	Marshes and wet meadows from low valleys to mountain ridges.	No	No	No
Western/Boreal Toad - <i>Anaxyrus boreas</i> (2/S)	Ephemeral pools and streams, all upland habitats.	No	No	No
Woodhouse's Toad – <i>Anaxyrus woodhousii</i> (2/S)	Lower elevation habitats, sagebrush desert, woodlands, grasslands, farmlands.	Yes	No	No
<b>Fish</b>				
White Sturgeon – <i>Acipenser transmontanus</i> (Snake River population above Hells Canyon Complex Only) (2/S)	Large, deeper pools of main river channels.	No	No	No
<b>Invertebrates</b>				
Bruneau Dune Tiger Beetle – <i>Cicindela waynei</i> (2/S)	Terrestrial insect regularly occurring year-round in Owyhee County.	No	No	No
Columbia Pebblesnail – <i>Fluminicola fuscus</i> (2/S)	Small to large rivers, in swift current on stable gravel to boulder substrate in cold, unpolluted, highly oxygenated water.	No	No	No
Snake River Physa Snail - <i>Haitia [Physa] natricina</i> (1/E)	Confined to the Snake River and distributed over 300 river miles (RM) from Ontario, OR, (RM 368) to just below Minidoka Dam, ID, (RM 675). Found in swift current on sand to boulder substrate.	No	No	No

**Table 3-1. Special Status Species<sup>a</sup> for the Four Rivers Field Office (which includes the NCA) and Likelihood of Occurrence in the Mountain Home AFB Pipeline Project Area (Continued)**

Species (Type/Status <sup>b</sup> )	Key Habitat Associations	Habitat Present	Species Present <sup>c</sup>	Species/Habitat Affected
California Floater <i>Anodonta californiensis</i> (2/S)	Lakes and large streams at lower elevations in areas with soft substrates and relatively slow currents	No	No	No
Shortface Lanx- <i>Fisherola nuttali</i> (2/S)	River reaches with a swift current and highly oxygenated, often near rapids.	No	No	No

<sup>a</sup>See IDIM-2015-009, Idaho Bureau of Land Management Special Status Species List Update, January 2015

<sup>b</sup>Type 1 = Species listed under the Endangered Species Act (ESA) as Endangered (E) or Threatened (T), Experimental Essential (XE) populations, and designated Critical Habitat (CH).

Type 2 = Idaho BLM Sensitive Species: Includes State Director designated species(s) as well as FWS Candidate species (C), FWS Proposed species (P), FWS Experimental Nonessential Populations (XN), and species delisted from ESA Threatened or Endangered status within the past 5 years (D).

Categories include species presence documented (**Yes**), species likely to occur based on preferred habitat and local species abundance and nearby (<5 miles) occurrences within 5 miles (**Probable**), species may occur based on preferred habitat and occurrences within 25 miles (**Possible**), species not likely to occur based on limited or lack of preferred habitat and occurrence over 50 miles (**Improbable**), and species not present due to lack of habitat (**No**).

Source: BLM 2017d.

## **Canyon Nesting Raptors**

### ***Prairie Falcon***

Prairie falcons are a migratory raptor species that breeds in the NCA, occupying the area from late January through July. They typically nest on cliffs, outcroppings, or pinnacles in cavities, ledges, or the nests of other raptors and ravens. Prairie falcons in the NCA time their annual breeding cycle with the seasonal activity of Piute ground squirrels, which are a critical food resource for breeding prairie falcons (USDI 1996). Prairie falcons return to the NCA in January as Piute ground squirrels begin to emerge from burrows after a six-month period of inactivity. Prairie falcons begin establishing nesting territories in late February through March, and peak egg laying corresponds with the emergence of juvenile ground squirrels, which increase the abundance of prey availability for falcons. Prairie falcons migrate from the NCA in late June or early July as summer heat and the desiccation of plant food sources prompt ground squirrels to descend into burrows to begin a period of seasonal inactivity (USDI 1979).

The NCA supports the largest breeding population of prairie falcons across the species range (which covers most of the Western U.S. and extends into Canada and Mexico) and past estimates suggest the NCA supports habitat for 5% of the entire population; in a highly productive year, more than 200 breeding pairs nest in the NCA. Past monitoring efforts from 1976 to 2002 identify the analysis area as part of an important 10-km unit of prairie falcon nesting habitat; approximately 15 pairs of falcons are known to nest in the unit (BLM/DOI 2008). A total of 51 known prairie falcon nests occur along the canyon walls of the analysis area (BLM 2017d).

### ***Golden Eagle***

Golden eagles are a resident and migratory raptor species that breeds in the NCA beginning in mid-to-late January. In the NCA, golden eagles typically nest along the cliffs of the steep canyon walls of the Snake River. Most do not acquire a nesting territory until they are at least four years old, after they have molted into definitive adult plumage. A territory may contain up to 14 nests, which a pair maintains and repairs as part of their courtship (BLM 2017d). The nesting season extends more than six months from the time eggs are laid until young reach independence. A typical Golden Eagle raises an average of only 1 young per year and up to 15 young over its lifetime. The number of young that Golden Eagles produce each year depends on a combination of weather and prey conditions. The black-tailed jackrabbit (*Lepus californicus*) is a key prey species throughout much of the range, and eagle reproductive rates fluctuate with jackrabbit population cycles (Kochert et al 2002). Forty known nesting territories occur throughout the NCA along the Snake River Canyon; 8 nesting territories and 68 known individual nests occur in the project area (BLM 2017d).

### ***Ferruginous Hawk***

Ferruginous hawks are a migratory species that migrate to the NCA in late February to begin courtship and breeding. They are opportunistic and nest in trees, shrubs, on cliffs, rock outcrops, buttes, and utility

structures; breeding pairs have been documented using farm equipment as nest sites in the NCA. In the NCA, ferruginous hawks nest on artificial nest platforms that were specifically built for the species. A total of 21 historically known ferruginous hawk nests occur in the project area.

## **Ground Nesting Species**

### ***Burrowing Owl***

Burrowing owls are another migrant raptor species that spends its breeding season in the NCA. They generally arrive in early March and leave the NCA by October; a small number of individuals of unknown origin (owls that did not breed in the NCA) winter in the area (Belthoff & King 2002). In the NCA, burrowing owls prefer open grassland habitat and typically nest in burrows dug most often by badgers. A system of artificial nesting burrows have been installed across suitable habitat in NCA, and are also readily used by breeding burrowing owls; the artificial burrows help supplement nesting opportunities and play a role in the research of the species. Burrowing owls occur in the project area, a cluster (approximately 14) of artificial nesting burrows is located approximately 2 miles west of the western alignment. Individuals have also been observed along Highway 167 / Grandview Highway and the CJ Strike Dam Cutoff Road (BLM 2017d).

### ***Long-billed Curlew***

Long-billed curlews are a migratory species and North America's largest shore bird. They migrate to the NCA in March, begin breeding in April, and leave by July. Similar to burrowing owls, curlew prefer open grassland habitat and areas dominated by short statured grass species such as Sandberg's bluegrass and cheatgrass. Curlews have been documented in the project area; the upland habitat that encompass and overlap the proposed western and eastern pipeline alignments support potential nesting habitat for the species.

### ***Piute Ground Squirrel***

Piute ground squirrels are a key prey species for many raptors in the NCA. As previously discussed, they are a critical prey item for breeding prairie falcons and are important food items for red-tailed hawk, ferruginous hawk, and common raven. In addition to their importance as raptor prey, ground squirrels likely increase plant productivity by loosening, aerating, and mixing soils (Yensen 2001). Piute ground squirrels are most abundant on the north side of the Snake River where deep deposits of loess soils types are common; loess soils are ideal for ground squirrel burrows as the soils are easily excavated and do not readily collapse (Johnson and Malequist 1975). Piute ground squirrels are commonly found in the uplands between the western and eastern alignments of the analysis area.

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### **3.2.2. Alternative B: Proposed Action (Eastern Alignment)**

#### **Direct and Indirect Impacts**

Water conveyance system construction activities – including increased human activity, vehicular movement, and operation of heavy equipment – that occurs within raptor nest buffers could potentially have direct impacts to nesting raptors and migratory bird species in the analysis area. There would be no effects on the Yellow-billed Cuckoo (*Coccyzus americanus*) because no habitat is present in the analysis area. Human encroachment within raptor nesting territories could affect the reproductive productivity of nesting raptors over the short- and long-term. Studies suggest that golden eagle territory occupancy, egg-laying, and nest survival are negatively associated with off-road vehicle use, pedestrian and other non-motorized recreation, and short-term peaks in off-road vehicle use (Spaul and Heath 2016). Additionally, golden eagle nest attendance, a strong predictor of nest survival, is associated negatively with use by pedestrians who arrive on motorized vehicles. Results from this study suggest that motorized vehicle use may facilitate human disturbance events leading to nest failure by transporting humans to areas near golden eagle nests (Spaul and Heath 2016).

Other studies suggest that habitat within 110 yards of OHV trails may provide reduced-quality habitat to shrub-nesting songbirds, especially for species that suffer significant losses of annual fecundity (i.e., the ability to produce offspring) due to abandonment or desertion of individual breeding attempts (Barton and Holmes 2007). While this study focused on OHV impacts, the use of heavy equipment and increased vehicular traffic associated with water conveyance system construction would likely have similar impacts to nesting migratory birds. Ground-nesting species such as long-billed curlew and burrowing owls could also be disturbed by increased vehicular activity in proximity to nesting territories, which could result in nest abandonment or destruction, or mortality of nestlings. Disturbance from excessive vehicular movement can be a substantial problem for nesting curlews, particularly during brood-rearing season (Jenni et al. 1981).

As stated in Section 1, a seasonal restriction on all construction activities would be implemented from January 15 through July 31 in order to mitigate impacts to nesting raptors and migratory bird species during the breeding season. While a seasonal restriction during the breeding season would mitigate impacts to nesting raptors and migratory birds, construction activity outside of the seasonal restriction will result in minor impacts to resident (non-migratory) and wintering birds as construction activity would likely cause birds and other wildlife species to avoid the area and move to other available habitat within the NCA.

#### **Canyon Nesting Raptors**

Construction of the eastern alignment would occur in relatively previously undisturbed raptor nesting habitat along the canyon rim of CJ Strike Reservoir. In order to install the pipeline securely over the canyon rim and into the reservoir, localized use of small-scale explosives may be required to create

suitable access for the pipeline. Use of explosives would have detrimental long-term impacts to nesting raptors in the area as potential nesting locations would be destroyed permanently. Additionally, the presence of a new anthropogenic feature in proximity to nesting habitat could potentially affect annual productivity of raptor species in the analysis area as breeding pairs may avoid nesting in the area over the short and long-term. Furthermore, the permanent construction of a reliable access road from the canyon rim down to the intake pump station will provide new access for various kinds recreationist to areas within raptor nesting territories. This access road is unlikely to be gated during the raptor-breeding season, which could result in long-term declines in raptor territory occupancy, egg laying, and nest survival.

Installation of the eastern alignment could potentially affect nine prairie falcon nests within an important nesting area for the species in the NCA. Two golden eagle nesting territories and four nests could potentially be affected, as well as five ferruginous hawk nests.

### ***Ground Nesting/Burrowing Species***

Impacts to ground nesting and burrowing species such as long-billed curlew, burrowing owl, and Piute ground squirrels would be similar to those described in Alternative C. Direct and indirect impacts to ground nesting and burrowing species habitat would be greater along the eastern alignment as the upland habitats that fall within the construction footprint, and the immediately adjacent habitat, are relatively undisturbed in comparison to the previously disturbed habitat off CJ Strike Dam Cutoff Road and Highway 167 (Grandview Highway) of the western alignment. Construction activities would result in minor short-term impacts to habitat quality and structure.

### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact wildlife habitat and raptor productivity include the following: Permitted livestock grazing, issuance of Idaho Army National Guard (IDARNG) right-of-way, motorized and non-motorized activities within raptor nesting territories during the breeding season. Livestock grazing is a potential stressor to wildlife habitat quality and structure, impacts differ between habitat type and wildlife species. Motorized boat use and associated activities that occur within the reservoir during raptor breeding season could have potential negative impacts to breeding raptors in the area. Cumulatively, these actions are likely to increase the severity of wildlife habitat structure and raptor productivity. Because the eastern alignment involves more new disturbance and a greater degree of new disturbance within golden, eagle, prairie falcon, and ferruginous hawk nesting habitat, these cumulative effects are likely to be greater than would be seen associated with the western alignment.

### 3.2.3. **Alternative C: BLM Preferred Alternative (Western Alignment)**

To quantify potential impacts to raptor nesting habitat in the analysis area, known nest locations of prairie falcon, golden eagle, and ferruginous hawk were buffered using recommended raptor nesting buffers provided by the US Fish and Wildlife Service (FWS) (Table 3-2). Nest management guidelines are currently under revision by the FWS, pending these guidelines, protective buffers described in the February 2008 draft version of the FWS “Guidelines for Raptor Conservation in the Western United States” (Whittington and Allen 2008) will be used on Idaho BLM lands unless buffers that are more restrictive are identified in existing RMPs (IDIB2010-039a1).

**Table 3-2. Idaho BLM Spatial Buffers for Breeding Raptors for Construction Activities**

Species	Nest Spatial Buffer Distance
Prairie Falcon	0.5 mile
Golden Eagle	0.5 mile
Ferruginous Hawk	1.0 mile

Source: BLM 2017d.

#### **Direct and Indirect Impacts**

Direct and indirect impacts associated with construction of the eastern alignment would be similar to those described in Alternative B. Seasonal restrictions (January 15 through July 31) to mitigate impacts to nesting raptors and migratory birds during the breeding season will be implemented.

#### **Canyon/Cliff Nesting Raptors**

Implementation of the western alignment (Alternative C) could potentially affect seven prairie falcon nests within an important nesting area relative to the entire NCA prairie falcon breeding population. One golden eagle nesting territory and five nests could potentially be affected. There are no known ferruginous hawk nests that fall within 1 mile of the western alignment (Table3-2).

**Table 3-3. Raptor Nests in the Analysis Area**

Raptor Species	Total Nest in Analysis Area	Total Number of Nest Buffers That Intersect Pipeline Alignments by Alternative	
		Alternative C (Western)	Alternative B (Eastern)
Prairie Falcon	51	7	9
Golden Eagle	68	5	4
Ferruginous Hawk	21	0	5
Total	140	12	18

Source: BLM 2017d.

#### **Ground Nesting/Burrowing Species**

Direct impacts to wildlife and habitat would result from the removal of vegetation and soil within the water conveyance system construction footprint; approximately 52.15 acres would be affected along the 14.4

miles of proposed pipeline. Impacts to ground nesting migratory birds and raptors would be minor over the short- and long-term, as construction would occur on previously disturbed ground along CJ Strike Dam Cutoff Road and Highway 167 (Grandview Highway); birds are unlikely to nest in these immediate areas due unsuitable habitat and constant disturbance associated with highway vehicular traffic.

Water conveyance system construction would likely occur during the late summer or fall, which coincides with the seasonal torpor period of Piute ground squirrels. Piute ground squirrel torpor disturbance and mortality could potentially occur to family groups or individuals if burrows are destroyed within the ~30-foot pipeline construction footprint. Burrow disturbance and destruction would likely be minimal along the western alignment as burrows are less likely to occur in the compacted soils along the CJ Strike Dam Cutoff Road and Highway 167, compared to adjacent upland habitat east of the western alignment.

Construction of a Water Treatment Facility and ancillary features on Mountain Home AFB would result in permanent loss of an additional 24.6 acres of potential nesting habitat for disturbance-tolerant migratory bird species associated with low-elevation shrub and exotic annual grass habitats. The treatment facility would create potential nesting substrate for species that readily habituate to human encroachment, such as common ravens.

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact wildlife habitat and raptor productivity include the following: Permitted livestock grazing, issuance of Idaho Army National Guard (IDARNG) right-of-way, motorized and non-motorized activities within raptor nesting territories during the breeding season. Livestock grazing is a potential stressor to wildlife habitat quality and structure, impacts differ between habitat type and wildlife species. Motorized boat use and associated activities that occur within the reservoir during raptor breeding season could have potential negative impacts to breeding raptors in the area. Cumulatively, these actions are likely to increase the severity of wildlife habitat structure and raptor productivity. Because the western alignment involves less new disturbance and less disturbance within golden, eagle, prairie falcon, and ferruginous hawk nesting habitat, these cumulative effects are likely to be less severe than would be seen associated with the eastern alignment.

## **3.3. Vegetation and Soils**

The analysis area for impacts to vegetation are the Hydrologic Unit Code (HUC)-level watersheds of Canyon Creek and CJ Strike Reservoir-Snake River (see Maps A-5 and A-6). The impact indicators for analysis are acres of vegetation and soil surface disturbance.

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### **3.3.1. Affected Environment**

The proposed project is in the Snake River Plain Major Land Resource Area, with elevations ranging from 2,460' (750 m) at CJ Strike Reservoir, to 3020' (920 m) at Mountain Home Air Force Base. The Western Snake River Plain is one of the driest and warmest areas of the northern Great Basin ecoregion, with average annual precipitation ranging from 8-12" (20-30 cm), and an average annual temperature of 51° F (10.6° C). The region has distinct wet and dry seasons, with the majority of the precipitation falling as snow and rain between October and May. June-August are typically hot and dry with daily high temperatures in the 90s, and monthly average precipitation of 0.5" or less.

The dominant geomorphic features of the project area are the flat to rolling Snake River Plain, occasionally dissected by drainages and arroyos, and the Snake River Canyon with basalt cliffs and talus slopes that rise 400' (130 m) above the surface of CJ Strike Reservoir.

Soils in the area are generally fairly deep, neutral to slightly alkaline silty loams, except near the canyon and basalt outcrops, where soils are shallow and poorly developed. Some soils near the reservoir are fine sandy loams. The silty soils (e.g. Garbutt-Strike-Trevino complex and Minidoka-Minveno silt loam) are susceptible to erosion, having Kf values of approaching 0.5 or greater. The fine sandy soils (e.g., Mazuma fine sandy loam) are moderately susceptible to wind erosion (NRCS web soil survey, accessed 04/05/17).

Potential native plant communities, as determined by NRCS Ecological Site Descriptions, range from salt-desert shrublands on drier sites, to shrub-steppe communities with sagebrush or winterfat shrub cover and native grasses (NRCS web soil survey, accessed 04/05/17).

The existing vegetation in the project area differs dramatically from historic/potential plant communities. Invasion of exotic annual plants, and the frequent wildfires they fuel, has converted much of the sage-steppe vegetation to exotic annual grassland dominated by cheatgrass (aka downy brome). Most of the project area has burned at least once since 1980, and some of it has burned multiple times. The lower elevation salt desert shrub communities have burned less frequently and still persist in some places. The only native grass that persists as a significant component of these degraded communities is Sandberg bluegrass.

A sensitive species known to occur in the project area is Davis Peppergrass (*Lepidium davisii* - EO 64), is a BLM Type 3 sensitive plant species. Davis peppergrass is endemic to southeastern Oregon, southwestern Idaho, and north central Nevada. Known populations occur in Ada, Elmore, Owyhee, and Twin Falls counties in Idaho, and in adjacent Malheur County (Oregon) and Elko County (Nevada). The plant is a deep-rooted perennial that forms low (4-8 cm in height) clumps in large well-defined playas scattered across the Snake River Plain. The plant's leaves are green but often appear grayish due to a dusting of the white clay in which they grow. Several dozen or more white, four-petaled flowers typical of the mustard family are produced in each rounded inflorescence (i.e., the complete flower head of a plant including stems, stalks, and flowers). The plant is adapted to survive both seasonal flooding and

prolonged hot dry summers and drought due to its large taproot which often extends for more 12 inches into the playas that it occupies. Plants typically begin flowering in May and can continue until August, with the peak flowering time and the ability of plants to produce fruit dependent on hydrologic conditions. Major threats to the species include livestock trampling, off-highway vehicle (OHV) disturbance, and both invasive and noxious weeds (BLM 2017; Oregon Department of Agriculture n.d.).

In response to wildfire, post-fire stabilization and rehabilitation land treatments, including noxious weed control and seeding/planting portions of the previously-burned areas, have occurred in the project area. Seeding success has varied, leaving parts of the project area a mix of seeded non-native and native grasses and shrubs, with variable amounts of cheat grass. The most common non-native species seeded and persisting in previously-burned areas are cultivars of crested wheatgrass and Russian wildrye (see “seedings”, Table 3-4), with native Sandberg bluegrass often present as well.

The deep silty soils, and the vegetation they support, are important for the long-term conservation of the nesting, wintering, and migrating raptors for which the National Conservation Area was established. These soils and plant communities, although in many places severely degraded, support an abundant prey base (most notably Piute ground squirrels) for the hundreds of pairs of raptors that nest in the basalt cliffs above the Snake River, and natural and artificial nesting structures on the Snake River Plain.

**Table 3-4. Ground Disturbance by Plant Community**

Plant Community (GIS)	Highest Resource Value?	E alignment		W Alignment		Total Sum of GIS_ACRES_	Total Sum of GIS_ACRES_2
		Acres	Percent	Acres	Percent		
Agriculture	N	0.0	0%	3.1	6%	3.06	3.49%
Big Sage	Y	3.2	9%	3.3	6%	6.51	7.43%
Big Sage Mix	Y	1.1	3%	2.8	5%	3.95	4.50%
Bunchgrass	Y	2.2	6%	2.9	6%	5.07	5.78%
Exotic Annuals	N	7.5	21%	13.2	25%	20.78	23.71%
Greasewood	Y	2.6	7%	1.0	2%	3.51	4.00%
Rabbitbrush	Y	0.7	2%	0.1	0%	0.79	0.90%
Salt Desert Shrub	Y	6.8	19%	13.7	26%	20.48	23.36%
Seeding	Y	5.9	17%	2.1	4%	8.05	9.19%
Sparse Veg	N	4.5	13%	7.1	14%	11.57	13.20%
Urban	N	0.9	2%	3.0	6%	3.89	4.44%
Grand Total		35.4	100%	52.2	100%	87.66	100.00%
Total of highest resource value communities		22.5	63%	25.9	50%		

Notes: Acreages Only for Pipeline Construction. Excludes New Roads, Road Improvements, Powerlines, and Facilities.

Source: BLM 2017b.

On 22 March 2017, BLM staff conducted a field survey of both alternative alignments to identify additional issues to be addressed in the analysis, and to verify plant community, soil, ecological site, rare plant, and invasive/noxious weed information gathered from geographic information system (GIS) data sources. The survey was conducted in an effort to supplement information provided during initial project scoping and agency coordination, as well as to identify species and soils information associated with the newly proposed Eastern alignment (BLM 2017b).

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### **3.3.2. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

Under Alternative B, direct impacts to vegetation and soils would result during water intake, Water Treatment Facility, and conveyance system (pipeline) site preparation and subsequent construction activities, as well as future disturbances caused by planned and unplanned maintenance and repair.

The majority of the 78.5 acres of total ground-disturbance and permanent facilities would be associated with water conveyance system construction. Under the eastern alignment, the total area of disturbance associated with water conveyance system construction would be 35.4 acres (Table 3-5), with a total volume of rough cut equal to approximately 297,440.02 cubic yards. Approximately 75% of the ground disturbance (27 acres) would occur in mapped units of moderately- to highly-erodible soils, with Kf values 0.49 or greater (e.g. Garbutt-Strike-Trevino complex and Minidoka-Minveno silt loams) (see Table 3-5).

Much of the affected area under this alternative has been previously disturbed, however, relative to the western alignment, a greater proportion of the eastern alignment parallels unimproved two-track and partially improved gravel roads, rather than a paved highway such as the CJ Strike Cutoff Road. For the purposes of this analysis, installation of water conveyance system along primitive two-track roads would be considered new disturbance because other than a lightly used two-track road, the habitat is currently undisturbed and degree of habitat fragmentation is low. Of the 35.4 acres of disturbance associated with eastern alignment pipeline construction, 7.5 acres (22%) would be new disturbance (see Table 3-5).

Approximately 23 acres (63%) of the ground disturbance associated with the western alignment would be in vegetation mapped as a shrub, bunchgrass, or seeding (see Table 3-4) which are considered higher resource value plant communities for this environment.

**Table 3-5. Summary of Ground Disturbance from the Proposed Action**

	WESTERN ALIGNMENT		EASTERN ALIGNMENT	
	Construction Soil Surface Facilities Disturbance and Permanent Facilities (acres)			
	New Disturbance	Previous Disturbance	New Disturbance	Previous Disturbance
Water Pipeline (BLM Land)	0	52.2	7.5	27.9
Water Pipeline (MHAFB Land)	0	0	0	7.5
Pump Station and Intake Structure (BLM Land – permanent facilities)	1.0	0	1.0	0
Power Line (BLM Land)	0	negligible	2.3	0
Access Road (BLM Land)	0	0	5.2	0
Improvements to Existing Single and Two-track roads (BLM Land)	0	negligible	0	2.5
Water Treatment Facility (MHAFB Land – permanent facilities)	8.5	0	8.5	0
Water Treatment Facility Ancillary Elements (MHAFB Land – permanent facilities)	16.1	0	16.1	0
<b>Total Soil Surface Disturbance and Permanent Facilities Footprint</b>	<b>24.6</b>	<b>52.2</b>	<b>40.6</b>	<b>37.9</b>
<b>Temporary Vegetation Disturbance (acres)</b>				
Temporary Use Areas (BLM Land) - 70-foot width adjacent to 30-foot alignment	121.6		65.3	
Temporary Staging Areas (BLM Land) - 100x100 foot area (1 per mile)	3.2		1.8	
Temporary Use Areas (MHAFB Land) - 70-foot width adjacent to 30-foot alignment	0		17	
<b>Total Temporary Vegetation Disturbance</b>	<b>124.8</b>		<b>84.1</b>	

Source: BLM 2017b.

For the eastern alignment, the two-track roadway leading west of the existing powerline that crosses the reservoir does not currently extend all the way to the proposed eastern intake location, and that creation of safe, reliable vehicle access to that location would require new effectively permanent road and disruption of previously intact soil surfaces, totaling 5.2 acres (see Table 3-5) in low-elevation shrub habitat, on soils mapped Timmerman Loamy Sand, which is moderately subject to wind erosion. Additional new disturbance of 2.3 acres would be required to facilitate extension of necessary powerlines

to the proposed intake site. Construction disturbance associated with a new permanent intake at the end of the road and powerline ROW would be approximately 1 acre.

In addition to the above soil-surface disturbing activities, construction along the eastern alignment would result in 84.1 acres of temporary vegetation-disturbing activities such as vehicle trampling, supply and equipment staging, and soil banking (see Table 3-5). These activities would be likely to have minor short-term effects on vegetation and soils. These temporary disturbances would be monitored to determine if reclamation is necessary.

Based on field observations (22 March 2017) and existing GIS data, no sensitive vegetation or suitable habitat for special status plant species would be impacted during implementation of Alternative B (Eastern Alignment). Small stands of Davis peppergrass and suitable habitat are known to occur within ¼ mile of the eastern alignment, however, the sensitive species/habitat would be outside the Project area (BLM 2017b).

Impacts from reclamation activities would be the same as described for Alternative C.

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact vegetative cover, growth, and change in species resulting from surface disturbance include the following: Permitted livestock grazing, issuance of IDARNG ROW, and programmatic treatment of noxious and invasive weeds on the Boise District. Livestock grazing is a potential stressor to ecosystem health. Issuance of new ROWs for IDARNG training contributes to landscape-level habitat fragmentation, as well as increasing the potential spread of invasive and noxious weeds. Cumulatively, these actions would be likely to increase the severity of ecosystem stress and habitat fragmentation. Because the eastern alignment involves more new disturbance and a greater degree of new habitat fragmentation, these cumulative effects would be likely to be more severe than would be seen associated with the western alignment. Implementation of programmatic weed treatment program on the Boise District would decrease the threat of noxious weed spread. The relative magnitude of these effects would be similar between the east and west alignments.

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### **3.3.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

Direct impacts to vegetation and soils would result during water intake, Water Treatment Facility, and conveyance system (pipeline) site preparation and subsequent construction activities, as well as future disturbances caused by planned and unplanned maintenance and repair. Vegetation within the construction footprint and corridor would be removed, and adjacent vegetation (e.g., in staging and access areas) would likely be trampled or otherwise harmed. In the interval between disturbance and site stabilization (rehabilitation), disturbed soils would be subject to wind and water erosion. Bare soil

surfaces, and surfaces that are not fully occupied by desirable species, are subject to be invasion by noxious weeds and other undesirable species such as cheatgrass and Russian thistle.

The construction of a Water Treatment Facility on Mountain Home AFB would result in permanent conversion of 24.6 acres of mixed low-elevation shrub and exotic annual grass habitat and pre-existing urban features, to primarily urban use. Landscaping the facility with native plants would result in the return of some native plants and habitats.

The majority of the 77.8 acres of total ground-disturbance and permanent facilities would be associated with water conveyance system construction. Under the western alignment, the total area of soil surface disturbed by water conveyance system construction would be 52.2 acres (see Table 3-5), with a total volume of rough cut equal to approximately 546,800 cubic yards. Approximately 57% of the ground disturbance (29.9 acres) would occur in mapped units of moderately- to highly-erodible soils, with Kf values (i.e., which measure erodibility) of 0.49 or greater (e.g. Garbutt-Strike-Trevino complex and Minidoka-Minveno silt loams). In addition, construction of a pump station and intake structure for the western alignment would result in the permanent conversion 1 acre of habitat to facilities in low-elevation salt desert habitat, on Rock-outcrop-Rubble Association soil (Table 3-6).

Much of the area affected by pipeline construction under this alternative has been previously disturbed (i.e., trenching would be within or immediately adjacent to the established CJ Strike Cutoff Road and Highway 167). Approximately 26 acres (50%) of the pipeline ground disturbance associated with the western alignment would be in vegetation mapped as a shrub, bunchgrass, or seeding (see Table 3-4) which are considered plant communities of relatively higher resource value for this environment. However, because most of this alignment parallels existing paved roads, the amount of new disturbance to these communities would be minimal.

Access to the intake facility on the reservoir for the western alignment would be via an unimproved roadway in place that provides access to the existing Simplot intake valve and pump station, and utilities have already been extended to this location. Further, the existing Simplot waterline passes through an established notch in the canyon rim and most of the proposed alignment on the plateau above would be within, or immediately adjacent to, existing ROWs associated with paved highways.

Several sections of the unimproved road between the western intake and CJ Strike Cutoff Road would need to be improved for large vehicle access. New ground disturbance associated with these improvements would be minimal.

**Table 3-6. Significant Soil Map Units of Proposed Mountain Home AFB Pipeline Project**

Soil Map Unit Name	KF Whole Soil	Wild Erodibility Group	Parent Material	Surface Texture	Ecological Site
Bahem-Minidoka-Trevino complex 0-4%	0.49	4L	silty alluvium and/or loess	silt loam	Loamy 8-12 Provisional
Bahem silt loam 0-4% (prime farmland if irrigated)	0.49	4L	silty alluvium and/or loess	silt loam	Loamy 8-12 Provisional
Trevino-Garbutt-Strike complex 2-8 slope	0.32	5	mixed alluvium and/or loess over bedrock derived from basalt	stony silt loam	Calcareous loam 7-10 ATCO, etc.
Garbutt-Strike-Trevino complex, 2-8%	0.55	5	silty alluvium and/or lacustrine deposits and/or loess	silt loam	Silty 7-10 KRLA-ACHY
Minidoka-Minveno silt loam 0-4%	0.55	4L	silty alluvium and/or loess and/or lacustrine deposits	silt loam	Loamy 8-12 Provisional
Minveno-Minidoka silt loam 0-8%, stony	0.49	5	volcanic ash and/or loess and/or mixed silty alluvium over bedrock derived from volcanic rock and/or basalt	silt loam	Loamy 8-12 Provisional
Rock Outcrop-Rubble land		NA	NA	bedrock	NA
Mazuma fine sandy loam, 0-4% (Saline - EC 10 dS/M)	0.28	3	mixed alluvium	fine sandy loam	Saline Bottom 8-12 Provisional
Royal-Truesdale fine sandy loam, 0-4%	0.32	3	mixed alluvium and/or eolian sands	fine sandy loam	Sandy Loam 8-12 ARTRWY8/ACHY-HECOC8

Source: [Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at https://websoilsurvey.sc.egov.usda.gov/. Accessed April 2017.](https://websoilsurvey.sc.egov.usda.gov/)

Dominant current vegetation cover: ARTR-mix/BG-BRTE; BRTE; Seeding; and ATCO-mix/BG-BRTE.

In addition to the above soil-surface disturbing activities, construction along the western alignment would result in 124.8 acres of temporary vegetation-disturbing activities such as vehicle trampling, supply and equipment staging, and soil banking (see Table 3-5). These activities would be likely to have minor short-term effects on vegetation and soils. These temporary disturbances will be monitored to determine if reclamation is necessary.

Based on field observations (22 March 2017) and existing GIS data, no sensitive plant species, or suitable habitat for special status plants, would be impacted during implementation of the project along the Western Alignment (Alternative C).

During the construction phase of the proposed project, all vegetation within the construction footprint would be cleared. During reclamation, all soil-surface disturbances that are not otherwise occupied by permanent facilities would be fully reclaimed (i.e., recontoured and reseeded). A Reclamation Framework will be finalized before project initiation detailing the BLM-approved plant materials, revegetation methods, and erosion control methods to be used (Appendix C). Re-established vegetation would consist of native grass, forb, and shrub species included in the seed mixtures, as well as native species that are not deliberately planted. Reclamation treatments will be monitored for three years, and if objectives are not being met, additional land treatments, including site preparation, seeding, and treatment of invasive and noxious weeds, would be done. Following the reclamation process, the resulting vegetation community could differ from plant communities surrounding the proposed project area. The accumulation of fugitive dust on vegetation may also impede vegetative growth and vigor. Impacts are likely to be low and moderate-term.

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact vegetative cover, growth, and change in species resulting from surface disturbance include the following: Permitted livestock grazing, issuance of IDARNG ROW, and programmatic treatment of noxious and invasive weeds on the Boise District. Livestock grazing is a potential stressor to ecosystem health. Issuance of new ROWs for IDARNG training contributes to landscape-level habitat fragmentation, as well as increasing the potential spread of invasive and noxious weeds. Cumulatively, these actions would be likely to increase the severity of ecosystem stress and habitat fragmentation. Because the western alignment involves less new disturbance and a lower degree of new habitat fragmentation, these cumulative effects would likely be less severe than would be seen associated with the eastern alignment. Implementation of programmatic weed treatment program on the BLM Boise District would decrease the threat of noxious weed spread. These relative magnitude of these effects would be similar between the east and west alignments.

## 3.4. Special Status Plants

The analysis area for impacts to special status plants is the project area. The impact indicator for analysis is surface disturbance to Davis Peppergrass playas (see Map A-10).

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### 3.4.1. *Affected Environment*

Davis Peppergrass (*Lepidium davisii* - EO 64), a BLM Type 3 sensitive plant species. Davis peppergrass is endemic to southeastern Oregon, southwestern Idaho, and north central Nevada. Known populations occur in Ada, Elmore, Owyhee, and Twin Falls counties in Idaho, in adjacent Malheur County, Oregon, and in Elko County, Nevada. The plant is a small fleshy leaved, taprooted perennial that occurs in large well defined playas scattered across the Snake River Plain. The plant is adapted to survive both seasonal flooding and prolonged hot dry summers and drought due to its large taproot which often extends for more 12 inches into the playas that it occupies. Major threats to the species include, livestock trampling, OHV disturbance, and both invasive and noxious weeds.

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### 3.4.2. *Alternative B: Proposed Action (Eastern Alignment)*

#### Direct and Indirect Impacts

Under Alternative B, impacts to Davis Peppergrass - EO 64 would be avoided by routing the pipeline around the perimeter of the playas occupied by this plant and by eliminating the potential for additional disturbance; such as driving or staging construction equipment or supplies within or immediately adjacent to the playas (refer to Map A-10).

#### Cumulative Impacts

Due to stipulations that would prevent disturbance of playas containing Davis Peppergrass, implementation of Alternative B would not have any direct or indirect impacts to Davis peppergrass. As such, there would be no cumulative impacts from this alternative.

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### 3.4.3. *Alternative C: BLM Preferred Alternative (Western Alignment)*

#### Direct and Indirect Impacts

The alignment for Alternative C does not include any playas containing Davis Peppergrass. As such, there would be no direct or indirect impacts from implementation of this alternative.

#### Cumulative Impacts

Since, Alternative C would not have any direct or indirect impacts to Davis Peppergrass, its implementation would not contribute to cumulative impacts.

## 3.5. Noxious Weeds

The analysis area for impacts to noxious weeds is the HUC 5 watershed. The impact indicator for analysis is acres of surface disturbance.

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### 3.5.1. *Affected Environment*

Invasive plants and noxious weeds are frequently found in areas that have been disturbed by surface activities. Invasive plants and noxious weeds are generally tolerant of disturbed conditions, and often times outcompete native species. These plants may displace native plant communities and lead to the degradation of wildlife habitat. BLM works closely with project applicants to address invasive plant management by incorporation of prevention and control measures on projects proposed on BLM lands.

No noxious weeds were found during the field surveys of the project areas (BLM 2017b). However, GIS data indicates that diffuse knapweed, perennial pepperweed, and Russian knapweed have been found along the proposed western alignment adjacent to CJ Strike Cutoff Road and Grandview Highway. In addition, whitetop mustard (hoary cress) and Scotch thistle have been found on Simco Road within 2 miles of the proposed western alignment, and rush skeletonweed is known to occur within several miles of both identified alignments.

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### 3.5.2. *Alternative B: Proposed Action (Eastern Alignment)*

#### Direct and Indirect Impacts

Disturbed soils from Alternative B may provide an opportunity for the introduction and establishment of non-native invasive species. During construction and operation, noxious weed sources could be introduced to disturbed areas from vehicles, equipment, people, wind, water, or other mechanisms. As specified in Section 2.3. *Best Management Practices*, IWRB would be responsible for monitoring and controlling any non-native invasive weed species within the permitted area for the life of the project in accordance with BLM requirements regarding weed-control methods. The re-vegetation of the disturbed area would reduce the potential for non-native invasive weeds to establish. Impacts are likely to be low and moderate-term.

Construction activities for the western alignment would result in total disturbance of 52.1 acres and, therefore, a marginally lesser risk of noxious weed invasion than Alternative C.

#### Cumulative Impacts

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact the potential for introduction and establishment of noxious weed species resulting from surface disturbance include ongoing noxious weed / invasive plant removal programs under development and underway throughout the NCA; these programs, together with a Reclamation Framework focused on ensuring use of native

species, would comprise a cumulatively beneficial impact with regard to the reduction of noxious weed populations in the region.

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### **3.5.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

Disturbed soils from Alternative C may provide an opportunity for the introduction and establishment of non-native invasive species. During construction and operation, noxious weed sources could be introduced to disturbed areas from vehicles, equipment, people, wind, water, or other mechanisms. As specified in Section 2.3. *Best Management Practices*, IWRB would be responsible for monitoring and controlling any non-native invasive weed species within the permitted area for the life of the project in accordance with BLM requirements regarding weed-control methods. Revegetation of disturbed areas would reduce the potential for non-native invasive weeds to establish themselves. Impacts are likely to be low and moderate-term.

Construction activities for the western alignment would result in total disturbance of 52.1 acres and, therefore, a marginally greater risk of noxious weed invasion than under Alternative B. In addition, due to previous infestations of noxious weeds along CJ Strike Cutoff Road and Grandview Highway, the western alignment may also be at greater risk for noxious weed invasion than the eastern alignment.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area, which may also impact the potential for introduction and establishment of noxious weed species resulting from surface disturbance include ongoing noxious weed / invasive plant removal programs under development and underway throughout the NCA; these programs, together with a Reclamation Framework focused on ensuring use of native species, would comprise a cumulatively beneficial impact with regard to the reduction of noxious weed populations in the region.

## **3.6. Water Resources**

The analysis area for impact to water resources is CJ Strike Reservoir. The impact indicator for analysis is the water level of CJ Strike Reservoir.

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

#### ***Groundwater***

As described in Sections 1 and 2 of this EA, groundwater resources in the Project area are constrained and the quality of their water has been compromised by contamination. The Mountain Home Groundwater Management Area was established in 1982 in response to growing concerns about the long-term sustainability and health of the local aquifer system. Regional aquifers (including those from which the

base currently extracts and distributes its water supply) have been declining at a rate of approximately two feet per year, which is not sustainable. Further, some wells in the area have been closed and abandoned based on concerns related to nitrate contamination.

### **Surface Water**

The CJ Strike Power Plant is located on the Snake River southwest of the City of Mountain Home, Idaho (see Map A-8). The plant has a total nameplate capacity of 89,000 kilowatts (kW). C.J. Strike was named after former Idaho Power President Clifford "C.J." Strike, and the project was completed in 1952 (Idaho Power 2017).

The CJ Strike Reservoir has become an important surface water feature within the Morley Nelson Snake River Birds of Prey NCA because changes in the surface elevation (i.e., reservoir depth) could have immediate ramifications on raptor species and/or the prey species on which they rely. Any substantial change in surface water levels at the reservoir could result in adverse impacts to upstream resources (e.g., birds, mammals, etc.) that rely on consistent food sources and habitat offered by the regional network of surface water resources. It is important to note that Idaho Power controls the surface level of the lake, and that the withdrawal of water to support Mountain Home AFB would not affect these management operations (IWRB 2017). Further, the site is not influenced by adjacent wetlands, streams, or runoff (USDA/NRCS n.d.; also see Figure A-7), and is not located within a mapped floodplain (FEMA 1989).

In 2017, the IWRB purchased a set of senior priority Snake River water rights from the Simplot Corporation for the purposes of providing a reliable surface water resource to Mountain Home AFB. The set of water rights would provide sufficient quantity to satisfy Mountain Home AFB's needs for a sustainable water source. The senior water rights purchased by the IWRB from the Simplot Corporation were included in final unified decree for the Snake River Basin Adjudication (SRBA) signed on August 25, 2014 which identified all claims to the water rights in the basin.

The portion of the Snake River within proximity to Mountain Home AFB is the CJ Strike Reservoir which is managed by Idaho Power Company's (IPCo) hydroelectric facility located at river mile 493.95. IPCo manages the water surface elevation of the CJ Strike Reservoir as well as recreation facilities within the Federal Energy Regulatory Commission's (FERC) boundary surrounding the reservoir and hydroelectric facility. The FERC boundary encompasses and is surrounded by the BLM's Morley Nelson Snake River Birds of Prey NCA. Both IPCo and the BLM coordinate the operations of the CJ Strike Reservoir since changes in the water surface elevation can impact the surrounding birds of prey natural resources and recreational opportunities.

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### **3.6.2. Alternative B: Proposed Action (Eastern Alignment)**

#### **Direct and Indirect Impacts**

With regard to groundwater, implementation of Alternative B would not involve activities that would have the potential to adversely influence regional groundwater levels, quality, or other characteristics. An

anticipated beneficial impact of the Proposed Action would be the reduced demand on resources contained within the Mountain Home Groundwater Management Area, established in 1982 in response to declining water levels and water quality in the local aquifer. Though several existing groundwater wells would remain in place and would serve as back-up water sources, establishment of the sustainable water supply from the CJ Strike Reservoir would alleviate virtually all local groundwater demand associated with Mountain Home AFB.

One of the most important potential direct impacts of the Proposed Action would be the potential for the system's operation to change (i.e., lower) the surface water level of CJ Strike Reservoir. However, the water allotment purchased and proposed for distribution to Mountain Home AFB would be a portion of (i.e., not in addition to) the existing Simplot water allocation (i.e., water rights secured represent "excess capacity" for Simplot). Therefore, this change in distribution 1) is not expected to affect water surface/levels on the CJ Strike Reservoir; 2) is not expected to affect water levels in upriver ecosystems within the Morley Nelson Snake River Birds of Prey NCA overseen by the BLM; and 3) would not impact water resources currently used by Simplot in the project area.

The Proposed Action would not impact or cause injury to IPCo's C.J. Strike Hydroelectric facility. The Proposed Action is expected to withdraw water from the reservoir, but would not significantly impact the water surface elevation and surrounding birds of prey ecosystems in the immediate area and upstream of the Proposed Action location. (IPCo 2017). Current users of the Snake River Basin are not expected to be impacted by the use of this existing senior water right (IWRB 2017)

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact water resources resulting from project implementation include ongoing operations by Simplot, IPCo, Simplot, and livestock grazing; continued operation of Mountain Home AFB; and planned roadway improvements. However, none of these ongoing or future actions would have the potential to impact regional surface or groundwater resources such that a cumulatively significant impact would result.

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### **3.6.3. Alternative C: BLM Preferred Alternative (Western Alignment)**

#### **Direct and Indirect Impacts**

With regard to groundwater – and similar to Alternative B – implementation of Alternative C would not involve any activities that would have the potential to adversely influence regional groundwater levels, quality, or other characteristics. An anticipated beneficial impact of the Alternative C would be the reduced demand on resources contained within the Mountain Home Groundwater Management Area, established in 1982 in response to declining water levels and water quality in the local aquifer. Though several existing groundwater wells would remain in place and would serve as back-up water sources,

establishment of the sustainable water supply from the CJ Strike Reservoir would alleviate virtually all local groundwater demand associated with Mountain Home AFB.

One of the most important potential direct impacts of the Proposed Action would be the potential for the system's operation to change (i.e., lower) the surface water level of CJ Strike Reservoir. However, the water allotment purchased and proposed for distribution to Mountain Home AFB would be a portion of (i.e., not in addition to) the existing Simplot water allocation. Therefore, this change in distribution 1) is not expected to affect water surface/levels on the CJ Strike Reservoir; 2) is not expected to affect water levels in upriver ecosystems within the Morley Nelson Snake River Birds of Prey NCA overseen by the BLM; and 3) would not impact water resources currently used by Simplot in the project area.

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact water resources resulting from project implementation include ongoing regional operations by Simplot, IPCo, Simplot, and other agribusiness / livestock grazing; continued operation of Mountain Home AFB; and planned local roadway improvements. However, none of these ongoing or future actions would have the potential to impact regional surface water or groundwater resources such that a cumulatively significant impact would result.

## **3.7. Cultural Resources**

The analysis area for impacts to cultural resources is defined as the Area of Potential Effect (APE). In accordance with 36 CFR 800.4(a)(1) and 800.16(d), the undertaking APE includes all geographic areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties. The APE is comprised of two proposed alignments (Alternative B [Eastern] and Alternative C [Western]), as depicted in Figure 2-1. The APE takes into account the maximum construction footprint requested by IWRB in its ROW application to the BLM (to include clearing/grubbing, building up the site, use of heavy equipment such as bulldozers, graders, dump trucks, and cranes for new pipe installation), and long-term maintenance footprints. This includes an area of between 50 feet to 100 feet in width along various portions of the alignments.

The impact indicator for analysis is the number of sites adversely impacted by the project. *Additional information regarding Native American outreach, coordination, and input is provided in Section 4.*

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### **3.7.1. Affected Environment**

Southwest Idaho is the homeland of two culturally and linguistically related tribes: the Northern Shoshone and the Northern Paiute. In the latter half of the 19<sup>th</sup> century, a reservation was established at Duck Valley on the Nevada/Idaho border, west of the Bruneau River. The Shoshone-Paiute Tribes residing on the

Duck Valley Reservation today actively practice their culture and assert aboriginal rights and/or interests in this area. The Shoshone-Paiute Tribes assert aboriginal rights to their traditional homelands as their treaties with the United States, the *Boise Valley Treaty of 1864* and the *Bruneau Valley Treaty of 1866*, which would have extinguished aboriginal title to the lands now federally administered, were never ratified.

Other tribes that have ties to southwest Idaho include the Bannock Tribe and the Nez Perce Tribe. Southeast Idaho is the homeland of the Northern Shoshone Tribe and the Bannock Tribe. In 1867, a reservation was established at Fort Hall in southeastern Idaho. The *Fort Bridger Treaty of 1868* applies to BLM's relationship with the Shoshone-Bannock Tribes. The northern part of the BLM's Boise District was also inhabited by the Nez Perce Tribe. The Nez Perce signed treaties in 1855, 1863, and 1868. BLM considers off-reservation treaty-reserved fishing, hunting, gathering, and similar rights of access and resource use on the public lands it administers for all tribes that may be affected by a proposed action.

The affected environment for cultural resources along the proposed routes were researched by examining records and databases maintained by the BLM and the Idaho State Historic Preservation Office (SHPO) and covering all areas within a 0.25-mile radius of the APE. These records searches – conducted in December 2016 and March 2017 – revealed that previous cultural resource surveys had been conducted over various segments of the proposed pipe alignments. About 20 previous surveys had located about 39 previously recorded cultural resource sites within approximately 0.5 miles of the proposed alignments (Table 3-7). Additional archival research included a review of regional ethnographic sources, regional/local histories, historic maps and aerial photographs, and applicable technical reports. All previously identified resources within the APE had been determined to be ineligible for listing on the NRHP by SHPO (BLM 2017b).

**Table 3-7. Select Previous Studies and Cultural Resources within the APE**

State Number	Name	Agency	Results
2008-47	Strike Dam Cutoff Road Survey	Idaho Dept. of Transportation	One historical linear feature (39-18216) within the APE. Determined ineligible in consultation with SHPO.
1997/180	Canyon Creek Emergency Fire Rehab, F-287 Class III Inventory	BLM	Three flakes, one (modern) refuse scatter found outside of APE. Not formally recorded. No resources identified within the APE.
No State Number	Dorsey Butte Fire Rehab Survey	BLM	Modern roadside grave marker (10-EL-851). Within the APE.
1996-744	Intermountain Gas 2" Natural Gas Line Project Near Mountain Home Air Force Base	BLM	No cultural resources identified.

1991	Survey of Mountain Home AFB and the Small Arms Range	Mountain Home AFB	One isolated hole in top can identified within the APE.
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Source: Mountain Home AFB 2017b.

Based on the records and archival research conducted, the expectation for finding intact prehistoric sites within the APE was low, with the possible exception being the area between the water line at the reservoir and the canyon wall. Based on this, and because of the potential impacts from the proposed water conveyance system, it was determined that the entire contemplated alignments required cultural resource surveys. These surveys would need to cover the proposed pump stations, pipe alignments, storage yards, staging locations, and other areas that would sustain soil disturbances if the water conveyance system were authorized. Collectively, these possible impact areas define the APE for cultural resources.

In March 2017, archaeologists from Mountain Home AFB conducted Class III intensive surveys of the proposed BLM ROWs (BLM 2017b). The Draft Class III report was prepared in accordance with BLM Manual 8110, *Identifying and Evaluating Cultural Resources*, and the 2015 Idaho SHPO's *Guidelines and Procedures for Cultural Resource Review and Consultation*, and includes a discussion of the methods and results of records searches, archival research, and the Class III survey, including baseline environmental and cultural settings, background information on relevant significance criteria, and recommendations (BLM 2017b). The Principal Investigator and primary author of the Draft report was the Mountain Home AFB Cultural Resources Manager; additional guidance for the survey and report was provided by the BLM FRFO archaeologist. All work was conducted under Fieldwork Authorizations granted by the BLM.

Visibility was excellent for the majority of the survey, and exceptions were primarily related to accumulation of vegetation (e.g., tumbleweeds) along heavily disturbed linear features (e.g., fences). The field survey team examined the entire alignments where access was feasible (e.g., at 30-meter transects along the base perimeter fence and along Air Base Road, and edge-of-pavement out to 50 feet along Grandview Highway). The survey examined BLM lands and private parcels for 100% coverage of the APE.

The surveys conducted in 2017 and previous surveys indicated that three cultural resource sites were located within the two proposed alignments. The sites were recorded on *Archaeological Survey of Idaho* forms and each site's eligibility to be listed on the NRHP was evaluated by the archaeologists. The archaeologists then made an assessment of the proposed impacts to each site from the proposed water system conveyance's construction, use, and maintenance.

Within the western alignment portion of the APE, only three cultural resources had been previously identified (a hole-in-top can, a modern roadside grave marker, and a linear feature/historical road). The

survey conducted in 2017 did not locate any cultural resources along segments of the western alignment that had not been previously identified.

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### **3.7.2. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

No cultural resources eligible for listing in the NRHP were identified within portion of the APE that would be affected if Alternative B were selected and implemented. As such, if Alternative B were authorized for a ROW grant by the BLM, the construction, use, and maintenance of the water conveyance system would have no direct or indirect impacts to historic properties that are eligible for listing on the NRHP.

During project implementation, stipulations attached to the ROW grant would ensure that if cultural resources were encountered, then all activities around that location would stop until a BLM archaeologist was able to record, evaluate, and assess impacts to those newly discovered cultural resources. In those instances, cultural resources would be avoided with the implementation of design features such as temporary or permanent fencing or other physical barriers, monitoring of earth-disturbing construction, reduction and/or specific construction avoidance zones, and employee education. In the unlikely event human remains were to be discovered, the County Coroner would be contacted immediately; if remains were determined to be potentially of Native American origin, activities would cease and measures to ensure compliance with NAGPRA would be implemented immediately. These design features are detailed in Section 2.3. *Best Management Practices (Protection of Cultural Resources)*.

#### **Cumulative Impacts**

Implementing the water pipeline project along the Eastern Alignment would have no direct or indirect impacts to historic properties; therefore, the project would not have the potential to result in significant cumulative effects.

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### **3.7.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

No cultural resources eligible for listing in the NRHP were identified within the APE designated as the Western Alignment. (Concrete highway markers installed in the 1950s have been assumed eligible as contributing elements to a historic resource; however, the Idaho Department of Transportation is addressing these markers under a separate program.) As such, if Alternative C were authorized for a ROW grant by the BLM, the construction, use, and maintenance of the water conveyance system would have no direct or indirect impacts to historic properties that are eligible for listing on the NRHP.

During project implementation, stipulations attached to the ROW grant would ensure that if cultural resources were discovered, then all activities around that location would stop until a BLM archaeologist was able to record, evaluate, and assess impacts to those newly discovered cultural resources. In those

instances, cultural resources would be avoided with the implementation of design features such as temporary or permanent fencing or other physical barriers, monitoring of earth-disturbing construction, reduction and/or specific construction avoidance zones, and employee education. In the unlikely event human remains were to be discovered, the County Coroner would be contacted immediately; if remains were determined to be potentially of Native American origin, activities would cease and measures to ensure compliance with NAGPRA would be implemented immediately. These design features are detailed in Section 2.3., *Best Management Practices (Protection of Cultural Resources)*.

### Cumulative Impacts

Implementing the water pipeline project along the Western Alignment would have no direct or indirect impacts to historic properties; therefore, the project would not have the potential to result in significant cumulative effects.

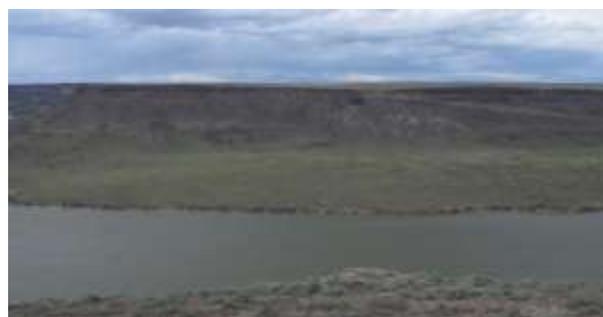
## 3.8. Visual Resources

The analysis area for impacts to visual resources is the project viewshed within the Snake River Canyon. The impact indicator for analysis is the change in visual character of the area.

### 3.8.1. Affected Environment

The project area is located along the Snake River arm of CJ Strike Reservoir. High, steep, shrub-covered canyon slopes rise above the water and are capped with high dark basalt cliffs and rims. Both locations have a mixture of grass and shrubs. In the spring vegetation takes on several hues of green. Later in the spring and early summer grasses turn brown. CJ Strike Reservoir is one of few major bodies of water in the Snake River Plains desert. It is an accessible and popular fishing and camping location. Most visitors in the project area travel by boat. Several boat ramps on the reservoir are in service and in high demand. Many anglers, hunters, and boaters use the reservoir. Given the remote location and available camping locations, visitors stay multiple days.

Section 102(a)(8) of the FLPMA directs that public land should be managed to protect the quality of scenic values and to preserve and protect certain public land in its natural condition. Additional guidelines for establishing *Visual Resources Management (VRM)* classes on public lands are established in BLM Handbook 8410-1, *Visual Resource Inventory*. Visual resources objectives established in the



*Eastern Alignment - view of the project location from the south side of the reservoir.*

SNAKE RIVER BIRDS OF PREY RMP include the protection of visual resources of historic areas with a secondary emphasis on the Snake River Canyon (BLM 2008a). Areas along the Snake River Canyon are

to be managed as *VRM Class II* (BLM 2008a). The objective of *VRM Class II* is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must be found in the predominant natural features of the characteristic landscape (H-8410-1).

The western alignment alternative would follow an existing pipe and road. There is substantial shrub cover in this location. The eastern alignment alternative has fewer shrubs and more grass. It also has a road but it does not run completely to the proposed pump station location. It also does not have a pump and pipe station already in place in that location; however, there is a small one located across the reservoir. There is also a short flat rise prior to the steeper slope in this location. Both locations have high, steep, shrub-covered canyon slopes with basalt cliffs and rims before flattening out on a high desert plateau.



*Western Alignment - existing pipeline and pump station from the rim above the project area.*

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### **3.8.2. Alternative B: Proposed Action (Eastern Alignment)**

#### **Direct and Indirect Impacts**

The Visual Contrast Rating (VCR) performed for this project determined that much of the contrast would be weak. Some new road construction and upgrades would be made, which would be moderate contrasts, although some of it may not be visible from the water due to their locations on the short flat rise. Also the existence of a new pump station and pipe would be new in this location, but similar to the smaller pump station and pipe across the reservoir. It appears that the notch in the canyon rim may need to be enlarged to accommodate both the road and pipe, which would be a moderate increase in contrast. The removal of vegetation associated with construction of the project was considered a moderate, short-term contrast. Management actions associated with water conveyance system and road construction would cause vegetation and soil disturbance and result in a localized, short-term degradation of visual quality within the analysis area. This might not strongly meet objectives for *VRM II* management in the short term. However, burying the water conveyance system and seeding the disturbance would reduce the impact and allow the objectives to be met overtime.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. There are no RFFAs in the analysis area that would have the potential to result in cumulatively adverse impacts to visual resources.

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### **3.8.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

The VCR performed for this project determined that much of the contrast would be weak. The removal of vegetation associated with construction of the project was considered a moderate, short-term contrast. Positioning the new pump and pipe next to the existing pump and pipe reduces the overall visual impact by consolidating structures and disturbance. It appears that no new road would be built and the water conveyance system would be aligned along CJ Strike Dam Cutoff Road which already has a high level of maintenance. Management actions associated with water conveyance system and pump station would cause vegetation and soil disturbance and result in a localized, short-term degradation of visual quality within the analysis area. This might not strongly meet objectives for VRM II management in the short term. However, burying the water conveyance system and revegetating the disturbance would reduce the impact allowing objectives to be met over time.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. There are no RFFAs in the analysis area that would have the potential to result in cumulatively adverse impacts to visual resources.

### **3.9. Livestock Grazing**

The analysis area for impacts to livestock grazing are the Rattlesnake Seeding (#00827) and Airbase (#00896) Allotments (see Map A-4). The impact indicator for analysis is the change in effort required to manage livestock grazing.

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

The western alignment route alternative would site the water pipeline along the eastern side of the CJ Strike Cutoff Road ROW and along the southern side of the Idaho Highway 167 ROW. The CJ Strike Dam Cutoff Road ROW and the westernmost portion of Highway 167 ROW is adjacent to the Canyon Creek Field of the Rattlesnake Seeding Allotment (#00827). There is one BLM permittee with a permit to graze cattle in the Canyon Creek Field from November 5 – February 28 every year. A maximum of 660 Animal Unit Months (AUMs) are authorized in this field. As the proposed western alignment pipeline route continues east towards the base and within the Highway 167 ROW, it would be adjacent to the Nielsen Field and the three smaller holding pastures of the Airbase Allotment.

The eastern alignment route alternative would site the water pipeline through the Airbase Grazing Allotment (#00896). There is one BLM permittee with a permit to graze cattle in this allotment from November 5 – February 28 every year. A maximum of 2,170 AUMs are authorized and grazing use is

rotated through two to four of the six larger pastures in any given year. Construction activities would occur within the Snake River Field, Nielsen Field, and three smaller holding pastures of this allotment.

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### **3.9.2. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

Direct impacts from project implementation to BLM grazing permittees and their livestock (cattle) would occur when construction activities displace livestock or disrupt the management or movement of livestock within or between grazing allotments. If construction activities occur during the winter months when livestock are grazing, and existing fences are removed to make room for these activities, then either the livestock permittee would need to avoid the use of those affected pastures or temporary fence (e.g. 3 or 4-strand barbed wire, electric) would be necessary to keep livestock out of the construction site and/or off adjacent paved roads. The inconvenience of either having to avoid the use of affected pastures or having to check on fencing more often than normal to the grazing permittee would be temporary in nature because disturbed permanent fences would be reconstructed after pipeline construction is complete. If construction occurs and is completed in the spring and summer months (including permanent fence reconstruction) there would be no overlap in the timing of grazing and construction activities in either of the two affected allotments and there would be no added inconvenience to the grazing permittee(s).

The area directly affected by pipeline construction activities would comprise a maximum of 77 acres. Any impacts to available forage in either of the affected BLM grazing allotments would be short-term and temporary and would not result in a temporary or permanent reduction in authorized BLM AUMs.

Following construction, the surface areas affected in Alternative C would be reseeded, and any forage removed would be replaced. Once operational, the project would be largely passive in nature and would not influence the grazing patterns of permitted livestock. Further, long-term operation and management requirements would not involve frequent disruption of BLM grazing allotments in the area.

Indirect impacts would result if livestock were allowed to make use in pastures affected by construction activities, and got out of these pastures onto either CJ Strike Dam Cutoff Road or Highway 167, and were then hit by an oncoming vehicle. Impacts to the BLM grazing permittee could be the cost of losing one or more cows. The increased potential for unsafe driving conditions would be borne by the general public utilizing highways adjacent to the Project. The probability of this happening is unknown but risk could be significantly reduced with the use of temporary 4-wire fencing during pipeline construction. As with direct impacts, any indirect impacts would be associated with construction phases of the Proposed Action and would therefore be short-term and temporary.

Ultimately, based on the short-term nature of construction activities and the passive nature of project operations, implementation of Alternative C would not have the potential to result in significant impacts with regard to livestock grazing, or the long-term viability of existing grazing allotments immediately adjacent to the project.

## **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area that may also impact forage production and increase hazards to livestock resulting from surface disturbance include the following: county and state highway road maintenance activities (e.g., road grading, fenceline burning of tumbleweeds), wildland fire and subsequent emergency stabilization and rehabilitation activities (e.g., burned vegetation and livestock facilities, reseeding efforts).

Livestock grazing is expected to continue at the same rate and manner as it currently occurs, and no change is expected in the reasonable foreseeable future.

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### **3.9.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct, Indirect, and Cumulative Impacts**

Impacts from Alternative C would be the same as those described for Alternative B.

## **3.10. Transportation and Travel**

The analysis area for impacts to transportation and travel is the NCA East Travel Management Area (TMA). The impact indicator for analysis is the number of miles of new or upgraded road.

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### **3.10.1. *Affected Environment***

The area affected by the Proposed Action is predominantly rural, with no major highways located in the Project area (Appendix A – Figure A-3). Most roadways in the vicinity of the proposed ROW are unimproved, two-track roadways used by agricultural operators, OHV enthusiasts, and Air Force personnel.

The project area is along the Snake River arm of CJ Strike Reservoir. The project pipeline crosses the plateau above C.J. Strike. The Western Alignment would follow existing access roads, Strike Dam Cutoff Road and Highway 167. The Eastern Alignment would follow existing routes of native materials that receive little to no maintenance. Some of these routes may be associated with ROWs.

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### **3.10.2. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

Under the proposed action, increased use of the area by construction vehicles and personnel could result in a safety issue for the public. The proposed alignments for the new water pipeline follow existing disturbance where practicable and will account for approximately 5.2 acres of additional road and approximately 80 acres of upgraded road in the analysis area. Roads will be maintained in the same or better condition as existed prior to the commencement of operations, and maintenance will continue until final abandonment and reclamation of Proposed Action.

The Eastern Alignment would follow Nielson Road and Highway 167. The proposed action would result in short-term increases in the volume of both heavy and light traffic during the construction, and operations and management phases of the project. The action area is rural, but travelers of the area could be impacted in the short term by pipeline construction. These impacts would be reduced after project completion. As discussed in Section 2.3. *Best Management Practices*, design features and BMPs would be implemented to reduce impacts of disturbance from vehicles and to increase public safety. Impacts are likely to be low and short-term.

### **Cumulative Impacts**

Mountain Home Highway District is currently proposing safety upgrades to CJ Strike Dam Cutoff Road (e.g., changes involving adjustments to the road's vertical alignment in three areas). While the project proposed by Mountain Home AFB would not impact these proposed projects, the cumulative impact with regard to transportation and travel would be beneficial, as safety conditions would improve.

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### **3.10.3. Alternative C: BLM Preferred Alternative (Western Alignment)**

#### **Direct and Indirect Impacts**

Under the proposed action, increased use of the area by construction vehicles and personnel could result in a safety issue for the public. The proposed alignments for the new water pipeline follow existing disturbance where practicable. Existing road widths are sufficient and no widening is anticipated. Roads will be maintained in the same or better condition as existed prior to the commencement of operations, and maintenance will continue until final abandonment and reclamation of Proposed Action.

The Western Alignment would follow CJ Strike Dam Cutoff Road and Highway 167. The proposed action would result in short-term increases in the volume of both heavy and light traffic during the construction, and operations and management phases of the project. The action area is rural, but travelers of the area could be impacted in the short term by pipeline construction. These impacts would be reduced after project completion. As discussed in Section 2.3. *Best Management Practices*, design features and BMPs would be implemented to reduce impacts of disturbance from vehicles and to increase public safety. Impacts are likely to be low and short-term.

### **Cumulative Impacts**

Mountain Home Highway District is currently proposing safety upgrades to CJ Strike Dam Cutoff Road (e.g., changes involving adjustments to the road's vertical alignment in three areas). While the project proposed by Mountain Home AFB would not impact these proposed projects, the cumulative impact with regard to transportation and travel would be beneficial, as safety conditions would improve.

## **3.11. Land Use Authorizations**

The analysis area for impacts to land use authorizations is the project area. The impact indicator for analysis is compatibility with other ROWs.

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### **3.11.1. Affected Environment**

There are currently several existing ROWs in place within or adjacent to the Project area, including roads and utilities. In 2008, the BLM prepared a Record of Decision (ROD) on the Snake River Birds of Prey NCA Proposed Resource Management Plan (RMP) / Final EIS (BLM 2008a). The RMP provides guidance to achieve the goals set forth in the Act and replaced portions of the Kuna Management Framework Plan (MFP; dated 1983), Bruneau MFP (dated 1983), Jarbidge RMP (dated 1987), Cascade RMP (dated 1988), and Owyhee RMP (dated 1999) that covered the NCA, and replaced the previous Snake River Birds of Prey NCA Management Plan (dated 1996).

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### **3.11.2. Alternative B: Proposed Action (Eastern Alignment)**

#### **Direct and Indirect Impacts**

The issuance by BLM of a ROW grant to facilitate implementation of the Proposed Action (Eastern Alignment) would result in construction and maintenance activities that could potentially impact compatibility with existing ROWs, as a result of either needing to temporarily redirect traffic around construction zones, disturbing existing utilities alignments (e.g., electricity distribution lines), or otherwise interrupting established linear and non-linear land use activities and functions.

Any direct impacts to existing ROWs would be short-term and temporary (e.g., redirecting vehicular traffic to avoid conflicts with construction crews and heavy equipment). Based on the construction phases proposed by IWRB, there would be no long-term impacts to existing ROWs. Impacts during construction would be addressed by the development and implementation of a transportation management plan that would ensure disruptions are minimized and limited to non-peak-hour travel periods, to the extent practicable, and would avoid all possible incompatibility with existing ROWs. Ultimately, BLM cannot be in conflict with existing land use plans (i.e., if a conflict were to be identified, the proposed project would either be modified, a Land Use Plan Amendment would be required, or the ROW would be denied). Neither direct nor indirect impacts would result following completion of construction (BLM 2017c).

#### **Cumulative Impacts**

With regard to past, ongoing and RFFAs, no projects would have the potential to result in cumulatively adverse impacts to land use authorizations in the analysis area.

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### **3.11.3. Alternative C: BLM Preferred Alternative (Western Alignment)**

The issuance by BLM of a ROW grant to facilitate implementation of Alternative C (Western Alignment) would result in construction and maintenance activities that could potentially impact compatibility with

existing ROWs, as a result of either needing to temporarily redirect traffic around construction zones, disturbing existing utilities alignments (e.g., electricity distribution lines), or otherwise interrupting established linear and non-linear land use activities and functions.

### **Direct and Indirect Impacts**

Direct impacts to existing ROWs would be short-term and temporary (e.g., redirecting vehicular traffic to avoid conflicts with construction crews and heavy equipment). Based on the construction phases proposed by IWRB, there would be no long-term impacts to existing ROWs. Impacts during construction would be addressed by the development and implementation of a transportation management plan that would ensure disruptions are minimized and limited to non-peak-hour travel periods, to the extent practicable. BLM cannot be in conflict with existing land use plans (i.e., if a conflict were to be identified, the proposed project would either be modified, a Land Use Plan Amendment would be required, or the ROW would be denied). Neither direct nor indirect impacts would result following completion of construction (BLM 2017c).

### **Cumulative Impacts**

With regard to past, ongoing and RFFAs, no projects would have the potential to result in cumulatively adverse impacts to land use authorizations in the analysis area.

## **3.12. Public Health and Safety**

The analysis area for impacts to public health and safety is the project area. The impact indicator is risk of accident or injury.

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### **3.12.1. Affected Environment**

Human health and safety are defined as the conditions, risks, and preventative measures associated with a facility and its ability to potentially affect the health and safety of facility personnel or the general public. If implementation of the Proposed Action would substantially increase the risks associated with aircraft mishap potential or flight safety relevant to the public or the environment, it would represent a significant impact. For example, if an action involved an increase in aircraft operation such that mishap potential would increase significantly, air safety would be compromised; conversely, beneficial impacts would be those reducing the potential for aircraft mishaps. Further, if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria as airfield Clear Zones (CZs) or Accident Potential Zones (APZs), impacts would be significant. Beneficial impacts would include those reducing incompatible land uses within CZs or APZs. Siting facilities within established Explosive Safety Quantity-Distance (ESQD) arcs would be considered adverse due to the risk of potential to explosives including those resulting from blasts, fragments, or thermal hazards.

In addition, if implementation of the Proposed Action would substantially increase the risks to occupational safety, it would represent a significant impact. Beneficial impacts would include those reducing the risk of occupational safety hazards. Worker safety is regulated under the Occupational Safety and Health Act of 1970 (OSHA), as amended (29 USC 651).

The proposed project area is fairly remote. With the exception of Mountain Home AFB itself, the entire affected area is rural and undeveloped. The nearest developed community (the City of Mountain Home) is located several miles east/northeast of the Project area.

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### **3.12.2. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

Direct impacts to public health and safety resulting from implementation of Alternative A would include the potential for members of the public (e.g., workers associated with local grazing or agricultural operations, recreational users, etc.) to come in contact with vehicles or heavy equipment associated with construction activities. There would also be the possibility that members of the public who fail to heed road closure signs or other posted warnings could fall into open trenches or be injured by materials or equipment being stored for use during Project-related construction. However, activity levels associated with members of the public in the Project area are comparably low, and the OSHA-compliant HASP developed for this Project would include exhaustive measures to prevent such occurrences. With regard to worker safety, site preparation, construction, and the operation of heavy equipment would pose potential safety concerns. A HASP would be developed in compliance with OSHA and strict conformance would be required; therefore, impacts would not be significant.

The potential for indirect safety impacts to result from implementation of the Proposed Action would be limited. Once operational, most elements of the sustainable water supply system would be passive in nature. The potential for surface water features at the new Water Treatment Facility to attract waterfowl and other potential BASH risk factors would be addressed via measures established in the Mountain Home AFB BASH Plan. Other Water Treatment Facility-related facilities proposed for development on base would be sited and constructed to comply with established ESQD arcs, AT/FP requirements, and other safety measures.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact the general public's health and safety resulting from activities and operations in the area would include the following:

- Traffic
- Community development
- Recreation

Based on the cumulative projects currently anticipated, there would be no potential for adverse public health and safety impacts to result from implementation of the Proposed Action when considered collectively with past, ongoing, and reasonably foreseeable actions.

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### **3.12.3. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

Direct impacts to public health and safety resulting from Project implementation would include the potential for members of the public (e.g., workers associated with local grazing or agricultural operations, recreationists, etc.) to come in contact with vehicles or heavy equipment associated with construction activities. There would also be the possibility that members of the public who fail to heed road closure signs or other posted warnings could fall into open trenches or be injured by materials or equipment being stored for use during Project-related construction. However, activity levels associated with members of the public in the Project area are comparably low, and the OSHA-compliant Health and Safety Plan (HASP) developed for this Project would include exhaustive measures to prevent such occurrences. With regard to worker safety, site preparation, construction, and the operation of heavy equipment would pose potential safety concerns. A HASP would be developed in compliance with OSHA and strict conformance would be required; therefore, impacts would not be significant.

The potential for indirect safety impacts to result from implementation of the Proposed Action would be limited. Once operational, most elements of the sustainable water supply system would be passive in nature. The potential for surface water features at the new Water Treatment Facility to attract waterfowl and other potential bird-aircraft strike hazard (BASH) risk factors would be addressed via measures established in the Mountain Home AFB BASH Plan. Other Water Treatment Facility-related facilities proposed for development on base would be sited and constructed to comply with established ESQD arcs, AT/FP requirements, and other safety measures.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact the general public's health and safety resulting from activities and operations in the area would include the following:

- Traffic
- Community development
- Recreation

Based on the cumulative projects currently anticipated, there would be no potential for adverse public health and safety impacts to result from implementation of the Proposed Action when considered collectively with past, ongoing, and reasonably foreseeable actions.

## 3.13. Social and Economic Conditions

The analysis area for social and economic conditions is the project area, and impact indicators include changes to regional economic activity (e.g., incomes, direct and indirect spending, employment, etc.).

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### 3.13.1. *Affected Environment*

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, requires that Federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies. It focuses on environmental hazards and human health to avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Guidance on environmental justice terminology developed by the President's CEQ (1997) is discussed below.

- Low-income population. A low-income population is determined based on annual statistical poverty thresholds developed by the U.S. Census Bureau. In 2012, poverty level is based on total income of \$11,720 for an individual and \$23,283 for a family of four (U.S. Census Bureau 2012a). A low-income community may include either a group of individuals living in geographic proximity to one another or dispersed individuals, such as migrant workers or Native Americans.
- Minority. Minorities are individuals who are members of the following population groups: American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic.
- Minority population area. A minority population area is so defined if either the aggregate population of all minority groups combined exceeds 50 percent of the total population in the area or if the percentage of the population in the area comprising all minority groups is meaningfully greater than the minority population percentage in the broader region. Like a low-income population, a minority population may include either individuals living in geographic proximity to one another or dispersed individuals.
- Comparison population. For the purpose of identifying a minority population or a low-income population concentration, the comparison population used in this study is the state of Idaho as a whole.

Population density in the vicinity of the Proposed Action is very low. With the exception of Mountain Home AFB itself, the entire affected area is rural and undeveloped. The nearest developed community (the City of Mountain Home) is located several miles east/northeast of the Project area. Further, implementation of

the Proposed Action is not anticipated to result in any significant impacts, and would not have the potential to disproportionately impact susceptible population groups. Any realized socioeconomic impacts would be beneficial, during project construction activities, as secondary spending and short-term employment opportunities increase in the region.

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### **3.13.2. *Alternative A: No Action Alternative***

If the Alternative A (No Action Alternative) were selected, existing conditions would remain, and there would be no resolution of ongoing issues regarding the water supply available for use by Mountain Home AFB. Ultimately, this would potentially limit the base's ability to support its current population of approximately 7,000 people, which could adversely impact social and economic conditions, as the base is a significant contributor to the regional economy, generating approximately \$1 billion in economic activity annually.

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### **3.13.3. *Alternative B: Proposed Action (Eastern Alignment)***

#### **Direct and Indirect Impacts**

While there would be no substantial direct changes to social and economic conditions under any development scenario, there would be short-term benefits directly related to spending on construction materials, creation of temporary jobs, and secondary spending during project implementation.

Long-term indirect impacts related to the Proposed Action would be beneficial, as project implementation would enhance the viability of Mountain Home AFB, a significant contributor to the health of the regional economy.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact local communities resulting from activities and operations in the area include the following:

- Commercial and agricultural development
- Community development
- Recreation and tourism

None of the past, ongoing, or reasonably foreseeable projects currently identified has the potential to result in measurable impacts to social or economic conditions – including with regard to Environmental Justice other than by generating short-term beneficial impacts, as described above.

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### **3.13.4. *Alternative C: BLM Preferred Alternative (Western Alignment)***

#### **Direct and Indirect Impacts**

While there would be no substantial direct changes to social and economic conditions under any development scenario, there would be short-term benefits directly related to spending on construction materials, creation of temporary jobs, and secondary spending during project implementation.

Long-term indirect impacts related to the Proposed Action would be beneficial, as project implementation would enhance the viability of Mountain Home AFB, a significant contributor to the health of the regional economy.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact local communities resulting from activities and operations in the area include the following:

- Commercial and agricultural development
- Community development
- Recreation and tourism

None of the past, ongoing, or reasonably foreseeable projects currently identified has the potential to result in measurable impacts to social or economic conditions – including with regard to Environmental Justice other than by generating short-term beneficial impacts, as described above.

## **3.14. Air Resources**

The analysis area for air resources is the project area, and impact indicators include changes to compliance with National Ambient Air Quality Standards (NAAQS) associated with dust and/or equipment emissions.

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### **3.14.1. *Affected Environment***

Air quality in a given location is determined by the concentration of various pollutants and particulates in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the U.S. Environmental Protection Agency (USEPA) under the Clean Air Act (CAA) for criteria pollutants, including ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>), particulate matter equal to or less than 2.5 microns in diameter (PM<sub>2.5</sub>), and lead (Pb). The primary NAAQS set limits to protect public health, including sensitive populations such as children, the elderly, and individuals suffering from respiratory disease, with an adequate margin of safety. The secondary NAAQS set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. In addition, the USEPA

regulates Hazardous Air Pollutants (HAPs) through the National Emission Standards for Hazardous Air Pollutants (NESHAP) program and rules.

The Idaho Department of Environmental Quality (DEQ) is responsible for monitoring and protecting the air quality of Idaho, and ensures that the ambient air quality in the state meets or exceeds the NAAQS. To address this responsibility, the Idaho DEQ owns and operates a network of ambient air quality monitoring sites stationed throughout the State of Idaho (Idaho DEQ 2017). Areas where monitored ambient air concentrations are within an applicable NAAQS are considered to be in attainment of that NAAQS. Areas where monitored ambient air concentrations exceed the NAAQS are designated by EPA as nonattainment areas. Lastly, areas that have historically violated the NAAQS, but have since instituted controls and programs that have successfully remedied these violations are known as maintenance areas.

Individual states must develop and maintain State Implementations Plans (SIPs) intended to bring nonattainment and maintenance areas within attainment of NAAQS. Additionally, in accordance with 40 CFR 93 Subpart B, proposed actions located within nonattainment and maintenance areas must ensure their implementation would conform with all applicable SIPs by performing a General Conformity Assessment; however, in the case of this Proposed Action, all proposed alternatives are located entirely within Elmore County which is currently in attainment for all NAAQS; therefore, General Conformity is not applicable.

## Criteria Pollutants

Air quality is affected by stationary sources (e.g., industrial development) and mobile sources (e.g., motor vehicles). Air quality at a given location is a function of several factors including the quantity and type of pollutants emitted locally and regionally, as well as the dispersion rates of pollutants in the region. Primary factors affecting pollutant dispersion include wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography.

**Ozone (O<sub>3</sub>).** The majority of ground-level (or terrestrial) O<sub>3</sub> is formed as a result of complex photochemical reactions in the atmosphere involving Volatile Organic Compounds (VOCs), nitrogen oxides (NO<sub>x</sub>), and oxygen. O<sub>3</sub> is a highly reactive gas that damages lung tissue, reduces lung function, and sensitizes the lung to other irritants. Although *stratospheric* O<sub>3</sub> shields the earth from damaging ultraviolet radiation, terrestrial O<sub>3</sub> is a highly damaging air pollutant and is the primary source of smog.

In March 2008, the USEPA published a new standard for 8-hour ozone, and revoked the 1-hour NAAQS for O<sub>3</sub> in most areas. During the review of NAAQS for O<sub>3</sub>, the USEPA revised the existing 8-hour threshold to a level of 0.075 parts per million (ppm) from the previous level of 0.08 ppm. On 26 October 2015, the USEPA published in the Federal Register Regulation Identification Number (RIN) 2060-AP38, Volume 80, Number 206, a proposed new rule revising the NAAQS for ground-level O<sub>3</sub>. As of 28

December 2015, the primary and secondary 8-hour NAAQS for O<sub>3</sub> has been revised to a level of 0.070 ppm from the previous level of 0.075 ppm.

**Carbon Monoxide (CO).** CO is a colorless, odorless, poisonous gas produced by incomplete burning of carbon in fuel. The health threat from CO is most serious for those who suffer from cardiovascular disease, particularly those with angina and peripheral vascular disease.

**Nitrogen Dioxide (NO<sub>2</sub>).** NO<sub>2</sub> is a highly reactive gas that can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Repeated exposure to high concentrations of NO<sub>2</sub> may cause acute respiratory disease in children. Because NO<sub>2</sub> is an important precursor in the formation of O<sub>3</sub> (or smog), control of NO<sub>2</sub> emissions is an important component of overall pollution reduction strategies. The two primary sources of NO<sub>2</sub> in the U.S. are fuel combustion and transportation.

**Sulfur Dioxide (SO<sub>2</sub>).** SO<sub>2</sub> is emitted primarily from stationary source coal and oil combustion, steel mills, refineries, pulp and paper mills, and from non-ferrous smelters. High concentrations of SO<sub>2</sub> may aggravate existing respiratory and cardiovascular disease; asthmatics and those with emphysema or bronchitis are the most sensitive to SO<sub>2</sub> exposure. SO<sub>2</sub> also contributes to acid rain, which can lead to the acidification of lakes and streams and damage trees.

**Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>).** Particulate matter (PM) is a mixture of tiny particles that vary greatly in shape, size, and chemical composition, and can be comprised of metals, soot, soil, and dust. PM<sub>10</sub> includes larger, coarse particles, whereas PM<sub>2.5</sub> includes smaller, fine particles. Sources of coarse particles include crushing or grinding operations, and dust from paved or unpaved roads. Sources of fine particles include all types of combustion activities (e.g., motor vehicles, power plants, wood burning) and certain industrial processes. Exposure to PM<sub>10</sub> and PM<sub>2.5</sub> levels exceeding current standards can result in increased lung- and heart-related respiratory illness. The USEPA has concluded that finer particles are more likely to contribute to health problems than those greater than 10 microns in diameter.

**Airborne Lead (Pb).** Airborne Pb can be inhaled directly or ingested indirectly by consuming lead-contaminated food, water, or non-food materials such as dust or soil. Fetuses, infants, and children are most sensitive to Pb exposure. Pb has been identified as a factor in high blood pressure and heart disease. Exposure to Pb has declined dramatically in the last 10 years as a result of the reduction in Pb in gasoline and paint, and the elimination of Pb from soldered cans.

**Hazardous Air Pollutants (HAPs).** The USEPA designated approximately 187 compounds as HAPs based on their toxicity and use throughout various industries. The USEPA has not established ambient air quality standards for the compounds, but regulates HAPs through industrial sources.

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### **3.14.2. Alternative B: Proposed Action (Eastern Alignment)**

#### **Direct and Indirect Impacts**

An air quality impact analysis was performed in accordance with AFI 32-7040, *Air Quality Management Program*, and guidance from the Air Force Air Quality EIAP Guide. The analysis was conducted with USAF's Air Conformity Applicability Model (ACAM) which provided a Net Change Emissions Assessment which compares all net (increases and decreases) direct and indirect emissions associated with the alternative. The net change in emissions associated with the alternative were compared against General Conformity *de minimis* values as an indicator of significance. The net change in emissions associated with the alternative were well below the General Conformity *de minimis* values; therefore, no significant impact to air quality would result from implementation of this alternative. Additionally, this alternative falls within Elmore County which is currently in attainment for all NAAQSs; therefore, General Conformity (40 CFR 93 Subpart B) is not applicable. See ACAM reports in Appendix F for details.

Elmore County is currently in attainment of NAAQS for all criteria pollutants (Idaho DEQ 2017), and the increase in fugitive dust (i.e., particulate matter [PM]) and other pollutant emissions (e.g., associated with construction-related vehicles and equipment) that would occur during project implementation would be short-term and temporary. These short-term impacts would be managed via standard procedures and BMPs (e.g., watering for dust control). Long-term operation of the water supply system would be largely passive and would not generate substantive pollutant emissions.

#### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact air quality resulting from activities and operations in the area include the following:

- Commercial and agricultural development
- Community development
- Recreation and tourism

None of the past, ongoing, or reasonably foreseeable projects currently identified has the potential to result in measurable impacts to air quality, as described above.

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### **3.14.3. Alternative C: BLM Preferred Alternative (Western Alignment)**

#### **Direct and Indirect Impacts**

An air quality impact analysis was performed in accordance with AFI 32-7040, *Air Quality Management Program*, and guidance from the Air Force Air Quality EIAP Guide. The analysis was conducted with USAF's ACAM which provided a Net Change Emissions Assessment which compares all net (increases and decreases) direct and indirect emissions associated with the alternative. The net change in emissions associated with the alternative were compared against General Conformity *de minimis* values

as an indicator of significance. The net change in emissions associated with the alternative were well below the General Conformity *de minimis* values; therefore, no significant impact to air quality would result from implementation of this alternative. Additionally, this alternative falls within Elmore County which is currently in attainment for all NAAQSs; therefore, General Conformity is not applicable. See ACAM reports in Appendix F for details.

Elmore County is currently in attainment of NAAQS for all criteria pollutants (Idaho DEQ 2017), and the increase in fugitive dust (i.e., PM) and other pollutant emissions (e.g., associated with construction-related vehicles and equipment) that would occur during project implementation would be short-term and temporary. These short-term impacts would be managed via standard procedures and BMPs (e.g., watering for dust control). Long-term operation of the water supply system would be largely passive and would not generate substantive pollutant emissions.

### **Cumulative Impacts**

The analysis area and impact indicator for cumulative impacts is the same as for direct and indirect impacts. Past, present, and RFFAs within the analysis area which may also impact air quality resulting from activities and operations in the area include the following:

- Commercial and agricultural development
- Community development
- Recreation and tourism

None of the past, ongoing, or reasonably foreseeable projects currently identified has the potential to result in measurable impacts to air quality, as described above.

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### **3.14.4. Greenhouse Gases (GHGs) and Climate Change**

#### **Direct and Indirect Impacts**

An assessment of GHG and climate change was performed using guidance from the USAF Air Quality EIAP Guide and the CEQ. Per established guidance, GHG emissions are used as a surrogate for climate change impacts. The total GHG emissions for each alternative are compared against a *de minimis* significance indicator to provide a relative indication of each alternative's climate change impact significance. If the *de minimis* indicator is not exceeded, the alternative has little potential for impacting climate change.

While neither the CEQ nor the EPA have not established a significance threshold, the USAF has adopted the EPA's proposed established "Significant Emissions Rate" (SER) of 75,000 tons per year (tpy) of carbon monoxide equivalent (CO<sub>2</sub>e). CO<sub>2</sub>e is a standard unit for measuring carbon footprints which express the impact of each different GHG in terms of the amount of CO<sub>2</sub> that would create the same amount of global warming. While the SER is intended by the EPA as a basis for requiring stationary

sources to obtain a Title V permit, the SER can be used as a conservative indicator of *de minimis* significance.

GHG emissions as CO<sub>2</sub>e for each alternative were estimated as part of the Net Change Emissions Assessment using the USAF's ACAM model (Appendix F). Results of the analysis indicate that total annual GHG emissions for all of the alternatives are well below the 75,000 tpy CO<sub>2</sub>e *de minimis* indicator; therefore, none of the alternatives would have a significant impact on climate change.

## 4. SUPPORTING INFORMATION

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### 4.1. Tribes, Individuals, Organizations, or Agencies Consulted

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#### 4.1.1. *Consultation with the Idaho State Historic Preservation Office and Native American Tribes*

Nationwide, the BLM fulfills its responsibilities under the National Historic Preservation Act (NHPA) through a number of agreements. The National Programmatic Agreement (NPA 2012) between the BLM, Advisory Council on Historic Preservation (ACHP), and the National Council of State Historic Preservation Officers (NCSHPO) allows the agency to fulfill its NHPA responsibilities in accordance with the provisions of the NPA in lieu of 36 CFR 800.3, through 800.7 regulations. The BLM initiated consultation with the Shoshone-Paiute Tribe and with the Shoshone-Bannock Tribe in the Spring of 2017.

In December 2016, the Mountain Home AFB Environmental Management Chief sent an Interagency Intergovernmental Coordination for Environmental Planning (IICEP) letter to the Idaho SHPO to introduce this proposed pipeline and to initiate consultation with the agency (Mountain Home 2016). On January 18, 2017, SHPO sent a formal letter to the Environmental Management Chief. The letter confirmed that consultation was initiated, and that the proposed project would be recognized as an “undertaking” that would require compliance with Section 106 of the NHPA. The letter also recommended that some level of survey be conducted to identify any historic properties within the APE (Idaho State Historical Society 2017).

Searches for relevant records housed at the SHPO were conducted on December 14, 2016, and March 27, 2017. The AFB archaeologist and the FRFO archaeologist shared cultural resource surveys and recorded site records. Mountain Home AFB also initiated consultation with all five (5) federally recognized Native American Tribes in the region, in January and March 2017, and no comments had been received as of 14 February 2017.

After Mountain Home AFB archaeologists conducted additional surveys in 2017, the results were shared with the SHPO. To conduct consultation, the BLM sent the results of the survey to the SHPO with a formal letter in May 2017. This packet included the survey results, site recordings, eligibility evaluations and assessments of proposed project impacts. The BLM's letter to the SHPO recommended that the BLM grant a ROW to Mountain Home AFB to authorize the construction, use and maintenance of the

proposed water pipeline. The letter requested a formal reply from the SHPO to conclude the Section 106 process.

The cultural resource surveys conducted revealed that three cultural sites were recorded within the APE. (Concrete highway markers installed in the 1950s and potentially affected by Alternative C [Western Alignment] have been assumed eligible as contributing elements to a historic resource; however, the Idaho Department of Transportation is addressing these markers under a separate program.) The BLM recommended and SHPO agreed that none of the sites identified were a historic property or eligible for listing on the NRHP. The BLM, SHPO, IWRB, and the USAF all agreed to avoid those sites during project construction.

The SHPO informed the NCA Manager they agreed with BLM's cultural resource site eligibility evaluations and the assessments of proposed project impacts and that the SHPO concurred with BLM's recommendation to grant the ROW to authorize the construction, use and maintenance of the water pipeline. SHPO also noted that consultation with their office under Section 106 of the NHPA was complete.

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#### **4.1.2. Coordination with Individuals, Organizations, and Agencies**

Organizations and agencies contacted during development of this EA included:

- Idaho Power Co. (IPCo)
- Federal Energy Regulatory Commission (FERC)
- Mountain Home Highway District (MHHD)
- Idaho Transportation Department (ITD)
- U.S. Department of Transportation, Federal Highway Administration (FHWA)
- Simplot Corporation
- City of Mountain Home
- Elmore County
- Idaho Department of Environmental Quality
- Idaho Department of Water Resources

## **4.2. List of Preparers**

This EA was prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) in conformance with the standards of and under the direction of the BLM and USAF. The following agency personnel assisted in the preparation of this EA:

BLM, Boise District

- Jared Fluckiger, Outdoor Recreation Planner

- Sarah Castro Garcia, Rangeland Management Specialist
- Matthew Hamilton, GIS Specialist
- Amanda Hoffman, NCA Manager
- Carol Montgomery, Realty Specialist
- Pamela Murdock, Planning and Environmental Coordinator
- Dean Shaw, Archaeologist
- Joe Sirotnak, Ecologist
- Mark Steiger, Botanist
- Joe Weldon, Wildlife Biologist

#### Mountain Home AFB

- Paula Jo Brown, Environmental Management
- Sheri Robertson, NEPA Project Manager
- Jason Darst, Water Supply Project Manager
- Nathan Rowland, PE, Deputy Base Civil Engineer
- Noelle Shaver, RPA, Cultural Resources Program Manager

#### Idaho Water Resources Board

- Randall Broesch, Project Manager

### 4.3. References

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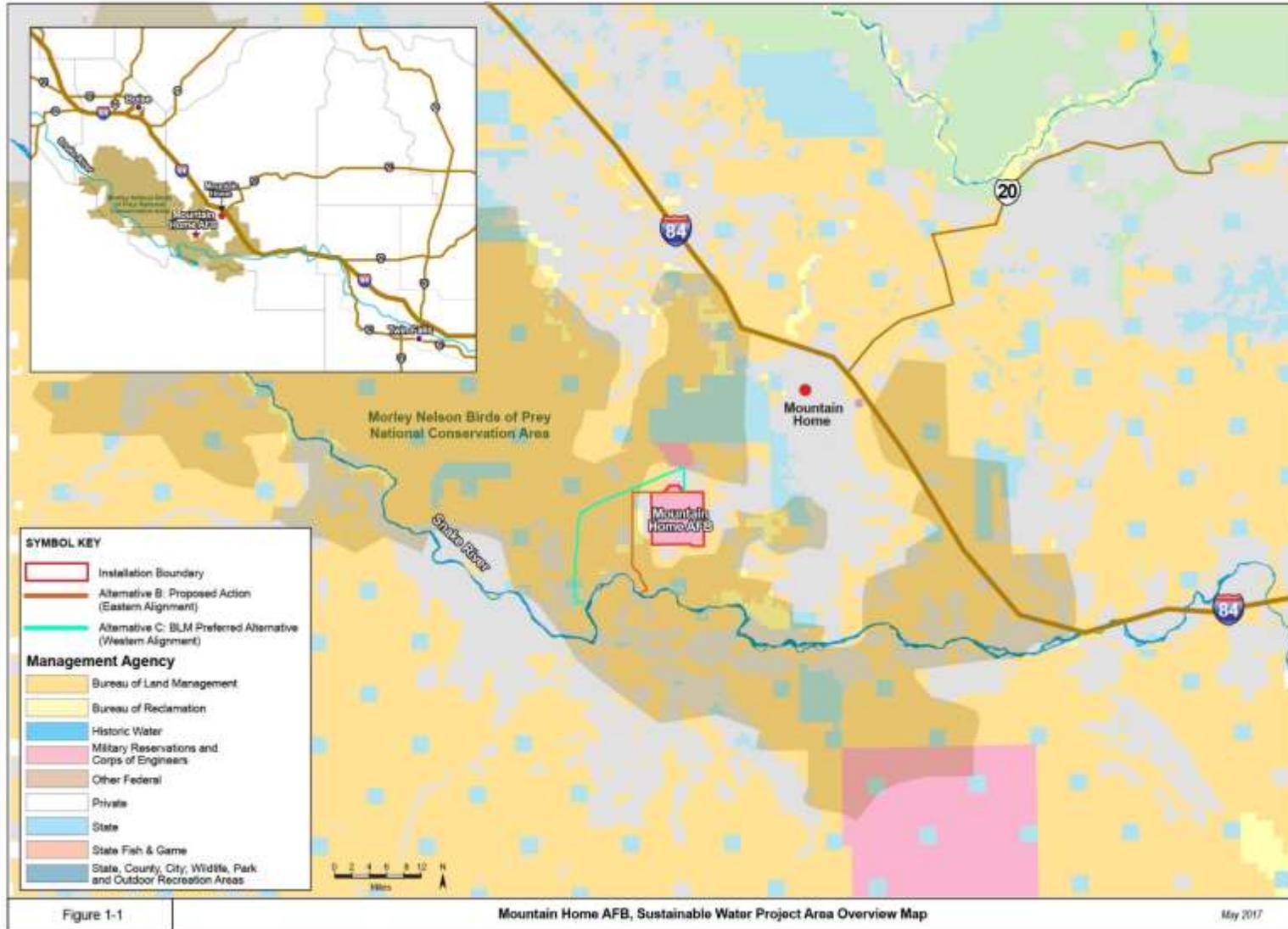
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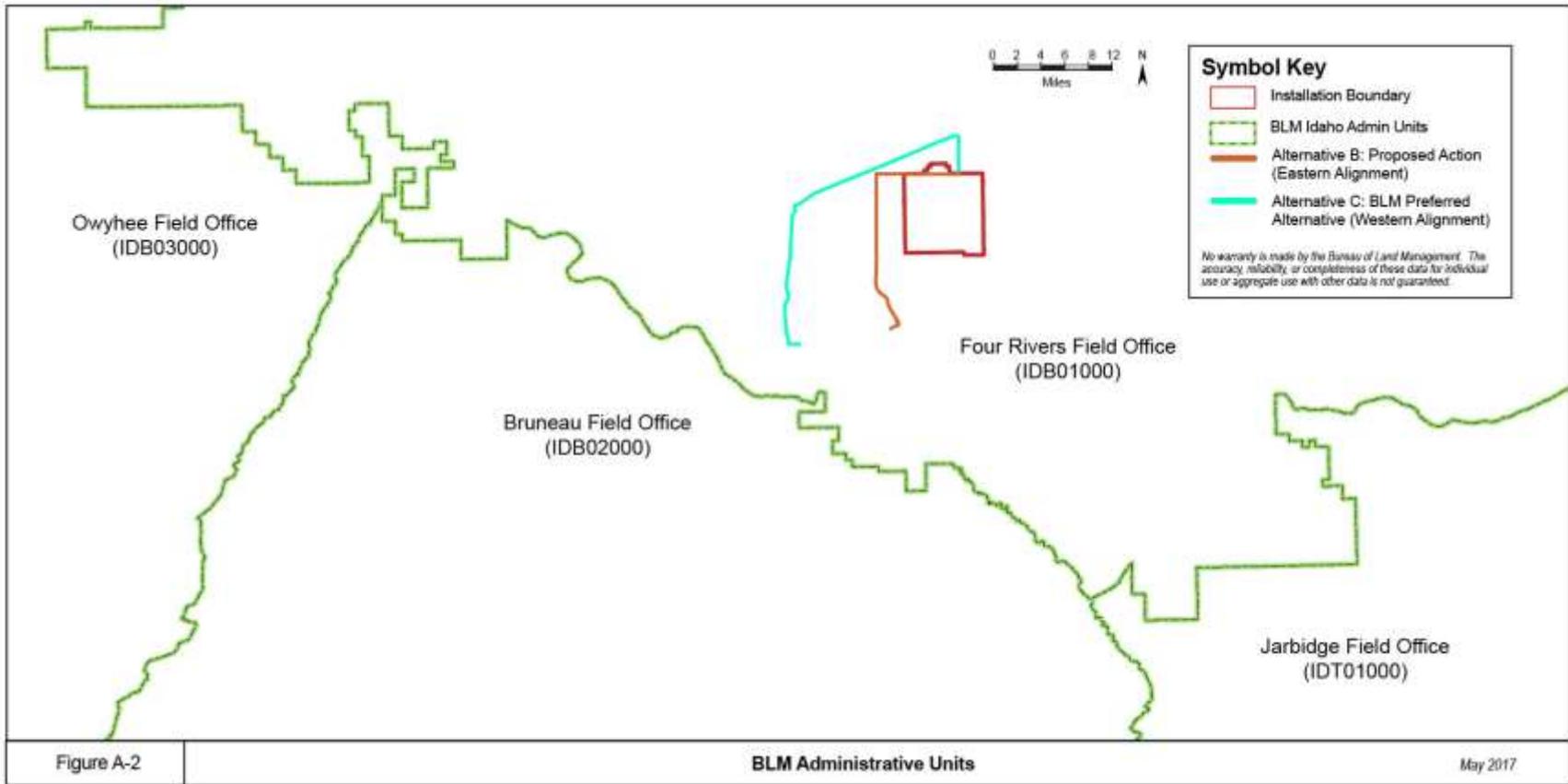
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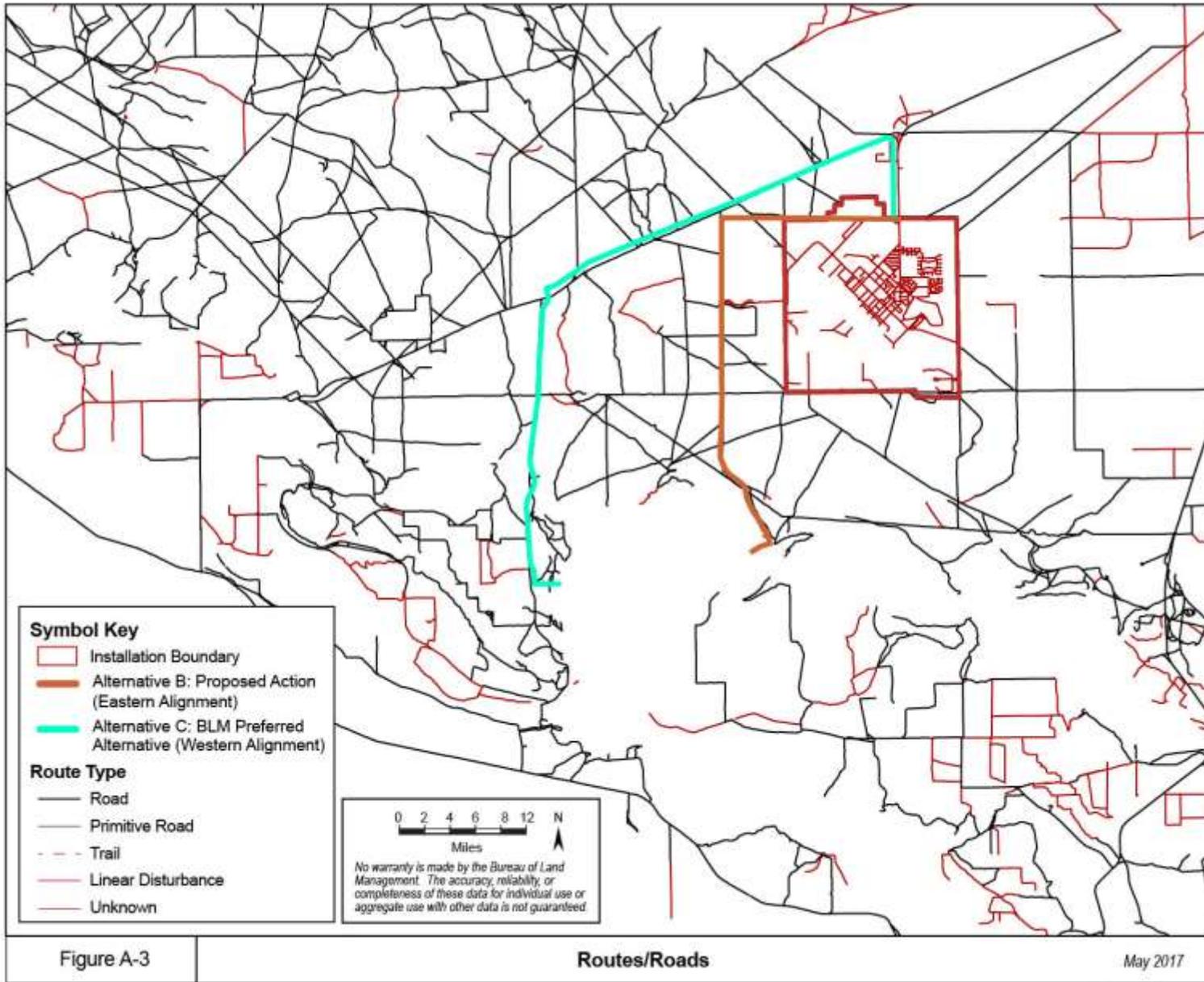
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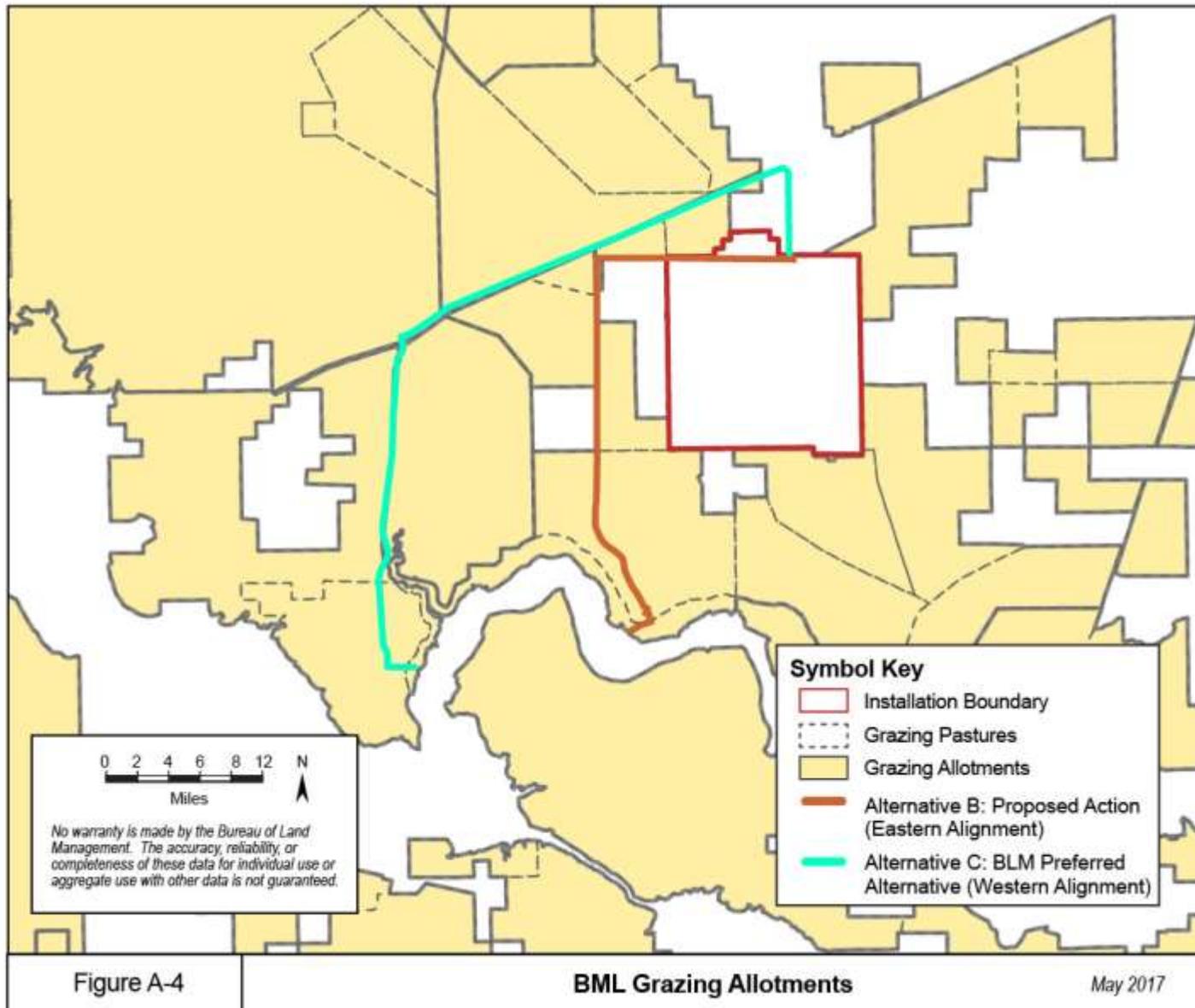
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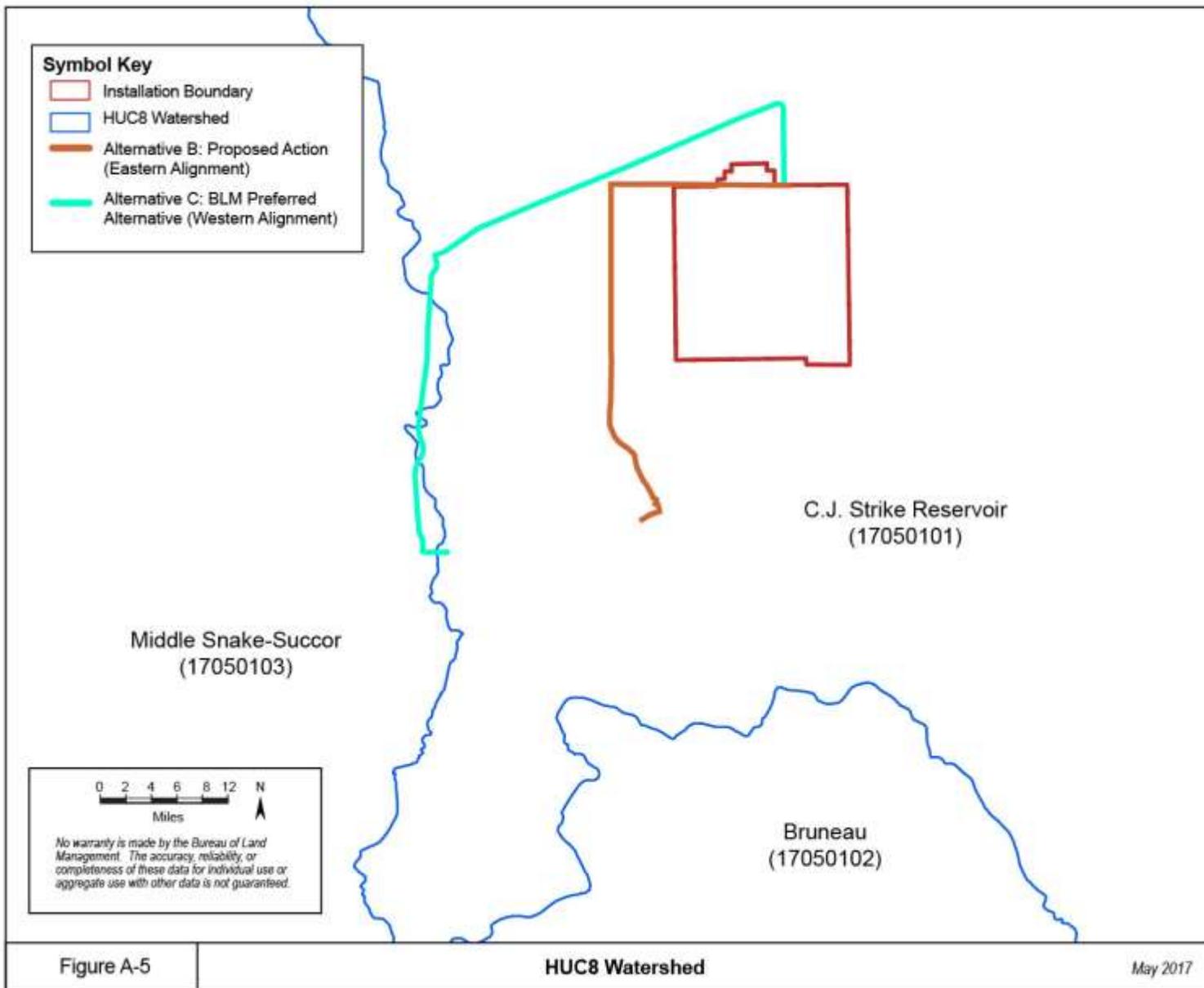
# APPENDIX A. MAPS/FIGURES

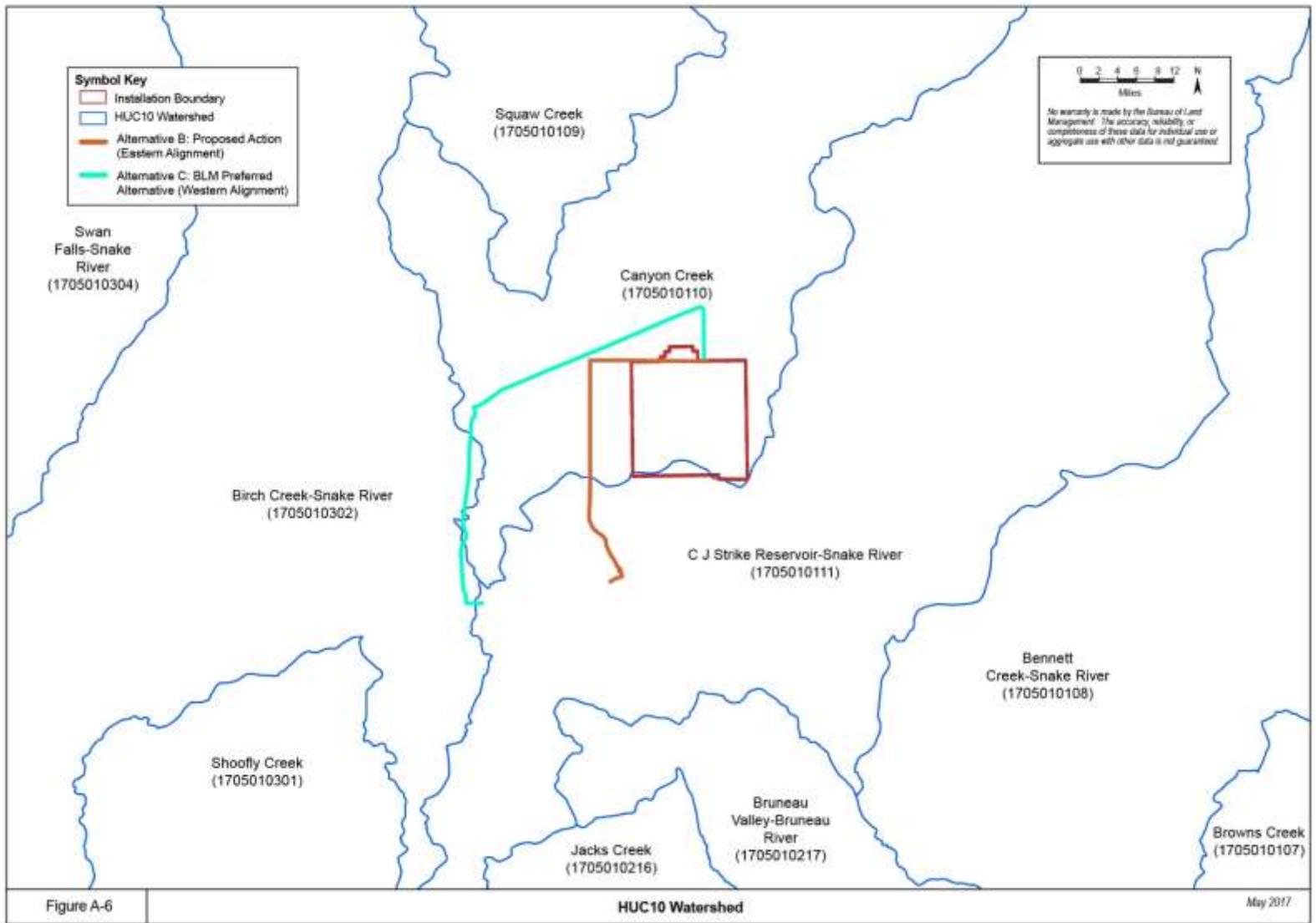


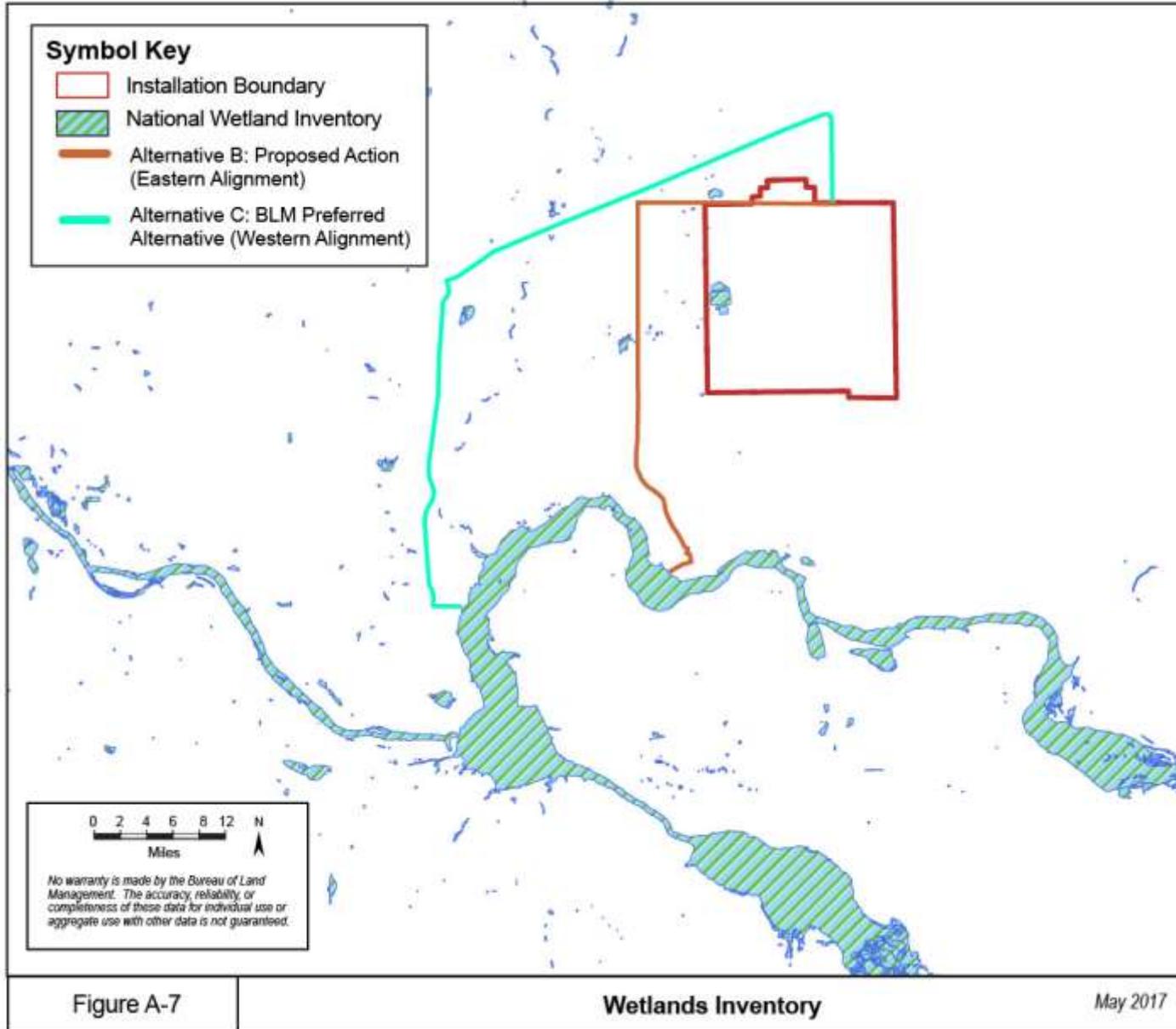


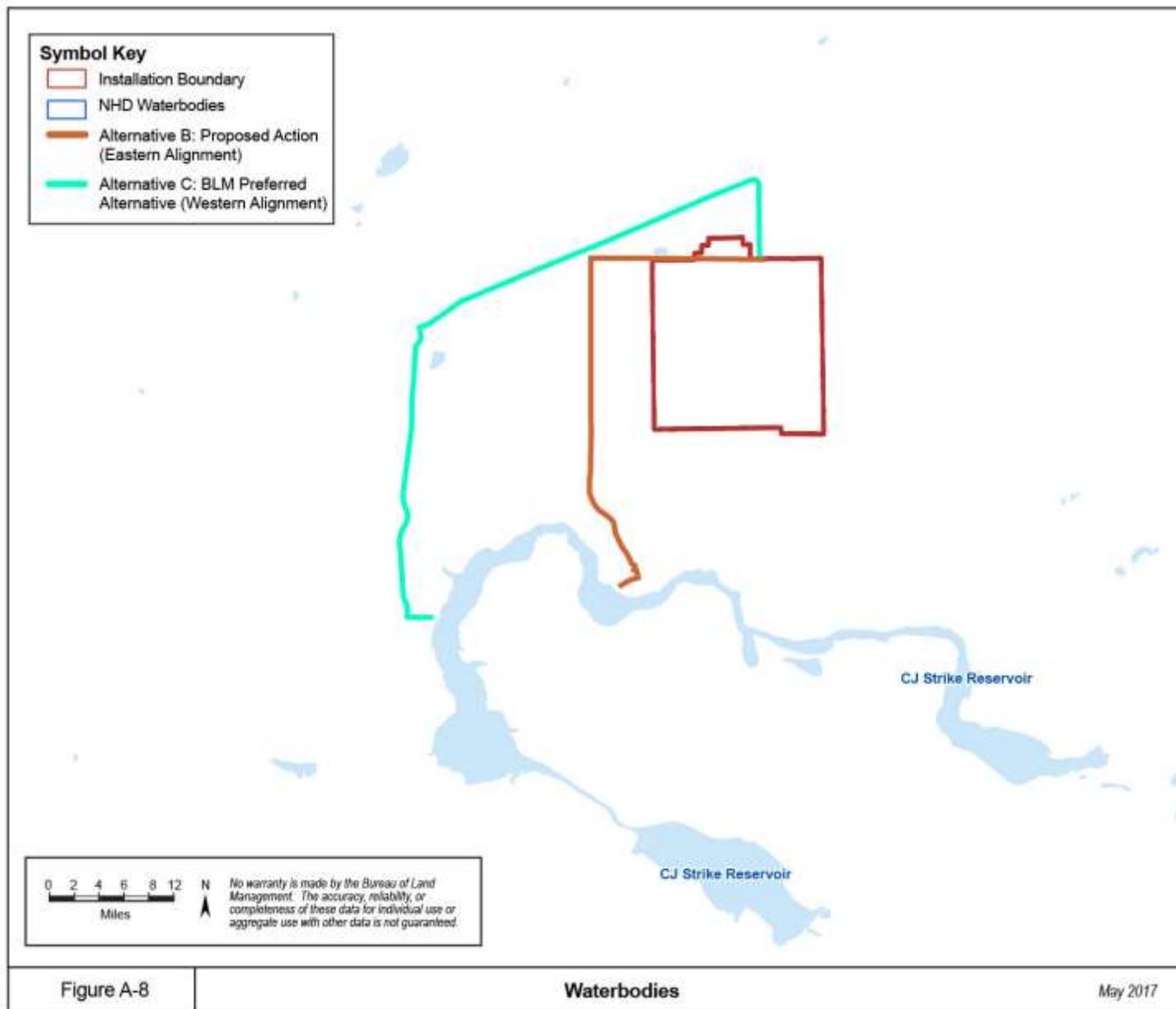


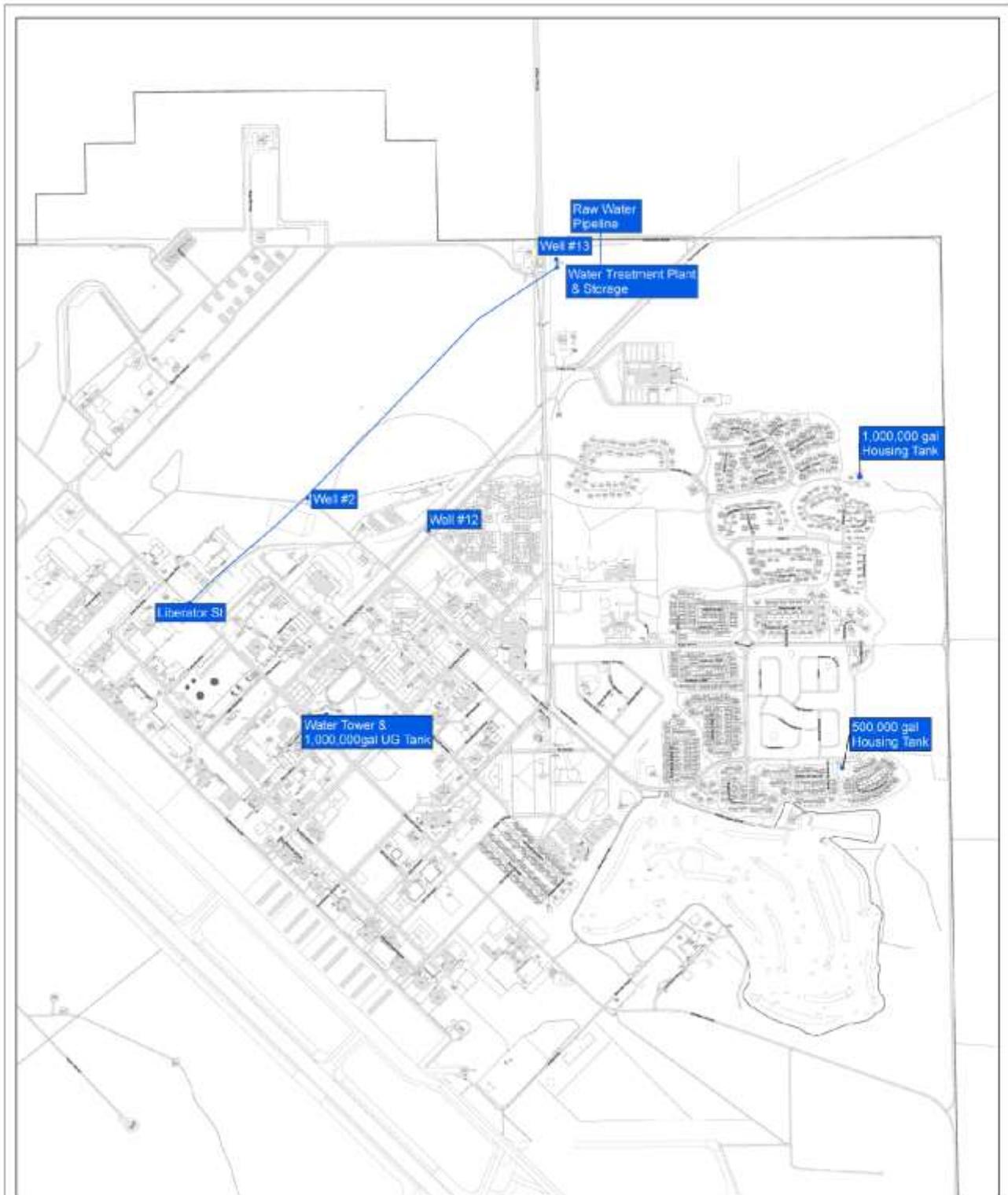












**MHAFB, Elmore County, Idaho**

**Legend**

Water Tower

Water Tank

Water Line

DEPARTMENT OF DEFENSE  
STATE OF IDAHO  
AIR FORCE

WATER SUPPLY AND INFRASTRUCTURE  
MOUNTAIN HOME AIR FORCE BASE, IDAHO

Scale: 1" = 1000'

North Arrow: True North

Map Date: 05/17/2017

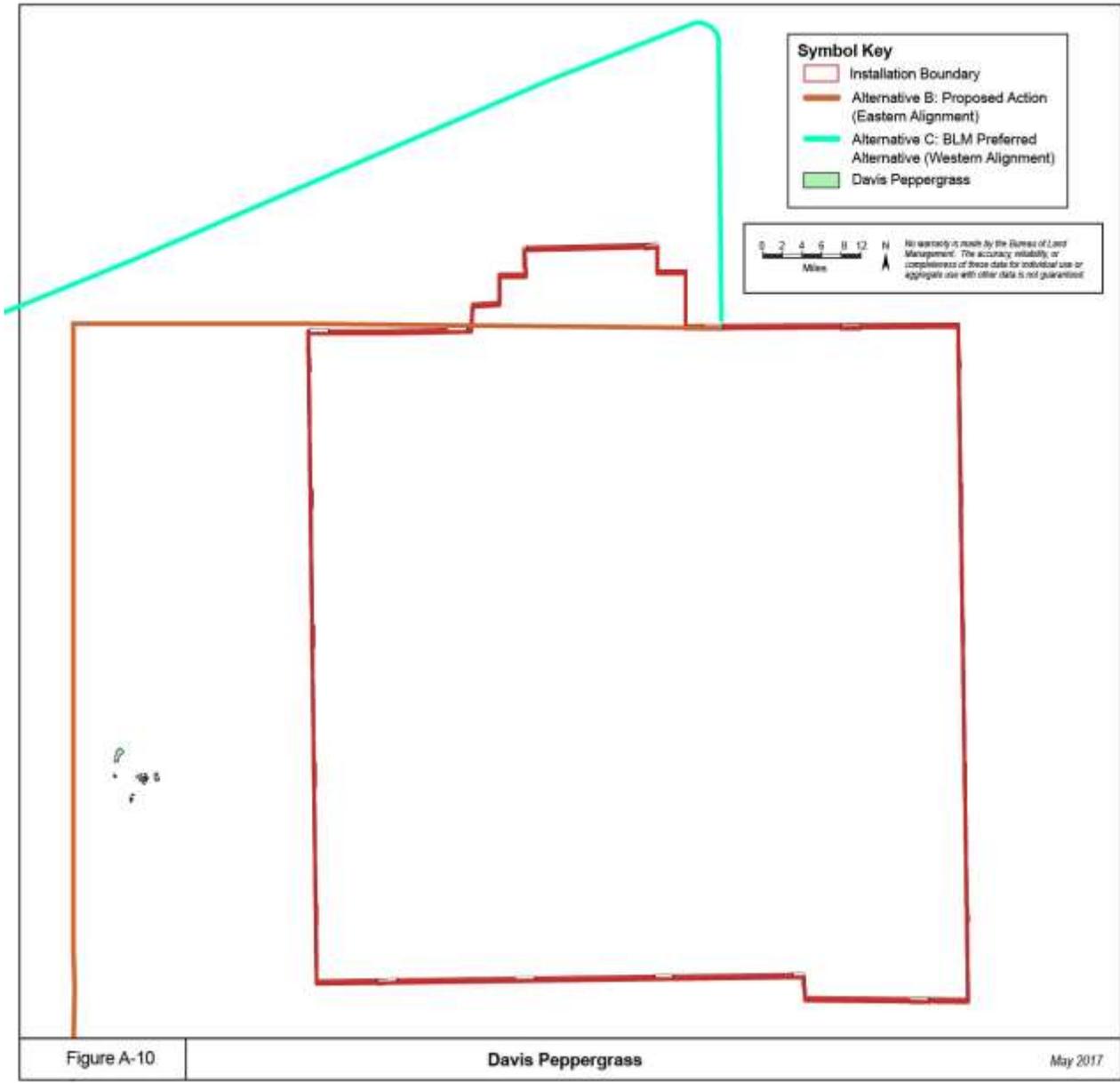
Map Title: Mountain Home Air Force Base Water Supply and Infrastructure

Map Author: [Name]

Map Reviewer: [Name]

Figure A-9

May 2017



## APPENDIX B. ACRONYMS AND ABBREVIATIONS

'	feet/foot
°C	degrees Celsius
°F	degrees Fahrenheit
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFI	Air Force Instruction
afy	acre feet per year
AIRFA	American Indian Religious Freedom Act
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
APE	Area of Potential Effect
APZ	Accident Potential Zone
ARNG	Army National Guard
ARPA	Archaeological Resources Protection Act
AUM	Animal Unit Months
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cm	centimeter
COA	Conditions of Approval
CWA	Clean Water Act
CZ	Clear Zone
DCMI	Domestic, Commercial, Municipal, and Industrial
DoDI	Department of Defense Instruction
DOI	Department of Interior
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program

ESA	Endangered Species Act
ESQD	Explosive Safety Quantity-Distance
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FRFO	Four Rivers Field Office
HASP	Health and Safety Plan
HDPE	high-density polyethylene
HUC	Hydrologic Unit Code
IDARNG	Idaho Army National Guard
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IPCo	Idaho Power Company
ITD	Idaho Transportation Department
IWRB	Idaho Water Resource Board
LUP	Land Use Plan
m	Meter
MBTA	Migratory Bird Treaty Act
MFP	Management Framework Plan
MHHD	Mountain Home Highway District
MILCON	Military Construction
MOU	Memorandum of Understanding
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area
NCSHPO	National Council of State Historic Preservation Officers
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability

NPA	National Programmatic Agreement
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Act of 1970
OTA	Orchard Training Area
P.L.	Public Law
PA	Programmatic Agreement
PM	particulate matter
POC	point-of-contact
PUR	Pesticide Use Report
RFFA	reasonably foreseeable future action
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
SF	Standard Form
SHPO	Idaho State Historic Preservation Office
SRBA	Snake River Basin Adjudication
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDI	U.S. Department of Interior
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resources Management
WSR	Wild and Scenic River

## **APPENDIX C. RECLAMATION FRAMEWORK**

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A revegetation plan, including information about native plant seed mixtures, watering requirements, etc. will be developed and implemented in order to offset impacts resulting from project construction and in an effort to rehabilitate the landscape using native plants and replacing native topsoil, to the extent practicable (IWRB 2017).

# APPENDIX D. AGENCY CORRESPONDENCE

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DEPARTMENT OF THE AIR FORCE  
366TH CIVIL ENGINEER SQUADRON (ACC)  
MOUNTAIN HOME AIR FORCE BASE IDAHO

10 JAN 2017

MEMORANDUM FOR: ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, AND ORGANIZATIONS

FROM: 366 CES/CEIE  
1030 Liberator Street Bldg 1297  
Mountain Home AFB ID 83648

SUBJECT: Obtain Sustainable Water supply for Mountain Home AFB ID

The 366th Fighter Wing (366 FW) of Mountain Home Air Force Base (MHAFB) is preparing an Environmental Assessment (EA) addressing a proposed action to convey water from the Snake River to MHAFB in order to provide a sustainable water supply for the base. The project is proposed to be located primarily on Bureau of Land Management (BLM)-managed lands in the Morley Nelson Snake River Birds of Prey National Conservation Area. As such, the BLM is participating as a Joint Lead Agency in the development of the EA and would have to approve any action occurring on BLM-managed lands.

The environmental analysis for the proposed action is being conducted by the 366 FW in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we solicit your comments concerning the proposal and any potential environmental consequences of the action. We also request information regarding other recently completed, on-going, or proposed projects in the vicinity that create cumulative impacts in association with the Proposed Action. We plan to conduct a scoping meeting open to interested parties on 17 January 2017 at the Mountain Home Public Library from 4 to 6pm. You may also provide any comments within 30 days of receipt of this letter.

Please forward your written comments, further questions, or if you would like to discuss the proposal further please feel free to contact me at (208)828-2299 or [sheri.robertson@us.af.mil](mailto:sheri.robertson@us.af.mil) or Amanda Hoffman at (208) 384-3336 or [alhoffman@blm.gov](mailto:alhoffman@blm.gov). Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Sheri Robertson", written over a horizontal line.

SHERIL ROBERTSON  
Chief, Environmental Management

Attachment:  
Description of Proposed Action and Alternatives (DOPAA)  
Map



# NEWS RELEASE

## UNITED STATES AIR FORCE

366th Fighter Wing Public Affairs  
Mountain Home Air Force Base

**Release: NR 20170103-001**

Jan 03, 2017 - 15:38

366 FW/PA  
366 Gunfighter Ave, Suite 310  
Mountain Home AFB, ID 83648

[www.mountainhome.af.mil](http://www.mountainhome.af.mil)

Commercial: (208) 828-6800

After hours: (208) 828-5800

DSN: (312) 728-6800

### **MHAFB and BLM discuss Environmental Assessment for proposed waterline**

MOUNTAIN HOME AIR FORCE BASE, Idaho – Mountain Home AFB and the BLM are preparing an Environmental Assessment (EA) addressing the construction of a waterline from the Snake River to MHAFB. In addition to the waterline, a water treatment plant would be constructed to provide potable water to the base. This proposal is needed to ensure the base maintains an adequate sustainable water supply. The project is proposed to be located primarily on BLM-managed lands.

A public scoping meeting will be held at the City of Mountain Home Public Library January 17th, 4 – 6 p.m.

- 30 -



C.L. "Butch" Otter  
Governor of Idaho

Janet Gallimore  
Executive Director

Administration  
2205 Old Penitentiary Road  
Boise, Idaho 83712-8250  
Office: (208) 334-2682  
Fax: (208) 334-2774

Membership and Fund  
Development  
2205 Old Penitentiary Road  
Boise, Idaho 83712-8250  
Office: (208) 514-2310  
Fax: (208) 334-2774

Historical Museum and  
Education Programs  
610 North Julia Davis Drive  
Boise, Idaho 83702-7695  
Office: (208) 334-2120  
Fax: (208) 334-4859

State Historic Preservation  
Office and Historic Sites  
Archaeological Survey of Idaho  
210 Main Street  
Boise, Idaho 83702-7264  
Office: (208) 334-3861  
Fax: (208) 334-2775

Statewide Sites:  
• Franklin Historic Site  
• Pierce Courthouse  
• Rock Creek Station and  
• Snicker Homesite

Old Penitentiary  
2445 Old Penitentiary Road  
Boise, Idaho 83712-8254  
Office: (208) 334-2844  
Fax: (208) 334-3228

Idaho State Archives  
2205 Old Penitentiary Road  
Boise, Idaho 83712-8250  
Office: (208) 334-2620  
Fax: (208) 334-2626

North Idaho Office  
112 West 4th Street, Suite #7  
Moscow, Idaho 83843  
Office: (208) 882-1540  
Fax: (208) 882-1763



Historical Society is an  
Equal Opportunity Employer

January 18, 2017

Mrs. Sheri Robertson  
Chief, Environmental Management  
Department of the Air Force  
366<sup>th</sup> Civil Engineer Squadron (ACC)  
Mountain Home Air Force Base Idaho

RE: Sustainable Water supply for Mountain Home Air Force Base (Idaho SHPO REV 2017-329)

Dear Mrs. Robertson,

Thank you for your informational letter and project materials regarding the proposed action. We understand that the proposed action consists of the development of a sustainable water supply system for Mountain Home Air Force Base. We also understand that you have initiated consultation with our office per the terms of our existing PA and working draft PA regarding undertakings which have the potential to adversely affect *historic properties*.

We have reviewed the *undertaking* and concur that it has the potential to effect *historic properties*. We recommend that a study be conducted to identify any *historic properties* within the area of potential effect (APE) and evaluate any effects. This study will likely include some level pedestrian survey depending on the nature of the environment and or any other recent studies within or near the APE. The APE needs to be designed to include potential direct and indirect effects.

We understand that you will be working closely with the BLM on the development of an Environmental Assessment. We also would recommend that you consult with Idaho Power (the Federal Energy Regulatory Commission delegate) as portions of the potential APE appear to be within the license boundary for their CJ Strike FERC license boundary.

We appreciate your consulting with our office and look forward to receiving a report which documents the study and provides and overall recommendation regarding the proposed action. If you have any questions feel free to contact me at 208-488-7467 ([ethan.morton@ishs.idaho.gov](mailto:ethan.morton@ishs.idaho.gov)) or Matt Halitsky at 208-488-7468 ([matt.halitsky@ishs.idaho.gov](mailto:matt.halitsky@ishs.idaho.gov)).

Sincerely,

Ethan Morton, Idaho State Historic Preservation Office

cc Amanda Hoffman, BLM  
Matt Halitsky, Idaho SHPO



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 366TH FIGHTER WING (ACC)  
MOUNTAIN HOME AIR FORCE BASE IDAHO



19 May 2017

Colonel Jefferson J. O'Donnell  
Commander  
366 Gunfighter Avenue, Suite 331  
Mountain Home AFB ID 83648

Mr. Blaine Edmo  
Chairman  
Shoshone-Bannock Tribes  
P.O. Box 306  
Fort Hall ID 83203

Dear Mr. Edmo

The 366th Fighter Wing (366 FW) at Mountain Home AFB (MHAFB) is preparing an Environmental Assessment (EA) addressing a proposed action (see Attachment 1) to convey water from the Snake River to MHAFB to provide a sustainable water supply for the base.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, and Section 106 of the *National Historic Preservation Act (NHPA)* (36 Code of Federal Regulations Parts 800.2, 800.3, and 800.4) the 366 FW would like to initiate Government-to-Government consultation regarding this proposal. The 366 FW would like to discuss the proposal in detail with you, and to understand and consider any comments, concerns, and suggestions you may have. In particular, the United States Air Force requests your input as to the status of any traditional resources that may be located within the proposed project area (see Attachment 2).

On behalf of the 366th Fighter Wing, I look forward to discussing the proposed action with you while being mindful of and addressing your concerns. I request that you contact us within 30 days of receipt of this letter. Please, let us know when you are available and your expectations for discussions. Do not hesitate to call me at (208) 828-2366 to arrange dates and times to your convenience.

Sincerely

  
JEFFERSON J. O'DONNELL, Colonel, USAF

2 Attachments:

1. Draft Description of Proposed Action and Alternatives (DOPAA)
2. Map



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 366TH FIGHTER WING (ACC)  
MOUNTAIN HOME AIR FORCE BASE IDAHO



19 May 2017

Colonel Jefferson J. O'Donnell  
Commander  
366 Gunfighter Avenue, Suite 331  
Mountain Home AFB ID 83648

Mr. Shane Warner  
Chairman  
Northwestern Band, Shoshone  
Brigham City Tribal Office  
707 North Main Street  
Brigham City UT 84302

Dear Mr. Warner

The 366th Fighter Wing (366 FW) at Mountain Home AFB (MHAFB) is preparing an Environmental Assessment (EA) addressing a proposed action (see Attachment 1) to convey water from the Snake River to MHAFB to provide a sustainable water supply for the base.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, and Section 106 of the *National Historic Preservation Act (NHPA)* (36 Code of Federal Regulations Parts 800.2, 800.3, and 800.4) the 366 FW would like to initiate Government-to-Government consultation regarding this proposal. The 366 FW would like to discuss the proposal in detail with you, and to understand and consider any comments, concerns, and suggestions you may have. In particular, the United States Air Force requests your input as to the status of any traditional resources that may be located within the proposed project area (see Attachment 2).

On behalf of the 366th Fighter Wing, I look forward to discussing the proposed action with you while being mindful of and addressing your concerns. I request that you contact us within 30 days of receipt of this letter. Please, let us know when you are available and your expectations for discussions. Do not hesitate to call me at (208) 828-2366 to arrange dates and times to your convenience.

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 366TH FIGHTER WING (ACC)  
MOUNTAIN HOME AIR FORCE BASE IDAHO



19 May 2017

Colonel Jefferson J. O'Donnell  
Commander  
366 Gunfighter Avenue, Suite 331  
Mountain Home AFB ID 83648

Mr. Lindsey Manning  
Chairman  
Shoshone-Paiute Tribes of Duck Valley  
P.O. Box 219  
Owyhee NV 89832

Dear Mr. Manning

The 366th Fighter Wing (366 FW) at Mountain Home AFB (MHAFB) is preparing an Environmental Assessment (EA) addressing a proposed action (see Attachment 1) to convey water from the Snake River to MHAFB to provide a sustainable water supply for the base.

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Sincerely

  
JEFFERSON J. O'DONNELL, Colonel, USAF

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2. Map



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 366TH FIGHTER WING (ACC)  
MOUNTAIN HOME AIR FORCE BASE IDAHO



19 May 2017

Colonel Jefferson J. O'Donnell  
Commander  
366 Gunfighter Avenue, Suite 331  
Mountain Home AFB ID 83648

Mr. Joe DeLaRosa  
Chairman  
Burns Paiute Tribe  
100 Pasigo Street  
Burns OR 97720

Dear Mr. DeLaRosa

The 366th Fighter Wing (366 FW) at Mountain Home AFB (MHAFB) is preparing an Environmental Assessment (EA) addressing a proposed action (see Attachment 1) to convey water from the Snake River to MHAFB to provide a sustainable water supply for the base.

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, and Section 106 of the *National Historic Preservation Act (NHPA)* (36 Code of Federal Regulations Parts 800.2, 800.3, and 800.4) the 366 FW would like to initiate Government-to-Government consultation regarding this proposal. The 366 FW would like to discuss the proposal in detail with you, and to understand and consider any comments, concerns, and suggestions you may have. In particular, the United States Air Force requests your input as to the status of any traditional resources that may be located within the proposed project area (see Attachment 2).

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Sincerely

  
JEFFERSON J. O'DONNELL, Colonel, USAF

2 Attachments:

1. Draft Description of Proposed Action and Alternatives (DOPAA)
2. Map

## Obtain Sustainable Water Supply for Mountain Home Air Force Base: Description of Proposed Action and Alternatives (DOPAA)

### Background:

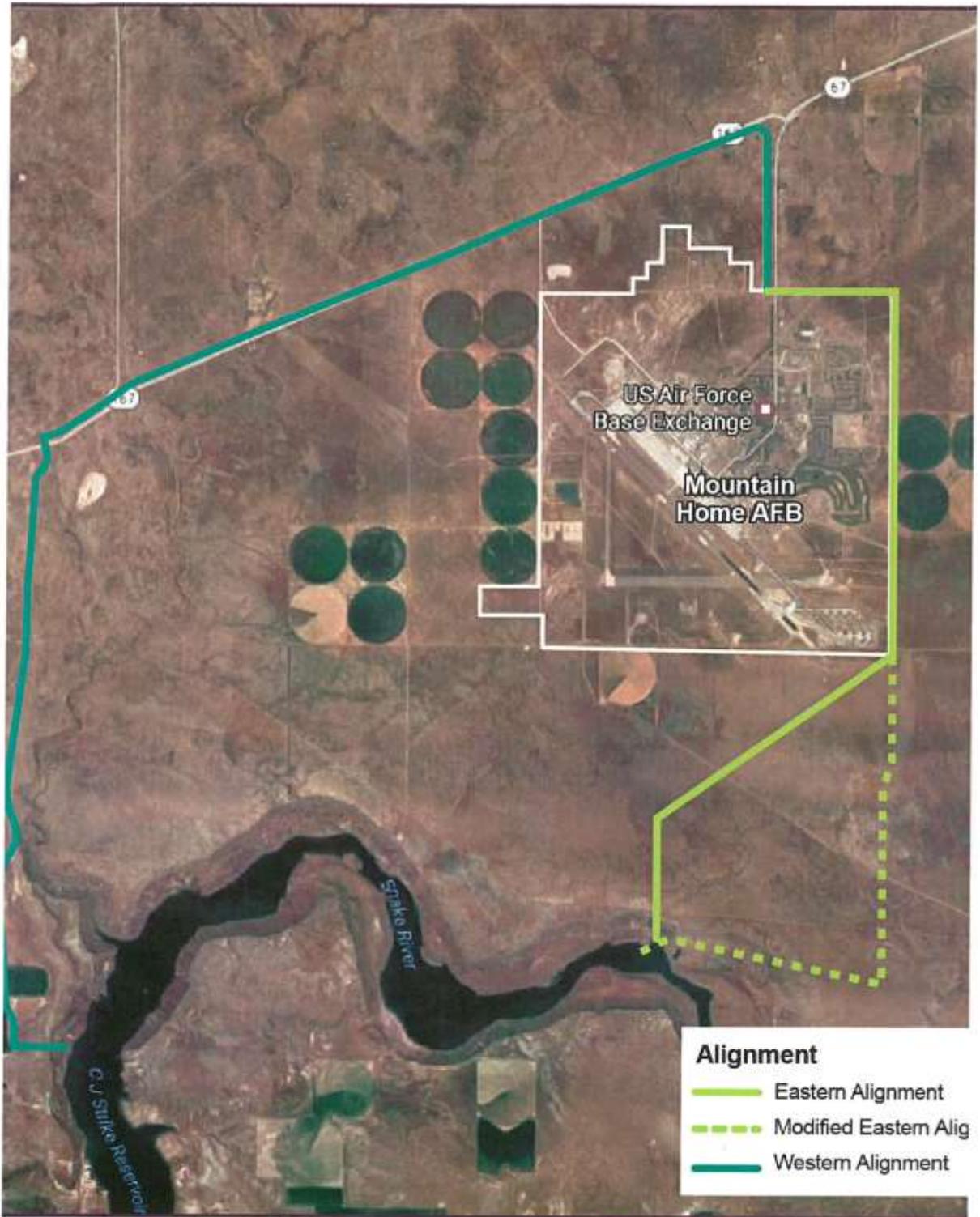
Mountain Home AFB (MHAFB) requires an average of 623 million gallons of water per year, with peak summertime usage at 3.3 million gallons per day in order to sustain our military mission. The base uses water primarily for municipal purposes to serve a resident population of approximately 3,000 people and assigned workforce of approximately 6,000 military, civilian, and contract personnel. The base currently relies on groundwater pumped from the Mountain Home Aquifer. The aquifer is declining at a rate of 2 feet per year. According a study conducted by Air Combat Command in 2012, the Snake River is the nearest dependable source of potable water other than the Mountain Home Aquifer. The study determined that pumping water from the Snake River to MHAFB to supply the base's water needs is feasible. If water is pumped from the Snake River, a pumping station at the river would be needed, as well as a pipe to convey the water from the river to the base. Additionally, a drinking water treatment plant would be needed at MHAFB to ensure the water meets primary and secondary drinking water standards when delivered to MHAFB. The water treatment plant could be located on or off base. The study identified two alternative routes for a pipe from the river to the base. We have also developed a modified eastern alignment that follows existing roads (see attached map showing alternative routes).

### Proposed Action and Alternatives:

The purpose of the proposed action is to provide a sustainable water supply for MHAFB by pumping water from the Snake River to Mountain Home AFB via pumping station at the river and water pipe from the river to the base. The project is needed because the current base water supply depends on pumping groundwater from the regional Mountain Home Aquifer. The aquifer is declining at a rate of 2 feet per year. Also, in some parts of the base the aquifer is contaminated with nitrates and perfluorinated compounds. According the study, at current rates of use the Mountain Home Aquifer near the base will be completely depleted in 15-20 years. The state water regulatory agencies have the legal right to curtail the use of the aquifer, and have discussed doing so within the next five years. This action could also adversely impact the base's water supply.

We are working with the Idaho Department of Water Resources to develop this proposed action. Depending on the route chosen, real estate actions by the US Department of Interior Bureau of Land Management (BLM) would be required.

The No Action Alternative would be to keep the status quo – the base would continue to rely on the dwindling Mountain Home Aquifer.



## APPENDIX E. EXISTING RIGHT-OF-WAYS

### WYWIDI38314 - Idaho Water Resource Board Mountain Home Air Force Base Sustainable Water Supply Project

Land Description	Serial #, Patent # or Authorization	Landowner	Right-of-Way Width	Type of ROW
<b>Eastern Alternative</b>				
<b>Land Ownership Along the Eastern Alignment</b>				
T. 4 S., R. 5 E., section 16		State of Idaho (Declaration of Taking USAF 1/29/58)		
T. 4 S., R. 5 E., section 17		BLM, Public Lands		
T. 4 S., R. 5 E., section 18		BLM, Public Lands		
T. 4 S., R. 5 E., section 19	11-68-0110	Dale E. Gilbert		
T. 4 S., R. 5 E., section 19	11-68-0084, 11-78-0031	Melville W. Fisher		
T. 4 S., R. 5 E., section 20		USAF Withdrawal		
T. 4 S., R. 5 E., section 21	890307, 826140 (7/5/1943)	USAF, Transfer of Jurisdiction		
T. 4 S., R. 5 E., section 30		BLM, Public Lands		
T. 4 S., R. 5 E., section 31		BLM, Public Lands		
T. 4 S., R. 4 E., section 24		BLM, Public Lands		
T. 4 S., R. 4 E., section 25	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands		

Land Description	Serial #, Patent # or Authorization	Landowner	Right-of-Way Width	Type of ROW
T. 5 S., R. 5 E., section 06		BLM, Public Lands		
T. 5 S., R. 5 E., section 07		BLM, Public Lands		
T. 5 S., R. 5 E., section 17	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands		T. 5 S., R. 5 E., section 17 and 18, Only Showing Landownership for north of the Snake River
T. 5 S., R. 5 E., section 17	Executive Order 07/02/1910, Withdrawal Power Site Reserve 77	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 17	Federal Power Commission Order 12/26/1956 Withdrawal Power Project 2055	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 17	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands		
T. 5 S., R. 5 E., section 17	810901 D/C	Clyde D. Summers, Michael H. Garrity		
T. 5 S., R. 5 E., section 18		BLM, Public Lands		
T. 5 S., R. 5 E., section 18	Executive Order 07/02/1910, Withdrawal Power Site Reserve 77	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 18	IDI3823 Withdrawal Birds of Prey National	BLM, Public Lands		

Land Description	Serial #, Patent # or Authorization	Landowner	Right-of-Way Width	Type of ROW
	Conservation Area			
T. 5 S., R. 5 E., section 18	Federal Power Commission Order 12/26/1956 Withdrawal Power Project 2055	Federal Energy Regulatory Commission		
<b>Rights-Of-Way Along and Within the Eastern Alignment</b>				
T. 4 S., R. 5 E., section 16	No Rights-of way present			
T. 4 S., R. 5 E., section 17, Lots 5, 13, 14	IDI35044	U.S. Air Force and U.S. Corps of Engineers	3137 ft. long X 100 ft. wide and 100 ft. long X 150 ft. wide	Right-of-way to US Air Force
T. 4 S., R. 5 E., section 17, Lots 9,18,19, S1/2SE1/4NW1/4SE1/4, S1/2NW1/4SW1/4SE1/4, NE1/4SW1/4SE1/4;S1/2SW1/4SE1/4	IDI08301	U.S. Corps of Engineers	Right-of-way	Safety Area & Ammunition Storage Area
T. 4 S., R. 5 E., section 17	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 5 E., section 17, Lots 1, 2, 3, 5, 6	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone Line
T. 4 S., R. 5 E., section 18, Lots 5, 7, 8, S1/2NE1/4,NE1/4SW1/4, NW1/4SE1/4	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone Line
T. 4 S., R. 5 E., section 18, S1/2SE1/4	IDI25543	Idaho Power Company	20 ft. wide	Power line
T. 4 S., R. 5 E., section 18, Lots 5,7,8; S1/2NE1/4,NW1/4SE1/4, NE1/4SW1/4	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 5 E., section 18, Lot 7	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road

Land Description	Serial #, Patent # or Authorization	Landowner	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 19, NE1/4NW1/4,NW1/4NE1/4,S1/2NE1/4,NE1/4SE1/4	IDI08301	U.S. Corps of Engineers	40 ft. wide	Road & Middle marker
T. 4 S., R. 5 E., section 19, Lot 3	IDI1080	Idaho Power Company	40 ft. wide	Powerline
T. 4 S., R. 5 E., section 19, NE1/4NE1/4SE1/4	IDI13468	U.S. Corps of Engineers	Un-specified	Restrictive Clear Zone
T. 4 S., R. 5 E., section 19, NE1/4NE1/4SE1/4	IDI011071	U.S. Corps of Engineers	Un-specified	Approach Lighting System
T. 4 S., R. 5 E., section 20	No Rights-of-way present			
T. 4 S., R. 5 E., section 21, Lot 13	IDI011679	Holly Corporation and Holly Energy Partners	50 ft. wide	Un-specified
T. 4 S., R. 5 E., section 30, Lots 7, 8, SE1/14SW1/4	IDI16388	Idaho Power Company	20 ft. wide	Power line
T. 4 S., R. 5 E., section 31, Lots 1, 2, NE1/4NW1/4	IDI20063	Farms LLC	30 ft. wide	NCA Road ROW
T. 4 S., R. 5 E., section 31, Lots 2, 3, 6, 7	IDI1080	Idaho Power Company	40 ft. wide	Powerline
T. 4 S., R. 4 E., section 24, NW1/4NE1/4,N1/2NW1/4,SW1/4NW1/4	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone line
T. 4 S., R. 4 E., section 24, NW1/4NE1/4,E1/2NW1/4,SW1/4NW1/4	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 4 E., section 24, E1/2E1/2	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road
T. 4 S., R. 4 E., section 25, E1/2E1/2	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road

Land Description	Serial #, Patent # or Authorization	Landowner	Right-of-Way Width	Type of ROW
T. 5 S., R. 5 E., section 06, Lots 1-4	IDI011906	Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 5 S., R. 5 E., section 06, Lots 1-5	IDI16387	Idaho Power Company	20 ft. wide	Power line
T. 5 S., R. 5 E., section 06, Lots 5, 6, 9, 10	IDI1080	Idaho Power Company	40 ft. wide	Powerline
T. 5 S., R. 5 E., section 07, Lots 1, 4	IDI1080	Idaho Power Company	40 ft. wide	Power line
T. 5 S., R. 5 E., section 07, N1/2N1/2;	BL054750	Idaho Power Company	40 ft. wide	Power line
T. 5 S., R. 5 E., section 17, N1/2N1/2	BL054750	Idaho Power Company	Power line	Power line
T. 5 S., R. 5 E., section 18, E1/2E1/2	IDI2802	Idaho Power Company	Power line	Power line

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
<b>Eastern Alternative</b>				
<b>Land Ownership Along the Eastern Alignment</b>				
T. 4 S., R. 5 E., section 16		State of Idaho (Declaration of Taking USAF 1/29/58)		
T. 4 S., R. 5 E., section 17		BLM, Public Lands		
T. 4 S., R. 5 E., section 18		BLM, Public Lands		
T. 4 S., R. 5 E., section 19	11-68-0110	Dale E. Gilbert		
T. 4 S., R. 5 E., section 19	11-68-0084, 11-78-0031	Melville W. Fisher		
T. 4 S., R. 5 E., section 20		USAF Withdrawal		
T. 4 S., R. 5 E., section 21	890307, 826140 (7/5/1943)	USAF, Transfer of Jurisdiction		
T. 4 S., R. 5 E., section 30		BLM, Public Lands		

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 31		BLM, Public Lands		
T. 4 S., R. 4 E., section 24		BLM, Public Lands		
T. 4 S., R. 4 E., section 25	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands		
T. 5 S., R. 5 E., section 06		BLM, Public Lands		
T. 5 S., R. 5 E., section 07		BLM, Public Lands		
T. 5 S., R. 5 E., section 17	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands	T. 5 S., R. 5 E., section 17 and 18, Only Showing Landownership for north of the Snake River	
T. 5 S., R. 5 E., section 17	Executive Order 07/02/1910, Withdrawal Power Site Reserve 77	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 17	Federal Power Commission Order 12/26/1956 Withdrawal Power Project 2055	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 17	IDI3823 Withdrawal	BLM, Public Lands		

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
	Birds of Prey National Conservation Area			
T. 5 S., R. 5 E., section 17	810901 D/C	Clyde D. Summers, Michael H. Garrity		
T. 5 S., R. 5 E., section 18		BLM, Public Lands		
T. 5 S., R. 5 E., section 18	Executive Order 07/02/1910, Withdrawal Power Site Reserve 77	Federal Energy Regulatory Commission		
T. 5 S., R. 5 E., section 18	IDI3823 Withdrawal Birds of Prey National Conservation Area	BLM, Public Lands		
T. 5 S., R. 5 E., section 18	Federal Power Commission Order 12/26/1956 Withdrawal Power Project 2055	Federal Energy Regulatory Commission		
<b>Rights-Of-Way Along and Within the Eastern Alignment</b>				
T. 4 S., R. 5 E., section 16	No Rights-of way present			
T. 4 S., R. 5 E., section 17, Lots 5, 13, 14	IDI35044	U.S. Air Force and U.S. Corps of Engineers	3137 ft. long X 100 ft. wide and 100 ft. long X 150 ft. wide	Right-of-way to US Air Force

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 17, Lots 9,18,19, S1/2SE1/4NW1/4SE1/4, S1/2NW1/4SW1/4SE1/4, NE1/4SW1/4SE1/4;S1/2SW1/4SE1/4	IDI08301	U.S. Corps of Engineers	Right-of-way	Safety Area & Ammunition Storage Area
T. 4 S., R. 5 E., section 17	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 5 E., section 17, Lots 1, 2, 3, 5, 6	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone Line
T. 4 S., R. 5 E., section 18, Lots 5, 7, 8, S1/2NE1/4,NE1/4SW1/4, NW1/4SE1/4	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone Line
T. 4 S., R. 5 E., section 18, S1/2SE1/4	IDI25543	Idaho Power Company	20 ft. wide	Power line
T. 4 S., R. 5 E., section 18, Lots 5,7,8; S1/2NE1/4,NW1/4SE1/4, NE1/4SW1/4	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 5 E., section 18, Lot 7	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road
T. 4 S., R. 5 E., section 19, NE1/4NW1/4,NW1/4NE1/4,S1/2NE1/4,NE1/4SE1/4	IDI08301	U.S. Corps of Engineers	40 ft. wide	Road & Middle marker
T. 4 S., R. 5 E., section 19, Lot 3	IDI1080	Idaho Power Company	40 ft. wide	Powerline
T. 4 S., R. 5 E., section 19, NE1/4NE1/4SE1/4	IDI13468	U.S. Corps of Engineers	Un-specified	Restrictive Clear Zone
T. 4 S., R. 5 E., section 19, NE1/4NE1/4SE1/4	IDI011071	U.S. Corps of Engineers	Un-specified	Approach Lighting System
T. 4 S., R. 5 E., section 20	No Rights-of-way present			

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 21, Lot 13	IDI011679	Holly Corporation and Holly Energy Partners	50 ft. wide	O&G Pipeline
T. 4 S., R. 5 E., section 30, Lots 7, 8, SE1/4SW1/4	IDI16388	Idaho Power Company	20 ft. wide	Power line
T. 4 S., R. 5 E., section 31, Lots 1, 2, NE1/4NW1/4	IDI20063	Farms LLC	30 ft. wide	NCA Road ROW
T. 4 S., R. 5 E., section 31, Lots 2, 3, 6, 7	IDI1080	Idaho Power Company	40 ft. wide	Powerline
T. 4 S., R. 4 E., section 24, NW1/4NE1/4,N1/2NW1/4,SW1/4NW1/4	IDI20976	Qwest Corporation DBA Centurylink QC and BLM Boise District	Various 10 -15 ft. Wide	Phone line
T. 4 S., R. 4 E., section 24, NW1/4NE1/4,E1/2NW1/4,SW1/4NW1/4	BL055491	Idaho Department of Transportation	120 ft. wide	Highway
T. 4 S., R. 4 E., section 24, E1/2E1/2	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road
T. 4 S., R. 4 E., section 25, E1/2E1/2	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road
T. 5 S., R. 5 E., section 06, Lots 1-4	IDI011906	Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 5 S., R. 5 E., section 06, Lots 1-5	IDI16387	Idaho Power Company	20 ft. wide	Power line
T. 5 S., R. 5 E., section 06, Lots 5, 6, 9, 10	IDI1080	Idaho Power Company	40 ft. wide	Power line
T. 5 S., R. 5 E., section 07, Lots 1, 4	IDI1080	Idaho Power Company	40 ft. wide	Power line
T. 5 S., R. 5 E., section 07, N1/2N1/2;	BL054750	Idaho Power Company	40 ft. wide	Power line
T. 5 S., R. 5 E., section 17, N1/2N1/2	BL054750	Idaho Power Company	Power line	Power line
T. 5 S., R. 5 E., section 18, E1/2E1/2	IDI2802	Idaho Power Company	Power line	Power line

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
<b>Western Alternative</b>				
<b>Land Ownership Along the Western Alignment</b>				
T. 4 S., R. 4 E., section 13		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 13	819387	Charles E. Leonard		
T. 4 S., R. 4 E., section 13	ID0190.353	Samuel J. Pritchard		
T. 4 S., R. 4 E., section 22		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 23		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 24		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 27		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 28		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 33		Birds of Prey Withdrawal		
T. 4 S., R. 4 E., section 33	11-77-0013	John F. Dobarah, Gary B. Wilson		
T. 4 S., R. 5 E., section 8		BLM, Public Lands		
T. 4 S., R. 5 E., section 8	IDI015579	BLM Order Classification Desert Land Entry		
T. 4 S., R. 5 E., section 9	PLO 2953 Withdrawal USAF			
T. 4 S., R. 5 E., section 9	IDI015579	BLM Order Classification Desert Land Entry		
T. 4 S., R. 5 E., section 9	11-72-0015	Oscar J. Streeter		
T. 4 S., R. 5 E., section 10		Birds of Prey Withdrawal		
T. 4 S., R. 5 E., section 10	11-72-0015	Oscar J. Streeter		

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 10	11-72-0020	Ferrel H. Bradbury R.M. Wetherell		
T. 4 S., R. 5 E., section 10	11-69-0126	Oscar J. Streeter		
T. 4 S., R. 5 E., section 15	11-72-0015	Oscar J. Streeter		
T. 4 S., R. 5 E., section 15	11-72-0020	Ferrel H. Bradbury R.M. Wetherell		
T. 4 S., R. 5 E., section 15	11-75-0072	Dorothy E. Mereen		
T. 4 S., R. 5 E., section 15	11-70-0030	Oscar J. Streeter		
T. 4 S., R. 5 E., section 16		State of Idaho (Declaration of Taking USAF 1/29/58)		
T. 4 S., R. 5 E., section 17		Birds of Prey Withdrawal		
T. 4 S., R. 5 E., section 18		BLM, Public Lands		
T. 5 S., R. 4 E., section 4		BLM, Public Lands		
T. 5 S., R. 4 E., section 4	11-73-0088	Elna F. Wilson Catherine M. Rawlings		
T. 5 S., R. 4 E., section 9		Birds of Prey Withdrawal		
T. 5 S., R. 4 E., section 16	SG 09/01/1894	State Grant (Selection of 1894)		
T. 5 S., R. 4 E., section 21		Birds of Prey Withdrawal		
	11-98-0014	J. R. Simplot Company		
	11-66-0008	Ruth W. Holland		
	11-73-0081	Virginia D. Rawlings		
T. 5 S., R. 4 E., section 22	472868	Samuel R. Castile	I only noted for the lands west of the Snake River	
	384800	Martha W. Blanchard		

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
<b>Rights-Of-Way Along and Within the Western Alignment</b>				
T. 4 S., R. 4 E., section 13, S1/2SE1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 13, SE1/4SE1/4	IDI1877	Mountain Home Highway District	30 ft. wide	Road Easement
T. 4 S., R. 4 E., section 22, S1/2SE1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 22, NE1/4SE1/4, S1/2SE1/4	IDI20976	BLM Boise District Office Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 22, W1/2W1/2	IDI9132	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 22, W1/2E1/2, SE1/4SW1/4	IDI011906	Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 22, E1/2W1/2, W1/2E1/2	IDI21406	Mountain Home Highway District	60 ft. wide	Road
T. 4 S., R. 4 E., section 23, lots 1. 3, S1/4ENW1/4, N1/2SW1/4, SW1/4SW1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 23, Lots 2. 4. N1/2SW1/4, NW1/4SE1/4	IDI20976	BLM Boise District Office Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 24, NW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 24, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4	IDI20976	BLM Boise District Office Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 24, E1/2E1/2	IDI1877	Mountain Home Highway District	30 ft. wide	Road Easement

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 4 E., section 27	IBL054417	Idaho Power Company	40 ft. wide	Right-of-way has been relinquished
T. 4 S., R. 4 E., section 27, E1/2NW1/4, N1/2SW1/4, SW1/4SW1/4	IDI011906	Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 27, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 27, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 4 E., section 28, SE1/4NE1/4, E1/2SE1/4	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 4 E., section 28, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4	IDI02239	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 4 E., section 28, NE1/4SE1/4NE1/4	IDI26492	BLM Lower Snake River District	Unknown	Road Guard (?)
		Mountain Home Highway District		
T. 4 S., R. 4 E., section 28	Withdrawal for Power Project 2055		120 ft. wide	
T. 4 S., R. 4 E., section 33	Withdrawal for Power Project 2055		120 ft. wide	
T. 4 S., R. 4 E., section 33	Withdrawal for Power Project 2055		100 ft. wide	Road
T. 4 S., R. 4 E., section 33, E1/2E1/2	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 4 E., section 33, SE1/4NE1/4, E1/2SE1/4	IDI011906	Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 4 E., section 33, SE1/4SE1/4	IDI7489	Idaho Power Company	20 ft. wide	Power line

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 4 E., section 33, SE1/4SW1/4, S1/2SE1/4	IDI16256	Idaho Power Company	40 ft. wide	Power line
		BLM Boise District Office		
T. 4 S., R. 5 E., section 8, SE1/4SE1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. Wide	Road
T. 4 S., R. 5 E., section 8, SE1/4SE1/4	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 5 E., section 8, SW1/4NE1/4, N2SW1/4, SE1/4SW1/4, SW1/4SE1/4	IDI23232	Idaho Power Company	90 ft. wide	Power line
T. 4 S., R. 5 E., section 9, N1/2SE1/4, NE1/4SE1/4, S1/2SW1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 5 E., section 9, NE1/4SE1/4, S1/2SW1/4	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 5 E., section 10, S1/2NW1/4	IDI20976	BLM Boise District Office	10 ft. wide	Phone line
		Qwest Corporation DBA Centurylink QC		
T. 4 S., R. 5 E., section 10, E1/2NW1/4, SW1/4NW1/4, N1/2NE1/4, SW1/4NE1/4, W1/2SW1/4	IDBL054425	Idaho Dept. of Transportation	200 ft. wide	Road
T. 4 S., R. 5 E., section 15, S1/2SW1/4	IDI31760	Intermountain Gas Company	20 ft. wide	O&G Pipeline
T. 4 S., R. 5 E., section 15, SE1/4SE1/4, SE1/4SW1/4	IDI29686	Intermountain Gas Company	30 ft. wide buried	O&G Pipeline
T. 4 S., R. 5 E., section 15, SE1/4SE1/4, SE1/4SW1/4	IDI29714	Idaho Power Company	40 ft. wide	Power line
T. 4 S., R. 5 E., section 15, SE1/4SW1/4	IDI011679	Holly Corporation	50 ft. wide	O&G Pipeline
		Holly Energy Partners		

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 4 S., R. 5 E., section 15, SW1/4SW1/4, W1/2W1/2	IDBL054425	Idaho Dept. of Transportation	200 ft. wide	Road
T. 4 S., R. 5 E., section 16	No Rights-of-way present			
T. 4 S., R. 5 E., section 17, Lots 1, 2, 3, 5, 6	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 5 E., section 17, Lots 1, 2, 3, 5, 6	IDI20976	BLM Boise District Office Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 5 E., section 17, Lots 5, 13, 14	IDI35044	U. S. Air Force	Various	Road
T. 4 S., R. 5 E., section 17, All	IDI3823	BLM Idaho State Office	Only acreage given	Birds of Prey Withdrawal
T. 4 S., R. 5 E., section 17, Lots 9, 18, 19, S1/2SE1/4NW1/4SE1/4, S1/2NW1/4SW1/4SE1/4, NE1/4SW1/4SE1/4, S1/2SW1/4SE1/4	IDI08301	U.S. Corps of Engineers	Only acreage given	Safety Area and Ammunition Storage Area
T. 4 S., R. 5 E., section 17, 2, 7, 10, 11, 16, 17	IDI23232	Idaho Power Company	90 ft. wide	Power line
T. 4 S., R. 5 E., section 18, Lots 5, 7, 8, S1/2NE1/4, NW1/4SE1/4, NE1/4SW1/4	IDBL055491	Idaho Dept. of Transportation	120 ft. wide	Road
T. 4 S., R. 5 E., section 18, Lots, 5, 7, 8, S1/2NE1/4, NE1/4SW1/4, NW1/4SE1/4	IDI20976	BLM Boise District Office Qwest Corporation DBA Centurylink QC	10 ft. wide	Phone line
T. 4 S., R. 5 E., section 18, Lots 5, 8, SE1/4SW1/4	IDI08301	U.S. Corps of Engineers	Unspecified in System	Power line
T. 4 S., R. 5 E., section 18, S1/2SE1/4	IDI25543	Idaho Power Company	20 ft. wide	Power line
T. 4 S., R. 5 E., section 18, Lot 7	IDI1877	Mountain Home Highway District	30 ft. wide	Easement from USBR for Road
T. 4 S., R. 5 E., section 22, Lots 3, 4	IDI011679	Holly Corporation	50 ft. wide	

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
		Holly Energy Partners		Oil and Gas Pipeline
T. 4 S., R. 5 E., section 23, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4	IDI014227	Qwest Corporation dba Centurylink QC	10 ft. wide	Phone line - buried
T. 5 S., R. 4 E., section 4, Lots 1, 2, 3, 4	IDI012260	Qwest Corporation dba Centurylink QC Centurytel of Gem State Inc.	10 ft. wide	Phone line
T. 5 S., R. 4 E., section 4, Lots 1, SE1/4NE1/4, N1/2SE1/4, SW1/4SE1/4	IDI7489	Idaho Power Company	20 ft. wide	Power line
T. 5 S., R. 4 E., section 4, Lot 1	IDI011906	Qwest Corporation dba Centurylink QC	10 ft. wide	Phone line
T. 5 S., R. 4 E., section 4 (Check plat for location within the section)	FPC O 12/26/1956 Withdrawal Power Project 2055		50 ft. wide	
T. 5 S., R. 4 E., section 4 (Check plat for location within the section)	FPC O 12/26/1956 Withdrawal Power Project 2055		50 ft. wide	
T. 5 S., R. 4 E., section 9 (Check plat for location within the section)	FPC O 5/16/1952 Withdrawal Power Project 2055		50 ft. wide	
T. 5 S., R. 4 E., section 9, W1/2NW1/4	IDI10116	J.R. Simplot Company	11.5 acres and 971 ft. long X 50 ft. wide	Reservoir
T. 5 S., R. 4 E., section 9 (Check plat for location within the section)	FPC O 5/16/1952 Withdrawal Power Project 2055		50 ft. wide	
T. 5 S., R. 4 E., section 9, W1/2E1/2	IDI7489	Idaho Power Company	20 ft. wide	Power line
T. 5 S., R. 4 E., section 9 (Check plat for location within the section)	FPC O 12/26/1956 Withdrawal Power Project 2055		50 ft. wide	
T. 5 S., R. 4 E., section 16	No Rights-of-way present			

Land Description	Serial #, Patent # or Authorization	Landowner/Right-of-way Holder	Right-of-Way Width	Type of ROW
T. 5 S., R. 4 E., section 21 (Check plat for location within the section)	FPC O 5/16/1952	Withdrawal Power Project 2055	50 ft. wide	
T. 5 S., R. 4 E., section 21, NW1/4SE1/4	IDI7489	Idaho Power Company	20 ft. wide	Power line
T. 5 S., R. 4 E., section 21, NW1/4SE1/4	IDI6458	Virginia D. Rawlins	50 ft. wide	Irrigation Facility
T. 5 S., R. 4 E., section 21NW1/4SE1/4	IDI16430	Qwest Corporation dba Centurylink QC	20 ft. wide	Phone line - buried
		Centurytel of Gem State Inc.		
T. 5 S., R. 4 E., section 21, NW1/4SE1/4, SE1/4SE1/4	IDI15485	J.R. Simplot Company	3809.7 ft. long X 100 ft. wide	Canal
			1908.2 ft. long X 100 ft. wide	Penstock
			3/20 ft. long X 100 ft. wide	Road
T. 5 S., R. 4 E., section 22, Lot 4 (only noted for the lands west of the Snake River)	IDI15485	J.R. Simplot Company	1908.2 ft. long X 100 ft. wide	Penstock
			3/20 ft. long X 100 ft. wide	Road
			Un-specified	Pumping Station

# APPENDIX F. AIR QUALITY MODELLING RESULTS

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## AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** MOUNTAIN HOME AFB

**County(s):** Elmore

**Regulatory Area(s):** NOT IN A REGULATORY AREA

**b. Action Title:** Establishment of a Sustainable Water Supply for Mountain Home Air Force Base

**c. Project Number/s (if applicable):** DOI-BLM-ID-B011-2017-0002-EA

**d. Projected Action Start Date:** 1 / 2018

**e. Action Description:**

The proposed project consists of establishing a new sustainable water supply conveyed via predominantly linear underground infrastructure to a proposed Water Treatment Facility that would be established within the base boundary. The USAF and BLM have collaborated to prepare an EA that accommodates directives of both organizations (e.g., 32 CFR 989, Environmental Impact Analysis Process, and 43 CFR 46. Implementation of the National Environmental Policy Act of 1969).

This EA analyzes the following alternatives:

- Alternative A: No Action
- Alternative B: Proposed Action (Eastern Alignment)
- Alternative C: BLM Preferred Alternative (Western Alignment) - Alternative C to be analyzed in Alternative 1 in ACAM file

The CEQ requires an assessment of potential adverse and beneficial environmental consequences that

could result from implementation of potentially effective and reasonably feasible alternatives that would achieve the purpose and need of the Proposed Action, and that the No Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Details related to the Proposed Action and its alternatives, including the No Action Alternative, are provided below.

**f. Point of Contact:**

**Name:** Jim McClain  
**Title:** President Solutio Environmental, Inc.  
**Organization:** Solutio Environmental, Inc.  
**Email:**  
**Phone Number:**

**2. Air Impact Analysis:** Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable  
 not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions.

“Air Quality Indicators” were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

**Analysis Summary:**

<b>2018</b>			
<b>Pollutant</b>	<b>Action Emissions (ton/yr)</b>	<b>AIR QUALITY INDICATOR</b>	
		<b>Threshold (ton/yr)</b>	<b>Exceedance (Yes or No)</b>
NOT IN A REGULATORY AREA			
<b>VOC</b>	3.331	100	No

<b>NOx</b>	25.259	100	No
<b>CO</b>	13.502	100	No
<b>SOx</b>	0.056	100	No
<b>PM 10</b>	26.638	100	No
<b>PM 2.5</b>	0.898	100	No
<b>Pb</b>	0.000	100	No
<b>NH3</b>	0.049	100	No
<b>CO2e</b>	5880.9		

**2019 - (Steady State)**

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
<b>VOC</b>	0.000	100	No
<b>NOx</b>	0.000	100	No
<b>CO</b>	0.000	100	No
<b>SOx</b>	0.000	100	No
<b>PM 10</b>	0.000	100	No
<b>PM 2.5</b>	0.000	100	No
<b>Pb</b>	0.000	100	No
<b>NH3</b>	0.000	100	No
<b>CO2e</b>	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

\_\_\_\_\_  
Jim McClain, President Solutio Environmental, Inc.

\_\_\_\_\_  
DATE

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## 1. General Information

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### - Action Location

**Base:** MOUNTAIN HOME AFB

**County(s):** Elmore

**Regulatory Area(s):** NOT IN A REGULATORY AREA

- **Action Title:** Establishment of a Sustainable Water Supply for Mountain Home Air Force Base

- **Project Number/s (if applicable):** DOI-BLM-ID-B011-2017-0002-EA

- **Projected Action Start Date:** 1 / 2018

### - Action Purpose and Need:

The purpose of the Proposed Action is to establish a long-term, sustainable water supply for Mountain Home AFB, which supports an average population of approximately 7,000 military and civilian men and women each day

### - Action Description:

The proposed project consists of establishing a new sustainable water supply conveyed via predominantly linear underground infrastructure to a proposed Water Treatment Facility that would be established within the base boundary. The USAF and BLM have collaborated to prepare an EA that accommodates directives of both organizations (e.g., 32 CFR 989, Environmental Impact Analysis Process, and 43 CFR 46. Implementation of the National Environmental Policy Act of 1969).

This EA analyzes the following alternatives:

- Alternative A: No Action
- Alternative B: Proposed Action (Eastern Alignment)
- Alternative C: BLM Preferred Alternative (Western Alignment) - Alternative C to be analyzed in Alternative 1 in ACAM file

The CEQ requires an assessment of potential adverse and beneficial environmental consequences that could result from implementation of potentially effective and reasonably feasible alternatives that would achieve the purpose and need of the Proposed Action, and that the No Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented. Details related to the Proposed Action and its alternatives, including the No Action Alternative, are provided below.

**- Point of Contact**

**Name:** Jim McClain  
**Title:** President Solutio Environmental, Inc.  
**Organization:** Solutio Environmental, Inc.  
**Email:**  
**Phone Number:**

**- Activity List:**

	<b>Activity Type</b>	<b>Activity Title</b>
2.	Construction / Demolition	Intake and Pump Station Staging/Site Preparation
3.	Construction / Demolition	Intake and Pump Station Surface Distributing Activities
4.	Construction / Demolition	Intake and Pump Station Concrete placement
5.	Construction / Demolition	Pipeline Construction Staging/Site Preparation
6.	Construction / Demolition	Pipeline Surface Disturbing Constructions (Trenching)
7.	Construction / Demolition	Pipeline Construction Concrete Placement and Appurtenances

## **2. Construction / Demolition**

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### **2.1 General Information & Timeline Assumptions**

**- Activity Location**

**County:** Elmore  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Intake and Pump Station Staging/Site Preparation

**- Activity Description:**

Roadway Enhancement and Powerline Installation

Area of Site to be Graded:  
Assume 2 Acres = 87120 ft<sup>2</sup>

Given: Vehicle usage as per Table 2-2.

Other Assumptions:  
2 generators to power equipment

**- Activity Start Date**

**Start Month:** 1  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 1  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.051044
SO <sub>x</sub>	0.000756
NO <sub>x</sub>	0.346035
CO	0.234530
PM 10	0.413356

Pollutant	Total Emissions (TONs)
PM 2.5	0.013352
Pb	0.000000
NH <sub>3</sub>	0.000077
CO <sub>2</sub> e	75.2

## 2.1 Site Grading Phase

### 2.1.1 Site Grading Phase Timeline Assumptions

**- Phase Start Date**

**Start Month:** 1  
**Start Quarter:** 1  
**Start Year:** 2018

**- Phase Duration**

**Number of Month:** 0  
**Number of Days:** 14

### 2.1.2 Site Grading Phase Assumptions

**- General Site Grading Information**

**Area of Site to be Graded (ft<sup>2</sup>):** 87120  
**Amount of Material to be Hauled On-Site (yd<sup>3</sup>):** 0  
**Amount of Material to be Hauled Off-Site (yd<sup>3</sup>):** 0

**- Site Grading Default Settings**

Default Settings Used: No  
 Average Day(s) worked per week: 5

**- Construction Exhaust**

Equipment Name	Number Of Equipment	Hours Per Day
Bore/Drill Rigs Composite	1	8
Excavators Composite	1	8
Generator Sets Composite	2	8
Graders Composite	1	8
Off-Highway Trucks Composite	4	8
Rubber Tired Dozers Composite	1	8
Skid Steer Loaders Composite	1	8

**- Vehicle Exhaust**

Average Hauling Truck Capacity (yd<sup>3</sup>): 20  
 Average Hauling Truck Round Trip Commute (mile): 20

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

**2.1.3 Site Grading Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour)**

<b>Bore/Drill Rigs Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0539	0.0017	0.4174	0.5010	0.0099	0.0099	0.0048	165.00
<b>Excavators Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0848	0.0013	0.5180	0.5159	0.0249	0.0249	0.0076	119.77
<b>Generator Sets Composite</b>								

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0477	0.0006	0.3758	0.2785	0.0191	0.0191	0.0043	61.100
<b>Graders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
<b>Off-Highway Trucks Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1613	0.0026	1.0525	0.5634	0.0359	0.0359	0.0145	260.43
<b>Rubber Tired Dozers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2343	0.0024	1.8193	0.8818	0.0737	0.0737	0.0211	239.61
<b>Skid Steer Loaders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0252	0.0003	0.1798	0.2145	0.0073	0.0073	0.0022	30.334

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.385	000.002	000.323	003.939	000.011	000.010		000.025	00338.181
LDGT	000.470	000.003	000.550	005.514	000.013	000.011		000.026	00436.182
HDGV	000.837	000.005	001.388	017.877	000.028	000.025		000.044	00758.397
LDDV	000.143	000.003	000.154	002.364	000.004	000.004		000.008	00328.464
LDDT	000.334	000.004	000.499	004.644	000.007	000.006		000.008	00477.745
HDDV	000.632	000.013	006.525	002.102	000.222	000.204		000.029	01508.266
MC	002.434	000.003	000.862	014.024	000.028	000.025		000.053	00397.679

**2.1.4 Site Grading Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
 NE: Number of Equipment  
 WD: Number of Total Work Days (days)  
 H: Hours Worked per Day (hours)  
 EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)  
 2000: Conversion Factor pounds to tons

**- Vehicle Exhaust Emissions per Phase**

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
 HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
 HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
 WD: Number of Total Work Days (days)  
 WT: Average Worker Round Trip Commute (mile)  
 1.25: Conversion Factor Number of Construction Equipment to Number of Works  
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Worker Trips On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

### 3. Construction / Demolition

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#### 3.1 General Information & Timeline Assumptions

**- Activity Location**

**County:** Elmore  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Intake and Pump Station Surface Distributing Activities

**- Activity Description:**

Excavation to

Assume:  
 10ft X 10ft base

20 cubic yards of base material brought on site

**- Activity Start Date**

**Start Month:** 1  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 1  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.031226
SO <sub>x</sub>	0.000446
NO <sub>x</sub>	0.206222
CO	0.129933

Pollutant	Total Emissions (TONs)
PM 2.5	0.008168
Pb	0.000000
NH <sub>3</sub>	0.000039
CO <sub>2</sub> e	44.4

PM 10	0.008401
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### 3.1 Trenching/Excavating Phase

#### 3.1.1 Trenching / Excavating Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 1  
Start Quarter: 1  
Start Year: 2018

**- Phase Duration**

Number of Month: 0  
Number of Days: 5

#### 3.1.2 Trenching / Excavating Phase Assumptions

**- General Trenching/Excavating Information**

Area of Site to be Trenched/Excavated (ft<sup>2</sup>): 100  
Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 20  
Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

**- Trenching Default Settings**

Default Settings Used: No  
Average Day(s) worked per week: 5

**- Construction Exhaust**

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Off-Highway Trucks Composite	6	8
Rollers Composite	2	8
Rubber Tired Dozers Composite	1	8

**- Vehicle Exhaust**

Average Hauling Truck Capacity (yd<sup>3</sup>): 20  
Average Hauling Truck Round Trip Commute (mile): 20

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

**3.1.3 Trenching / Excavating Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour)**

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.609	000.007	000.673	005.393	000.017	000.015		000.033	00366.292
LDGT	000.779	000.010	001.153	008.233	000.018	000.016		000.034	00488.279
HDGV	001.302	000.015	003.117	025.841	000.041	000.037		000.045	00755.112
LDDV	000.268	000.003	000.324	003.377	000.006	000.006		000.008	00371.129
LDDT	000.568	000.005	000.865	006.852	000.008	000.008		000.008	00577.978
HDDV	000.889	000.014	009.424	002.889	000.372	000.342		000.030	01559.636
MC	002.500	000.008	000.881	015.202	000.028	000.025		000.050	00397.107

**3.1.4 Trenching / Excavating Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
 NE: Number of Equipment  
 WD: Number of Total Work Days (days)  
 H: Hours Worked per Day (hours)  
 EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)  
 2000: Conversion Factor pounds to tons

**- Vehicle Exhaust Emissions per Phase**

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
 HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
 HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
 WD: Number of Total Work Days (days)  
 WT: Average Worker Round Trip Commute (mile)  
 1.25: Conversion Factor Number of Construction Equipment to Number of Works  
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>VE</sub>: Worker Trips Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Worker Trips On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

## 4. Construction / Demolition

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### 4.1 General Information & Timeline Assumptions

**- Activity Location**

**County:** Elmore  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Intake and Pump Station Concrete placement

**- Activity Description:**

Assume:  
 10 ft X 10 ft

**- Activity Start Date**

**Start Month:** 2  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 2  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.165457
SO <sub>x</sub>	0.002579
NO <sub>x</sub>	1.067061
CO	0.653688
PM 10	0.038002

Pollutant	Total Emissions (TONs)
PM 2.5	0.037988
Pb	0.000000
NH <sub>3</sub>	0.000229
CO <sub>2</sub> e	258.2

### 4.1 Building Construction Phase

#### 4.1.1 Building Construction Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 2  
 Start Quarter: 1  
 Start Year: 2018

**- Phase Duration**

Number of Month: 1  
 Number of Days: 0

**4.1.2 Building Construction Phase Assumptions**

**- General Building Construction Information**

Building Category: Office or Industrial  
 Area of Building (ft<sup>2</sup>): 100  
 Height of Building (ft): 10  
 Number of Units: N/A

**- Building Construction Default Settings**

Default Settings Used: No  
 Average Day(s) worked per week: 5

**- Construction Exhaust**

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	8
Forklifts Composite	2	8
Off-Highway Trucks Composite	10	8
Skid Steer Loaders Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

**- Vehicle Exhaust**

Average Hauling Truck Round Trip Commute (mile): 20

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

**- Vendor Trips**

Average Vendor Round Trip Commute (mile): 40

**- Vendor Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**4.1.3 Building Construction Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour)**

<b>Cranes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1012	0.0013	0.7908	0.4059	0.0318	0.0318	0.0091	128.85
<b>Forklifts Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0371	0.0006	0.2186	0.2173	0.0101	0.0101	0.0033	54.479
<b>Off-Highway Trucks Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1613	0.0026	1.0525	0.5634	0.0359	0.0359	0.0145	260.43
<b>Skid Steer Loaders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0252	0.0003	0.1798	0.2145	0.0073	0.0073	0.0022	30.334
<b>Tractors/Loaders/Backhoes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.385	000.002	000.323	003.939	000.011	000.010		000.025	00338.181
LDGT	000.470	000.003	000.550	005.514	000.013	000.011		000.026	00436.182
HDGV	000.837	000.005	001.388	017.877	000.028	000.025		000.044	00758.397
LDDV	000.143	000.003	000.154	002.364	000.004	000.004		000.008	00328.464
LDDT	000.334	000.004	000.499	004.644	000.007	000.006		000.008	00477.745
HDDV	000.632	000.013	006.525	002.102	000.222	000.204		000.029	01508.266

MC	002.434	000.003	000.862	014.024	000.028	000.025		000.053	00397.679
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#### 4.1.4 Building Construction Phase Formula(s)

##### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

##### - Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft<sup>2</sup>)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.42 trip / 1000 ft<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

##### - Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

$V_{POL}$ : Vehicle Emissions (TONs)  
 $VMT_{WT}$ : Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
 $EF_{POL}$ : Emission Factor for Pollutant (grams/mile)  
 $VM$ : Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

**- Vender Trips Emissions per Phase**

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

$VMT_{VT}$ : Vender Trips Vehicle Miles Travel (miles)  
 $BA$ : Area of Building (ft<sup>2</sup>)  
 $BH$ : Height of Building (ft)  
(0.38 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.38 trip / 1000 ft<sup>3</sup>)  
 $HT$ : Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

$V_{POL}$ : Vehicle Emissions (TONs)  
 $VMT_{VT}$ : Vender Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
 $EF_{POL}$ : Emission Factor for Pollutant (grams/mile)  
 $VM$ : Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## **5. Construction / Demolition**

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### **5.1 General Information & Timeline Assumptions**

**- Activity Location**

**County:** Elmore  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Pipeline Construction Staging/Site Preparation

**- Activity Description:**

Assume:

15 staging areas at 30ft X 30ft each - Area of Site to be graded: (30ft X 30ft) X15 Sites = 13500 ft<sup>2</sup>

**- Activity Start Date**

**Start Month:** 1  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 9  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.874743
SO <sub>x</sub>	0.013601
NO <sub>x</sub>	5.647638
CO	3.460586
PM 10	1.410512

Pollutant	Total Emissions (TONs)
PM 2.5	0.201769
Pb	0.000000
NH <sub>3</sub>	0.001096
CO <sub>2</sub> e	1362.8

## 5.1 Site Grading Phase

### 5.1.1 Site Grading Phase Timeline Assumptions

**- Phase Start Date**

**Start Month:** 1  
**Start Quarter:** 1  
**Start Year:** 2018

**- Phase Duration**

**Number of Month:** 9  
**Number of Days:** 0

### 5.1.2 Site Grading Phase Assumptions

**- General Site Grading Information**

**Area of Site to be Graded (ft<sup>2</sup>):** 13500  
**Amount of Material to be Hauled On-Site (yd<sup>3</sup>):** 0

Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

**- Site Grading Default Settings**

Default Settings Used: No  
 Average Day(s) worked per week: 5

**- Construction Exhaust**

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Off-Highway Trucks Composite	6	8
Skid Steer Loaders Composite	1	8

**- Vehicle Exhaust**

Average Hauling Truck Capacity (yd<sup>3</sup>): 20  
 Average Hauling Truck Round Trip Commute (mile): 20

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HDTV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDTV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

**5.1.3 Site Grading Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour)**

Graders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
Off-Highway Trucks Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1613	0.0026	1.0525	0.5634	0.0359	0.0359	0.0145	260.43
Skid Steer Loaders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0252	0.0003	0.1798	0.2145	0.0073	0.0073	0.0022	30.334

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.385	000.002	000.323	003.939	000.011	000.010		000.025	00338.181
LDGT	000.470	000.003	000.550	005.514	000.013	000.011		000.026	00436.182
HDGV	000.837	000.005	001.388	017.877	000.028	000.025		000.044	00758.397
LDDV	000.143	000.003	000.154	002.364	000.004	000.004		000.008	00328.464
LDDT	000.334	000.004	000.499	004.644	000.007	000.006		000.008	00477.745
HDDV	000.632	000.013	006.525	002.102	000.222	000.204		000.029	01508.266
MC	002.434	000.003	000.862	014.024	000.028	000.025		000.053	00397.679

**5.1.4 Site Grading Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)  
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)  
 ACRE: Total acres (acres)  
 WD: Number of Total Work Days (days)  
 2000: Conversion Factor pounds to tons

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
 NE: Number of Equipment  
 WD: Number of Total Work Days (days)  
 H: Hours Worked per Day (hours)  
 EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)  
 2000: Conversion Factor pounds to tons

**- Vehicle Exhaust Emissions per Phase**

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
 HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
 HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

- V<sub>POL</sub>: Vehicle Emissions (TONs)
- VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)
- VM: Vehicle Exhaust On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V<sub>POL</sub>: Vehicle Emissions (TONs)
- VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

## **6. Construction / Demolition**

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### **6.1 General Information & Timeline Assumptions**

**- Activity Location**

- County:** Elmore
- Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Pipeline Surface Disturbing Constructions (Trenching)

**- Activity Description:**

Area to be trenched:  
Given 14.34 miles long  
Assume 4 feet wide

$$14.34 \text{ miles} \times 5280 \text{ ft/mile} \times 4 \text{ ft} = 302861$$

To haul on/off site:  
 $302861 \text{ ft}^2 \times 6.5 \text{ ft deep (given)} \times 10\% = 19196860 \text{ ft}^3 = 710995 \text{ yd}^3$

**- Activity Start Date**

**Start Month:** 2  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 9  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	1.895680
SO <sub>x</sub>	0.033640
NO <sub>x</sub>	16.015258
CO	7.576725
PM 10	24.692799

Pollutant	Total Emissions (TONs)
PM 2.5	0.561683
Pb	0.000000
NH <sub>3</sub>	0.047048
CO <sub>2</sub> e	3664.6

## 6.1 Trenching/Excavating Phase

### 6.1.1 Trenching / Excavating Phase Timeline Assumptions

**- Phase Start Date**

**Start Month:** 2  
**Start Quarter:** 1  
**Start Year:** 2018

**- Phase Duration**

**Number of Month:** 8  
**Number of Days:** 0

## 6.1.2 Trenching / Excavating Phase Assumptions

### - General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft<sup>2</sup>): 302861  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 710995  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 710995

### - Trenching Default Settings

Default Settings Used: No  
 Average Day(s) worked per week: 5

### - Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Forklifts Composite	2	8
Graders Composite	1	8
Off-Highway Trucks Composite	4	8
Other General Industrial Equipmen Composite	1	8
Rollers Composite	2	8
Skid Steer Loaders Composite	1	8

### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 20  
 Average Hauling Truck Round Trip Commute (mile): 20

### - Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

### - Worker Trips

Average Worker Round Trip Commute (mile): 20

### - Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

## 6.1.3 Trenching / Excavating Phase Emission Factor(s)

**- Construction Exhaust Emission Factors (lb/hour)**

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.609	000.007	000.673	005.393	000.017	000.015		000.033	00366.292
LDGT	000.779	000.010	001.153	008.233	000.018	000.016		000.034	00488.279
HDGV	001.302	000.015	003.117	025.841	000.041	000.037		000.045	00755.112
LDDV	000.268	000.003	000.324	003.377	000.006	000.006		000.008	00371.129
LDDT	000.568	000.005	000.865	006.852	000.008	000.008		000.008	00577.978
HDDV	000.889	000.014	009.424	002.889	000.372	000.342		000.030	01559.636
MC	002.500	000.008	000.881	015.202	000.028	000.025		000.050	00397.107

**6.1.4 Trenching / Excavating Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

- PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)
- 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
- ACRE: Total acres (acres)
- WD: Number of Total Work Days (days)
- 2000: Conversion Factor pounds to tons

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

**- Vehicle Exhaust Emissions per Phase**

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

- VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)
- HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)
- HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)
- HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

$V_{POL}$ : Vehicle Emissions (TONs)  
 $VMT_{VE}$ : Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
 $EF_{POL}$ : Emission Factor for Pollutant (grams/mile)  
VM: Vehicle Exhaust On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

$VMT_{WT}$ : Worker Trips Vehicle Miles Travel (miles)  
WD: Number of Total Work Days (days)  
WT: Average Worker Round Trip Commute (mile)  
1.25: Conversion Factor Number of Construction Equipment to Number of Works  
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

$V_{POL}$ : Vehicle Emissions (TONs)  
 $VMT_{VE}$ : Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
 $EF_{POL}$ : Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## **7. Construction / Demolition**

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### **7.1 General Information & Timeline Assumptions**

**- Activity Location**

**County:** Elmore  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Pipeline Construction Concrete Placement and Appurtenances

**- Activity Description:**

**- Activity Start Date**

**Start Month:** 2  
**Start Month:** 2018

**- Activity End Date**

**Indefinite:** False  
**End Month:** 9  
**End Month:** 2018

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.312576
SO <sub>x</sub>	0.004774
NO <sub>x</sub>	1.977009
CO	1.446327
PM 10	0.075236

Pollutant	Total Emissions (TONs)
PM 2.5	0.075201
Pb	0.000000
NH <sub>3</sub>	0.000609
CO <sub>2</sub> e	475.6

## 7.1 Building Construction Phase

### 7.1.1 Building Construction Phase Timeline Assumptions

**- Phase Start Date**

**Start Month:** 2  
**Start Quarter:** 1  
**Start Year:** 2018

**- Phase Duration**

**Number of Month:** 8  
**Number of Days:** 0

### 7.1.2 Building Construction Phase Assumptions

**- General Building Construction Information**

**Building Category:** Office or Industrial  
**Area of Building (ft<sup>2</sup>):** 100

Height of Building (ft): 1  
 Number of Units: N/A

- Building Construction Default Settings  
 Default Settings Used: No  
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Forklifts Composite	1	8
Off-Highway Trucks Composite	2	8
Skid Steer Loaders Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust  
 Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips  
 Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips  
 Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

### 7.1.3 Building Construction Phase Emission Factor(s)

#### - Construction Exhaust Emission Factors (lb/hour)

Forklifts Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0371	0.0006	0.2186	0.2173	0.0101	0.0101	0.0033	54.479
Off-Highway Trucks Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1613	0.0026	1.0525	0.5634	0.0359	0.0359	0.0145	260.43
Skid Steer Loaders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0252	0.0003	0.1798	0.2145	0.0073	0.0073	0.0022	30.334
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

#### - Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.385	000.002	000.323	003.939	000.011	000.010		000.025	00338.181
LDGT	000.470	000.003	000.550	005.514	000.013	000.011		000.026	00436.182
HDGV	000.837	000.005	001.388	017.877	000.028	000.025		000.044	00758.397
LDDV	000.143	000.003	000.154	002.364	000.004	000.004		000.008	00328.464
LDDT	000.334	000.004	000.499	004.644	000.007	000.006		000.008	00477.745
HDDV	000.632	000.013	006.525	002.102	000.222	000.204		000.029	01508.266
MC	002.434	000.003	000.862	014.024	000.028	000.025		000.053	00397.679

### 7.1.4 Building Construction Phase Formula(s)

#### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

#### - Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
BA: Area of Building (ft<sup>2</sup>)  
BH: Height of Building (ft)  
(0.42 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.42 trip / 1000 ft<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
WD: Number of Total Work Days (days)  
WT: Average Worker Round Trip Commute (mile)  
1.25: Conversion Factor Number of Construction Equipment to Number of Works  
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

**- Vender Trips Emissions per Phase**

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT<sub>VT</sub>: Vender Trips Vehicle Miles Travel (miles)  
BA: Area of Building (ft<sup>2</sup>)

BH: Height of Building (ft)  
(0.38 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.38 trip / 1000 ft<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VT</sub>: Vender Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons