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Tuanna Pipeline Extension and Storage Tank

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ABBREVIATIONS

AUM: animal unit month

BLM: Bureau of Land Management

CEQ: Council on Environmental Quality

CFR: Code of Federal Regulations

CIAA: cumulative impact analysis areas

DEQ: Idaho Department of Environmental Quality

EA: environmental assessment

EIS: environmental impact statement

ESA: Endangered Species Act

ESR: emergency stabilization and rehabilitation

FLPMA: Federal Land Policy and Management Act

FONSI: finding of no significant impact

GIS: geographic information system

GWW: Gateway West

HMA: herd management area

ID: interdisciplinary

IPaC: Information for Planning and Conservation

JFO: Jarbidge Field Office

MBTA: Migratory Bird Treaty Act

MRLC: Multi-Resolution Land Characteristics Consortium

MUA: multiple use area

NEPA: National Environmental Policy Act

NLCD: National Land Cover Database

NRCS: Natural Resources Conservation Service

RFFA: reasonably foreseeable future action

RMP: resource management plan

ROW: right-of-way

SGPA: sage-grouse planning area

TNR: temporary non-renewable

U.S.: United States

USC: United States Code

USFWS: U.S. Fish and Wildlife Service

CHAPTER 1. PURPOSE AND NEED

1.1. Introduction

This environmental assessment (EA) has been prepared to analyze the potential effects of the U.S. Department of the Interior Bureau of Land Management (BLM) Jarbidge Field Office's (JFO's) proposal to construct an underground water pipeline extension and an aboveground water storage tank (the project) on public land. The project would be approximately 18 miles southeast of Glenns Ferry, Idaho, in Owyhee County, and would be managed by the BLM.

This EA is a site-specific analysis of potential effects that could result from the implementation of the Proposed Action or its alternatives. An EA assists the BLM in project planning, ensuring compliance with the National Environmental Policy Act of 1969 (NEPA), and determining whether any *significant* effects could result from the analyzed actions. (*Significance* is defined by the Council on Environmental Quality [CEQ] regulations for implementing NEPA, and is found in 40 Code of Federal Regulations [CFR] 1508.27.) An EA provides evidence for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). A FONSI is a document that presents the reasons why implementation of the selected alternative would not result in significant environmental effects beyond those already addressed in the BLM's *Jarbidge Record of Decision and Approved Resource Management Plan*, hereafter referred to as the JFO RMP (BLM 2015a). If the decision maker determines that the project would result in significant effects, an EIS and decision record would be prepared for the project.

1.2. Background

The BLM proposes to construct a water storage tank on an existing underground water pipeline and to extend the pipeline to an existing well (approximately 0.6 mile on BLM-administered land and 1.0 mile on state land) (Figure 1-1). The project area is approximately 18 miles southeast of Glenns Ferry, Idaho. The proposed pipeline extension and water storage tank are within the Twin Butte grazing allotment (Twin Butte Allotment). The proposed pipeline extension is also within BLM's Saylor Creek Herd Management Area (HMA). The wild horses in the Saylor Creek HMA rely solely on artificial water systems for drinking water, because there are no naturally occurring perennial water sources (e.g., streams and springs) in the HMA. Because of the lack of water storage in the project area and the unreliability of the existing pipeline, BLM personnel have had to haul water to the wild horses. Over the past 10 years, many problems with the current water system have occurred, including the following:

- The fuse/breaker at the top of a power pole would go out, causing the well pump to lose power and shut down. This, in turn, would result many times in air lock of the pipeline. Idaho Power would have to come out and reset the breaker. BLM employees would then spend days trying to bleed air out of the system. Water would also need to be delivered to the horses by a water tender.
- The grazing permittees have replaced the well pump several times and have also dug the well deeper. When the pump goes down, it would result many times in air lock of the pipeline, and BLM employees would spend days trying to bleed air out of the system. Water would also need to be delivered to the horses by a water tender.
- The current closed-top storage tank within close proximity to the proposed open-top storage tank has been unreliable because over many years a portion of the tank has likely filled with rust and silt, making it difficult to fill the tank and use any water that was stored in the tank.
- The pipeline has had chronic leaking problems over the past 10–15 years. The BLM and the permittee have had to replace 9 miles of the pipeline.

This project would provide water storage for the pipeline and increase the reliability of supplying drinking water for the wild horses, as well as for livestock. The proposed water storage tank would also provide an additional water source for fire suppression activities.

1.3. Purpose and Need for the Action

The purpose of the BLM proposal is to increase water storage and pipeline reliability to supply drinking water to wild horses and livestock in the Twin Butte Allotment and Saylor Creek HMA. The proposed storage tank would also provide an additional water source for fire suppression activities. The need for the action stems from the current lack of water storage capacity and unreliability of the existing pipeline, as described in section 1.2. Furthermore, the BLM has a responsibility, under the Federal Land Policy and Management Act of 1976 (FLPMA) to "manage, maintain and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values" (43 United States Code [USC] 1902(b)(2)). The Wild Free-Roaming Horses and Burros Act of 1971, as amended by the Public Rangelands Improvement Act of 1978, also establishes the BLM's need to engage in rangeland improvements such as providing water storage tanks and ensuring the reliability of water pipelines (Public Law 92-195).

1.4. Decision to be Made

The decision the BLM will make based on the NEPA analysis is whether or not to construct a pipeline extension and water storage tank.

1.5. Bureau of Land Management Responsibilities and Relationship to Planning

The BLM is responsible for the preparation of this EA, which was prepared in conformance with the policy guidance provided in the BLM NEPA Handbook H-1790-1 (BLM 2008) and CEQ regulations for implementing NEPA (40 CFR 1500–1508). This EA assists the BLM in project planning and in determining whether the Proposed Action is consistent with BLM policies. Pursuant to NEPA (40 CFR 1502.13), this EA has been prepared to provide sufficient evidence and analysis for 1) determining whether to prepare a more detailed EIS or 2) issuing a FONSI.

1.6. Conformance with Bureau of Land Management Land Use Plan

The JFO RMP was revised in September 2015. The JFO RMP objective for range infrastructure is to "manage (e.g., maintain, improve, build, realign, remove) range infrastructure at levels appropriate to the amount of livestock use to provide for efficient management of livestock grazing allotments and support fire suppression and resource objectives" (BLM 2015a). For livestock grazing, the JFO RMP provides for the "construction of new pipelines…where they will help meet resource objectives" (LG-MA-29). The proposed project is also consistent with JFO RMP's wildland fire management direction to "improve water availability for fire suppression" (WFM-MA-18) and "design water developments for fire suppression" including pipelines, water storage tanks, and draft sites (WFM-MA-19). Finally, the project is consistent with wild horse management direction to "increase the reliability of artificial water sources for wild horses" within the Saylor Creek HMA (WH-MA-4).

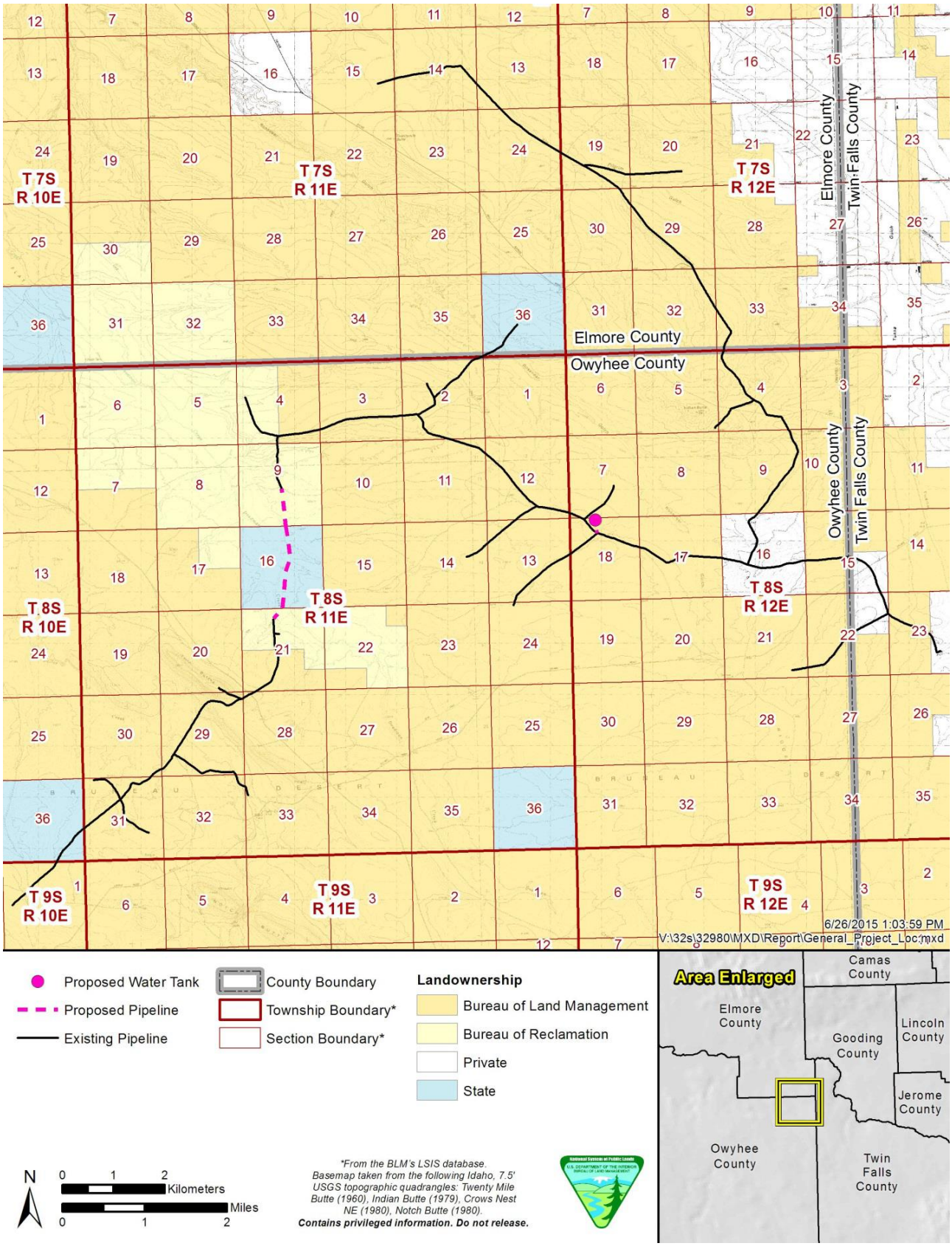

Figure 1-1. Location of the proposed pipeline extension and water storage tank.

1.7. Relationship to Statutes, Regulations, or Other Plans

The proposed project will be processed and evaluated under the BLM statutory mandates and authority governing federal land leasing and other federal authorities listed below.

- Multiple-Use Sustained Yield Act of 1960
- NEPA, as amended
- FLPMA (BLM's multiple-use mandate)
- Wild Free-Roaming Horses and Burros Act of 1971

Other than BLM land use planning, no other federal land use plans apply to the alternatives presented in Chapter 2. The proposed project also conforms with *The Owyhee County Comprehensive Plan*, which has a land use objective to "conserve and encourage the best of the County's historic and ranching and farming tradition and way of life" (Owyhee County 2010). The proposed project would help to conserve and encourage the traditional ranching and livestock grazing way of life in Owyhee County by providing a reliable source of water for livestock.

1.8. Identification of Issues

1.8.1. Internal Scoping

A BLM interdisciplinary (ID) team formulated potential issues associated with the Proposed Action and completed a checklist on February 23, 2015.

1.8.2. Public Scoping

The BLM sent a scoping letter to interested members of the public on March 16, 2015. Three comment letters were received in response to the scoping letter. The commenters comprised the Idaho Department of Environmental Quality (DEQ), Idaho Conservation League, and the Owyhee County Board of Commissioners. The DEQ expressed concerns about potential impacts to surface water. The Idaho Conservation League expressed a desire for the BLM to consider a range of alternatives to reduce any potential impacts of water diversion on plant and wildlife communities. The Owyhee County Board of Commissioners expressed support for the project.

1.8.3. Issues

The following potential issues were identified during the scoping process:

- **Fuels and Fire Management:** How would the project impact BLM's fuels and fire management capabilities?
- **Livestock Grazing:** How would the project impact the acreage available for livestock grazing and the reliability of water sources for livestock?
- **Soils:** How would surface disturbance from construction of the project impact soils?
- **Vegetation:** How would surface disturbance from construction of the project impact vegetation, including vegetation loss and the potential for the spread of invasive and non-native species?
- **Wildlife, including Migratory Birds and Special-Status Species:** How would construction of the project impact wildlife habitat and wildlife behavior?
- **Wild Horses:** How would the project impact acreage available for wild horses and the reliability of water sources for wild horses?

The following potential issues were considered but dismissed from detailed analysis:

- **Water Resources/Quality:** The proposed pipeline would cross Deadman Creek, which is an ephemeral stream that occasionally has water during spring runoff. If the pipeline extension and water storage tank are constructed, stipulations would not allow vehicle fueling or maintenance in areas where water quality may be impacted. The pipeline would be buried 5–6 feet underneath the creek and would be monitored and maintained to avoid erosion.
- **Air Quality:** The pipeline extension and water storage tank would create 8.6 acres of surface disturbance. This surface disturbance would result in a small amount of fugitive dust affecting air quality. Vehicle and construction equipment use during the approximately 1–3 weeks of pipeline construction and during the approximately 2 weeks of water storage tank construction would also create a small amount emissions that affect air quality.
- **Cultural Resources:** Archaeological inventories indicate no surface expressions of cultural resources in the project footprint. As a result, impacts to cultural resources from the proposed project would not be expected.
- **Special-Status Plant Species:** Special-status species are species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed and federally proposed species that are protected under the Endangered Species Act (ESA), species considered as candidates for such listing by the USFWS, BLM sensitive species, and species that are state protected. The USFWS Information for Planning and Conservation (IPaC) database (USFWS 2015) and the BLM Idaho special-status plant list (for the JFO of the BLM Twin Falls District) (BLM 2015b) were reviewed for special-status species in the area affected by the project. No special-status plant species were identified with habitat in or near the project area. The project area is outside potential habitat for slickspot peppergrass (*Lepidium papilliferum*) due to slope and soil type. The nearest occupied slickspot peppergrass habitat is 27 miles to the southwest. The soils in the project area also do not support Janish's penstemon (*Penstemon janishiae*) and calcareous buckwheat (*Eriogonum ochrocephalum*), which are found approximately 10 miles to the north.
- **Greater Sage-Grouse (*Centrocercus urophasianus*):** The nearest occupied sage-grouse lek (2O-831) is approximately 13.5 miles to the west. Repeated wildfires have burned the northern part of the JFO planning area, greatly reducing sagebrush habitat. Most of the remaining sagebrush habitat lacks an understory suitable for sage-grouse nesting and brood rearing. The proposed project would not cross any large (>20 acres) islands of sagebrush habitat. Because most (95%) of the vegetation cover in the project area is grassland/herbaceous, no impacts to sage-grouse from the project would be expected.
- **Wastes (Hazardous or Solid):** There are no wastes (hazardous or solid) present in the project area. Any wastes used or produced during the construction of the project would be handled and disposed of in accordance with applicable regulations.
- **Wetlands and Riparian Zones:** The proposed pipeline would cross Deadman Creek, which is an ephemeral stream that occasionally has water during spring runoff. The limited episodic flows do not support riparian or wetland vegetation.
- **Geology and Mineral Resources:** Implementation of the project would not prohibit future use of mineral resources because all valid and existing mineral rights would remain intact.
- **Lands and Access:** Access to public lands would remain open.
- **Paleontology:** There is no indication of fossil resources on the ground surface in the project area. Per BLM Manual Section 8270 – Paleontological Resource Management (BLM 1998), paleontological resources uncovered by the 7.0 acres of disturbance caused by the burial of the proposed pipeline extension would need to be protected from inadvertent damage or destruction.

The Proposed Action would have no impact on the following resources because these resources are not present in the project area:

- **Wild and Scenic Rivers:** No wild and scenic rivers are in the area that would be affected by the project (BLM 2015a).
- **Wilderness:** No designated wilderness areas are in the area that would be affected by the project (BLM 2015a).
- **Environmental Justice:** There are no communities in the area that would be affected by the project; therefore, there are no environmental justice communities in the area that would be affected by project.
- **Farmlands, Prime and Unique:** According to applicable Natural Resources Conservation Service (NRCS) data, no prime or unique farmlands are present in the area that would be affected by the project.
- **Floodplains:** No floodplains, as defined by Executive Order 11988, are present in the area that would be affected by the project.
- **Areas of Critical Environmental Concern (ACEC):** No ACECs are in the area that would be affected by the project. The nearest ACEC is Sandpoint ACEC, which lies more than 18 miles to the northwest. Sandpoint ACEC would not be affected by the project (BLM 2015a).

CHAPTER 2. DESCRIPTION OF THE ALTERNATIVES

2.1. Introduction

This EA analyzes the potential effects of implementing Alternative A (the No Action Alternative) and Alternative B (the Proposed Action). The No Action Alternative is considered and analyzed to provide a baseline against which to compare the impacts of the Proposed Action. No other alternatives were brought forward for detailed analysis.

2.2. Alternative A: No Action

Under the No Action Alternative, the BLM would not construct the water storage tank nor extend the pipeline to an existing well. As a result, the BLM would continue to haul water to the area to supply drinking water to the wild horses in the HMA as well. Hauling water to the area for fire suppression activities, as needed, would continue to be necessary. The BLM currently hauls water in emergency situations to the area for wild horse consumption. In the past 10 years, there have been two periods when water hauling was needed. During both of these periods, the water hauling occurred twice a day for 2 weeks. When water hauling occurs, water tenders from the BLM fire program are used to fill the existing troughs along the existing pipelines.

2.3. Alternative B: Proposed Action

Under the Proposed Action, the BLM would extend an underground water pipeline to an existing well (including construction, operation, and maintenance) and construct, operate, and maintain a 40,000-gallon water storage tank that would be connected to an existing underground water pipeline. Details associated with the construction, operation, and maintenance of the pipeline extension and water storage tank are provided in section 2.3.1 and section 2.3.2, respectively. Section 2.3.3 enumerates design features intended to avoid or reduce impacts to resources.

The section of proposed pipeline on state land in Section 16, Township 8 South, Range 11 East would be built to the same specifications and using the same methods as the proposed pipeline extension on BLM land.

2.3.1. Pipeline Extension

2.3.1.1. Pipeline Extension Location and Overview

The proposed pipeline extension would occur on approximately 0.6 mile of BLM land and approximately 1.0 mile of state land. The project would occur approximately 18 miles southeast of Glenns Ferry, Idaho, in Owyhee County (Figure 2-1). The legal location of the proposed pipeline extension is Sections 9, 16, and 21, Township 8 South, Range 11 East Boise Meridian.

The proposed pipeline construction would start in the southeast quarter of the northeast quarter of Section 9, and would travel in a southerly direction through state land, ending in Section 21.

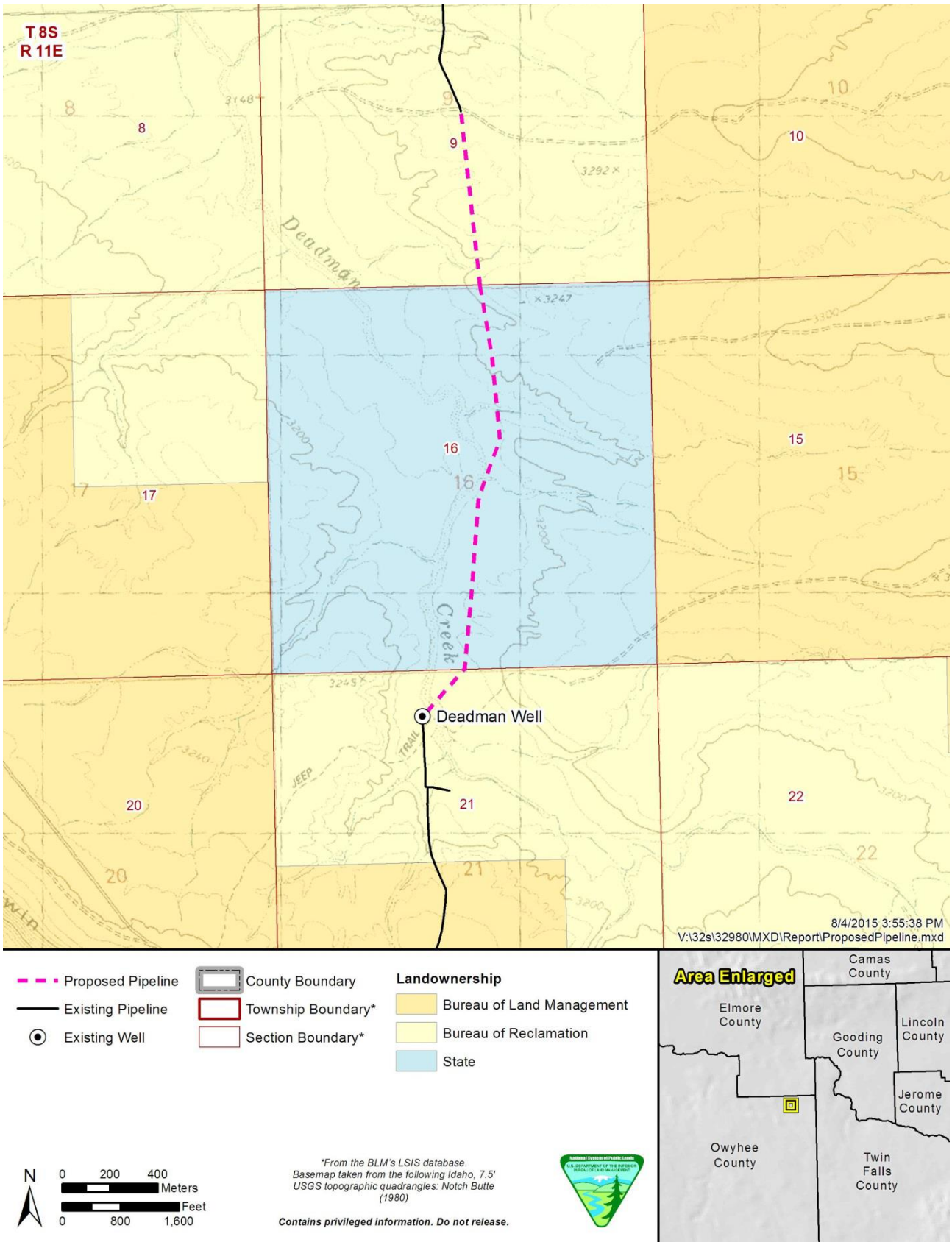

Figure 2-1. Location of the proposed pipeline extension.

2.3.1.2. Pipeline Extension Construction and Rehabilitation

The construction of the pipeline extension would take 1–3 weeks to complete, depending on the equipment that is used. Generally, such construction is completed using a backhoe or a road grader with a tilted blade, or a combination of the two. A road grader is typically the preferred method, unless the ground is too rocky. The construction process typically takes less time with a road grader than with a backhoe. If the ground is too rocky for a road grader, a backhoe would be needed. The temporary surface disturbance from the trenching for the pipeline extension would range from 12 to 18 inches (using a backhoe) up to a few feet wide (using a road grader). Where the pipeline crosses Deadman Creek, it would be buried 5–6 feet deep and would be monitored and maintained to prevent erosion. A 35-foot-wide temporary work area is typically needed for pipeline installation. Existing routes would be used to access the project area. Once the pipeline is installed, a two-track road would be authorized for long-term project maintenance of the pipeline.

Rehabilitation of the site would involve reseeding the disturbed area with a BLM-approved seed mix of crested wheatgrass (*Agropyron cristatum*) or Siberian wheatgrass (*Agropyron fragile*).

2.3.1.3. Pipeline Extension Operation and Maintenance

The pipeline extension would be accessed for operation and maintenance activities using an approximately 1.8-mile-long two-track road that would be authorized and created by the overland travel during the construction phase. BLM staff conduct weekly checks of the wild horses in the Saylor Creek HMA, during which they typically check the condition of the pipeline as well (e.g., checking for leaks). Major maintenance on underground water pipelines is typically needed every 20–30 years.

2.3.2. Water Storage Tank

2.3.2.1. Water Storage Tank Location and Overview

The proposed water storage tank would be constructed on BLM land approximately 18 miles southeast of Glenns Ferry, Idaho, in Owyhee County. Approximately 0.2 mile of water pipeline would be spurred from an existing water pipeline to the proposed water storage tank. The legal location of the proposed water storage tank and pipeline spur is Section 18, Township 8 South, Range 12 East Boise Meridian (Figure 2-2).

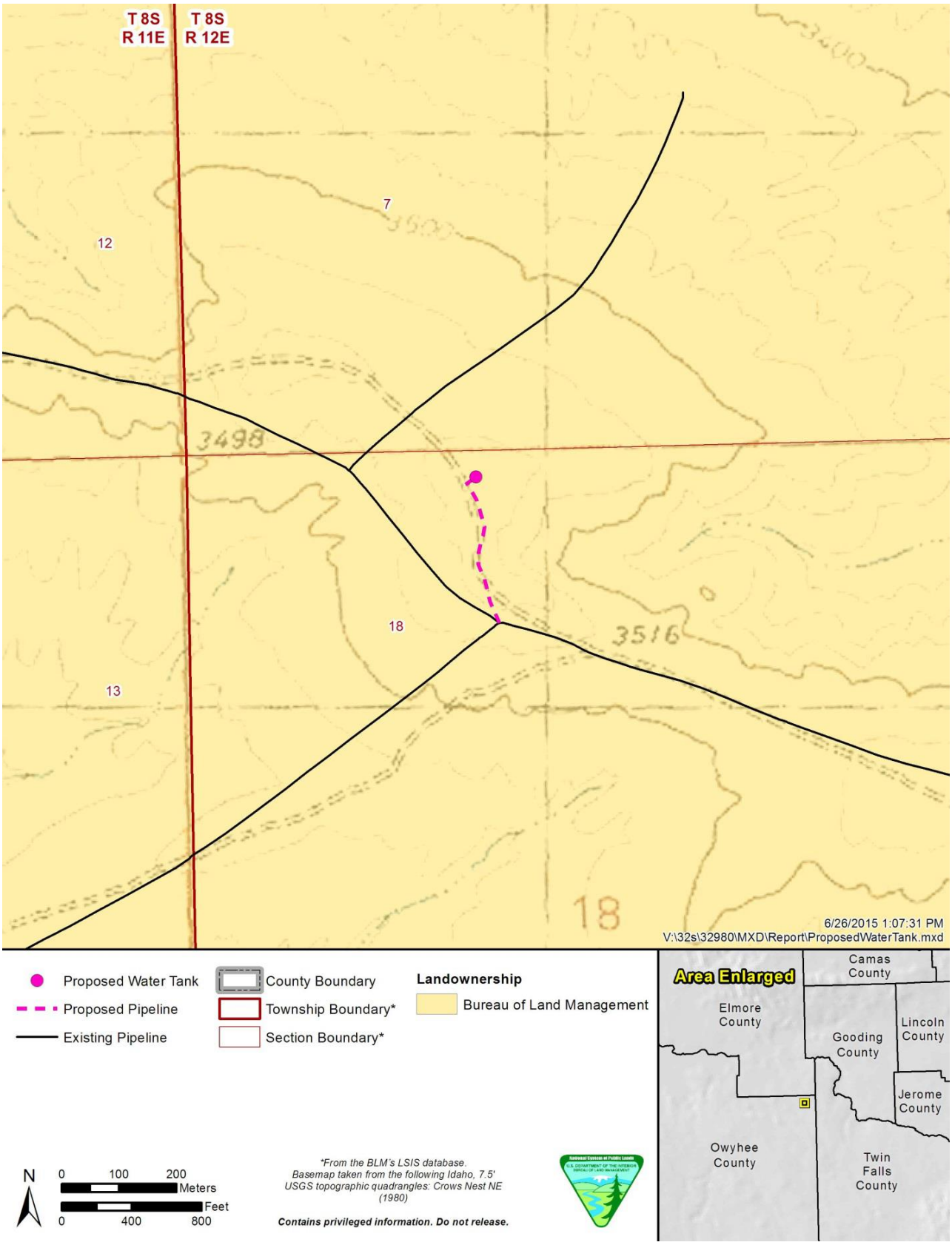

Figure 2-2. Location of the proposed water storage tank and associated spurred pipeline.

2.3.2.2. Water Storage Tank Construction and Rehabilitation

The proposed 40,000-gallon water storage tank would take approximately 2 weeks to construct. An existing access road would be used to access the site where the tank would be constructed. A road grader would be used to level and move dirt at the construction site. A concrete pad would then be poured, and the storage tank would be constructed upon it. The storage tank would be constructed with corrugated, galvanized steel wall sheets that would be bolted together on-site. It would measure 39 feet in diameter and 7 feet 3 inches in height, and would have an open top. The temporary work area would be approximately 120 feet in diameter. The tank would be built approximately 300 feet north of the existing water pipeline. A buried spur pipeline would lead from the existing pipeline to the tank and back. Both the inlet and outlet pipelines would be placed in the same trench. Construction methods and the nature of the temporary surface disturbance associated with the connecting pipeline would be the same as those described for the pipeline extension in section 2.3.1.2, above. Water in the pipeline would be temporarily shut off, but this would be very short term, would be coordinated with the grazing permittees, and would only occur when plumbing the new tank to the existing pipeline.

2.3.2.3. Water Storage Tank Operation and Maintenance

An existing access road in the area would be used to access the water storage tank for operation and maintenance purposes. Maintenance on the water storage tank would be conducted on an as-needed basis. Major maintenance on such tanks is typically needed approximately every 15 years.

2.3.3. Design Features

If the project is approved, the following design features would be required to reduce potential impacts of the Proposed Action and implement applicable restrictions stated in the JFO RMP:

- Bird ladders would be installed in the proposed water storage tank to allow birds that have fallen into the tank or troughs to escape.
- Construction activities would be prohibited from March 15 to July 30 to avoid impacts to migratory birds during the breeding/nesting season.
- Vehicles used during construction activities would carry fire suppression equipment consisting of at least one fire extinguisher and shovel per vehicle.
- Construction equipment and vehicles would be required to be washed prior to entering and exiting the project area to help prevent the spread of noxious weeds.
- Noxious weed control would be required in disturbed areas following construction. Disturbed areas would be monitored for the presence of state-listed noxious weeds. If found, weeds would be treated using BLM-approved chemicals or other methods.
- Erosion control structures would be used on areas of the proposed pipeline extension where the slope is prone to erosion and the soils have a moderate or severe potential for wind erosion or have a medium or high potential for water erosion. Straw wattles would be placed perpendicular to the slope along the pipeline where the slope exceeds 10%. Wattles would be located no more than 200 feet apart on slopes between 10% and 20%. On steeper slopes (20% or more) the distance between wattles would be approximately 100 feet.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environment and trends of the area that would be affected by the No Action Alternative and the Proposed Action, and discloses the potential impacts of the alternatives. Resources associated with supplemental authorities are listed in Appendix 1 of the BLM NEPA Handbook H-1790-1 (BLM 2008). Resources that were determined to be unaffected by the Proposed Action are summarized in section 1.8.3. Section 1.8.3 is based on the results of the BLM's ID team checklist, which can be found in Appendix A. The elimination of non-relevant resources is consistent with 40 CFR 1500.4. Resources or uses that may be affected by the No Action Alternative and the Proposed Action are analyzed in the remainder of this chapter.

3.1. General Setting

The project area is in the BLM JFO planning area. The planning area is in the northern part of the Basin and Range Province of the Great Basin in Nevada and in the Snake River Plain, which is in the southern portion of the Columbia River Basin in Idaho. The planning area is known for its geology of broad, gently rolling plateau lands with deeply incised rivers, which provide a variety of scenic values and habitats used by numerous fish, plant, and wildlife species. Most of the planning area has burned in repeated wildfires in the last 30 years and supports seeded grasslands resulting mostly from fire rehabilitation projects. Sagebrush steppe is generally limited to the southern half of the planning area. Water availability influences the distribution of plant communities and is based on the rain shadow effect, distribution of soil types, slope, and aspect. Ecologically dry lowland areas support salt desert shrub communities, which change to sagebrush steppe with increasing elevation and moisture. At higher elevations, patches and stringers of aspen (*Populus tremuloides*) and mountain mahogany (*Cercocarpus ledifolius*) are present. Surface water in the planning area is generally limited to scattered perennial springs and creeks. Creeks are typically located in the deeper draws and canyons (BLM 2015a). There are no naturally occurring sources of surface water in the project area.

3.2. Fuels and Fire Management

The analysis area for fuels and fire management–related issues is the Saylor Creek East Multiple Use Area 7 (MUA-7). This area covers 446,142 acres and was chosen because it contains the project area and represents a geographic boundary within which to analyze potential direct and indirect impacts to fuels and fire management resulting from the Proposed Action (Figure 3-1).

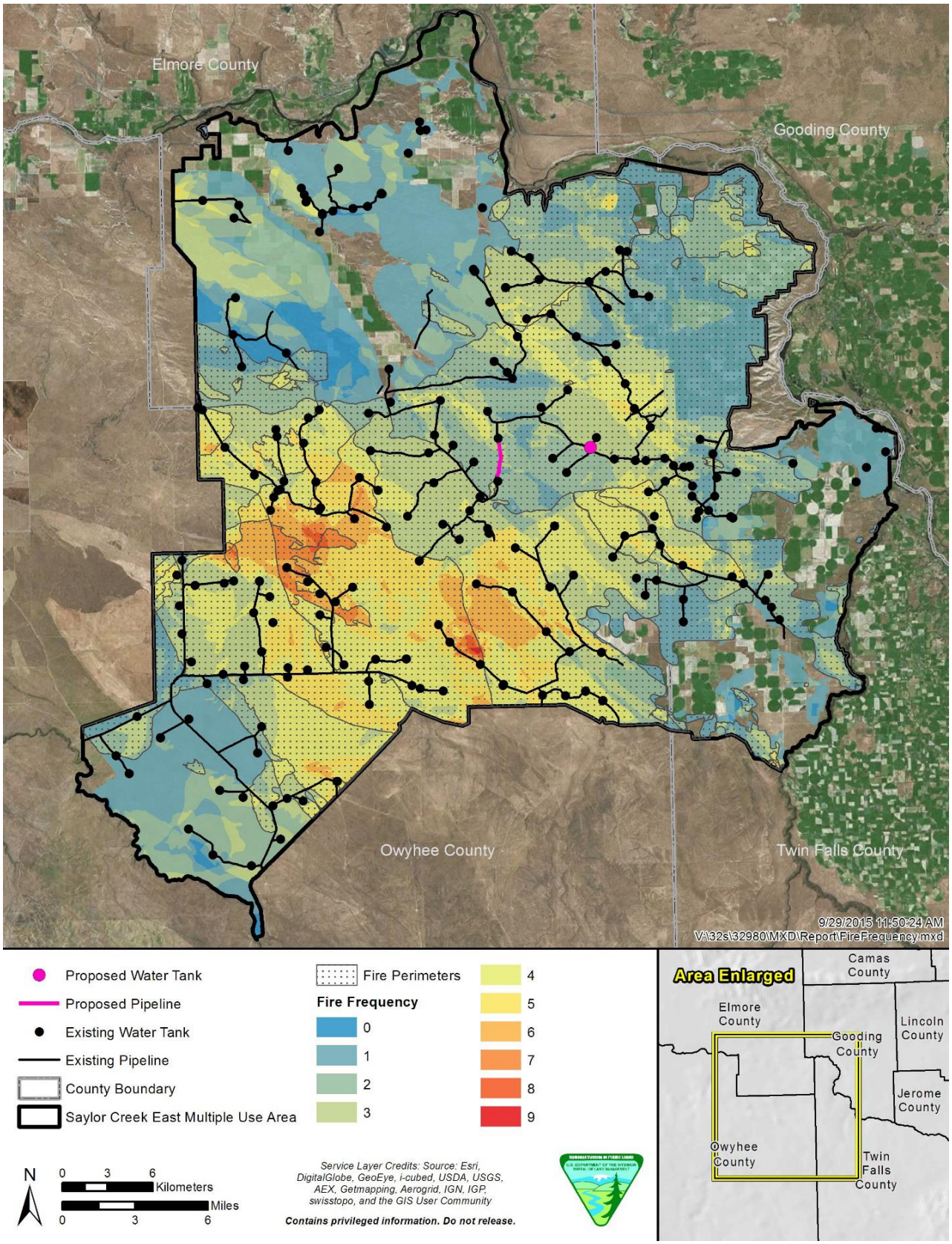

Figure 3-1. Fire perimeters and frequencies in the fuels and fire management analysis area from 2005 to 2014 (MUA 7).

3.2.1. Affected Environment

Historically, MUA 7 has experienced high fire occurrence with very large fires (BLM 2015a). Several large fires have occurred in the Saylor Creek East MUA during the past decade; examples include the Clover Fire in 2005, the Long Butte Fire in 2010, and the Kinyon Road Fire in 2012. Table 3-1 lists the fires that have occurred in MUA 7 over the past decade. Figure 3-1 shows the boundary of the Saylor Creek East MUA in relation to the project area, as well as the 2005–2014 fire perimeters within the MUA and the 10-year fire frequency (2005–2014). MUA 7 is burning with an approximate 5-year fire frequency. The historic fire return interval in MUA 7 is <100 years, and the current fire return interval is <10 years. Some locations in the general area have burned several times in the last 10 years. Fire kills big sagebrush (*Artemisia tridentata*) and may promote rabbitbrush (*Chrysothamnus nauseosus*) (Wright et al. 1979). Annual and perennial grasses and forbs increase the amount of fine fuels, which encourages future fire size and rate of spread. Over time this reduces remnant sagebrush stands, perpetuating the loss of sagebrush community and eliminating the sagebrush seed source.

Table 3-1. Fires in Multiple Use Area 7 during the Past 10 Years

Year	Fire Name	Acres Burned in MUA 7
2005	Twenty	29
2005	Clover	40,538
2005	Indian Ridge	1
2005	Sailor Creek	37
2005	Pot Hole	462
2006	Sailor Cap	1,308
2007	Flint Mesa	79
2007	Grindstone	82
2009	Saylor Creek	98
2009	Dove Springs	436
2010	Dove Springs	1,526
2010	Flint	729
2010	Sailor	1,514
2010	Long Butte	53,382
2011	Windmill	172
2011	Grindstone	1,430
2012	Kinyon Road	34,350
2013	Pot Hole	9

High fire frequency also facilitates the expansion of cheatgrass (*Bromus tectorum*) (Peters and Bunting 1994; Whisenant 1990), which has been observed in portions of the JFO. Because cheatgrass becomes flammable early in the year, it can enhance fire size and rate of spread. Seeding native or non-native grasses at high density also displaces many of the native annual forbs and grasses, as well as outcompetes seedlings of native perennial grasses, forbs, and shrubs (The Jarbidge Sage-Grouse Local Working Group 2007).

There are no naturally occurring surface waters in the project area that are suitable for fire suppression activities. The nearest naturally occurring surface water in relation to the project area is the Grindstone

Canal, which is approximately 6 miles to the northwest. The Snake River is approximately 8 miles from the proposed water storage tank. Other naturally occurring surface waters in the analysis area that are available for fire suppression activities include canals and several small ponds. There are also several open top water storage tanks within the analysis area that can be used for fire suppression activities as filling sources for helicopters or ground engines. The locations and approximate capacities of these storage tanks are listed below.

- West Saylor Creek Pasture #3: 25,000 gallons
- Dove Spring South Pasture: 25,000 gallons
- Grindstone Allotment: 25,000 gallons
- Three Island Tank Pasture: 25,000 gallons
- Twin Butte West Pasture (Thompson): 25,000 gallons
- Twin Butte West Pasture (Twin Butte): 50,000 gallons
- Echo 4 Allotment (Winter Camp Reservoir): 80,000 gallons

Total: 255,000 gallons

3.2.2. Environmental Consequences

3.2.2.1. Alternative A: No Action

Under the No Action Alternative, the proposed water storage tank would not be constructed and the water available for fire suppression activities in the analysis area would remain as is. These levels do not include any naturally occurring surface waters in or near the project area that can be used for fire suppression activities, but the analysis area does include canals, several small ponds, and approximately 255,000 gallons of water in water storage tanks that can be used for fire suppression activities.

3.2.2.2. Alternative B: Proposed Action

Under the Proposed Action, the water storage tank would provide 40,000 gallons of water that would be available for fire suppression activities in the analysis area. Helicopters and other vehicles used for fire suppression activities would be able to transport water from the proposed water storage tank and use it to suppress fires in the analysis area. The water storage tank would supplement the approximately 255,000 gallons of water in existing water storage tanks within the analysis area, thus decreasing the need for water transport for fire suppression activities. There would be a slight risk of fire during construction activities because sparks from construction vehicles and equipment could start fires in the proposed work areas. However, fire extinguishers would be required to be on hand during construction activities, which would reduce this potential impact.

Noxious weeds can increase wildfire fuel levels as well as the potential for greater intensity and number of wildfires. As described in section 3.5.2.2.2. (Noxious and Invasive Weeds), 156.4 acres would be at increased risk for weed invasion under the Proposed Action.

3.3. Livestock Grazing

The analysis area for livestock grazing–related issues is the Twin Butte Allotment (51,340 acres). This area was chosen because the pipeline extension and water storage tank would be constructed here, and this allotment contains livestock that would be affected by the Proposed Action (Figure 3-2).

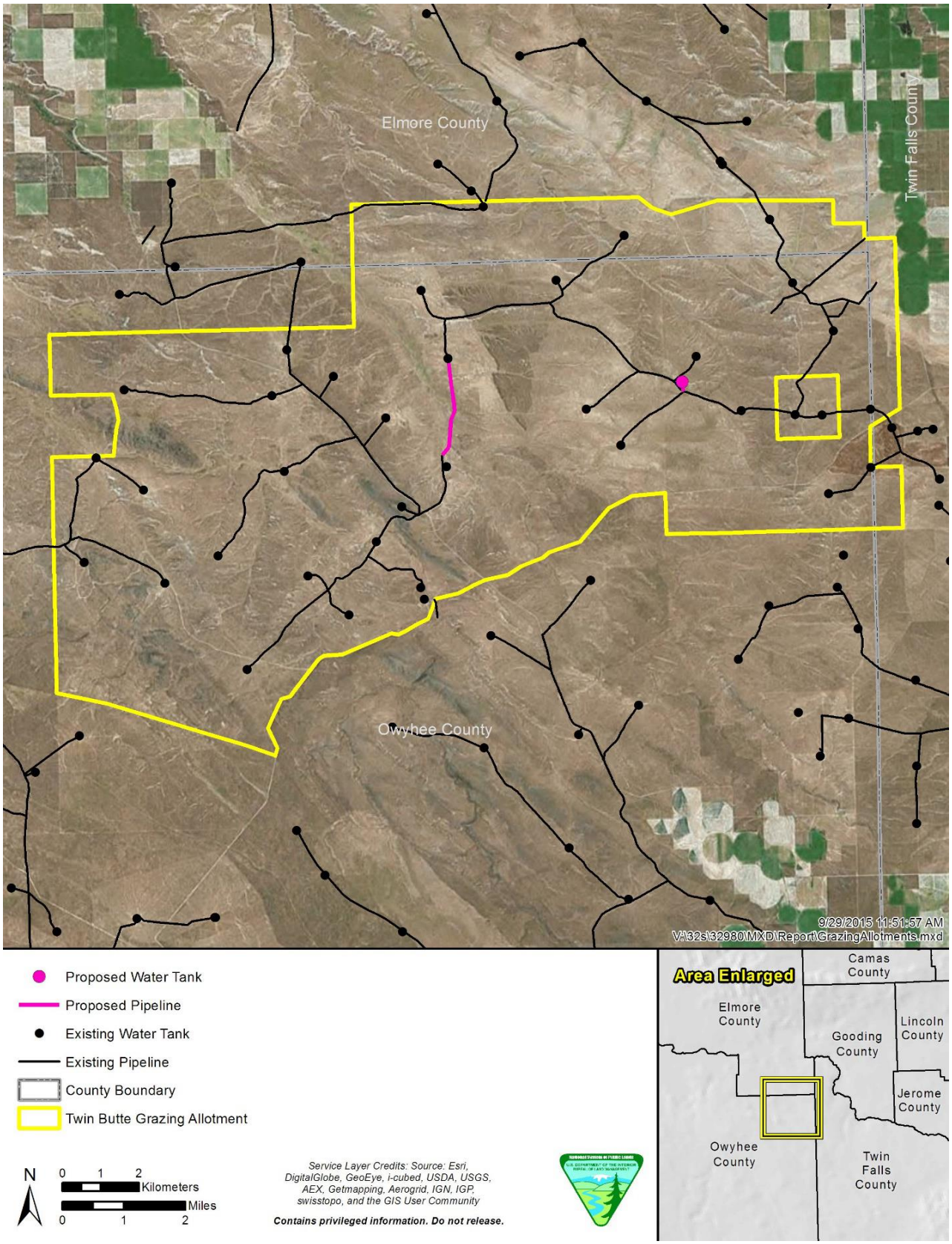

Figure 3-2. Livestock grazing analysis area (Twin Butte Allotment).

3.3.1. Affected Environment

The Twin Butte Allotment encompasses 51,340 acres. Table 3-2 details the number of animal unit months (AUMs), livestock, livestock type, season of use, land ownership, and average use in the Twin Butte Allotment.

Table 3-2. Twin Butte Allotment Use Levels and Landownership

Authorized AUMs*	Number of Livestock	Livestock Type	Season of Use	Landownership (acres)			10-Year Average Actual Use	10-Year Average TNR Use
				BLM	State	Private		
5,208	434	Cattle	3/1–2/28	47,846	1,893	1,601	5,777	1,192
408	1,000	Sheep	3/1–3/31				1,045	–
	1,000	Sheep	12/1–12/31					

* An AUM is the amount of forage (800 pounds of dry matter) required to sustain a cow and her calf for 1 month. A horse, bull, or five sheep/goats are considered equivalent to one AUM.

† Actual use is a post-use report demonstrating the actual number of livestock and period of time they were on the allotment. Actual use in this table represents both authorized AUMs and temporary non-renewable (TNR) permitted AUMs.

Source: BLM (2015a).

Over the last 50 years, forage production has increased from changes to vegetation from range improvement projects designed to increase forage production for livestock grazing, from wildland fire creating more grasslands, and from rehabilitation projects in burned areas (BLM 2015a). Actual use (grazing use that actually occurred) has varied annually based on factors such as forage production, resource conditions, wildland fire, court decisions, and individual livestock grazing operations (BLM 2015a). The season of actual use on the Twin Butte Allotment is typically from mid- to late October through late June to early July for cattle and from March through early June for sheep.

Effective management of livestock grazing depends on the use of infrastructure to meet resource objectives. Infrastructure such as water developments provides a means to control the timing and duration of grazing periods. The Twin Butte Allotment contains 47 miles of water pipelines and 34 water storage tanks and troughs that provide water for livestock. In addition to providing water for livestock, pipelines in the Twin Butte Allotment distribute water used for wildland fire suppression; they also serve as a source of water for wildlife and the only source of water for wild horses.

3.3.2. Environmental Consequences

3.3.2.1. Alternative A: No Action

Under the No Action Alternative, the pipeline extension and water storage tank would not be constructed, and water supply available to livestock in the analysis area, as well as the reliability of that water supply, would remain at existing levels. At this time there are 47 miles of water pipelines and 34 water storage tanks and troughs in the analysis area. Grazing permittees would continue to haul water to livestock during times when the existing pipeline system is not functioning properly, as described previously in section 1.2. Difficulties may arise in hauling water, such as weather conditions, damage to roads, or mechanical issues. Hauling water to the livestock could also increase the potential for the spread of invasive weeds, because they could be transported by the haul trucks.

3.3.2.2. Alternative B: Proposed Action

Under the Proposed Action, the pipeline extension and water storage tank would be constructed and would increase the water supply available to livestock in the analysis area, as well as increase the reliability. Water supply reliability would be increased by adding 40,000 gallons of water to the system, which would continue to provide water to livestock in the event the well pump needs to be shut down for maintenance. The proposed pipeline extension would also increase reliability of the water supply by connecting existing pipelines and allowing water to be in both systems in case the pumps on the current system fail.

The construction activities would cause both temporary and permanent surface disturbance in the analysis area that would result in impacts to forage for livestock. The pipeline extension would create approximately 7.0 acres (0.01% of the analysis area) of temporary surface disturbance. The disturbance would be temporary because it typically takes a couple of growing seasons before the disturbance is no longer visible. The proposed water storage tank and pipeline would result in approximately 0.1 acre (0.0002% of the analysis area) of permanent surface disturbance resulting from the concrete for the tank and 1.6 acres (0.003% of the analysis area) of temporary surface disturbance in the analysis area. There would also be permanent surface disturbance from the approximately 1.8 miles of two-track road created for pipeline maintenance. The surface disturbance would not impact the number of AUMs available in the analysis area, which are listed in Table 3-2, because the disturbance would affect far less than 1% of the analysis area and only part of the disturbance would be long term. Once construction of the pipeline extension (1–3 weeks) and water storage tank (approximately 2 weeks) is complete, the areas of temporary disturbance would be reseeded with a BLM-approved seed mix. It typically takes two growing seasons for reseeded areas to revegetate. Livestock do not necessarily need to be kept off of temporarily disturbed areas while they are revegetated because densities of livestock would be low within the disturbed areas and would not be expected to hinder the recovery or establishment of seeded or other desirable vegetation.

Water would be temporarily shut off during construction, but the shut off would be very short term, would be coordinated with grazing permittees, and would only occur when plumbing the new tank to the existing pipeline. For these reasons, livestock would not be affected.

Construction activities have the potential to increase the spread of invasive weeds in the analysis area, which could decrease the amount of available forage for livestock if weeds crowd out vegetation that is used as forage. As described in section 3.5.2.2.2 (Noxious and Invasive Weeds), 156.4 acres would be at increased risk for weed invasion under the Proposed Action.

3.4. Soils

The analysis area for soils-related issues consists of the Middle Deadman Creek and Upper Rosevear Gulch watersheds. This area covers 46,362 acres and was chosen because it provides a distinct, natural topographic boundary in which to analyze potential impacts to soil types and because it lies down gradient from the proposed project.

3.4.1. Affected Environment

Soil health is the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Sensitive soils have soil properties that make them more susceptible to degradation with a disturbance. These properties include water erosion hazard and wind erosion hazard. Water erodibility indicates soil detachment by runoff and raindrop impact. Some of the most important soil properties that influence rainfall erosion are texture, organic matter content, structure size class, and the saturated hydraulic conductivity of the subsoil (NRCS 2015). Wind erodibility indicates the susceptibility of soil to blowing or wind erosion. There is a correlation between wind erodibility and the size and

durability of surface clodiness, fragments, organic matter, and calcareous reaction. Soil moisture and the presence of frozen soil also influence soil blowing (NRCS 2015).

Soil types in the analysis area were identified with Soil Survey Geographic Database data and are listed in Table 3-3. Table 3-3 also indicates each soil type's susceptibility to wind and water erosion.

Table 3-3. Soil Types and Susceptibility to Wind and Water Erosion in the Analysis Area and Project Area

Soil Type	Analysis Area (acres)	Project Area (acres)	Soil Type Susceptibility	
			Wind Erosion	Water Erosion
Abgese loamy sand, 2%–8% slopes	1,614.8	0	Very severe	Medium
Abgese loamy sand, 8%–40% slopes	390.1	0	Very severe	Medium
Arbidge-Buko complex, 1%–8% slopes	**13,715.1**	**1.9**	**Severe**	**Medium**
Buko fine sandy loam, 1%–4% slopes	92.4	0	Severe	Low
Buko fine sandy loam, 4%–12% slopes	860.1	0	Severe	Low
Chilcott-Elijah silt loams, 0%–12% slopes	454.6	0	Moderate	No data
Colthorp stony silt loam, 0%–8% slopes, very stony	1.4	0	Moderate	No data
Colthorp-Minveno silt loams, 0%–8% slopes, stony	30.2	0	Moderate	No data
Cottle-Trevino-Rock outcrop complex, 8%–30% slopes	277.8	0	Moderate	Medium
Davey-Quincy complex, 1%–12% slopes	2,495.1	0	Very severe	Medium
Elijah silt loam, 0%–4% slopes	1.7	0	Moderate	No data
Elijah silt loam, 4%–12% slopes	19.3	0	Moderate	Medium
Elijah-Purdam silt loams, 0%–8% slopes	48.0	0	Moderate	High
Jacquith loamy fine sand, 1%–8% slopes	81.6	0	Very severe	Low
Jacquith-Quincy loamy sands, 0%–12% slopes	190.2	0	Very severe	Low
Mazuma fine sandy loam, 0%–4% slopes	777.9	0	Severe	Medium
Minidoka-Minveno silt loams, 0%–4% slopes	24.2	0	Severe	High
Minveno silt loam, 0%–4% slopes	467.1	0	Moderate	No data
Minveno silt loam, 4%–8% slopes	394.7	0	Moderate	No data
Owsel-Purdam complex, 1%–12% slopes	5,637.2	0	Moderate	Medium
Purdam silt loam, 0%–4% slopes	688.8	0	Moderate	High
Purdam silt loam, 4%–8% slopes	104.1	0	Moderate	High
Quincy fine sand, 0%–12% slopes	101.2	0	Very severe	Low
Royal fine sandy loam, 0%–4% slopes	**399.0**	**1.4**	**Severe**	**Medium**
Royal fine sandy loam, 4%–12% slopes	131.5	0	Severe	Medium
Scoon very fine sandy loam, 0%–4% slopes	4,830.9	0	Severe	Medium
Shano loam, 1%–12% slopes	132.7	0	Moderate	Medium
Shano-Owsel complex, 0%–12% slopes	**3.674.8**	**0.3**	**Moderate**	**Medium**

Table 3-3. Soil Types and Susceptibility to Wind and Water Erosion in the Analysis Area and Project Area

Soil Type	Analysis Area (acres)	Project Area (acres)	Soil Type Susceptibility	
			Wind Erosion	Water Erosion
Shano-Truesdale fine sandy loams, 0%–12% slopes	619.8	0	Severe	Medium
Sidlake-Bruncan complex, 1%–8% slopes	65.8	0	Slight	No data
Truesdale fine sandy loam, 0%–4% slopes	1,100.1	0	Severe	Medium
Truesdale fine sandy loam, 4%–12% slopes	1,010.6	0	Severe	No data
Xeric Torriorthents and Xerollic Camborthids, 8%–20% slopes	1,244.5	0	Severe	Medium
Xeric Torriorthents-Xerollic Camborthids complex, 20%–70% slopes	**4,685.0**	**5.0**	**Severe**	**Medium**
Total	**46,362.3**	**8.60**		

Within the Middle Deadman Creek and Upper Rosevear Gulch watersheds, there are 41,433 acres of soils that are moderately to severely susceptible to wind erosion (89.3% of the analysis area). There are 42,611 acres of soils that have a medium or high susceptibility to water erosion (91.9% of the analysis area). Therefore, most of the analysis area is susceptible to wind and water erosion.

As shown in Table 3-3, there are four soil types in the project area: 1.9 acres of Arbidge-Buko complex, 1%–8% slopes (22.2% of the project area); 1.4 acres of Royal fine sandy loam, 0%–4% slopes (16.5% of the project area); 0.3 acre of Shano-Owsel complex, 0%–12% slopes (3.3% of the project area); and 5.0 acres of Xeric Torriorthents-Xerollic Camborthids complex, 20%–70% slopes (58.0% of the project area). Although the project area includes soil types that can sometimes be associated with up to 70% slopes, the project area surface does not exceed a 12% slope. Soils in all areas of disturbance in the project area are moderately to severely susceptible to wind erosion and have a medium susceptibility to water erosion. Soil susceptibility to wind and water erosion in the project area by project element is shown in Table 3-4. The pipeline extension would create the largest area of surface disturbance (7.0 acres) and would disturb soils that have a severe susceptibility to wind erosion and a medium susceptibility to water erosion.

Table 3-4. Soil Susceptibility to Wind and Water Erosion in the Project Area by Project Element

Project Element	Soil Property: Wind Erosion		Soil Property: Water Erosion	
	Susceptibility	Acres of Soil in Project Area	Susceptibility	Acres of Soil in Project Area
Pipeline extension (35-foot-wide temporary work area)	Severe	7.0	Medium	7.0
Water storage tank (120-foot-diameter temporary work area)	Moderate Severe	0.3 0.6	Medium	0.9
Water storage tank (39-foot-diameter permanent disturbance)	Severe	0.1	Medium	0.1
Water storage tank pipeline (35-foot-wide temporary work area)	Severe	0.6	Medium	0.6
Total		**8.6**		**8.6**

3.4.2. Environmental Consequences

3.4.2.1. Alternative A: No Action

Under the No Action Alternative, the proposed pipeline extension and water storage tank would not be constructed, and water supply availability and reliability in the analysis area would remain at existing levels. No impacts to soils would occur from the Proposed Action. However, when needed BLM personnel would continue to haul water to wild horses during times when the existing pipeline system is not functioning. Repeated trips with water trucks would disturb the soils on existing jeep trails associated with the pipelines, increasing localized soil loss from wind and water erosion. Grazing by livestock and wild horses would also continue to impact soils in the analysis area.

3.4.2.2. Alternative B: Proposed Action

Implementation of the Proposed Action would cause both temporary and permanent disturbance to soils in the analysis area. The proposed pipeline extension would create 7.0 acres of temporary surface disturbance (0.02% of the analysis area). The proposed water storage tank and 0.2-mile pipeline would cause 0.1 acre of permanent surface disturbance (0.0002% of the analysis area) and 1.6 acres of temporary surface disturbance (0.003% of the analysis area). Under the Proposed Action, total temporary disturbance to soils would consist of 8.6 acres (0.02% of the analysis area) and total permanent disturbance to soils would consist of 0.1 acres (0.0002% of the analysis area). There would also be permanent surface disturbance from the approximately 1.6 miles of two-track road created by overland travel during pipeline construction. The two-track road would also be used for pipeline maintenance.

These disturbances could result in soil compaction, increased susceptibility to soil erosion, mixing of soil horizons, changes in soil function due to soil exposure from vegetation removal, and loss of soil productivity (ability to support vegetation). As discussed in section 3.4, the soil types that would be disturbed in the project area are moderately to severely susceptible to wind erosion and have a medium susceptibility to water erosion. Because of this susceptibility, an indirect, long-term loss of soil and soil productivity could occur in areas of surface disturbance (0.02% of the analysis area). A loss of soil and soil productivity could reduce the health of local vegetation communities and impact the livestock, wild horses, and wildlife that depend on them. Erosion by wind would most likely be based on the generally severe susceptibility of soil types to wind erosion in the project area. However, erosion would be limited through the use of straw wattles, which would be used on areas of the proposed pipeline extension where the slope is prone to erosion and the soils have a moderate or severe potential for wind erosion or have a medium or high potential for water erosion (see section 2.3.3).

Once construction of the pipeline extension and water storage tank is complete, areas of temporary disturbance (8.5 acres) would be reseeded with a BLM-approved seed mix, limiting overall impacts to soils and susceptibility to erosion by replacing bare ground with perennial plants. It typically takes two growing seasons for reseeded areas to revegetate; some erosion of soils could occur during this 2-year growing period.

3.5. Vegetation

The analysis area for vegetation-related issues consists of the Middle Deadman Creek and Upper Rosevear Gulch watersheds. This area covers 46,362 acres and was chosen because it provides a distinct, natural topographic boundary in which to analyze potential impacts to vegetation and because vegetative connectivity is linked to watersheds.

3.5.1. Affected Environment

3.5.1.1. Land Cover Mapping Observations

Vegetation communities in the analysis area were identified and described using data from the National Land Cover Database (NLCD), which provides spatial reference and descriptive data for characteristics of the land surface (U.S. Geological Survey 2012). Land cover classes in the NLCD include categories such as open water; developed land; barren land; a variety of forest, grassland, and shrub/scrub communities; cultivated crops; and two types of wetlands. The NLCD is based on satellite data, and its accuracy varies by regional geography and specific class type; accuracy assessments of the 1992 NLCD dataset for the conterminous United States indicated class accuracy levels of 85.3% and 78.7% (U.S. Geological Survey 2012). In summary, the NLCD is generalized and not verified by on-the-ground observations.

Five land cover classes were identified in the analysis area, and two land cover classes were identified specifically in the project area, as shown in Table 3-5. The locations of the land cover classes in the analysis area and project area are shown in Figure 3-3.

Table 3-5. Land Cover Classes in the Analysis Area and Project Area

Land Use	Land Cover Class	Analysis Area (acres)	Project Area (acres)
Planted/Cultivated	Pasture/Hay	60.9	0
	Cultivated Crops	116.3	0
Developed	Developed, Open Space	14.9	0
Herbaceous	Grassland/Herbaceous	30,705.7	8.2
Shrubland	Shrub/Scrub	15,464.5	0.4
	Total	**46,362.3**	**8.6**

Source: Multi-Resolution Land Characteristics Consortium (MRLC) (2011a).

The Pasture/Hay land cover class typically consists of areas of grasses and legumes, or grass-legume mixtures planted for livestock grazing or for the production of seed or hay crops, generally on a perennial cycle. In this class, pasture/hay vegetation accounts for more than 20% of the total vegetation cover. The Cultivated Crops class consists of areas used for the production of annual crops (e.g., corn, soybeans, and cotton) and also perennial woody crops grown in orchards or vineyards. This class also includes all land actively being tilled. Crop vegetation accounts for more than 20% of the total vegetation in this class (MRLC 2011b).

The Developed, Open Space class usually consists of areas with a mixture of some constructed materials but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of the total cover in this class (MRLC 2011b).

Grassland/Herbaceous areas are dominated by graminoid or herbaceous vegetation typically representing more than 80% of the total vegetation cover in the class. These areas are not subject to intensive management such as tilling but can be used for grazing (MRLC 2011b). The large quantity of the Grassland/Herbaceous land cover class in the analysis area may be due to past wildfires described in section 3.2.1.

The Shrub/Scrub class typically consists of areas dominated by shrubs (less than 5 meters tall with shrub canopy typically consisting of more than 20% of the total vegetation cover). This class includes true shrubs, young trees in an early successional stage, or trees stunted from environmental conditions such as cold temperatures or lack of moisture (MRLC 2011b).

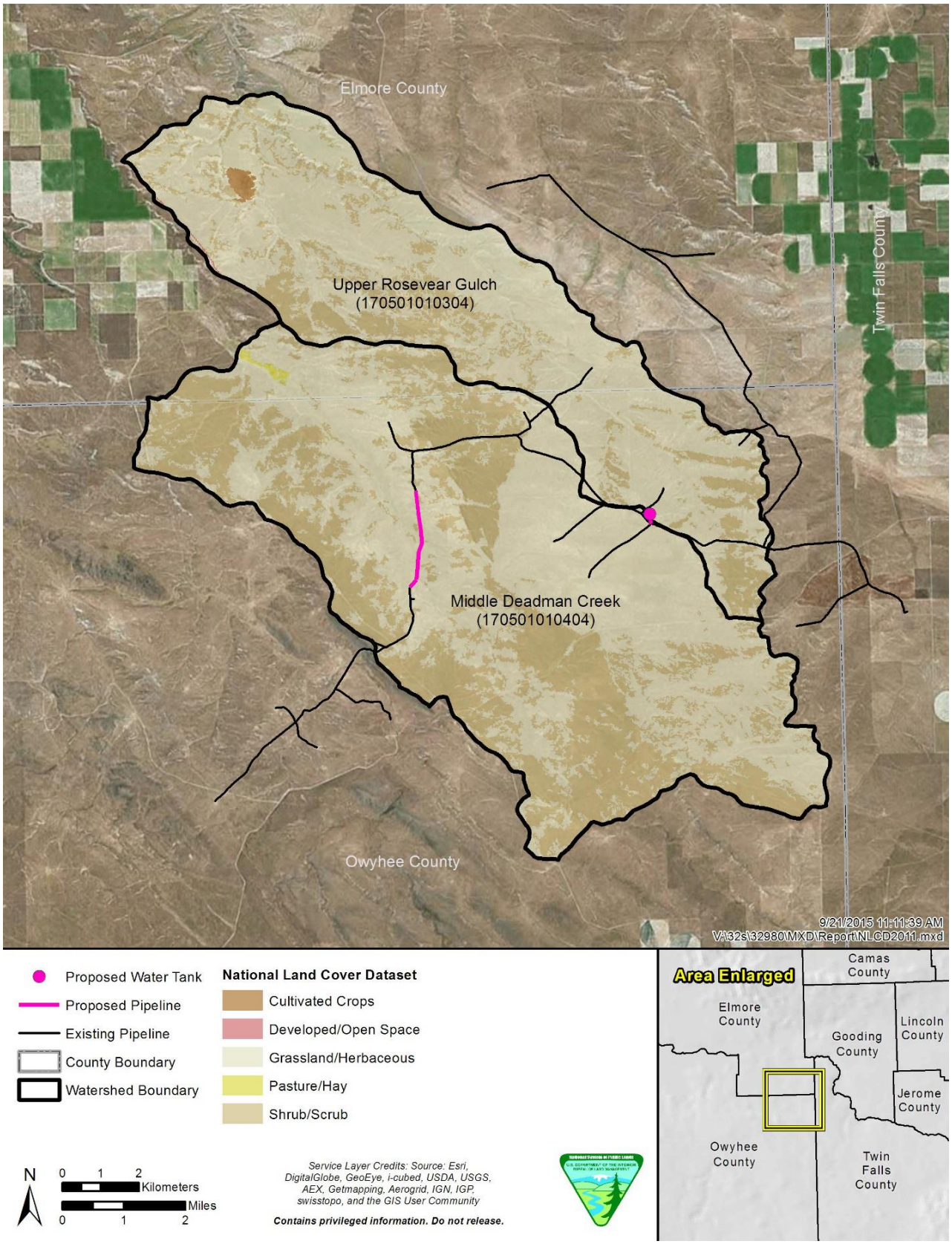

Figure 3-3. National Land Cover Dataset land cover classes in the vegetation analysis area (Middle Deadman Creek and Upper Rosevear Gulch watersheds).

3.5.1.2. Site-Specific Observations

According to BLM data, the majority of the project area has been seeded with crested wheatgrass, a non-native perennial species. Non-native perennial vegetation is defined as a shrub overstory (e.g., rabbitbrush or sagebrush) with a seeded non-native species planted in the understory (e.g., crested wheatgrass). The presence of crested wheatgrass is likely the result of past vegetation projects implemented after wildfire events.

Based on BLM information, the Pasture/Hay, Cultivated Crops, and Developed, Open Space land cover classes are very limited or not present at all within the analysis area. The Shrub/Scrub land cover class acreage in the analysis area is likely overestimated; most of the shrubland present is north of the Twin Buttes Grazing Allotment (see Figure 3-2) and is dominated by big sagebrush. In the analysis area, the Shrub/Scrub land cover class contains very few, if any, trees.

3.5.1.3. Noxious and Invasive Weeds

A noxious weed is legally defined as any plant designated by a federal, state, or county government that is injurious to public health, agriculture, recreation, wildlife, or property. It is also commonly defined as a plant that grows out of place and is persistent, competitive, and pernicious. Invasive plants include not only noxious weeds but also other plants that are not native to the area where they are growing. Invasive plants have been introduced into an environment in which they did not evolve (BLM 2010).

Thirty-six noxious weeds species are known to occur in Elmore, Owyhee, and/or Twin Falls Counties. The BLM's in-house database of areas of weed treatment was reviewed for the analysis area. Of the 36 species, BLM has records of treating only two species: diffuse knapweed (*Centaurea diffusa*), and rush skeletonweed (*Chondrilla juncea*) (BLM 2015c). Areas where weeds have been treated are shown in Figure 3-4.

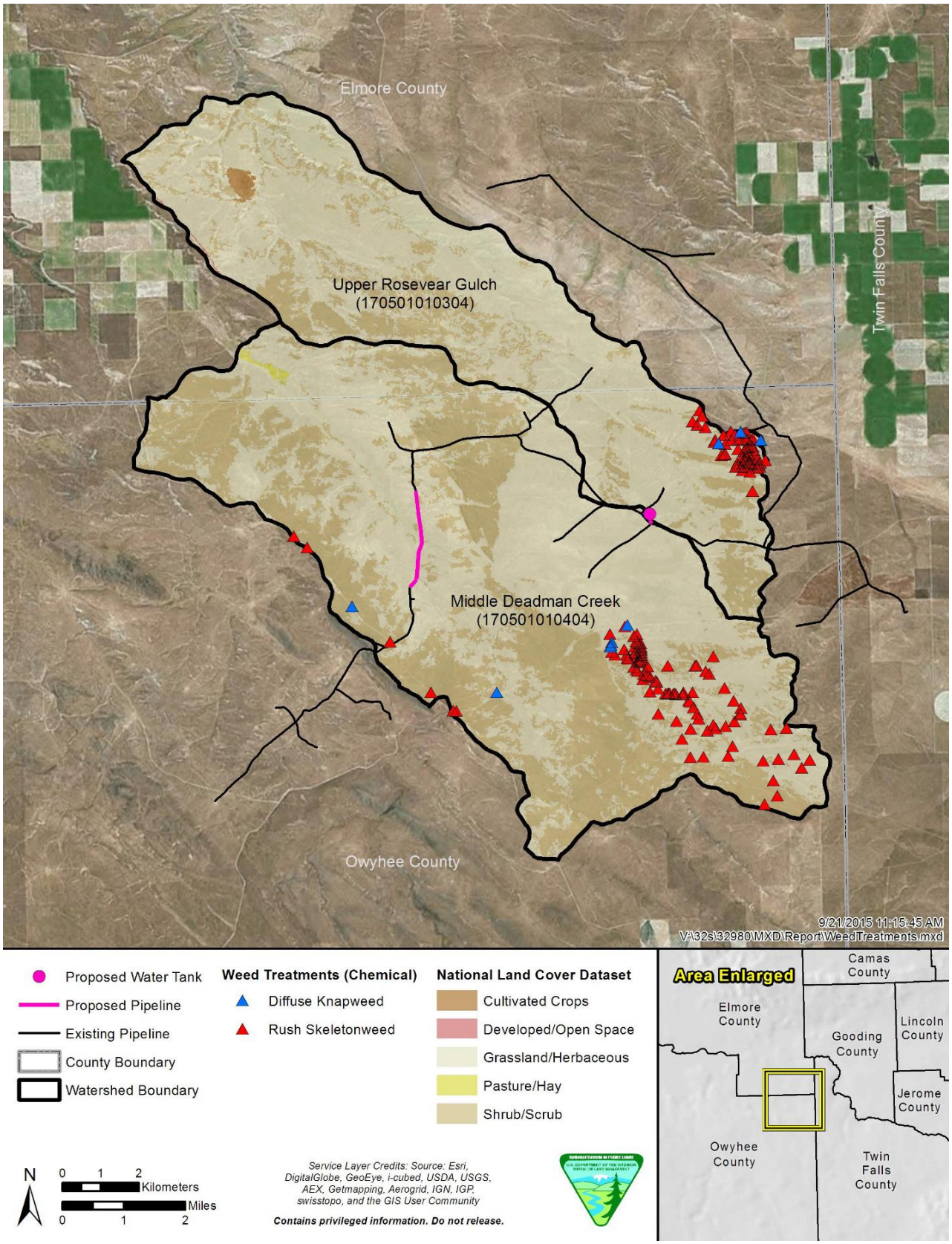

Figure 3-4. Weed treatments in the vegetation analysis area (Middle Deadman Creek and Upper Rosevear Gulch watersheds).

As shown on Figure 3-4, diffuse knapweed and rush skeletonweed have been chemically treated in the analysis area. Both of these weeds are listed on Idaho's noxious weed list as species needing containment and are relatively widespread in the general area (BLM 2015d). Areas were chemically treated in 2005, 2006, and 2008. Scotch thistle (*Onopordum acanthium*) and field bindweed (*Convolvulus arvensis*), both listed as Idaho noxious weeds, are also known to be present in the analysis area. Scotch thistle along Crows Nest and Grindstone Roads was chemically sprayed in the middle to late 1990s (BLM 2015d).

Livestock, wild horses, and wildlife may have contributed to the presence of noxious weeds in the analysis area. (The seeds of some weeds may pass through the digestive tract of animals and remain viable, and seeds can be transported to new locations on animal hair.) In addition, past wildfires may have provided avenues for weeds to move into new areas or to increase their numbers in already-established locations. If a burned area is treated under an emergency stabilization and rehabilitation (ESR) plan, it is inventoried for noxious weeds by BLM weed treatment specialists for 3 years following the fire. Any state-listed noxious weeds identified during the inventory would be chemically treated. The most recent ESR-related noxious weed treatments occurred after the 2010 Long Butte Fire and were conducted from 2011 to 2013.

3.5.2. Environmental Consequences

3.5.2.1. Alternative A: No Action

Under the No Action Alternative, the pipeline extension and water storage tank would not be constructed. As a result, BLM personnel would continue to haul water to wild horses during times when the existing pipeline system is not functioning properly, which could cause impacts to vegetation through trampling or the continued spread of noxious and invasive weeds. In general, existing conditions and trends in vegetative communities would continue, which could include noxious weed treatments in some areas and additional seeding with crested wheatgrass or Siberian wheatgrass. Impacts to vegetation from wildlife, wild horses, livestock, and wildfire would continue.

3.5.2.2. Alternative B: Proposed Action

3.5.2.2.1. Land Cover

Implementation of the proposed pipeline extension would cause temporary disturbance of 7.0 acres (0.02% of the analysis area) of vegetation in the analysis area. The proposed water storage tank and 0.2-mile pipeline would cause 0.1 acre of permanent vegetation removal (0.0002% of the analysis area) and 1.6 acres of temporary disturbance to vegetation in the analysis area (0.003% of the analysis area). Under the Proposed Action, total temporary disturbance to vegetation would consist of 8.6 acres (0.02% of the analysis area), and total permanent vegetation removal would consist of 0.1 acre (0.0002% of the analysis area). There would also be long-term disturbance to vegetation from approximately 1.6 miles of two-track road created during pipeline construction. The two-track road would also be used for subsequent maintenance.

Effects to vegetation from the Proposed Action would consist of damage to or loss of individual plants and could, as a result, include changes to community composition (species composition and plant density) on a localized basis. The land cover class that would experience the largest acreage of disturbance would be Grassland/Herbaceous class because of its abundance in the project area (8.2 acres or 95% of the project area). The Shrub/Scrub class (0.4 acre or 5% of the project area) would also experience these impacts. Permanent vegetation impacts would occur on 0.1 acre of the Grassland/Herbaceous class, which is 0.0004% of that land cover type in the analysis area. This vegetation would be completely removed and replaced by the water storage tank. Temporary disturbance or removal of vegetation would occur on 8.1 acres of the Grassland/Herbaceous class (0.03% of the land cover type in the analysis area) and 0.4 acre

of the Shrub/Scrub class (0.003% of the land cover type in the analysis area). This vegetation would be replaced through reseeding with a BLM-approved seed mix; it typically takes two growing seasons for reseeded areas to establish.

3.5.2.2.2. Noxious and Invasive Weeds

Implementation of the Proposed Action could introduce or spread noxious or invasive weed populations in areas adjacent to access routes or adjacent to project construction activities. Vehicles traveling on roads, both paved and non-paved, are often conduits for seed dispersal. In addition, disturbed sites such as cleared areas may increase the likelihood of noxious weed invasion by increasing the availability of suitable microsites for germination and establishment to occur (Hobbs and Huenneke 1992). If noxious weeds are introduced or spread, they can invade and outcompete existing vegetation. Noxious weeds can be aggressive colonizers of disturbed areas, can increase wildfire fuel levels, and can increase the potential for greater intensity and number of wildfires.

A 300-foot buffer around the project area was used to calculate the potential spread of weeds as a result of proposed activities under the Proposed Action. This buffer was chosen because weed spread could occur from vehicles that have the potential to disperse seeds beyond the project area (e.g., from vehicle tires or wheel wells); the size of the buffer was chosen to capture the estimated potential extent of seed dispersal. The results of these calculations are shown in Table 3-6.

Table 3-6. Acres of Land at Increased Risk for Weed Invasion under the Proposed Action

Project Element	Area (acres)	Additional Area included in 300-Foot Buffer (acres)	Total Area at Increased Risk for Weed Invasion (acres)
Pipeline extension (35-foot-wide temporary work area)	7.0	126.0	132.9
Water storage tank (120-foot-diameter temporary work area)	0.9	4.4	5.3
Water storage tank (39-foot-diameter permanent disturbance)	0.1	7.1	7.2
Water storage tank pipeline (35-foot-wide temporary work area)	0.6	10.4	11.0
Total	**8.6**	**147.9**	**156.4**

The Proposed Action would increase the acres of land susceptible to weed invasion by 156.4 acres as compared to the No Action Alternative. This acreage includes the 300-foot buffer, as well as the acres of disturbance from the pipeline extension, two-track road, and water storage tank. However, under the No Action Alternative, BLM personnel would continue to haul water to wild horses, which would also have some potential to introduce or spread noxious and invasive weeds through vehicle use. Under the Proposed Action, the potential for construction activities to spread noxious or invasive weed species would be reduced by the reseeding of disturbed portions of the project area to re-establish disturbed vegetation communities. In addition, areas disturbed by Proposed Action activities would be monitored for the presence of state-listed noxious weeds. If found, weeds would be treated using BLM-approved chemicals or other methods (see section 2.3.3).

3.6. Wildlife, including Migratory Birds and Special-Status Species

The analysis area for wildlife-related issues consists of the Middle Deadman Creek and Upper Rosevear Gulch watersheds. This area covers 46,362 acres and was chosen because these watersheds represent a defined, continuous area linked by common ephemeral stream channels.

3.6.1. Affected Environment

Wildlife species addressed in this section consist of common wildlife typical of the habitats in the analysis area, migratory birds protected by the Migratory Bird Treaty Act (MBTA), and special-status species. Special-status species are species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed and federally proposed species that are protected under the ESA, species considered as candidates for such listing by the USFWS, BLM sensitive species, and species that are state protected. In accordance with the ESA, federal agencies are prohibited from authorizing, funding, or carrying out actions that "destroy or adversely modify" critical habitat for species listed as threatened or endangered (ESA Section 7(a)(2)).

3.6.1.1. Common Wildlife

Animals typical of the Grassland/Herbaceous and Shrub/Scrub land cover classes in the analysis area include the American badger (*Taxidea taxus*); cottontail rabbit (*Sylvilagus nuttallii*); black-tailed jackrabbit (*Lepus californicus*); spotted skunk (*Spilogale gracilis*); red fox (*Vulpes vulpes*); coyote (*Canis latrans*); several species of mice, voles, and chipmunks; and pronghorn (*Antilocapra americana*). Reptiles typical of the area include several species of snakes and lizards.

3.6.1.2. Migratory Birds

In addition to the common wildlife listed above, migratory birds are present in the project area. Migratory birds and raptors are protected under the MBTA of 1918. Species defined as migratory birds are listed in 50 CFR 10.13 and include raptors. The MBTA prohibits the taking or killing of migratory birds and the destruction of their nests or eggs without a permit. Executive Order 13186 directs federal agencies to undertake mitigation measures in support of the MBTA if they are taking actions that are likely to have a measurable adverse effect on migratory birds. The Bald and Golden Eagle Protection Act (as amended in 1962) specifically protects bald and golden eagles and prohibits the taking or killing of bald eagles, including their parts, nests, or eggs.

According to the USFWS and BLM, migratory birds with the potential to occur in and around the project area include the bald eagle (*Haliaeetus leucocephalus*) in winter, Brewer's sparrow (*Spizella breweri*), ferruginous hawk (*Buteo regalis),* northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), long-billed curlew (*Numenius americanus*), peregrine falcon (*Falco peregrinus*) in winter, sage thrasher (*Oreoscoptes montanus*), short-eared owl (*Asio flammeus*), and Swainson's hawk (*Buteo swainsoni*) (Haney 2015; USFWS 2015). All of these migratory birds have the potential to occur during breeding season; the ferruginous hawk, northern harrier, and short-eared owl could be present year-round. BLM data indicate that the burrowing oil (*Athene cunicularia*) and long-billed curlew are widely scattered in the northern part of the JFO, which includes the project area. In addition, there may occasionally be grasshopper sparrows (*Ammodramus savannarum*) present in the project area (BLM 2015e). BLM databases also indicate the presence of the black-throated sparrow (*Amphispiza bilineata*), prairie falcon (*Falco mexicanus*), and burrowing owl in or near the borders of the Middle Deadman Creek and Upper Rosevear Gulch watersheds (Figure 3-5). In addition, the golden eagle (*Aquila chrysaetos*), horned lark (*Eremophila alpestris*), savannah sparrow (*Passerculus sandwichensis*), vesper sparrow (*Pooecetes gramineus*), western meadowlark (*Sturnella neglecta*), and bank swallow (*Riparia riparia*) could be present in the analysis area.

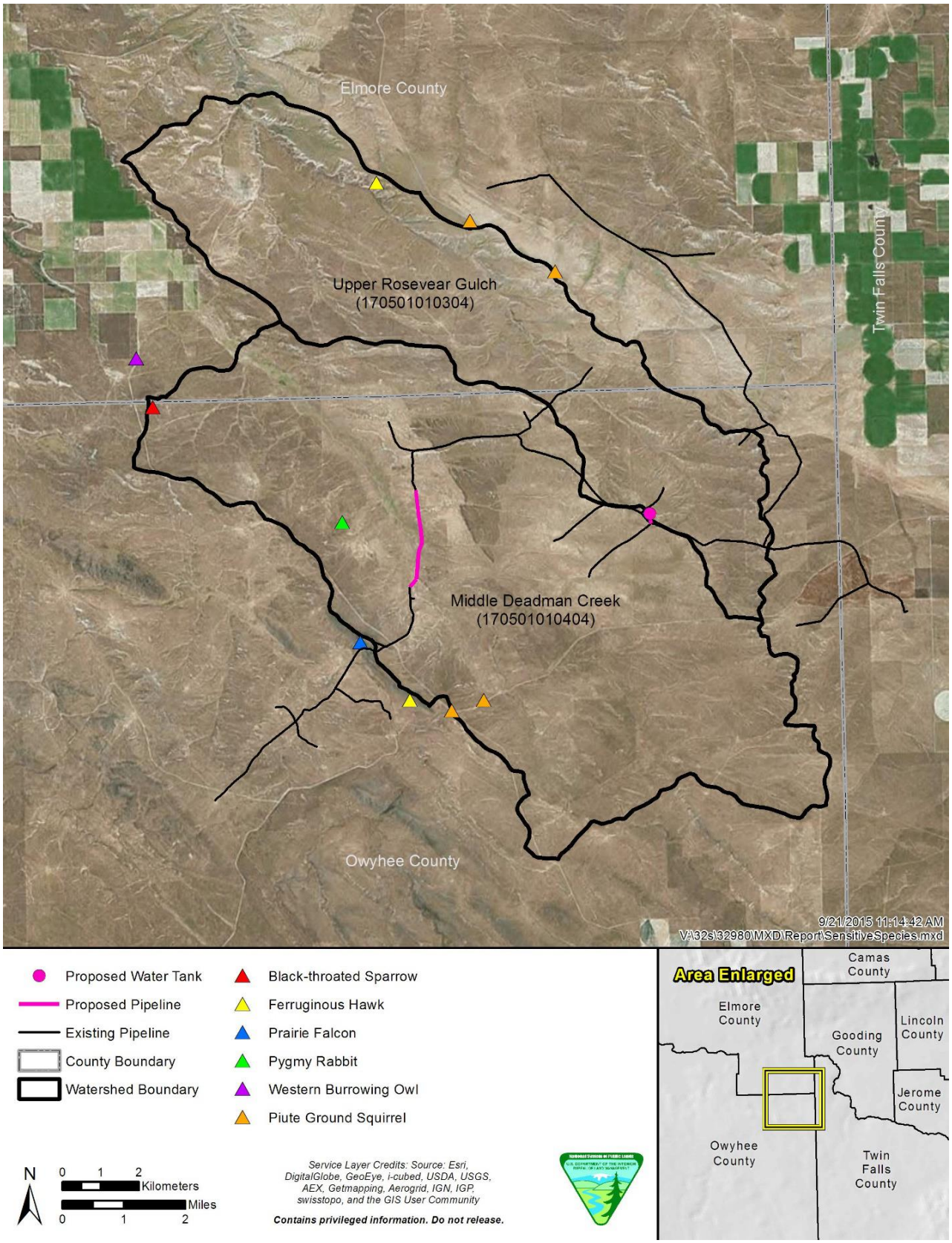

Figure 3-5. BLM-designated sensitive species observed in and near the wildlife analysis area (Middle Deadman Creek and Upper Rosevear Gulch watersheds) (BLM 2015f).

3.6.1.3. Special-Status Species

Along with common wildlife species and migratory birds, a number of special-status species have habitat in the analysis area (these species include some of the migratory birds discussed above). Table 3-7 provides the following: 1) a list of the threatened, endangered, and candidate wildlife species identified by the USFWS IPaC database (USFWS 2015); 2) information maintained in-house by the JFO for designated sensitive species within the Middle Deadman Creek and Upper Rosevear Gulch watersheds; and 3) migratory birds with potential habitat in the watersheds that are considered sensitive species by the Idaho BLM.

Table 3-7. Special-Status Wildlife Species and Their Potential to Occur in the Project Area

Common Name/ Species Name	Status*	Habitat Association†	Potential for Occurrence in the Project Area‡
BIRDS			
Black-throated sparrow *Amphispiza bilineata*	S	Arid brush, creosote-bush deserts, and a variety of dry open habitats, including grassland with scattered cactus, sagebrush flats, and open pinyon-juniper woodlands.	High. Documented at the northwest border of the Middle Deadman Creek watershed (see Figure 3-5). The Grassland/Herbaceous and Shrub/Scrub land cover classes are present in and near the project area.
Brewer's sparrow *Spizella breweri*	S	Depends almost exclusively on the sagebrush ecosystem during breeding. Also uses large clearings in pinyon-juniper woodlands. In winter, occupies sagebrush shrublands and a range of desert scrub habitats.	High. The Shrub/Scrub land cover is present in and near the project area, and sagebrush habitat could be present.
Burrowing owl *Athene cunicularia*	S	Dry, open areas with no trees and short grass. Habitat includes golf courses, cemeteries, airports, vacant lots, and pastures.	High. Documented just northwest of the Middle Deadman Creek watershed (see Figure 3-5). The Grassland/Herbaceous land cover class is present.
Ferruginous hawk *Buteo regalis*	S	Open country, primarily prairies, plains, and badlands. Usually breeds in trees near streams or on steep slopes.	Moderate. Documented just outside the west boundary of the Middle Deadman Creek watershed and inside the north boundary of the Upper Rosevear Gulch watershed (see Figure 3-5). In this general area, the ferruginous hawk has been known to nest on the ground on ridges above draws like Rosevear Gulch. It likely forages over the analysis area.
Grasshopper sparrow *Ammodramus savannarum*	S	Open grasslands and prairies with patches of bare ground.	High. The Grassland/Herbaceous land cover class is present, and BLM data indicate that grasshopper sparrows may occasionally be present in the project area.
Loggerhead shrike *Lanius ludovicianus*	S	Typically open country with scattered shrubs and trees. Can also be found in more heavily wooded habitats with large openings and in very short habitats with few or no trees.	Moderate. The project area contains both the Shrub/Scrub and Grassland/Herbaceous land cover classes.
Long-billed curlew *Numenius americanus*	S	Summers in areas of western North America with sparse, short grasses, including shortgrass and mixed-grass prairies as well as agricultural fields. In winter, they migrate to the coasts and interior Mexico, where they can be found in wetlands, tidal estuaries, mudflats, flooded fields, and occasionally beaches.	High. The project area contains the Grassland/Herbaceous land cover class, and BLM data indicate that this species is widely scattered in the northern part of the JFO planning area (which contains the project area).

Table 3-7. Special-Status Wildlife Species and Their Potential to Occur in the Project Area

Common Name/ Species Name	Status*	Habitat Association†	Potential for Occurrence in the Project Area‡
Prairie falcon *Falco mexicanus*	Protected by the MBTA	Open habitats such as plains and prairies. Typically nests on rocky cliff ledges.	Moderate. Documented just outside the west border of the Middle Deadman Creek watershed (see Figure 3-5). Nesting habitat is lacking in the project area, but is documented nearby on Twin Buttes and Notch Butte.
Sagebrush sparrow *Artemisiospiza nevadensis*	S	Breeds in open areas of the rolling, sage-dominated shrub-steppe of western North America. During migration and in winter, inhabits open, dry habitats including creosote and saltbush-dominated desert scrub.	High. The Shrub/Scrub land cover is present in and near the project area and sagebrush habitat could be present.
Sage thrasher *Oreoscoptes montanus*	S	Expanses of dense sagebrush with scattered bunchgrasses and bare ground. During migration and winter, they occupy a broader range of open, arid habitats, such as grasslands with scattered shrubs and open pinyon-juniper woodlands.	High. The Shrub/Scrub land cover class is present in and near the project area and sagebrush habitat could be present. The Grassland/Herbaceous land cover class is also present.
Short-eared owl *Asio flammeus*	S	Open grasslands, shrublands, and other open habitats.	High. Both the Shrub/Scrub and grassland/herbaceous land cover classes are present in and near the project area.
MAMMALS			
Piute ground squirrel *Urocitellus mollis*	S	Desert (including sagebrush) or grassland habitats.	High. Documented in the southwest portion of the Middle Deadman Creek watershed and along the north border of the Upper Rosevear Gulch watershed (see Figure 3-5). The Grassland/Herbaceous land cover class is present in and near the project area.
Pygmy rabbit *Brachylagus idahoensis*	S	Prefers areas with tall dense sagebrush and loose soils. Highly dependent on sagebrush for both food and shelter.	Low. Although documented in the northwest portion of the Middle Deadman Creek watershed, wildfires have nearly eliminated suitable sagebrush habitat. Without large areas of sagebrush, this species is unlikely to occur in the wildlife analysis area.

Note: Bird species with low or no potential to occur in the analysis area consist of the bald eagle (*Haliaeetus leucocephalus)* and Lewis's woodpecker (*Melanerpes lewis*).

* Status: C = federal candidate, E = federal endangered, T = federal threatened, S = Idaho BLM sensitive species

† Data from BLM (2015b).

‡ Occurrence: None = Suitable and/or potential habitat for this species is unknown in project area. Low = Some suitable and/or potential habitat for this species is present, but populations are unknown near project area. Moderate = Substantial suitable and/or potential habitat for this species or known populations are near the project area but unknown in project area. High = Suitable and/or potential habitat is present and populations are known in project area or immediate vicinity.

In summary, nine special-status species have a high potential of occurring in the project area: black-throated sparrow, Brewer's sparrow, burrowing owl, grasshopper sparrow, long-billed curlew, sagebrush sparrow (*Artemisiospiza nevadensis*), sage thrasher, short-eared owl, and Piute ground squirrel (*Urocitellus mollis*). Three special-status species (all of which are bird species) have a moderate potential of occurring in the project area: ferruginous hawk, loggerhead shrike, and prairie falcon. Brewer's sparrow, black-throated sparrow, sagebrush sparrow, sage thrasher, and loggerhead shrike are all typically more abundant in large blocks of sagebrush steppe; however, these species can use small patches of sagebrush habitat. Grasshopper sparrow, long-billed curlew, and short-eared owl typically nest in grassland habitats. Burrowing owl, ferruginous hawk, prairie falcon, and the Piute ground squirrel use a mix of both grassland and shrubland habitats.

3.6.2. Environmental Consequences

3.6.2.1. Alternative A: No Action

Under the No Action Alternative, the pipeline extension and water storage tank would not be constructed. As a result, BLM personnel would continue to haul water to wild horses during times when the existing pipeline system is not functioning properly, which could increase human activity and noise during the hauling of water for wild horses. In general, existing conditions and activities in the analysis area would continue.

3.6.2.2. Alternative B: Proposed Action

Impacts from the Proposed Action on wildlife would consist of habitat loss and disturbance from human activity and noise. Some habitat loss would be permanent due to the installation of the water tank's concrete base; some habitat loss would be temporary and would last up to two growing seasons until disturbed areas revegetate. Disturbance from human activity and noise would be temporary and would occur during construction and maintenance activities.

3.6.2.2.1. Habitat Loss

Habitat loss impacts would be similar for all wildlife species encountered in the analysis area and would consist of 8.5 acres of total temporary disturbance to wildlife habitat (0.02% of the analysis area) and 0.1 acre of permanent disturbance to wildlife habitat (0.0002% of the analysis area). There would also be permanent disturbance to wildlife habitat from the approximately 1.6 miles of two-track road created by overland travel during pipeline construction and maintenance. More specifically, permanent habitat impacts would occur on 0.1 acre of the Grassland/Herbaceous land cover class, which is 0.0004% of that land cover type in the analysis area. This habitat would be completely removed. Temporary impacts would occur on 8.1 acres of the Grassland/Herbaceous land cover class (0.03% of the land cover type in the analysis area) and 0.4 acre of the Shrub/Scrub land cover class (0.003% of the land cover type in the analysis area). This temporary habitat loss would be replaced through reseeding with a BLM-approved seed mix.

Construction activities would take up to 3 weeks. After construction is complete, 8.5 acres of wildlife habitat would again be available for use by wildlife after seeded vegetation establishes. Seeded grasses should be established by the end of the second growing season. If drought occurs after seeding, establishment of the seeded species could require additional time.

Loss of the Grassland/Herbaceous land cover class could affect the following special-status species with a moderate or high potential to occur in the project area:

- Ferruginous hawk
- Loggerhead shrike
- Prairie falcon
- Black-throated sparrow
- Burrowing owl
- Grasshopper sparrow
- Long-billed curlew
- Sage thrasher
- Short-eared owl
- Piute ground squirrel

Loss of the Shrub/Scrub land cover class could affect the following special-status species with a high potential to occur in the project area:

- Ferruginous hawk
- Loggerhead shrike
- Prairie falcon
- Black-throated sparrow
- Burrowing owl
- Brewer's sparrow
- Sage thrasher
- Sagebrush sparrow
- Piute ground squirrel

Habitat alteration would result in the direct loss of elements such as groundcover, which may cause a localized decrease in available forage and cover for certain species (e.g., birds) and an increase in predation on species such as rodents and reptiles on exposed soils. However, effects to wildlife species populations are considered localized and negligible because of the relatively small percentage of surface disturbance (0.02% temporary disturbance and 0.0002% permanent disturbance in the analysis area, as well as limited disturbance to the Grassland/Herbaceous (0.03%) and Shrub/Scrub (0.003%) land cover classes in the analysis area). In addition, most individual animals would be able to move into adjacent habitat as needed to avoid the disturbance. In rare instances burrowing animals may be harmed when trenching with a grader or backhoe. Reseeding of disturbed areas at the completion of construction would reduce habitat impacts by restoring the area to pre-construction conditions within a few years.

3.6.2.2.2. Human Activity and Noise

Types of noise associated with construction include engine noise from road graders, backhoes, and trucks; backup alarms; human voices; and other common construction sounds. Effects on wildlife from human activity and noise during construction would consist of auditory and visual disturbances to individual animals in or near the project area, which could cause stress to individual animals. Some individual animals such as pronghorn would likely leave the immediate area, resulting in a temporary (during construction) spatial redistribution of individuals or habitat-use patterns. Rodents active at night would likely remain in underground burrow systems and would not be displaced. Construction activity and noise would be a direct, temporary impact that would disappear at the completion of project construction. Some additional human activity and noise would also occur in the long term during inspection and maintenance activities (pipeline conditions would typically be observed during BLM weekly checks of wild horses and grazing permittees check water systems when livestock are present). Major maintenance on underground water pipelines is typically needed every 20–30 years. Maintenance on the water storage tank would be conducted on an as-needed basis. Major maintenance on this type of tank is typically needed approximately every 15 years. Vehicle use associated with the Proposed Action (during construction and maintenance) would result in an increased risk of vehicle-animal collisions on project access roads and could cause stress to individual animals. Vehicle-animal collisions could cause injury or mortality to individual wildlife. This risk would be small because of the low level and sporadic nature of anticipated vehicle use. Because of the short-term nature of project construction activities (no more than 3 weeks) and the availability of similar habitat nearby, human activity and noise from the Proposed Action would not have long-term impacts on wildlife populations.

Specifically for migratory birds, impacts from the Proposed Action could include a localized loss of habitat in the analysis area from surface disturbance and removal of vegetation, the displacement of individual birds, and a temporary relocation of prey from the project area because of human activity and noise. Habitat loss would be limited because of the small amount of disturbance discussed above. Human activity and noise would primarily be short term during construction activities and would also occur sporadically during maintenance activities. Similar habitat for displaced prey or individual birds would be available in adjacent areas. Under the Proposed Action, construction activities would be prohibited from March 15 to July 30 to avoid impacts to migratory birds during the breeding/nesting season (see section 2.3.3). This would protect the bird species with a moderate or high potential to occur in the project area during nesting and brood rearing. A small amount of habitat (8.5 acres of temporary disturbance and 0.1 acre of permanent disturbance) would be damaged for the next breeding season.

BLM data indicate that the Piute ground squirrel breeding activity period is early February to July 1 (BLM 2015e). By July, Piute ground squirrels have entered estivation and are not active. In addition, the breeding season of the pygmy rabbit is March through May in Idaho (Tesky 1994). Based on these data, the prohibition of construction activity from March 15 to July 30 would also limit impacts to this species, although it has a low potential for occurrence in the project area.

3.7. Wild Horses

The analysis area for wild horse–related issues is the Saylor Creek HMA. This area covers 101,876 acres and was chosen because the pipeline extension would be constructed in the HMA and because it contains all the wild horses that would be affected by the Proposed Action (Figure 3-6). The water storage tank would be located just outside of the HMA boundary to the east.

3.7.1. Affected Environment

The Saylor Creek HMA encompasses 101,876 acres. Approximately 95,000 acres of the HMA are BLM land, 1,000 acres are private land, and 6,000 acres are state endowment land. The Saylor Creek HMA was established following passage of the Wild Free-Roaming Horses and Burros Act of 1971. The project area is also in the Twin Butte Allotment, and the horses spend much of their time in the West Pasture of the Twin Butte Allotment (see Figure 3-6) (BLM 2015a).

Development of private agricultural lands and some conversion of public lands to private land in the Grindstone area beginning in the 1960s slowly eliminated access to natural water at the Snake River for wild horses. When the HMA was created it did not include any of the Snake River, resulting in the wild horse herd's total dependence on developed livestock water systems. No naturally occurring perennial water sources occur in the HMA (BLM 2015a). The HMA has four water pipeline systems consisting of 93 miles of pipeline and 69 troughs that provide water to livestock and the wild horse herd (BLM 2015a). Because of the lack of naturally occurring water in the HMA, maintenance of these artificial water systems is critical to the well-being of the wild horse herd. The BLM currently works with permittees to maintain these water systems and to ensure wild horses always have sufficient water available. Permittees are primarily responsible for daily operation and maintenance duties when domestic livestock are present on allotments in the HMA. During these periods, the BLM continues to inspect pipelines and troughs but at a lower frequency than when livestock are not present on allotments in the HMA. The BLM typically assumes responsibility for the daily operations and maintenance of these water systems (BLM 2015a).

The BLM has water system maintenance duties year round due to its responsibility to ensure that wild horses have adequate drinking water. However, the grazing permittees take on much of the responsibility during their season of use. Maintenance is shared between the BLM and permittees on larger issues, even when livestock are not present. Many times, permittees have helped the BLM with maintenance issues even during times when livestock are not present. If a maintenance issue is preventing delivery of water to wild horses, permittees will often communicate this to the BLM during times when livestock are present.

The number of wild horses on the HMA has varied over the past decade primarily due to wildfires. After the Clover Fire in 2005, 334 horses were removed from the HMA, with 12 remaining in unburned portions of the HMA. In 2006, 93 horses were returned to the HMA. The population of wild horses on the HMA had grown from 105 (93 returned and 12 remaining on the HMA) in 2006 to 168 in 2009 (BLM 2015a). After the fires in 2010, 194 horses were removed from the HMA, with five horses remaining in unburned portions of the HMA. In September 2011, 30 horses were released back to the HMA. The latest census counted 52 horses in June 2014 (BLM 2015g).

There are currently 80 miles of water pipeline and 58 water storage tanks and troughs in the analysis area. The artificial water system in the analysis area has been unreliable since 2005, resulting in two periods during which water had to be hauled for livestock and wild horses. Each of these periods lasted approximately 2 weeks, during which water was hauled twice per day.

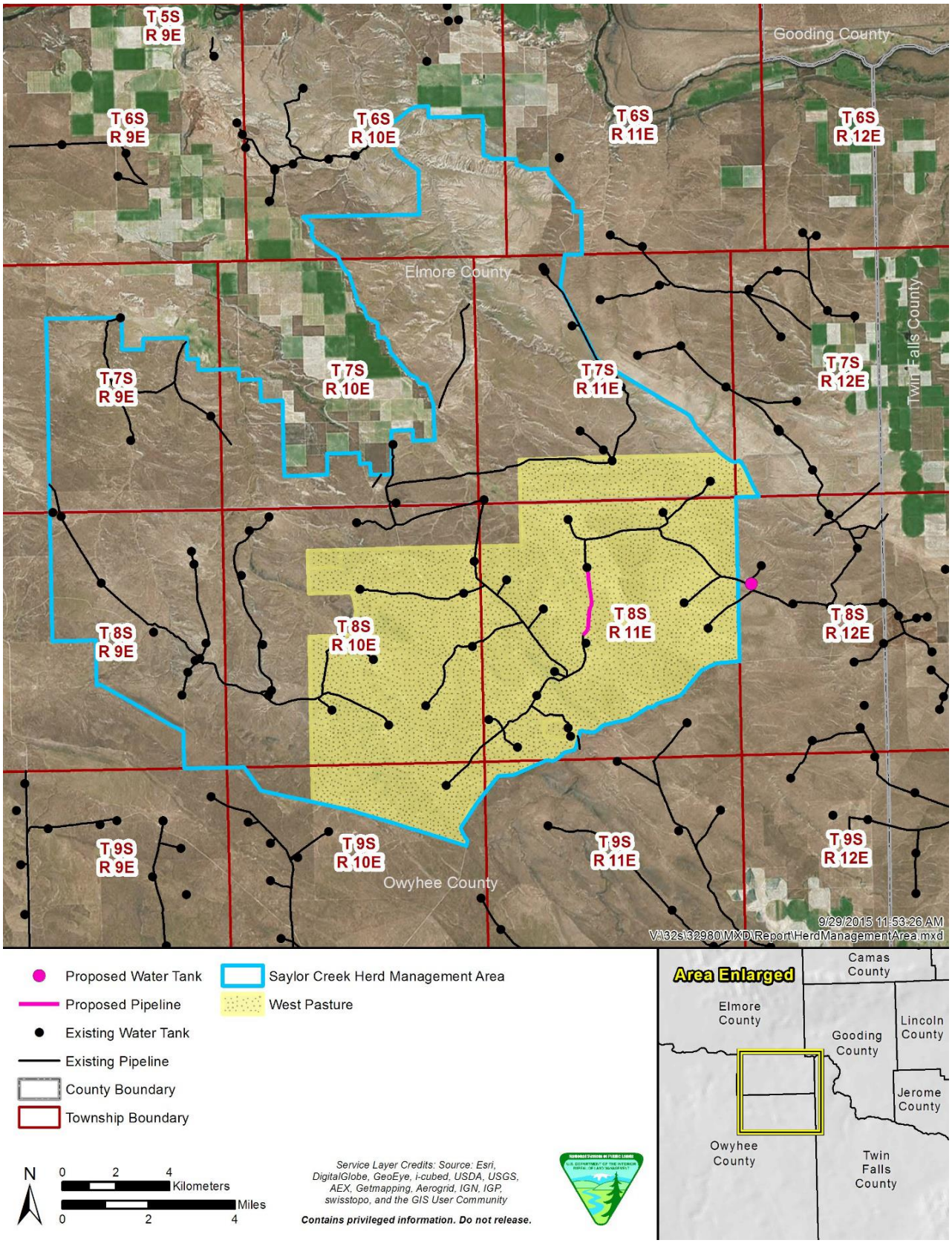

Figure 3-6. Wild horse analysis area (Saylor Creek Herd Management Area) boundary.

3.7.2. Environmental Consequences

3.7.2.1. Alternative A: No Action

Under the No Action Alternative, the pipeline extension and water storage tank would not be constructed, and the water supply available to wild horses in the analysis area, as well as the reliability of that water supply, would remain at existing levels (80 miles of water pipeline and 58 water storage tanks and troughs). BLM personnel would continue to haul water to wild horses during times when the existing pipeline system is not functioning, as previously described in section 1.2. This would make the water supply for wild horses less reliable. Difficulties would arise that impede water hauling, such as weather conditions, damage to roads, or mechanical issues. Hauling water to the wild horses could also increase the potential for the spread of invasive and noxious weeds, because they could be transported by the haul trucks.

3.7.2.2. Alternative B: Proposed Action

Under the Proposed Action, the pipeline extension and water storage tank would be constructed and would increase the water supply available to wild horses in the analysis area, as well as increase the reliability of that water supply. The construction activities would cause both temporary and permanent surface disturbance in the analysis area that would result in an impact to forage for wild horses. The proposed pipeline extension would create approximately 7.0 acres (0.007% of the analysis area) of temporary surface disturbance. There would also be minimal permanent surface disturbance from the approximately 1.6 miles of two-track road created for pipeline maintenance. Once construction of the pipeline extension is complete, the area of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass), replacing any disturbed forage for wild horses. It typically takes two growing seasons for reseeded areas to revegetate.

Construction activities have the potential to increase the spread of invasive weeds in the analysis area, which could, over time, affect available forage for wild horses. As described in section 3.5.2.2.2. (Noxious and Invasive Weeds), 156.4 acres would be at increased risk for weed invasion under the Proposed Action.

CHAPTER 4. CUMULATIVE IMPACTS ANALYSIS

As defined in 40 CFR 1508.7 (the CEQ regulations for implementing NEPA), cumulative impacts on the environment result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (RFFAs), regardless of which agency (federal or non-federal) or person undertakes such other actions.

4.1. Analysis Areas

The geographic extent of cumulative impacts varies by the type of resource and resource issues and by the type of potential impact. Different cumulative impacts analysis areas (CIAAs) have been developed for each resource and are listed in Table 4-1. In all cases, the CIAA is the same as the analysis area described in Chapter 3.

Table 4-1. Cumulative Impacts Analysis Area by Resource Issue Category

Resource Issue Category	CIAA	Rationale	Total CIAA Acreage
Fuels and fire management	Saylor Creek East MUA	All potential direct, indirect, and cumulative impacts to fuels and fire management would occur in this area.	446,142
Livestock grazing	Twin Butte Allotment	The pipeline extension and water storage tank would be constructed in this allotment, and it contains all of the livestock that would be affected by the Proposed Action.	51,340
Soils	Middle Deadman Creek and Upper Rosevear Gulch watersheds	Watersheds provide a distinct, natural topographic boundary in which to analyze potential impacts to soil.	46,362
Vegetation	Middle Deadman Creek and Upper Rosevear Gulch watersheds	Watersheds provide a distinct, natural topographic boundary in which to analyze potential impacts to vegetation, and vegetative connectivity is linked to watersheds.	46,362
Wildlife, including migratory birds and special-status species	Middle Deadman Creek and Upper Rosevear Gulch watersheds	Watersheds represent a defined continuous area linked by common watercourses on which wildlife depend.	46,362
Wild horses	Saylor Creek HMA	The pipeline extension would be constructed in the HMA, and it contains all the wild horses that would be affected by the Proposed Action	101,876

4.2. Past, Present, and Reasonably Foreseeable Future Actions

Past actions in the CIAAs include fires (Clover Fire 2005, Long Butte Fire 2010, and Kinyon Road Fire 2012), livestock grazing, existing pipelines, and wild horse use. Past fires removed sagebrush, and areas were reseeded with crested wheatgrass. Cheatgrass and other annual grasses are also present. Impacts to soils and vegetation from livestock and wild horses differ in that impacts from livestock are generally more concentrated as cattle tend to stay close to water sources and in lower-elevation areas and wild horses wander much farther from water sources and range widely through both steep, hilly terrain and lower, more level areas. The larger range of wild horses and their natural grazing patterns help prevent the range from getting denuded, as can happen in the areas where cattle concentrate. Cattle also tend to have a greater impact on vegetation because they often pull out vegetation by the roots when they eat it, rather than clipping the grass with their teeth as horses do. Pulling the vegetation out by the roots prevents plants from growing back, while clipped vegetation does regenerate. Past wild horse use in the HMA was up to 350 horses, which was far above the 1987 appropriate management levels, which is 50. Present actions in the CIAAs include livestock grazing and wild horse use. Current wild horse use is approximately 50 horses.

RFFAs are decisions, funding, or formal proposals that are either existing or are highly probable based on known opportunities or trends. RFFAs occurring in the CIAAs include fires, fuel breaks, livestock grazing, wild horse use, and the Gateway West Transmission Line Project (referred to as the GWW project). The GWW project would cause surface disturbance from structure installation, creation of roads for construction and maintenance, and areas for supply and equipment during construction. Because specific numbers and locations of these surface disturbance activities are not available, the cumulative impacts analysis takes a conservative approach and assumes that the entire 250-foot GWW project right-of-way (ROW) would create surface disturbance.

4.3. Cumulative Impacts by Resource Issue Category

Cumulative impacts organized by resource issue category are described below. A choice of No Action would not contribute incrementally to the impacts of past, present, and RFFAs, because under the No Action Alternative, the pipeline extension and water storage tank would not be constructed. As a result, no cumulative impacts analysis associated with the No Action Alternative is presented below.

4.3.1. Fuels and Fire Management

The effects of past and present actions on fire and fuels management are summarized in section 3.2.1 and section 4.2.

The GWW project will add 33.7 miles (1,021.5 acres) of transmission line in the CIAA, the construction and maintenance of which could increase the potential for fires because of possible sparks from construction vehicles and equipment.

When added to the ROW for the GWW project, the area affected by construction activities and the increased risk of fire under the Proposed Action would represent an approximately 0.8% cumulative increase in area affected by construction activities and in area susceptible to fires caused by construction activities in the CIAA. The Proposed Action would also provide an additional 40,000 gallons of water that would be available for fire suppression activities in the analysis area. This would be a large increase over the water currently available on-site for fire suppression activities in the CIAA. This is especially true for the area surrounding the project area, which has no naturally occurring surface water. There would also be a slight risk of fire caused by construction activities. Sparks from construction vehicles and equipment could start fires in the proposed work areas. This would be a slight cumulative increase to the impact of past, present, and RFFAs that increase the risk of fires in the CIAA. However, fire extinguishers would be required to be on hand during construction activities, which would mitigate this potential impact.

4.3.2. Livestock Grazing

The effects of past and present actions on livestock grazing are summarized in section 3.3.1 and section 4.2.

The GWW project will add 8.3 miles (250.4 acres) of transmission line in the CIAA, which will cause surface disturbance that could affect forage for livestock. The water storage tank under the Proposed Action would represent an approximately 0.6% cumulative increase in surface disturbance in the CIAA when added to the disturbance from the GWW project. The two-track road under the Proposed Action would represent a minimal cumulative increase in permanent surface disturbance in the CIAA when added to the disturbance from the GWW project.

Under the Proposed Action, the pipeline extension and water storage tank would result in a cumulative increase in the quantity and reliability of water for livestock in the CIAA. The water storage tank would ensure that up to 40,000 gallons of water would be available to livestock in the CIAA. Because of the

current unreliability of water sources for livestock in the CIAA, this would be a large cumulative improvement over existing conditions, especially because there are no naturally occurring water sources in the CIAA.

The construction of the pipeline extension and water storage tank would result in a minimal cumulative addition of surface disturbance to livestock forage in the CIAA. The pipeline extension would create approximately 7.0 acres (0.01% of the CIAA) of temporary surface disturbance. The water storage tank would cause approximately 0.1 acre (0.0002% of the CIAA) of permanent surface disturbance and 1.6 acres (0.003% of the CIAA) of temporary surface disturbance in the analysis area. There would also be minimal permanent surface disturbance from the approximately 1.6 miles of two-track road created for pipeline maintenance. Once pipeline extension and water storage tank construction is complete, the areas of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass). It typically takes two growing seasons for reseeded areas to revegetate.

Construction activities would also result in a minimal cumulative increase in the risk of the spread of invasive weeds in the CIAA, which could affect available forage for livestock.

4.3.3. Soils

In the soils CIAA, there are 60.9 acres classified as the Pasture/Hay land cover class, 116.3 acres classified as the Cultivated Crops land cover class, and 14.9 acres classified as the Developed, Open Space land cover class (see Table 3-5). These land cover classes indicate impacts to soils through erosion and top soil degradation. This past and present surface disturbance affecting soils totals 192.1 acres, which represents 0.41% of the soils CIAA. Other past and present actions that may have impacted soils include fires and grazing by wild horses and livestock.

RFFAs include fires, implementation of fuel breaks along major routes and in pasture areas, livestock and wild horse grazing, and the GWW project. Assuming a 250-foot ROW, the GWW project would add 13.1 miles (396.6 acres) of surface disturbance in the soils CIAA.

The construction of the pipeline extension and water storage tank would result in a small cumulative addition of surface disturbance to soils in the CIAA. The Proposed Action would create 8.5 acres of temporary surface disturbance (0.02% of the CIAA) and 0.1 acre of permanent surface disturbance (0.0002% of the CIAA). Assuming that both temporary and permanent surface disturbance from the Proposed Action would add cumulatively to the 192.1 acres of surface disturbance from past and present actions and to the 396.6 acres of surface disturbance from RFFAs, the 8.6 acres of surface disturbance would be a 1.5% increase to the acres disturbed by past, present, and RFFAs in the soils CIAA.

After pipeline extension and water storage tank construction is complete, the areas of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass). It typically takes two growing seasons for reseeded areas to revegetate. Once areas of temporary disturbance are successfully reseeded, they would no longer contribute to cumulative impacts in the soils CIAA.

4.3.4. Vegetation

In the vegetation CIAA there are 60.9 acres classified as the Pasture/Hay land cover class, 116.3 acres classified as the Cultivated Crops land cover class, and 14.9 acres classified as the Developed, Open Space land cover class. These land cover classes indicate impacts to vegetation that include removal of native vegetation communities and soil disturbance. This past and present surface disturbance affecting vegetation totals 192.1 acres, which represents 0.41% of the vegetation CIAA. Other past and present actions that may have impacted vegetation include fires and grazing by wild horses and livestock.

RFFAs include fires, implementation of fuel breaks along major routes and in pasture areas, livestock and wild horse grazing, and the GWW project. Assuming a 250-foot ROW, the GWW project would add 13.1 miles (396.6 acres) of surface disturbance in the vegetation CIAA.

The construction of the pipeline extension and water storage tank would result in a small cumulative addition of surface disturbance to vegetation in the CIAA. The Proposed Action would create 8.5 acres of temporary surface disturbance (0.02% of the CIAA) and 0.1 acre of permanent surface disturbance (0.0002% of the CIAA). Assuming that both temporary and permanent surface disturbance from the Proposed Action would add cumulatively to the 192.1 acres of surface disturbance from past and present actions and to the 396.6 acres of surface disturbance from RFFAs, the 8.6 acres of surface disturbance would be a 1.5% increase to the acres disturbed by past, present, and RFFAs in the vegetation CIAA.

After pipeline extension and water storage tank construction is complete, the areas of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass). It typically takes two growing seasons for reseeded areas to revegetate. Once areas of temporary disturbance are successfully reseeded, they would no longer contribute to cumulative impacts in the vegetation CIAA.

Surface disturbance and construction activities from the Proposed Action would also result in a cumulative increase in the risk of the spread of noxious and invasive weeds in the vegetation analysis area. The Proposed Action would result in 156.4 acres of land at increased risk for weed invasion (see section 3.5.2.2.2), which could add cumulatively to other lands at increased risk for weed invasion in the analysis area (such as the GWW project). Weed treatments have previously been conducted in the CIAA (see Figure 3-4).

4.3.5. Wildlife, including Migratory Birds and Special-Status Species

Past, present, and RFFAs could adversely affect wildlife habitat, contribute to habitat fragmentation, displace individual wildlife species, increase collisions between wildlife and vehicles, and potentially impact the health of individual animals through stress. These impacts could affect all wildlife, including migratory birds.

Traffic, noise, and increased human activity in the project area during construction activities would create short-term cumulative impacts on wildlife in the wildlife CIAA. A long-term cumulative impact would also be created by the presence of human activity and noise associated with maintenance activities and the permanent loss of 0.1 acre of habitat. Possible use of the two-track road by the public for recreation and viewing wild horses could also cumulatively increase the presence of human activity and noise in the analysis area. The severity of the cumulative impacts would depend on factors such as the sensitivity of the species affected, seasonal intensity of use, type of activity, and physical parameters (e.g., topography, forage, and cover availability).

Cumulative impacts to wildlife habitat in the wildlife CIAA consist of the replacement of habitat with developed uses, including 60.9 acres of the Pasture/Hay land cover class, 116.3 acres of the Cultivated Crops land cover class, and 14.9 acres of the Developed, Open Space land cover class. This past and present surface disturbance affecting wildlife habitat totals 192.1 acres, which represents 0.41% of the wildlife CIAA. Other past and present actions that may have impacted wildlife habitat include fires and grazing by wild horses and livestock.

RFFAs include fires, implementation of fuel breaks along major routes and in pasture areas, livestock and wild horse grazing, and the GWW project. Assuming a 250-foot ROW, the GWW project would add 13.1 miles (396.6 acres) of surface disturbance in the wildlife CIAA.

The construction of the pipeline extension and water storage tank would result in a small cumulative addition to the past, present, and RFFA disturbance in wildlife habitat in the CIAA. The Proposed Action would create 8.5 acres of temporary surface disturbance (0.02% of the CIAA) and 0.1 acre of permanent surface disturbance (0.0002% of the CIAA). Assuming both temporary and permanent surface disturbance from the Proposed Action would add cumulatively to the 192.1 acres of surface disturbance from past and present actions and to the 396.6 acres of surface disturbance from RFFAs, the 8.6 acres of surface disturbance would be a 1.5% increase to the acres disturbed by past, present, and reasonably foreseeable actions in the wildlife CIAA.

After construction of the pipeline extension and water storage tank is complete, the areas of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass). It typically takes two growing seasons for reseeded areas to revegetate. Once areas of temporary disturbance are successfully reseeded, they would be available for wildlife to use as habitat and would no longer contribute to cumulative impacts in the wildlife CIAA.

4.3.6. Wild Horses

The effects of past and present actions on wild horses are summarized in section 3.7.1 and section 4.2.

The GWW project will add 13.2 miles (398.4 acres) of transmission line in the CIAA, which will cause surface disturbance that could affect forage for wild horses. The two-track road under the Proposed Action would represent a minimal cumulative increase in permanent surface disturbance in the CIAA when added to the disturbance from the GWW project.

Under the Proposed Action, the pipeline extension and water storage tank would result in a cumulative increase in the quantity and reliability of water for wild horses in the CIAA. The water storage tank would ensure that up to 40,000 gallons of water would always be available to wild horses in the CIAA. Because of the current unreliability of water sources for wild horses in the CIAA, this would be a large cumulative improvement over existing conditions, especially because there are no naturally occurring water sources in the CIAA.

The construction activities would cause both temporary and permanent surface disturbance in the analysis area, which would result in a minimal cumulative impact to forage for wild horses. The proposed pipeline extension would create approximately 7.0 acres (0.007% of the CIAA) of temporary surface disturbance. There would also be minimal permanent surface disturbance from the approximately 1.6 miles of two-track road created for pipeline maintenance. Once construction of the pipeline extension is complete, the area of temporary disturbance would be reseeded with a BLM-approved seed mix (crested wheatgrass or Siberian wheatgrass). It typically takes two growing seasons for reseeded areas to revegetate.

Construction activities under the Proposed Action have the potential to increase the spread of invasive weeds in the CIAA, which could affect available forage for wild horses.

CHAPTER 5. CONSULTATION, COORDINATION, AND PARTICIPATION

5.1. Persons, Groups, and Agencies Consulted

Because of the size, scale, and location of the project near existing water pipeline facilities, the BLM consulted only with affected grazing permittees and the Idaho Department of Lands. There was no need for the BLM to consult with other agencies, persons, or groups as part of completing this analysis.

5.2. Summary of Public Participation

The BLM conducted internal scoping on the Proposed Action and completed an ID team checklist on February 23, 2015. Issues identified by the ID team were incorporated into this EA for analysis. Additional information on public participation is also provided in section 1.8.

5.3. List of Preparers

Tables 5-1 and 5-2 identify BLM staff and consultants used in the preparation of this EA.

Table 5-1. Bureau of Land Management Staff Used in the Preparation of this Environmental Assessment

Name	Position	Role
Jeff Ross	Archaeologist	Project management
Shane Wilson	Park ranger	Project management
Julie Hilty	Fire ecologist	Fuels and fire management
Ken Crane	Supervisory rangeland management specialist	Livestock grazing, wild horses
Michael Haney	Botanist	Soils, vegetation
Jim Klott	Wildlife biologist	Wildlife, including migratory birds and special-status species

Table 5-2. SWCA Environmental Consultants Staff Used in the Preparation of this Environmental Assessment

Name	Position	Role
Ben Gaddis, M.E.M.	Project manager	NEPA oversight, review of all sections
Gretchen Semerad, M.S.	NEPA writer	Soils, vegetation, wildlife
Jeremy Eyre, J.D.	Assistant project manager and NEPA writer	Fire and fuels management, livestock grazing, wild horses
Rachel Johnson, B.S.	Geographic information system (GIS) specialist	GIS and mapping
Linda Tucker-Burfitt, B.A. Kari Chalker, M.A.	Technical editor	Technical editing and formatting

CHAPTER 6. LITERATURE CITED

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