Final

Environmental Assessment for Operational Changes and Range Improvements in the Mountain Home Range Complex

September 2016

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FINDING OF NO SIGNIFICANT IMPACT
MOUNTAIN HOME AIR FORCE BASE RANGE COMPLEX
MOUNTAIN HOME AFB, IDAHO

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States (U.S.) Code (USC) Sections 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) Parts 1500-1508, and 32 CFR Part 989, Environmental Impact Analysis Process, the U.S. Air Force (USAF) assessed the potential environmental consequences associated with operational changes at the Mountain Home Range Complex (MHRC). The Complex comprises Saylor Creek Range (SCR), Juniper Butte Range (JBR), target and emitter sites, and overlying special use airspace located primarily in Owyhee County in southwestern Idaho.

The purpose of the Proposed Action is to sustain the primary mission of 366th Fighter Wing (366 FW), which is to provide mission-ready gunfighters to fight today's war and the next, as well as providing the most up-to-date air-to-air and air-to-ground support training opportunities and long-term viability of MHRC associated airspace and ranges for 366 FW and other Department of Defense (DoD) aircrews. Supporting current, emerging, and future integrated-based training operations, especially relating to the integration of air and ground operations is critical for sustaining 366 FW mission. These operational changes are needed to maintain pace with emerging and future combat training needs through continued upgrade and modernization of range facilities, targets, and impact areas at the MHRC. The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with operational changes at MHRC, and provides environmental protection measures to avoid or reduce adverse environmental impacts.

The EA considers all potential impacts of Alternative 1, the Air Force's preferred alternative because it best meets the purpose of and need for the Proposed Action, Alternative 2, and the No-Action Alternative. The EA also considers cumulative environmental impacts with other projects in the region.

The USAF distributed the Draft EA on June 1, 2016 and announced its availability for public review in the *Idaho Statesman*, *Times News*, and *Mountain Home News* newspapers on June 1, 2016. The Draft EA was distributed to agencies and regional libraries on June 1, 2016 for public comment over a 30-day period. The review period for the Draft EA and Finding of No Significant Impact (FONSI); however, was extended to July 25, 2016 to ensure full participation of agencies, Tribes, and general public. Notice of this extension was publicized in local papers on June 29, 2016. Over the extended review period, two comments were received from the public; one that noted their support of the proposed action and another that identified items of clarification. Chapter 2 of the EA was revised to address these comments associated with Clover-Three Creek Road blockage, identification of buildings to be demolished on Saylor Creek Range, and correction to text about the location of the proposed Assault Landing Zone.

ALTERNATIVE 1 (PREFERRED ALTERNATIVE): FULL IMPROVEMENT AND OPERATIONAL CHANGES TO ENHANCE INTEGRATED TRAINING

Under Alternative 1, the USAF would implement operational changes and improvements in the MHRC to enhance integrated air-to-air and air-to-ground training. These changes would involve upgrading ground-based operations, facilities, targets, and munitions to enhance the training related to integrated

ground-based and airspace units within the MHRC. Changes to ground-based operations within the MHRC under Alternative 1 would include:

Ground-Based Operations

- Convoy training on Highway 51 between Bruneau and Grasmere and on Clover-Three Creek Road between SCR and JBR. This training would occur two times every 3 months primarily Monday through Friday, with the exception of 3 to 4 weekends per year to support Air National Guard Drill weekends. Convoy training would occur between 8:00 a.m. and 10:00 p.m.; however, 70 percent would occur during daylight hours.
- Satellite communications jamming would comprise approximately 14 portable jamming units distributed throughout the MHRC, including SCR, emitter sites, and the Grasmere EC. Communications jamming would occur for 1 week up to four times a year. Each training episode would occur twice a day for approximately 2 hours.
- Up to six additional firing positions (FPs) within the Joint Use Land (JUL) area would be established as firing positions for inert artillery, mortars, rockets, and High Mobility Artillery Rocket System (HIMARS). Mortars and artillery would be fired from FPs 1 and 5, artillery from FP 3, and HIMARS and artillery firing from FPs 2, 4, and 6. Gravel pads would be constructed at each of the FPs and vegetation cleared up to 1 acre to prevent fires; access roads to the FPs would follow existing two-track roads to the greatest extent possible and also serve as a fire break. Firing would occur no more than 30 days a year, usually on a weekday between 8:00 a.m. and 2:00 a.m., with the majority of the firing occurring from noon to 2:00 a.m. Firing would not occur during sage grouse breeding and nesting seasons (March-June). Approximately 145 120mm, 300 105mm, 215 155mm, and 100 HIMARS would be fired from the FPs on an annual basis. The inert mortars/rockets/HIMARS would be fired by onsite personnel and not remotely.

Range and facility Improvements

- Demolishing two existing buildings to remove all non-essential personnel from the central EUA during operations. A new maintenance building and control tower would replace them and be constructed in the West Maintenance Complex and
- Using smoke generators on SCR Exclusive Use Area (EUA) to conceal targets up to 2 weeks annually.

Aircraft operational Improvements

- Establishing landing zones on JBR for helicopters and V-22 aircraft; proposed helicopter operations would average 4 weeks per year (or 28 days), with no more than two landings per day, totaling 56 operations per year and the V-22s would operate 2 weeks per year (or 14 days) with no more than four landings per day, totaling 28 operations per year and
- Developing a 75- by 5,000-feet compacted gravel assault landing zone (ALZ) would be constructed in the southeast corner of SCR EUA; additionally, a 200- by 500-feet aircraft parking apron on the southwest side of the strip would be constructed; the ALZ would accommodate unmanned aerial vehicles, helicopters, Special Forces aircraft, and V-22s; fixed-wing aircraft would be authorized during the day only, while rotary aircraft would be authorized both day and night; aircraft would land on average 30 days per year with up to three landings/takeoffs per day.

Target improvements

Adding up to six additional No Drop (ND) targets on JBR inside the 12,141-acre JBR boundary, but outside the current 662-acre impact area. These targets would be 2 acres in size and placed to minimize ground disturbance, especially to avoid slickspot peppergrass sites.

- Modifying existing ND-1 target array to reduce the number of vehicle targets and replace with target sets including urban villages, tanks, surface-to-air-missile sites, and anti-aircraft artillery sites would be built.
- Munitions improvements would include increases in 5.56mm, 7.62mm, and .50 Cal small arms munitions within the SCR EUA. New munitions within the EUA would include a few small arms (.22 Cal, 9mm, .45 Cal and 10 gauge), grenades (40mm MK19 Mod 3, M203/320), anti-tank rockets (66mm Light Anti-Tank Round, 84mm AT4), and physical munitions such as ground burst simulation, flare pens, star clusters, and artillery simulator. Mortars (60mm, 81mm, and 120mm) would be fired within the EUA and 120mm mortars from FPs in the JUL. Artillery (105mm, 155mm, HIMARS) would be fired from FPs in the SCR JUL only.

ALTERNATIVE 2: PARTIAL IMPROVEMENT AND OPERATIONAL CHANGES TO ENHANCE INTEGRATED TRAINING

Ground-based operations, and Range, Facility, and Target Improvements would be the same as Alternative 1 except 120mm mortars would not be fired from the JUL but would be employed in the EUA, along with 60mm and 81mm mortars.

Munitions Improvements would differ from Alternative 1 in that the following would not be used:

- Grenades (M203/M320 Grenade Launcher) using practice, smoke, and illumination munitions; the use of 40mm MK19 Mod 3 grenades would not change from baseline conditions.
- Artillery (105mm, 155mm, MLRS, and HIMARS) using training, smoke, illumination, and white phosphorus marking munitions.
- Anti-Tank rockets (66mm Light Anti-Tank Weapon, 84mm Anti-Tank [AT4]).

NO ACTION ALTERNATIVE

The No-Action Alternative represents the continuance of existing military training as identified in the current Comprehensive Range Plan. No changes to ground-based or air-to-ground operations would occur, and no improvements to facilities, targets, or munitions would be implemented. This alternative would restrict the ability to train in a realistic manner, particularly when joint forces are operating in the same battlefield environment.

SUMMARY OF FINDINGS

The Air Force has concluded that no significant or adverse effects (as presented in Sections 4.2 through 4.10 in the EA) would result to the following resources: acoustic environment; land management and use; safety; hazardous materials and waste, toxic substances and contaminated sites; air quality; transportation; natural resources; and cultural resources. No significant adverse cumulative impacts would result from activities associated with Alternative 1 or Alternative 2 when considered with past, present, or reasonably foreseeable future projects within the region (see Section 4.11). In addition, the EA concluded that the action alternatives would not affect airspace management and use, earth

resources, water resources, socioeconomics, as well as environmental justice and protection of children and the elderly. As such, it was determined that an Environmental Impact Statement was not required.

Alternative 1: Full Improvement and Operational Changes to Enhance Integrated Training

Acoustic Environment. Construction activities would occur within boundaries of ranges where no adjacent communities are found or people reside. Noise from convoy training would occur infrequently in a sparsely populated area and be consistent with normal commercial truck traffic that currently exists. With the exception of noise generated by the HIMARS rocket launches, all other munitions-generated noise would remain within JUL boundaries. No population would be affected by munitions from any of the proposed new FPs. Peak noise levels above 115 decibels (dB) would extend into 1,000 acres past the SCR along the west side but would still be at least 2 miles from the nearest farmhouse along the Bruneau River. Noise level changes would be minor and imperceptible to any residents living within the MHRC affected environment. No incompatible land uses would result from noise level changes. Short-term startle effects to wildlife inhabiting areas adjacent to construction activities could occur, but would not be significant as wildlife would be expected to move to adjacent habitat. Proposed munitions employment would not cause significant impacts to domesticated animals or wildlife.

Land Management and Use. No change to land ownership resulting from construction and changes in operations. Minor changes to grazing and temporary public access. No significant impacts to recreation resulting from noise-level changes. Range and target upgrades would not introduce significant impacts that would adversely affect adjacent visual landscapes.

Safety. Aircraft mishaps would not perceptibly increase. No additional safety impacts resulting from bird/wildlife aircraft strike hazards are anticipated. All proposed surface danger zones (SDZs) would be wholly contained within the SCR EUA except for the HIMARS, mortars, and artillery. No SDZs would fall outside of the SCR boundary. Fire risk associated with HIMARS would be reduced due to clearing of 1 acre of vegetation around the FP; a fire crew would be present during launches to extinguish potential fires, and fire-resistant vegetation would be planted around the FP to retard any fires from spreading quickly.

Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites. No new hazardous materials or hazardous waste streams would be introduced. The ability to continue storage and disposal of spent munitions would not be significantly impacted. Alternative 1 would not involve the use or disposal of toxic materials. No identified contaminated sites would be disturbed.

Air Quality. Proposed construction emissions would not exceed 250 tons per year for any criteria pollutant. Proposed operations would not result in net emissions increases for any of the criteria pollutants in excess of 250 tons per year. In terms of greenhouse gases (GHGs) emissions of equivalent carbon dioxide would incrementally increase; however, emissions would not exceed the 25,000 metric tons per year guideline identified for GHG emissions.

Transportation. In general, construction traffic would result in minor, temporary, and intermittent increases in the use of roadways during construction activities. Increase in traffic as a result of the convoy operations would be minimal, increasing annual traffic counts by a maximum of 80 vehicle trips on Highway 51 and Clover-Three Creek Road; increasing Average Daily Trips by less than one vehicle trip.

Natural Resources. Given the limited scope of disturbance and the lack of native vegetation and high-quality habitats in areas proposed for construction, there would be no significant impacts to vegetation under Alternative 1. No adverse impacts would occur to wildlife during construction or operations. No wetlands would be impacted. No threatened, endangered, or special-status species would be affected by construction or changes in operations.

Cultural Resources. There would be no impacts to historic properties, archaeological, traditional, or unevaluated sites from Alternative 1.

Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

Acoustic Environment. All noise levels would be the same as identified under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles at the FPs on SCR. Therefore, no munitions-generated peak noise would extend outside SCR boundaries.

Land Management and Use. Impacts would be the same as described under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles and construction of the FPs on SCR. Public access and grazing would remain consistent with existing conditions.

Safety. Safety impacts would be the same as described under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles at the FPs on SCR. As a result, the SDZs would remain within the SCR EUA, and wildfire risk would remain similar to existing conditions.

Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites. Impacts would be the same as described under Alternative 1, the only difference would be fewer munitions expended.

Air Quality. Impacts would be the same as described under Alternative 1, the only difference would be fewer munitions expended and therefore, a lesser amount of emissions.

Transportation, Natural Resources, and Cultural Resources. Impacts to these resources would be the same as described under Alternative 1.

MITIGATION

Regardless of the alternative, all would be managed in accordance with the mitigations and management policies identified in:

- the SCR Public Land Order (PLO) No. 1027 of November 2, 1954, as amended by PLO No. 3192 of August 2, 1963 and PLO No. 4902 of September 16, 1970;
- the JBR Withdrawal Act, Public Law (PL) 105-261;
- Programmatic Agreement between Mountain Home AFB and the Idaho State Historic Preservation Agency;
- the Enhanced Training in Idaho (ETI) Record of Decision (ROD) and Supplemental ROD mitigation measures and management actions; and
- the Integrated Natural Resource Management Plan (INRMP) for SCR and JBR, Integrated Cultural Resources Management Plan (ICRMP) for SCR and JBR, and Biological Opinions with the U.S. Fish and Wildlife Service associated with SCR and JBR range activities.

For instance, the following examples of Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) prescribed in the INRMP and ICRMP, will be followed under any of the alternatives. For detailed plan management objectives and procedures, please contact the Mountain Home AFB Civil Engineer Division, Environmental Element.

BMPs and SOPs associated with the INRMP include but are not limited to:

Protect and conserve sage grouse and sage grouse habitat by:

- Restricting ground-based operations at designated emitters and no-drop sites during breeding and nesting periods.
- Requiring all vehicles to remain on existing roads to avoid destroying sage grouse habitat such as sagebrush and rabbitbrush.

Undertake slickspot peppergrass friendly rehabilitation practices by:

- Using only non-invasive plant materials. Do not use forage kochia, intermediate wheatgrass, and salt tolerant species such as four-wing saltbush.
- Employing native plants to the maximum extent practicable and in concert with the military mission.

Provide a grounds maintenance program that is compatible to the military mission as well as to conserving slickspot peppergrass and sage grouse habitat, and other special status species by:

- Providing annual Natural and Cultural Resource Awareness Training to all personnel using the range.
- Reseeding disturbed areas to increase desirable sage grouse vegetation.
- Using herbicides, pesticides, and soil sterilants appropriately.

Mitigate training effects to vegetation and potential sage grouse habitat by:

- Using cold spot or no spot ordnance to reduce risk of fires.
- Using simulated ordnance dropping during high fire risk times.
- Using fire ratings and restrictions to reduce the risk of fires.
- Providing ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
- Employing firefighters on range during declared fire season to provide immediate initial response for fires.
- Elevating flare release altitudes during declared fire season according to fire ratings.
- Providing ordnance cleanup to reduce the likelihood unconsumed flares from starting a fire.
- Employing firefighters on range during declared fire season to provide immediate initial response for fires.
- Avoiding disturbance at emitter sites during sage grouse breeding and nesting periods.

Mitigate maintenance effects by:

- Performing maintenance activities in previously disturbed areas to avoid impacts to slickspots and sage grouse habitat.

- Controlling undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
- Reseeding disturbed areas to increase desirable vegetation.
- Performing maintenance tasks when soils are drier, but prior to fire season to the maximum extent practicable.
- Restricting maintenance activities during fire season in accordance with fire ratings. Activities that may cause a fire (welding, using cutting torches) are restricted to morning hours in fire rating 3, or avoided altogether if fire rating is 4 or 5.

BMPs and SOPs associated with the ICRMP include but are not limited to:

Avoid potential damage to archaeological sites during ordnance and munitions clean-up activities at SCR and JBR, MHAFB personnel will:

- Coordinate with Environmental Flight on sensitive areas and avoidance periods.
- Operate all vehicles to minimize disturbance and fire; and when feasible given safety considerations site "firing areas" (locations where non-expended ordnance is detonated) in locations clear of dry vegetation and cultural resources.
- Have annual Natural and Cultural Resource Awareness Training prior to range cleanup. Training will focus on limiting disturbance and off-road driving procedures.
- Conduct clean up at JBR only when soil moisture is dry enough to permit driving on it without creating tire ruts. Efforts should be made to minimize disturbance to vegetation. All Terrain Vehicles should drive around, rather than over, slickspots, sagebrush, and rabbitbrush.
- Collect ordnance by staying on designated routes to the maximum extent practicable without compromising the mission.
- Adhere to SOPs as detailed in Chapter 4 of the ICRMP: (SOP 1) Wing leadership, Indian Tribal consultation (SOP 2), emergency discoveries (SOP 3), training (SOP 4), general treatment and protection of resources (SOP 5), maintenance of significant structures (SOP 6), monitoring and reporting site damage (SOP 7), protection of Surface Data (SOP 8), reporting Bald eagle and Golden eagle remains (SOP 9), and curation of cultural material (SOP 10).

Specific SOPs incorporated into the project to reduce impacts include:

- Slickspot peppergrass
  - All proposed LZ and ND target locations on the JBR will be surveyed prior to construction-related activities to ensure no slickspot peppergrass plants are present in areas designated for clearing and/or disturbance.
  - Convoy training along Clover-Three Creek Road will avoid both new ground disturbance in previously undisturbed areas and inadvertent trampling of slickspot peppergrass plants.
- Migratory birds
  - The existing Mountain Home AFB's aggressive Bird/Wildlife Aircraft Strike Hazard (BASH) program will continue to be observed to minimize strike hazards, and Best Management Practices and Standard Operating Procedures described in the 2012 Mountain Home AFB INRMP to minimize effects to special-status species and habitat will be adhered to strictly.

- Sage grouse
  - No firings from FPs in the JUL will occur during sage grouse breeding season (March-June).
- Convoy training notification
  - Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office.
- GPS jamming
  - Prior to a training episode, the 746th Test Squadron together with the 366 FW will notify the Federal Aviation Administration (through their Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures are implemented. The Mountain Home AFB Public Affairs will also notify local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. In the event of a safety issue, such as visually observing non-participating aircraft, communications jamming will halt immediately and not resume until the aircraft's safe passage through the airspace.
- FP safety measures
  - Public access to the SCR JUL and grazing allotments will be restricted during firing by blocking Clover-Three Creek Road into the SCR. The USAF will coordinate with local, state, and federal agencies prior to firing to ensure the safety of non-participating parties per DoD Instruction 1322.28, Realistic Military Training Off Federal Property. Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office. The Owyhee County Sheriff's Office will assist in restricting access to the JUL, but range personnel will ensure that the area is cleared before firing commences.
  - To minimize the potential of fire risk from HIMARS employment, 1 acre surrounding the FP will be cleared of all vegetation, fire resistant vegetation will be planted around the FP to act as a fire break, and trained fire crews will be present during launches to extinguish any fire ignitions.
  - munitions with white phosphorus will only be used when a range control officer (RCO) is present, so that if a munition lands outside the EUA, the EOD can be notified immediately. In the event that munitions with white phosphorus land outside the EUA, an EOD team and fire crew will be immediately dispatched to the site to ensure that a hazard does not exist to the public, wildlife, or livestock. Fire suppression support will be provided by the Range's contractor or the Bureau of Land Management (BLM) depending on the time of year. Fire crews will be increased as needed as the fire risk increases.

FINDINGS

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR Part 989, I conclude that the operational changes at MHRC would not have a significant environmental impact, either by itself or cumulatively with other projects in the region. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

_____ Date _____

JEFFERSON J. O'DONNELL, Colonel, USAF

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ACRONYMS AND ABBREVIATIONS

366 FW	366th Fighter Wing
ADT	Average Daily Traffic
AFB	Air Force Base
AFI	Air Force Instruction
AFSC	Air Force Safety Center
AGL	above ground level
ALZ	assault landing zone
ATCAA	Air Traffic Control Assigned Airspace
BASH	Bird/Wildlife-Aircraft Strike Hazard
BDU	Bomb Dummy Unit
BLM	Bureau of Land Management
BP	Before Present
CDNL	C-weighted DNL
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRM	Cultural Resource Manager
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
DNL	Day-Night Average Sound Level
DoD	Department of Defense
EA	Environmental Assessment
EC	Electronic Combat
EO	Executive Order
ETI	Enhanced Training in Idaho
EUA	Exclusive Use Area
FONSI	Finding of No Significant Impact
FP	firing point
GBU	Guided Bomb Unit
GHG	greenhouse gas
GPS	Global Positioning System
HAP	hazardous air pollutant
HIMARS	High Mobility Artillery Rocket System
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
LZ	helicopter landing zone
JBR	Juniper Butte Range
JTAC	Joint Terminal Attack Controller
JUL	Joint Use Land

L_{dnmr}	Onset-Rate Adjusted Day-Night Average Sound Level
L_{max}	Maximum Sound Level
MHRC	Mountain Home Range Complex
MLRS	Multiple Launch Rocket System
mm	millimeter
MOA	Military Operating Area
MSAT	Mobile Source Air Toxic
MSL	mean sea level
NEPA	National Environmental Policy Act
ND	No-Drop
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PBR	precision bombing range
PLO	Public Land Order
PM	particulate matter
RCO	Range Control Officer
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SAM	surface-to-air missile
SAR	Synthetic Aperture Radar
SCR	Saylor Creek Range
SDZ	surface danger zone
SEL	Sound Exposure Level
SERE	Survival, Evasion, Resistance, and Escape
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
U.S.	United States
USC	U.S. Code
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
WDZ	weapons danger zone
WISS	Weapons Impact Scoring System

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The United States (U.S.) Air Force (USAF) and 366th Fighter Wing (366 FW) at Mountain Home Air Force Base (AFB) prepared this Environmental Assessment (EA) analyzing possible operational changes at the Mountain Home Range Complex (MHRC). The Complex comprises Saylor Creek Range (SCR), Juniper Butte Range (JBR), target and emitter sites, and overlying special use airspace located primarily in Owyhee County in southwestern Idaho. As warfighting has changed in recent years, more emphasis has been placed on coordinated integrated training (e.g., air-based Air Force forces training with ground-based Army or Marine Corps forces), especially between air and ground units. Military training ensures that deployed forces are well trained and equipped to conduct integrated combat operations. As missions change, training assets need to adapt to evolving training needs. The target arrays at SCR have been stagnant over the last 5 years. The JBR target array has not changed since the range opened in April 2002. Additionally, the 726th Air Control Squadron (ACS) at Mountain Home AFB provides an air picture to the other aircraft as they train. Idaho Air National Guard unit, the 266th Range Squadron, controls and maintains emitter sites within the MHRC. Other units (e.g., Special Forces from installations in the region, as well as area Reserve, National Guard, and Army units) have requested integrated training with 366 FW to prepare for deployments abroad. To meet the changing warfighting requirements for integrating ground and air capabilities, range facilities, targets, and types and numbers of munitions used need to be improved within the MHRC. The Proposed Action includes operations, facility, target, and munitions improvements across the MHRC.

This EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (Public Law 91-190), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the USAF's implementing regulations (32 CFR Part 989) to determine the potential environmental consequences of implementing the Proposed Action at the MHRC. In addition to the Proposed Action, NEPA requires the USAF to analyze the No-Action Alternative. Under the No-Action Alternative, the USAF would continue to perform military training identified in the current Comprehensive Range Plan.

1.2 Background

Mountain Home AFB is the home to 366 FW. It is located in southwestern Idaho and is approximately 50 miles southeast of Boise and 8 miles southwest of Mountain Home (Figure 1-1). Mountain Home AFB also includes the Small Arms Range, Rattlesnake Radar Station, Middle Marker and C.J. Strike Dam Recreation Annex, and the MHRC. At present, Mountain Home AFB has three fighter squadrons—two F-15E squadrons from 366 FW and one squadron of F-15SGs from the Republic of Singapore Air Force (Table 1-1).

Table 1-1. Composition of 366 FW in 2011

Aircraft Type	Aircraft	Squadron Designation
F-15E	18	389th Fighter Squadron
F-15E	24	391st Fighter Squadron
F-15SG (Singapore)	14	428th Fighter Squadron
Total	**56**	

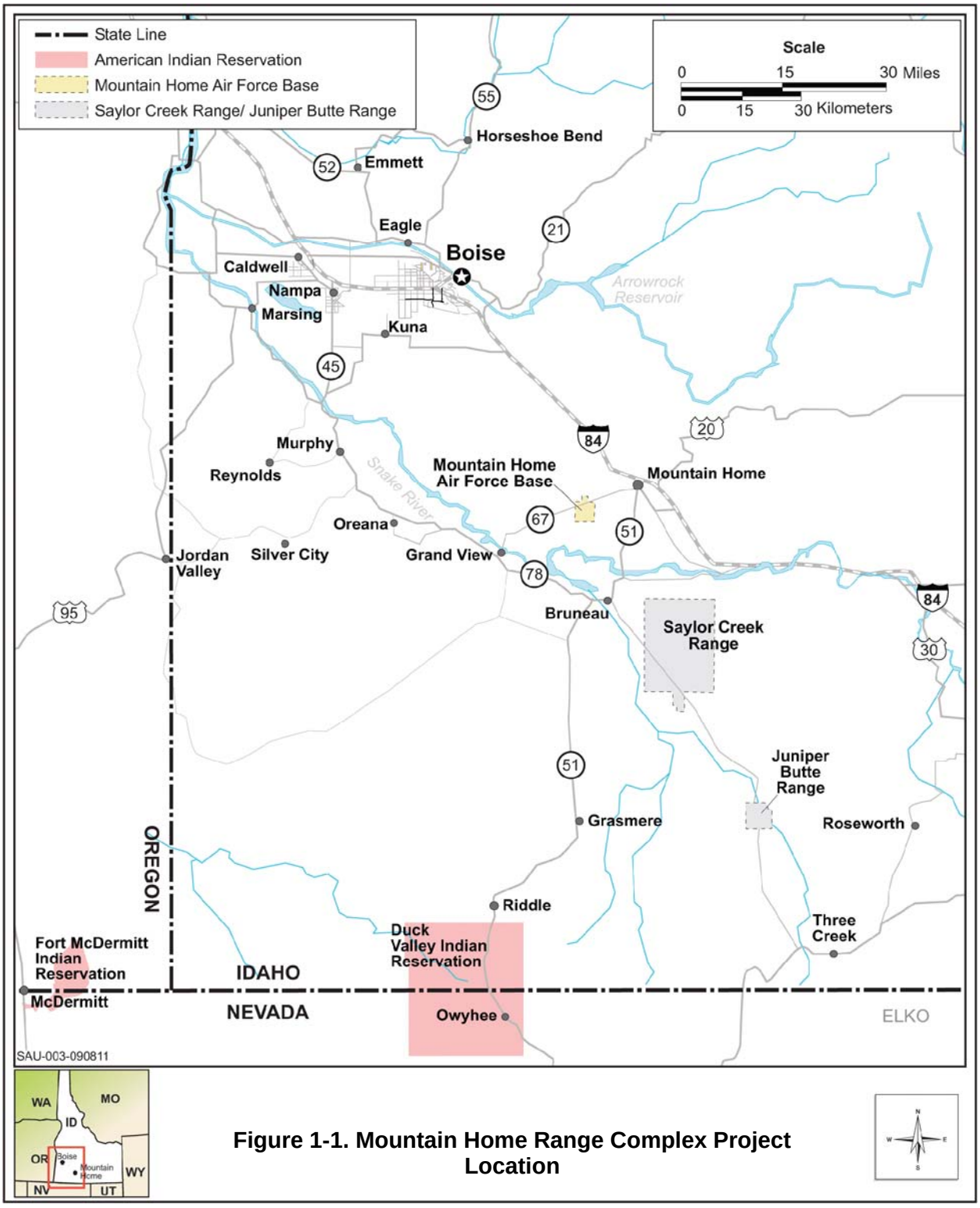

Figure 1-1. Mountain Home Range Complex Project Location

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The base has a 68-year history of adapting to the effects of changing USAF missions, from the World War II long-range, heavy bombers (B-24s, B-29s, and B-47s), to Cold War-era modern fighters (F-16s and F-15Cs) and bombers (B-1Bs), to the current F-15E/F-15SG squadrons. Mountain Home AFB has expanded, constricted, closed, and re-opened several times. Since 1990, the number of aircraft based at Mountain Home AFB has varied from a high of 76 to its present level of 56. There are currently two primary missions at Mountain Home AFB: to rapidly deploy to conflicts and trouble spots around the world, and to be the foreign military pilot training location for the Republic of Singapore F-15SGs (USAF 2013).

The MHRC supports air-to-air training, air-to-ground bombing and gunnery training, and Electronic Combat (EC) training activities. The MHRC is managed by 366 FW and comprises over 9,026 square nautical miles of airspace and multiple ground-based training ranges, all of which are critical to the readiness of combat aircrews from Mountain Home AFB. Aircraft based at Mountain Home AFB conduct over 90 percent of their flight training in the MHRC. Additionally, other aircraft from Air Combat Command, Air National Guard, sister services, and foreign allies regularly train in the MHRC, which makes the property and training opportunities provided by the MHRC a valuable Department of Defense (DoD) asset.

The MHRC airspace includes six Military Operations Areas (MOAs) and an associated Air Traffic Control Assigned Airspace (ATCAA), allowing aircraft to train at altitudes up to 50,000 feet mean sea level (MSL) (Figure 1-2). The MHRC also incorporates two air-to-ground weapons ranges (SCR and JBR), No-Drop (ND) targets, emitter sites, and Grasmere EC site (Figure 1-3). The ranges provide aircrews a realistic layout of simulated targets similar to those they might encounter during actual combat, such as an airfield, an industrial complex and radar, missile stations, as well as gun and artillery sites.

An air-to-ground range, SCR encompasses approximately 109,466 acres in Owyhee County in southwestern Idaho, approximately 25 miles southeast of Mountain Home AFB. The land within SCR is withdrawn from all forms of appropriation under public land laws, including mining and mineral leasing laws, and is reserved for the exclusive use of the USAF. On SCR, the Exclusive Use Area (EUA) is a designated impact area that consists of approximately 12,840 fenced acres in the center of SCR. The remaining acreage surrounding the EUA is the Joint Use Land (JUL), which is managed by the USAF, Bureau of Land Management (BLM), and State of Idaho (Mountain Home AFB 2015a). Overall management and use of the withdrawn lands are the responsibility of the USAF, including land rehabilitation, prevention, fire suppression, and ordnance clean-up. However, the BLM provides grazing management in the JUL on federal lands, and the USAF leases State of Idaho lands that the state manages for grazing.

SCR is a day/night, multi-use air-to-ground and EC training range complex with 116 targets, with 87 capable of being ground scored by the Weapons Impact Scoring System (WISS). Target types include simulated vehicles, airfield, urban village, aircraft, petroleum tanks, convoys, main battle tanks, ammunition bunkers, anti-aircraft artillery, and surface-to-air missile (SAM) (Figure 1-4). Some of the targets can be infrared heated when requested, and can be night-lighted using propane mantles.

Anti-Aircraft Artillery Target at Saylor Creek Range

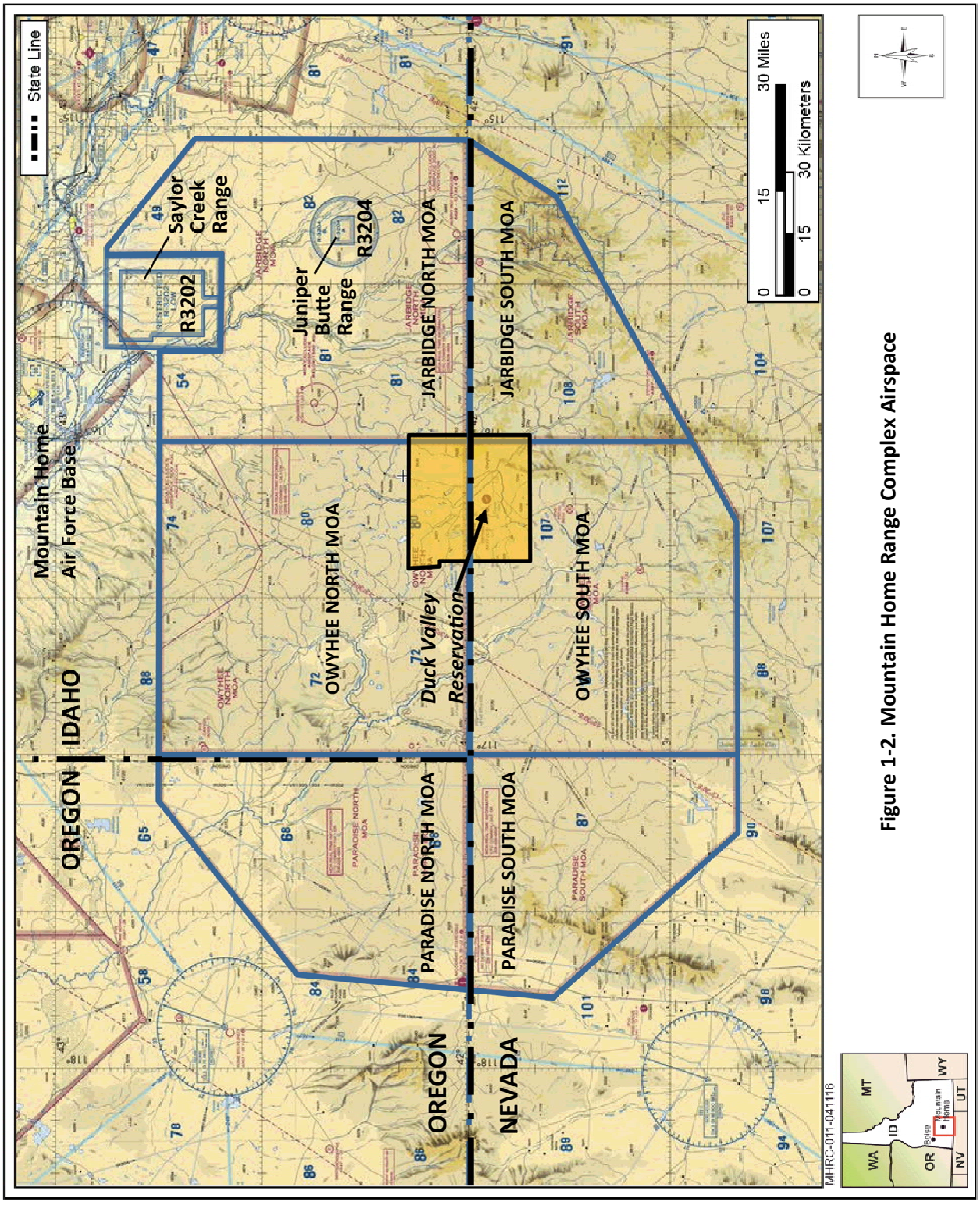

Figure 1-2. Mountain Home Range Complex Airspace

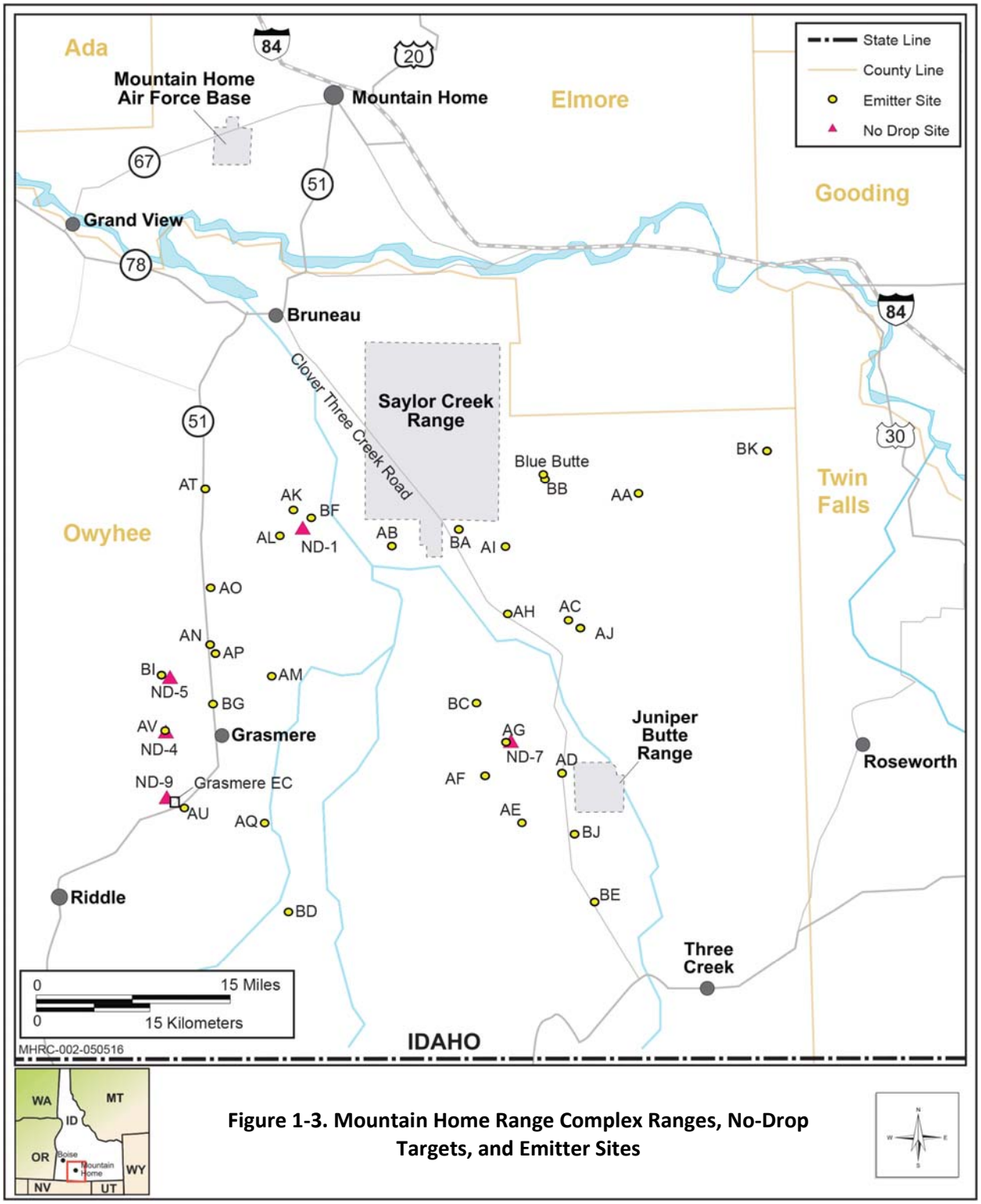

Figure 1-3. Mountain Home Range Complex Ranges, No-Drop Targets, and Emitter Sites

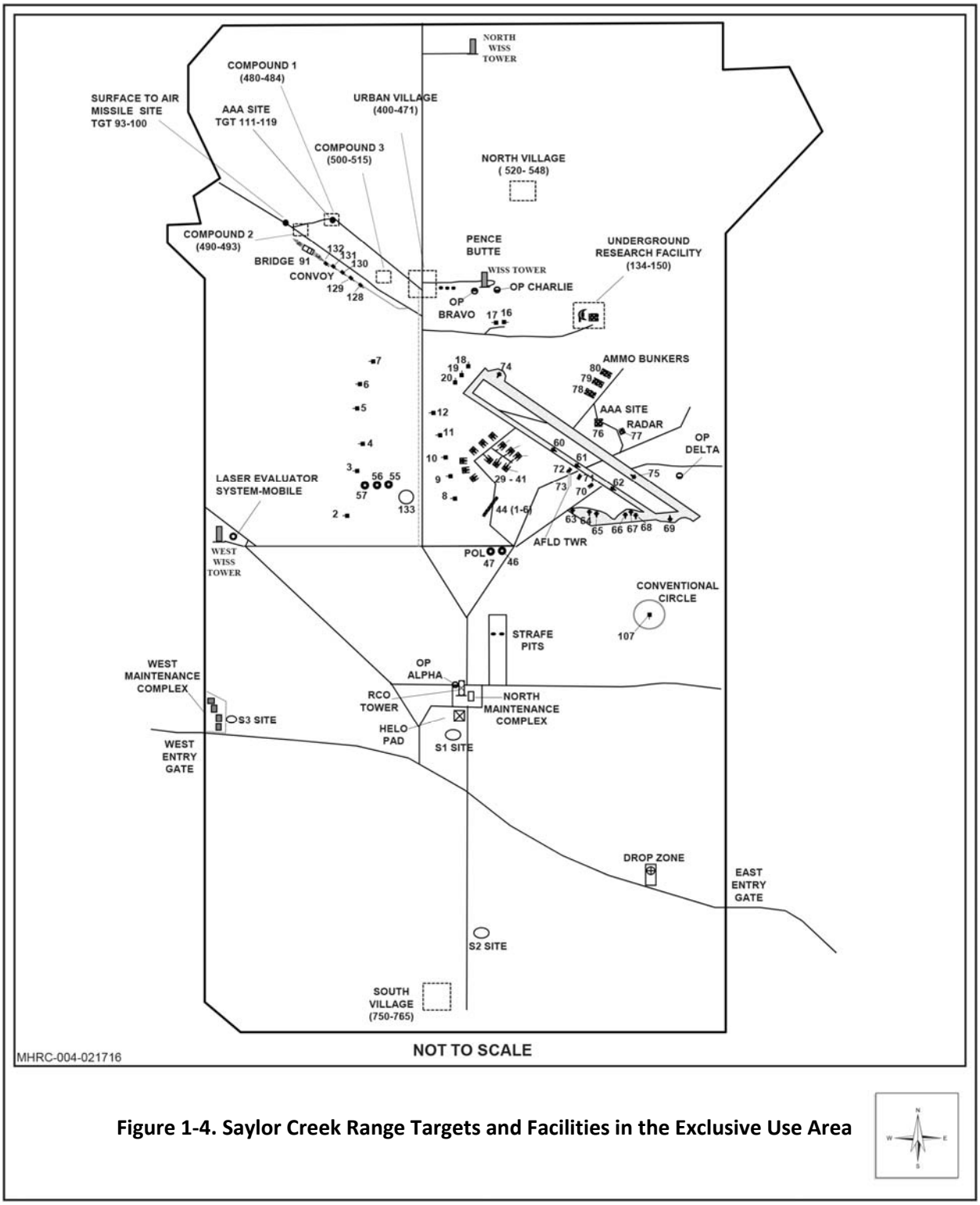

Figure 1-4. Saylor Creek Range Targets and Facilities in the Exclusive Use Area

Authorized ordnance includes inert heavyweights up to 2,000 pounds (see Appendix A for detailed descriptions of munitions), cold spot and hot spot ordnance, chaff, flare, and combat lasers. Smokey SAM and Smokey Gun provide realistic visual training for aircrews. Within the EUA, SCR has conventional strafe pits and tactical strafe targets that can be scored by the Improved Remote Strafe Scoring System. There also is a moving target system in the EUA consisting of a Jeep Cherokee with a tow target, which operates on the urban village road in the northwestern part of the SCR EUA (see Figure 1-4), and along a road parallel to the North/South Road north of the Range Control Officer (RCO) tower.

Range Control Officer Tower at Saylor Creek Range

The SCR EUA includes the North Tower Area and West Gate Area. Key facilities at the North Tower Area are the RCO Tower (Building 45), Vehicle Maintenance Shop (Building 61), Old Maintenance Complex (Building 51), Emergency Generator (Building 58), Pump House (Building 55), and Vehicle Storage (Buildings 67 and 68). These key buildings use commercial power with diesel-generator emergency backup. The North Tower Area has an underground 3,000-gallon non-potable water tank for Building 51 and two above ground 250-gallon propane tanks to heat Buildings 51 and 61. In addition, there is one above ground, 500-gallon gasoline tank and one above ground 1,200-gallon diesel fuel tank with power pumps. There is a Helicopter Pad (or Helo Pad) and fenced residue holding area at the North Tower Area. Key facilities at the West Gate Area include the New Operations and Maintenance Building (Building 66) and Range Squadron Maintenance Building (Building 65). Building 66 is connected to an emergency back-up power generator. The West Gate Area has an underground 5,000-gallon non-potable water tank for Buildings 65 and 66. Buildings 67 and 68 are vehicle storage facilities. There are three WISS towers in the impact area (North, West, and Pence Butte) constructed of stacked concrete blocks. Additionally, the RCO Tower has WISS cameras mounted on it to ground score nearby targets (Mountain Home AFB 2015a).

Juniper Butte Range Operations and Maintenance Complex

JBR is an air-to-ground training range composed of 12,112 acres—662 acres fenced off for an impact area and the other 11,450 acres leased to support grazing. JBR is located approximately 25 miles southeast of SCR in Owyhee County, Idaho (see Figure 1-3). It was established with the JBR Withdrawal Act in 1998 to augment SCR. This range is a day/night multi-use air-to-ground and EC training range complex. Although all 12,112 acres are considered an impact area, targets can only be placed in a 662-acre fenced off area in the center of the range (Figure 1-5). The impact area supports 88 targets, with 71 capable of being scored by the WISS. Target types include simulated SAM, weapons/supply storage buildings, petroleum tanks, railroad cars, and battle tanks. Some of the targets are ND targets or are limited to one bomb per day, per aircraft. Targets are infrared heated by small electrical heaters in the targets.

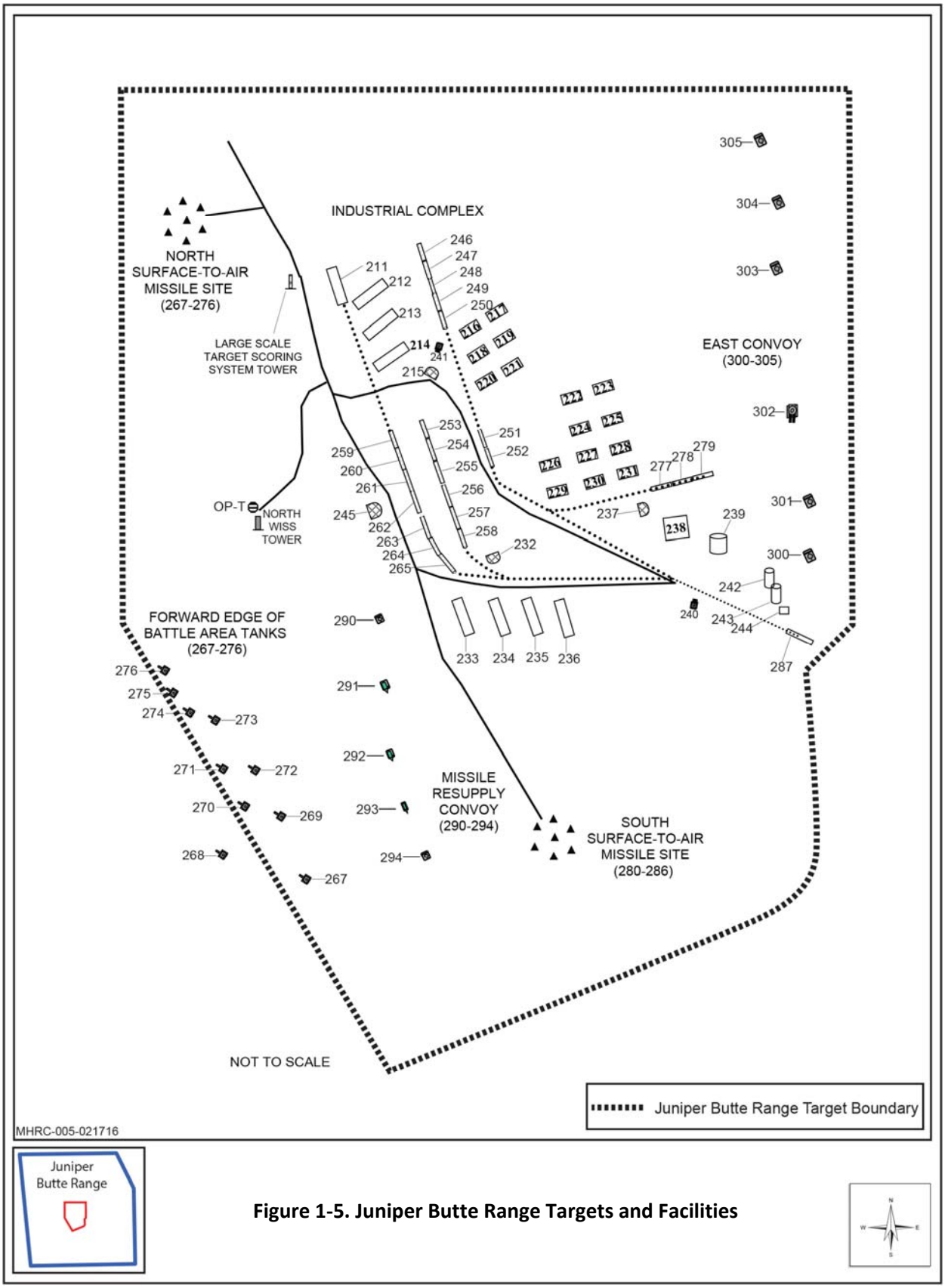

Figure 1-5. Juniper Butte Range Targets and Facilities

The only authorized ordnance in the JBR impact area is the cold-spot Bomb Dummy Unit (BDU)-33, as well as chaff and flares.

Key facilities at JBR include the Operations and Maintenance Complex (Building 10), Water Pump House (Building 20), and Generator Building (Building 30). All key facilities have commercial power with generator back-up. JBR has an above ground, 10,000-gallon non-potable water tank for Building 10, an above ground 50,000-gallon gravity-fed water tank for firefighting, four above ground 1,000-gallon propane tanks for the emergency back-up generators, and four 250 gallon fuel tanks (three gasoline and one diesel). There is a fenced residue holding area at JBR for the storage of BDU-33s. The BLM has a small diesel tank outside the fenced area of the main compound on the east side (Mountain Home AFB 2015a).

Mountain Home Range Complex ND-9

The MHRC also includes five ND target complexes, ten 1-acre EC threat emitter sites, Grasmere EC site, and twenty 0.25-acre threat emitter sites (see Figure 1-3). Electronic bombing sites ND-1, ND-4, ND-5, and ND-7, are all withdrawn for USAF use. ND-9 is on leased private property. The 20 quarter-acre threat emitter sites (AA-AV) are held by right of way issued from the BLM to the USAF. The 1-acre EC threat emitter sites (BA-BK) were created by the JBR Withdrawal Act, Public Law 105-261. The Grasmere EC site is held by right of way permit from the BLM.

The ND sites have propane enclosures which also simulate small building targets. The 640-acre ND target, ND-1, has three enclosures with two 1,000-gallon propane tanks each (six tanks total), as well as a simulated Forward Edge of Battle Area with tank and vehicle targets. Both ND-4 and ND-5 have simulated industrial sites and each has two enclosures with two 1,000-gallon propane tanks (four tanks total each site). ND-7 has one enclosure with two 1,000-gallon propane tanks (two tanks total). ND-9 supports a simulated SAM site but does not have propane tanks (Mountain Home AFB 2015a).

Principal users of the MHRC are the F-15Es and F-15SGs from Mountain Home AFB and the A-10s from the Air National Guard's 190 Fighter Squadron at Gowen Field in Boise. Additional users include F-16Cs and F-35As from Hill AFB, B-1Bs from Ellsworth and Dyess AFBs, EF-18s from Naval Air Station Whidbey Island, and UH-60s/AH-64s helicopters from the Idaho Army National Guard. The 366 FW also regularly conducts large force employment exercises and hosts bombing competitions. In addition to air-to-ground training, MHRC supports integrated ground training such as Joint Tactical Air Controller (JTAC) training; Survival, Evasion, Resistance, and Escape (SERE) training; security forces training; and vehicle convoy training.

1.3 Purpose and Need for the Action

The **purpose** of the Proposed Action is to sustain the primary mission of 366 FW by providing the most up-to-date air-to-air and air-to-ground support training opportunities and long-term viability of MHRC associated airspace and ranges for 366 FW and other DoD aircrews. Supporting current, emerging, and future integrated-based training operations, especially relating to the integration of air and ground operations is critical for sustaining 366 FW mission. In addition to the JTAC and SERE training, these integrated training missions include:

Air Strike Control. This provides Air Force specialists, who are imbedded with Army and Marine units on the frontline, with training on calling in an air strike on the right target at the right time.

Combined Arms Training. This approach to warfare integrates different arms of the military to achieve mutually complementary effects. For instance, all at the same time, the Air Force hits the enemy target from aircraft, the Army and/or Marine Corps hits it with artillery, and the Navy deploys weapons at the target from ships and/or aircraft.

Close Air Support. Close air support is the use of military aircraft in a ground-attack role against targets in close proximity to friendly forces conducting ground-based operations. Close air support requires close coordination of aircraft firing activities with ground troop movement (USAF 2007b). In this role, aircraft serve a purpose similar to that of artillery. Close air support is a part of modern combined arms doctrine. Close air support requires excellent coordination between aircrews and ground forces. This coordination is typically handled by USAF JTAC specialists who are embed with the Army and call in airstrikes for close air support during firefights. Joint Fire Observers are located in aircraft and relay targeting information to the JTACs, and airborne Forward Air Controllers ensure that aircraft safely operate over friendly troops during close air support activities.

Providing these improved facilities, targets, and use of munitions would address new training requirements or scenarios that have arisen through recent combat engagements, especially those relating to Air Strike Control, Combined Arms Training, and Close Air Support. The Proposed Action would meet several objectives:

- Provide realistic training for air to ground and ground based training missions by providing realistic targets.
- Improve and increase realistic joint training for JTAC, SERE, and other ground-based units.
- Provide aviators Combined Arms Training, Air Strike Control, and Close Air Support realistic scenario opportunities.
- Make the best use of limited national assets.

These operational changes are **needed** to maintain pace with emerging and future combat training needs through continued upgrade and modernization of range facilities, targets, and impact areas at the MHRC. The MHRC facilities and targets have not been updated in several years. The proposed improvements will ensure that the targets and facilities will meet current training needs. The Proposed Action is also needed to meet new training requirements or scenarios relating to integrated training. Deconflicting air and ground missions, while providing Close Air Support to ground troops, is a critical feature of modern warfare. The Proposed Action will ensure that both air and ground based units “train like they fight” in preparation for any future combat engagements.

1.4 Decision To Be Made

This EA evaluates the potential environmental consequences of implementing the Proposed Action on MHRC to maintain pace with emerging and future combat training needs by continually upgrading and modernizing training facilities, targets, and impact areas. Based on the analysis in this EA, the USAF will make one of three decisions regarding the Proposed Action: 1) choose the alternative action that best meets the purpose of and need for this project and sign a Finding of No Significant Impact (FONSI), allowing implementation of the selected alternative; 2) initiate preparation of an Environmental Impact Statement if it is determined that significant impacts would occur through implementation of the action alternatives; or 3) select the No-Action Alternative, whereby the Proposed Action would not be implemented. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts.

1.5 Intergovernmental Coordination/Consultations

In accordance with the Intergovernmental Coordination Act of 1968, and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, interagency and intergovernmental coordination was conducted. The USAF sent letters to interested and affected government agencies, government representatives, elected officials, and interested parties potentially affected by the Proposed Action on March 15, 2016. Appendix C contains the recipient mailing list. Appendix D contains the agency and intergovernmental coordination letters as well as letters to interested parties, chamber of commerce and libraries. These letters announced the USAF's intent to prepare an EA, summarized the Proposed Action and preliminary alternatives, and solicited comments. No responses were received within the 30-day comment period, which was designated to ensure proper consideration in the draft EA analysis. However, any comments received after this period were considered during the impact analysis process as much as possible. The Air Force also announced its Notice of Intent to prepare the EA on March 17, 2016 in the *Idaho Statesman* (Boise area) and *Times-News* (Twin Falls area); the Notice of Intent also appeared in the *Mountain Home News* on March 23, 2016.

An advertisement was posted in the *Idaho Statesman*, *Mountain Home News*, and *Times-News* on June 1, 2016 notifying the public of the availability of the Draft EA and unsigned FONSI for review in local libraries (Appendix D). A revised notice of availability was published on June 29, 2016 extending the public comment period through July 25, 2016. Information about the Draft EA, FONSI, and public comment period was also posted to Mountain Home AFB's public website (http://www.mountainhome.af.mil/Home/ EnvironmentalNews.aspx). Copies of the Draft EA and unsigned FONSI were sent to agencies, American Indian Tribes, as well as to interested groups and the public.

1.5.1 State Historic Preservation Offices, United States Fish and Wildlife Service, and Bureau of Land Management

On April 20, 2016, the USAF sent a letter to the Idaho State Historic Preservation Office (SHPO) notifying them of the Proposed Action and the USAF determination that the action would have no effects to historic properties because construction would be minimal and that the activities would be covered under the existing Program Agreement Regarding the Management of Historic Properties at Mountain Home AFB. The Idaho SHPO, in their response dated June 1, 2016, agreed with the USAF determination

of no effects to historic properties. The letters to the Nevada and Oregon SHPOs indicated that the Proposed Action would not involve construction in either Nevada or Oregon and airspace operations not be changed. In response, on June 21 the Nevada SHPO in their email, agreed with the USAF determination of no effects to historic properties. On August 1, 2016, the Oregon SHPO concurred with the USAF finding of no adverse effects for two eligible for listing properties under the MHRC airspace; they noted that this letter signified conclusion of the consultation process associated with above-ground historic resources.

The letter to the U.S. Fish and Wildlife Service (USFWS) requested concurrence of the USAF determination that section 7 consultation would not be needed to implement the Proposed Action. The activities proposed would remain consistent with operations evaluated in the 2010 Biological Opinion. A response to the letter was received on May 16, 2016 from the USFWS. The USFWS agreed that if the six no-drop targets and the nine new landing zones proposed for JBR were located in areas that did not contain slickspot microsites or habitat components important to insect pollinators, then Mountain Home AFB may determine that the new actions would have "no effect" on slickspot peppergrass and no additional section 7 consultation was necessary. However, following review of the Draft EA, the following items were identified by the USFWS as concerns in their June 27, 2016 letter. The responses to comments and where they are addressed in the Final EA are indicated in italics. Appendix D provides copies of the letters and any agency response.

- If there is a determination to reinstate threatened status for the slickspot peppergrass species, then all new and ongoing actions that may affect slickspot peppergrass will require section 7 consultation. *Although the slickspot peppergrass has been listed, the USFWS has agreed that the action would not affect this species. Therefore, further consultation is not needed (see Section 4.8.1.3).*
- The Service recommends that the final EA include a description of potential effects to slickspot peppergrass along Clover-Three Creek Road as well as to incorporate conservation measures to avoid or minimize potential impacts to this species associated with convoy training. *Text has been added to Section 4.8.1.3 to address potential effects and conservation measures to minimize impacts to this species.*
- The Service recommends that the preferred alternative in the final EA address migratory birds through best management practices to minimize effects of the action on migratory birds. *Text was added to Section 4.8.1.3 to address potential effects to migratory birds due to Landing Zones and Assault Landing Zone operations.*

The Bureau of Land Management (BLM) also identified several items they wished to be addressed in the Final EA, in a letter dated June 27, 2016. The following lists and addresses (in italics) these items below:

> Would depleted uranium be used in the munitions? *No depleted uranium munitions are proposed.*

> Will clean-up of the lead used in small arms munitions be handled under the Defense Environmental Restoration Program? *This is identified in Section 3.5.1.3; however, clean-up of lead at small arms ranges is not required for active ranges and no ranges are proposed for closure under this action.*

Are there any certifications on clean-up activities that will be conveyed to the BLM once an area has been cleared i.e. quarterly or annual, or final reports? *See Section 3.5.1.3 where munitions clean-up activities are addressed; please note that all procedures currently followed for SCR and JBR would continue.*

How will BLM be notified of any spills of hazardous material, i.e. fuel, oil, or munitions on federal lands managed by the BLM? *Some operations would occur on lands co-managed by the USAF and BLM in the Joint Use Area. See Section 3.5.1.1 where additional information has been added that addresses spills of hazardous materials.*

1.5.2 Government-to-Government

In accordance with EO 13175, Consultation and Coordination with Indian Tribal Governments (6 November 2000), federal agencies are required to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on Federally administered lands. Consistent with the executive order, Department of Defense (DoD) Instruction (DoDI) 4710.02 (DoD Interactions with Federally-Recognized Tribes), and AFI 90-2002 (Air Force Interactions with Federally-Recognized Tribes), Federally recognized tribes that are historically affiliated with Mountain Home AFB geographic region are invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the interagency coordination process and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Mountain Home AFB point-of-contact for Native American tribes is the installation Commander. In accordance with these requirements, Government-to-Government consultation was requested in letters sent on March 31, 2016, to five federally-recognized tribes. These included the Shoshone-Paiute Tribes of Duck Valley Indian Reservation, Shoshone-Bannock Tribes, Northwestern Band of the Shoshone, Paiute-Shoshone Tribes of Fort McDermitt Indian Reservation, and Burns Paiute Tribe. The letters requested consultation with the Tribes, asked for input on any concerns or information of traditional resources within the MHRC potentially impacted by the Proposed Action, and requested meetings at their convenience to discuss their concerns (see Appendix D). Additionally, copies of the Draft EA and a letter were sent to each of the five tribes on June 23, 2016 for their review and comment. Copies of the Draft EA were received by the tribes on June 27 through July 5, 2016 (see Appendix D). The USAF requested that they provide comments by July 25, 2016 to ensure consideration in the Final EA. To date, no comments were received from the five tribes on the EA or unsigned FONSI. Additional communication with the Shoshone-Paiute Tribes concerning the EA also occurred through email correspondence in November, 2015, February, 2016, and at a meeting in March, 2016. Mountain Home AFB contacted the tribal representatives from all five federally recognized tribes and received the following responses from each tribe.

1.6 Public Participation

Regulations from the Council on Environmental Quality (40 CFR Part 1506.6) direct agencies to involve the public in preparing and implementing their NEPA procedures. The USAF published a Notice of Availability (NOA) of the Draft EA/FONSI in three local papers on June 1, 2016. The NOA identified the eight libraries where the Draft EA/FONSI could be reviewed in hard-copy format and the website where the public could download an electronic version of the document. The NOA also requested that

comments be submitted by June 30, 2016 to ensure their inclusion in the Final EA. The review period for the Draft EA/FONSI, however, was extended to July 25, 2016 to ensure full participation of agencies, Tribes, and general public. Notice of this extension was publicized in local papers on June 29, 2016.

Over the extended review period, two comments were received from the public; one that noted their support of the proposed action and another that identified the following in the Draft EA that needed addressing, italics indicated the action taken in the Final EA:

> Page 2-6 Line 32: "firing by blocking portions of the Clover-Three Creek Road that go into SCR." Are you blocking the entry into SCR or actually blocking Clover-Three Creek Road. Recommend adding clarification of where the blockage would be and add to a diagram, possible Figure 2-1 where the road blockage would be. *Revised text to say: Public access to the SCR JUL and grazing allotments would be restricted during firing by blocking Clover-Three Creek Road (see Figure 2-1) into the SCR. If this activity were chosen for implementation, the USAF would coordinate with local, state, and federal agencies prior to firing to ensure the safety of non-participating parties per DoD Instruction 1322.28, Realistic Military Training Off Federal Property. Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office.*
>
> Page 2-8 line 2-5 and line 13: This provides a discussion of buildings 51 and 61 but there is no figure to display where these buildings are. Recommend add them to a figure. *The building numbers have been added to Figure 2-2.*
>
> Page 2-10 Line 11: EA states that the Assault Landing Zone will be located in the "Southwest" Corner of SCR EUA and refers to Figure 2-4. However, Figure 2-4 shows the area to be highlighted in red in the "Southeast" corner of SCR EUA. *The text has been corrected to identify the Assault Landing Zone is in the southeast corner of the SCR EUA.*

An additional comment was received on October 3, 2016 noting opposition to the Proposed Action and concerns about impacts to wildlife, safety, wilderness, noise levels, and recreation. Comments and their responses are noted in Appendix D. One change was made to the document in response to the comments:

> White Phosphorus is used in War Crimes and should never be used by the military - and especially in these extremely fire prone landscapes. *Added to text on page 4-12: An increase in munitions that use white phosphorus as a marking device would occur under Alternative 1. These munitions include mortars (60mm, 120mm) and artillery (105mm, 155mm). Rockets with white phosphorus are currently used on the SCR. Safety measures instituted while using these rockets would also occur while using any other munitions with white phosphorus. The white phosphorus munitions would only be used when a range control officer (RCO) is present, so that if a munition lands outside the EUA, the EOD can be notified immediately. In the event that munitions with white phosphorus land outside the EUA, an EOD team and fire crew would be immediately dispatched to the site to ensure that a hazard does not exist to the public, wildlife, or livestock. Fire suppression support would be provided by the Range's contractor or the Bureau of Land Management (BLM) depending on the time of year. Fire crews would be increased as needed as the fire risk increases. With the implementation of these BMPs, fire risk would be minimal.*

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action, evaluates all reasonable alternatives, and alternatives considered and not carried forward. In accordance with CEQ regulations (40 CFR § 1502.14[d]) and the USAF Environmental Impact Analysis Process regulation (32 CFR § 989.8), this chapter details the process the USAF followed to identify reasonable alternatives that met the purpose of and need for the Proposed Action. This chapter also discusses the No-Action Alternative, as required under CEQ regulations (40 CFR § 1502.14[d]).

2.1 Proposed Action

Under the Proposed Action the USAF would implement operational changes and improvements in the MHRC to sustain the primary mission of 366 FW and the long-term viability of MHRC training assets for 366 FW and other DoD military personnel. Operational changes would involve upgrading ground-based operations, facilities, targets, and munitions to enhance integrated ground-based and airspace training within the MHRC. The Proposed Action would meet training requirements associated with air strike control missions, SERE training, JTAC training, Combined Arms Training missions, and Close Air Support missions. To better aircrew air-to-ground training, the USAF proposes improvements and additions to facilities in the SCR, improvements to targets on JBR, changes in ground-based operations in the MHRC, and increases in existing and new use of munitions. All procedures, guidelines, restrictions, and prohibitions for operations identified in the MHRC Range Handbook (2015a) would continue. The preferred alternative—Alternative 1—provides detailed descriptions of the operational changes and improvements proposed. Most of these operations, such as JTAC training, GPS jamming, or helicopter landings, have been conducted previously in the MHRC, but have been analyzed individually and allowed as temporary use of the ranges. Under the Proposed Action, all of the operational changes and facility upgrades would be analyzed cumulatively. No new airspace would be established and no changes to existing airspace configurations would occur under the Proposed Action.

2.2 Selection Standards

Alternatives form the core of the NEPA process. In compliance with NEPA, 32 CFR § 989, and CEQ regulations, the USAF must consider reasonable alternatives to the Proposed Action. Only those alternatives determined as reasonable relative to their ability to fulfill the need for a Proposed Action warrant detailed analysis. To be considered reasonable, an alternative must not only fulfill the purpose of and need for the action, it must be technically feasible. Alternative selection standards served to assist Mountain Home AFB in defining the minimum standards that any alternative must support to meet the purpose of and need for the Proposed Action. They helped to identify a reasonable range of alternatives to be analyzed within the EA. The alternative selection standards included identifying:

- sites where USAF specialists can train on how to call in air strikes on targets for air strike control and conduct combined arms training—these sites would need to be located within ranges and target areas throughout MHRC;
- areas where ground troops can maneuver and operate both in vehicles and on foot while aircraft are providing close air support—these areas need to be on existing and/or unimproved roads and land areas underlying MHRC special use airspace;

- locations underlying MHRC airspace where ground-based training activities such as radar jamming, illumination flares, smoke generators, and simulated weapons emitters could be employed;
- ranges where various types of munitions and ordnance could be used by ground troops; and
- training areas that are consistent with existing public laws, plans, and agreements, as well as minimize public controversy.

The final standard of avoiding public controversy is crucial. Due to the history of establishing JBR in the early 2000s, the USAF recognizes what proposals would likely cause public controversy. These proposals include removing areas from grazing, hunting, and recreating; increasing noise levels and/or lighting that could disturb traditional ceremonies and recreating; increasing noise levels over canyons to disturb wildlife and recreating; removing soils and exposing archaeological resources that have been heretofore undiscovered; impacting native vegetation such as slickspot peppergrass; and disturbing habitat of the sage grouse.

Following review of these standards, the most viable alternatives would need to occur within established ranges, targets, and emitter sites of the MHRC. The existing improved and unimproved road network and two-track paths currently used in Owyhee County for military training could support additional training as proposed under this action. Opting for these locations would expedite the time needed to undertake the Proposed Action and could be done within existing budgeted funds.

2.3 Screening of Alternatives

The following alternatives were reviewed against the selection standards. Regardless of the alternative, all would be managed in accordance with:

- the SCR Public Land Order (PLO) No. 1027 of November 2, 1954, as amended by PLO No. 3192 of August 2, 1963 and PLO No. 4902 of September 16, 1970 (see Appendix E);
- the JBR Withdrawal Act, Public Law (PL) 105-261;
- the Enhanced Training in Idaho (ETI) Record of Decision (ROD) and Supplemental ROD mitigation measures and management actions; and
- the Integrated Natural Resource Management Plan (INRMP) for SCR and JBR, Integrated Cultural Resources Management Plan (ICRMP) for SCR and JBR, and Biological Opinions with the U.S. Fish and Wildlife Service associated with SCR and JBR range activities.

The INRMP and ICRMP have specific measures for avoiding sensitive species and significant cultural resources. These measures include planning training exercises and construction areas to avoid resources and placing restrictions on cantonment, vehicle use, and other aspects of exercise requirements so that the mission is achieved with the least amount of impact to resources. Digging and ground disturbance is not allowed without prior evaluation and approval (Mountain Home AFB 2012: 4-6).

2.3.1 Alternative 1: Full Improvement and Operational Changes to Enhance Integrated Training

This alternative would improve ground-based operations such as convoy training, upgrade and/or replace facilities in the SCR EUA, increase the number and add the types of munitions used at SCR EUA (i.e., small arms, mortars, artillery, grenades, anti-tank rockets, as well as other defensive countermeasures such as star clusters and flares), introduce artillery firing points (FPs) in the SCR JUL, modify targets on the JBR to improve air-to-ground training, as well as upgrade ground-to-air operations

(e.g., conduct radar, global positioning, and frequency jamming) within the MHRC. Also included is an assault landing strip in the SCR EUA and landing zones (LZs) in JBR to support SERE and Special Forces training. Rotary-wing aircraft currently operating in the overlying SCR and JBR restricted airspace would occasionally land at the specified LZs instead of on existing roads as is currently done.

2.3.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

This alternative would be the same as the full improvement option across the MHRC. However, it would not include the use of artillery, certain types of grenades, and anti-tank rockets in the SCR EUA and would not include artillery and mortar FPs in the SCR JUL.

2.3.3 Alternative 3: Full or Partial Improvement and Enhanced Off-Range Ground-Based Training

This alternative would include either the full or partial improvement alternative identified above, with the addition of JTAC training. This type of training provides a more realistic urban combat environment for integrated, multi-service training. JTAC training can be provided in either an urban or a simulated urban environment, such as the urban village targets on SCR and JBR. Urban operations would include both military and civilian equipment of up to 6 vehicles and 20 personnel. JTAC training would be conducted in towns such as Grandview, Mountain Home, and Boise.

2.3.4 Alternative 4: Full or Partial Improvement and Large Vehicle Maneuvering

This alternative would include either the full or partial improvement identified above, with the addition of maneuvering tracked and wheeled vehicles. The maneuvering would occur throughout the SCR EUA and JUL to support joint force training requirements for heavyweight tracked and wheeled vehicles, such as Multiple Launch Rocket Systems (MLRS), High Mobility Artillery Rocket Systems (HIMARS), and Howitzers.

Table 2-1 compares each of the alternatives against the selection standards in Section 2.2. An x indicates that the alternative meets the standard, an o indicates it does not. Not applicable is indicated with NA.

Table 2-1. Alternatives Screening Process

Selection Standards	Alternatives			
	1: Full Improvement and Operational Changes	***2: Partial Improvement and Operational Changes***	***3: Full or Partial Improvement and Enhanced Off-Range Ground-Based Training***	***4: Full or Partial Improvement and Large Vehicle Maneuvering***
Support current, emerging, and future integrated-based training operations	Yes	Yes	Yes	Yes
Consistent with DoD Directives, Instructions, Regulations	Yes	Yes	Yes	Yes
Complies with SCR related PLO No. 1027, 3192, 4902	Yes	Yes	Not Applicable	Yes
Complies with JBR Withdrawal Act, PL 105-261	Yes	Yes	Not Applicable	Yes
Consistent with ETI ROD	Yes	Yes	Not Applicable	Yes
Management Plans, Biological Opinions, and Programmatic Agreements	Yes	Yes	No	No
Avoidance of Public Controversy	Yes	Yes	No	Yes
Feasibility	Yes	Yes	Yes	Yes

2.4 Alternatives Eliminated From Further Consideration

The following alternatives were considered but dismissed due to potential controversy or because they conflicted with existing laws, plans, and agreements. While each of these actions would meet the purpose and need, they would not be feasible and/or practical per the criteria identified above. Therefore, the following were not carried forward for further consideration as viable alternatives.

Alternative 3: Full or Partial Improvement and Enhanced Off-Range Ground-Based Training. Off-range training on public roads near existing towns would potentially cause a high level of public controversy. It would also require extensive local and state coordination and agreements to implement. This training requirement could be met by using a simulated urban environment on either of the ranges.

Alternative 4: Full or Partial Improvement and Large Vehicle Maneuvering. Large vehicle maneuvering within the SCR would not comply with existing plans for managing natural and cultural resources on the range.

2.5 Detailed Description of the Alternatives Carried Forward

Two alternatives meet all of the selection standards—the full and partial improvement alternatives. These two are carried forward for detailed analysis in the EA and described in detail in Sections 2.5.1 and 2.5.2. The No-Action Alternative is also examined and described in Section 2.5.3. Regardless of the alternative ultimately selected the following examples of Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) prescribed in the INRMP and Integrated Cultural Resources Management Plan (ICRMP), will be followed. For detailed plan management objectives and procedures, please contact the Mountain Home AFB Civil Engineer Division, Environmental Element.

BMPs and SOPs associated with the INRMP include but are not limited to:

Protect and conserve sage grouse and sage grouse habitat by:

- Restricting ground-based operations at designated emitters and no-drop sites during breeding and nesting periods.
- Requiring all vehicles to remain on existing roads to avoid destroying sage grouse habitat such as sagebrush and rabbitbrush.

Undertake slickspot peppergrass friendly rehabilitation practices by:

- Using only non-invasive plant materials. Do not use forage kochia, intermediate wheatgrass, and salt tolerant species such as four-wing saltbush.
- Employing native plants to the maximum extent practicable and in concert with the military mission.

Provide a grounds maintenance program that is compatible to the military mission as well as to conserving slickspot peppergrass and sage grouse habitat, and other special status species by:

- Providing annual Natural and Cultural Resource Awareness Training to all personnel using the range.
- Reseeding disturbed areas to increase desirable sage grouse vegetation.
- Using herbicides, pesticides, and soil sterilants appropriately.

Mitigate training effects to vegetation and potential sage grouse habitat by:

- Using cold spot or no spot ordnance to reduce risk of fires.
- Using simulated ordnance dropping during high fire risk times.
- Using fire ratings and restrictions to reduce the risk of fires.
- Providing ordnance cleanup to reduce the likelihood of ordnance striking ordnance and creating sparks.
- Employing firefighters on range during declared fire season to provide immediate initial response for fires.
- Elevating flare release altitudes during declared fire season according to fire ratings.
- Providing ordnance cleanup to reduce the likelihood unconsumed flares from starting a fire.
- Employing firefighters on range during declared fire season to provide immediate initial response for fires.
- Avoiding disturbance at emitter sites during sage grouse breeding and nesting periods.

Mitigate maintenance effects by:

- Performing maintenance activities in previously disturbed areas to avoid impacts to slickspots and sage grouse habitat.
- Controlling undesirable vegetation in disturbed areas to limit weed encroachment and spread. Target cheatgrass and Russian thistle. Eliminate any noxious weeds found.
- Reseeding disturbed areas to increase desirable vegetation.
- Performing maintenance tasks when soils are drier, but prior to fire season to the maximum extent practicable.
- Restricting maintenance activities during fire season in accordance with fire ratings. Activities that may cause a fire (welding, using cutting torches) are restricted to morning hours in fire rating 3, or avoided altogether if fire rating is 4 or 5.

BMPs and SOPs associated with the ICRMP include but are not limited to:

Avoid potential damage to archaeological sites during ordnance and munitions clean-up activities at SCR and JBR, MHAFB personnel will:

- Coordinate with Environmental Flight on sensitive areas and avoidance periods.
- Operate all vehicles to minimize disturbance and fire; and when feasible given safety considerations site “firing areas” (locations where non-expended ordnance is detonated) in locations clear of dry vegetation and cultural resources.
- Have annual Natural and Cultural Resource Awareness Training prior to range cleanup. Training will focus on limiting disturbance and off-road driving procedures.
- Conduct clean up at JBR only when soil moisture is dry enough to permit driving on it without creating tire ruts. Efforts should be made to minimize disturbance to vegetation. All Terrain Vehicles should drive around, rather than over, slickspots, sagebrush, and rabbitbrush.
- Collect ordnance by staying on designated routes to the maximum extent practicable without compromising the mission.

- Adhere to SOPs as detailed in Chapter 4 of the ICRMP: (SOP 1) Wing leadership, Indian Tribal consultation (SOP 2), emergency discoveries (SOP 3), training (SOP 4), general treatment and protection of resources (SOP 5), maintenance of significant structures (SOP 6), monitoring and reporting site damage (SOP 7), protection of Surface Data (SOP 8), reporting Bald eagle and Golden eagle remains (SOP 9), and curation of cultural material (SOP 10).

2.5.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

Under Alternative 1, the USAF would implement operational changes and improvements in the MHRC to enhance integrated air-to-ground training. These changes would involve upgrading ground-based operations, facilities, targets, and munitions. Alternative 1 was selected as the preferred alternative, as it would best meet the purpose of and need for the Proposed Action. The following provides detailed descriptions of these proposed changes and improvements.

2.5.1.1 Ground-Based Operations

Several changes to ground-based operations within the MHRC would occur under Alternative 1. As noted above, all existing standard operating procedures and management practices would be followed and restriction/avoidance measures adhered to when undertaking ground-based operations.

Convoy Training on Public Roads of MHRC

Mountain Home Range Complex Convoy Training

Convoy escort training is a requirement for the 726th ACS to provide training for aircrews that need to supply close air support for vehicle escort. Additionally, air-to-ground training can also be obtained when the convoy acts as an opposing force unit and aircrews can electronically target the convoy from MHRC airspace.

Convoy operations would involve transporting troops and supplies to specific locations identified within the MHRC. The training includes tactical convoy operations as well as defensive operations against ambush, improvised explosive devices, or similar threat scenarios in field and urban environments. Equipment used in convoy operations includes trucks and other wheeled tactical vehicles, pyrotechnics to simulate improvised explosive devices, and blank ammunition for simulated ambushes. This activity would occur on the side of the road and would not block roadways. Prior to training, the USAF would coordinate with local, state, and federal agencies to ensure safety of non-participating parties per DoD Instruction 1322.28, *Realistic Military Training Off Federal Property*. Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office.

Convoy training would be conducted on improved and unimproved roads underneath MHRC airspace on Highway 51 between Bruneau and Grasmere and on Clover-Three Creek Road between SCR and JBR (see

Figure 1-3). Convoy training would entail up to ten 5-ton trucks, 2 times every 3 months primarily Monday through Friday, with the exception of 3 to 4 weekends per year to support Air National Guard Drill weekends. Convoy training would occur between 8:00 a.m. and 10:00 p.m.; however, 70 percent would occur during daylight hours. All convoy training will strictly adhere to Best Management Practices and Standard Operating Procedures described in the 2012 Mountain Home AFB INRMP to minimize effects to special-status species and habitat (Mountain Home AFB 2012).

Conduct Global Positioning System (GPS) Jamming and Synthetic Aperture Radar (SAR) in MHRC

Portable trailers, like the one shown here, would be used to disrupt information from Global Positioning System satellites.

Navigational warfare is a joint service effort to protect U.S. and allied forces from GPS disruption, and to prevent hostile forces from using GPS with minimal impact on the civil community. The 746th Test Squadron, the Department of Defense's designated lead test organization chartered to test and evaluate GPS user equipment and integrated GPS based guidance and navigation systems, provides support to 366 FW training by jamming GPS and SAR receivers, such as satellites and overflying aircraft, which replicates enemy threats during 366 FW training exercises. This jamming would occur throughout the eastern portion of the MHRC, including SCR and emitter sites and include airspace overlying MHRC. By using GPS, SAR, and satellite communications jamming techniques, this capability provides USAF, joint, and allied military personnel with an understanding of how to recognize, mitigate, counter, and defeat these threats. This jamming training allows the modern warfighter to operate in an environment where critical systems like GPS, SAR, and satellite communications are interfered with or denied—preparing them for current and future combat. Approximately 14 portable jamming units would be distributed throughout the MHRC, including SCR, emitter sites, and the Grasmere EC. Communications' jamming would occur for 1 week up to four times a year. Each training episode would occur twice a day for approximately 2 hours.

High Mobility Artillery Rocket System

The need for this training was punctuated by enemy attempts to jam GPS signals around Baghdad during Operation Iraqi Freedom. This training would simulate real world situations that occur in contested environments when GPS, SAR, and satellite communications and data links (or communications) are denied. Communication jamming activities have occurred intermittently within the MHRC, once in 2012 and twice in 2015. Initial use of jamming resulted in interference with navigation systems, especially those belonging to local farmers in southwestern Idaho. Notification through the public affairs office to local officials and the public now occurs before communication jamming activities take place. Specifically, prior to a training episode, the 746th Test Squadron together

with the 366 FW would notify the Federal Aviation Administration (through their Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures are implemented. The Mountain Home AFB Public Affairs would also notify local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. However, in the event of a safety issue, such as visually observing non-participating aircraft, communications jamming would halt immediately and not resume until the aircraft's safe passage through the airspace.

Firing Positions within the JUL

Up to six areas outside the EUA of SCR, but within the JUL would be used as firing positions for inert mortars/rockets/HIMARS to targets inside the EUA (Figure 2-1). HIMARS is a light-weight MLRS that is mounted on a 5-ton medium tactical vehicle. Mortars and artillery would be fired from FPs 1 and 5, artillery from FP 3, and HIMARS and artillery firing from FPs 2, 4, and 6. The purpose of this training would be to enhance the use of artillery in concert with aircrew training. Annual certification training for these weapon systems would occur elsewhere.

Gravel pads would be constructed at each of the FPs and vegetation cleared up to 1 acre to prevent fires; access roads to the FPs would follow existing two-track roads to the greatest extent possible and also serve as a fire break. Vegetation around each pad would be planted with forage kochia or other fire resistant plants. Each gravel pad would be 50 by 50 feet in size, large enough to permit the weapon system and a support vehicle on the gravel pad. A 6-inch gravel road base would be added for approximately 10 feet from the to the existing two-track roads to the FP.

Fire Resistant Vegetation – Forage Kochia

Firing would occur no more than 30 days a year, usually on a weekday between 8:00 a.m. and 2:00 a.m., with the majority of the firing occurring from noon to 2:00 a.m. Firing would not occur during sage grouse breeding season (March-June). Typically, firing training would occur once during the day and once at night. Only one FP would be used at a time. On average, the number of rounds fired on each of the 30 days would be less than 100 including all mortars, artillery, and HIMARS. Approximately 145 120mm, 300 105mm, 215 155mm, and 100 HIMARS would be fired from the FPs on an annual basis. The inert mortars/rockets/HIMARS would be fired by onsite personnel and not remotely. Safety procedures would include inspection of the launch area for possible ignition sites following the release of each rocket launch, and if any fires were present, extinguishing them immediately. Annually, approximately 380 additional mortars (120mm) would be fired within the EUA along with 80 60mm and 750 81mm mortars. Public access to the SCR JUL and grazing allotments would be restricted during firing by blocking Clover-Three Creek Road (see Figure 2-1) into the SCR. If this activity were chosen for implementation, the USAF would coordinate with local, state, and federal agencies prior to firing to ensure the safety of non-participating parties per DoD Instruction 1322.28, *Realistic Military Training Off Federal Property*. Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will

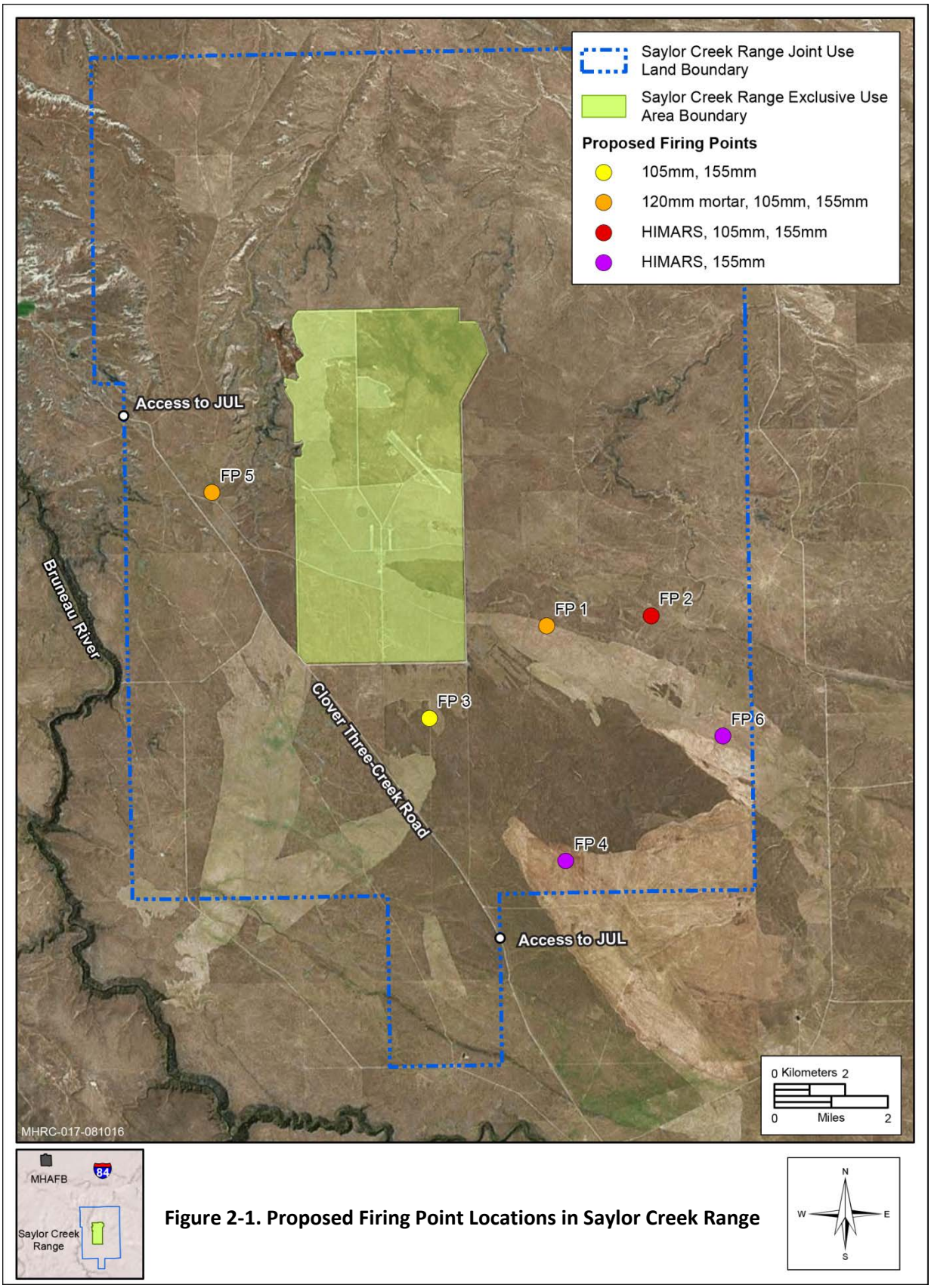

Figure 2-1. Proposed Firing Point Locations in Saylor Creek Range

be alerted through either public service announcements or personal communication by the base Public Affairs office. The Owyhee County Sheriff's Office would assist in restricting access to the JUL, but range personnel would ensure that the area is cleared before firing commences.

2.5.1.2 Range and Facility Improvements

Several range and facility improvements would occur under Alternative 1. As noted above, all existing standard operating procedures and management practices would be followed and restriction/avoidance measures adhered to when undertaking facility and range improvements.

Maintenance Building and Control Tower

West Maintenance Complex at Saylor Creek Range

Building 51 and 61 at the North Maintenance Area are currently the primary maintenance facilities within the SCR EUA. Under Alternative 1, the maintenance facility and range control tower within the center of the EUA would be relocated. The new facilities would be established inside the EUA, at the West Maintenance Complex (Figure 2-2a), immediately adjacent to the west gate (see Figure 1-4). This would remove all non-essential personnel from the central EUA during operations ensuring that no non-mission essential personnel are in the weapons safety footprint, reducing the risk to personnel, and reducing weapons delivery restrictions. Building 61 would be demolished and Building 51 would be used as an equipment staging area (Figure 2-2b). The existing range control tower would remain as a scoring site, but would not be manned. The proposed maintenance building would be a 4,500-square feet, 60- by 75-feet building. The new range control tower would have a footprint of 30 by 30 feet and be approximately 75-feet tall.

M56 Coyote Smoke Generator

Concealment of Targets Using Smoke Generators

As part of camouflage, concealment, and deception training, targets would be obscured using smoke generators within the SCR EUA for up to 2 weeks annually. This would create a more realistic battlefield environment for the aircrews to train against, as enemy troops often deploy smoke to obscure assets and make targeting more difficult for aircrews.

Smoke screens for targets may be produced from a smoke grenade or a smoke generator. Smoke grenades are canister-type grenades used as a ground-to-ground or ground-to-air signaling device. The canister consists of a steel sheet metal cylinder with a few emission holes on top and on the bottom to allow smoke release when the smoke composition inside the grenade is ignited. In those that produce colored smoke, the filler consists of 250 to 350 grams of colored (red, green, yellow, or violet) smoke mixture (mostly potassium chlorate, sodium bicarbonate, lactose, and a dye). In those that produce screening smoke, the filler usually consists of hexachloroethane/zinc smoke mixture or terephthalic acid smoke mixture.

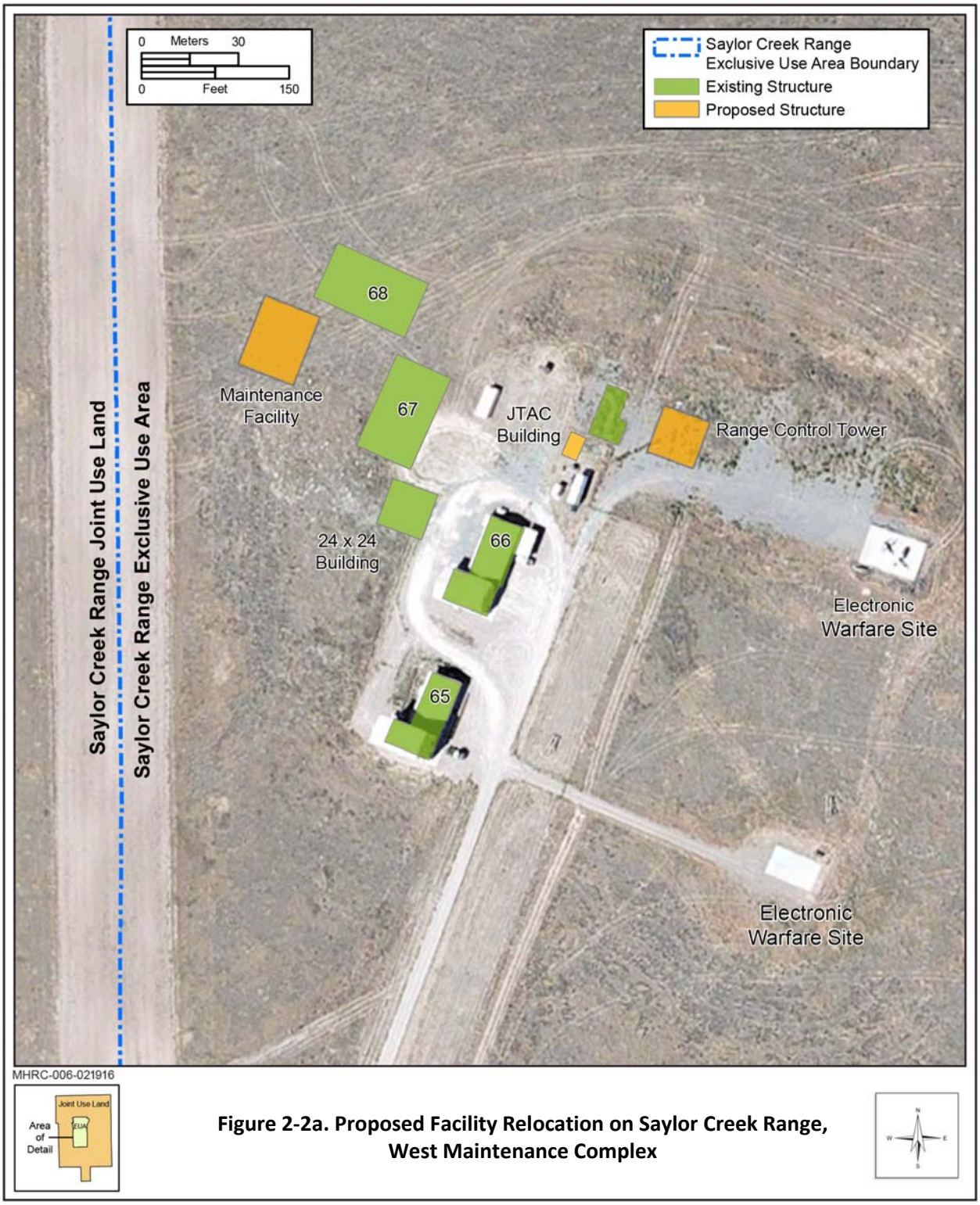

Figure 2-2a. Proposed Facility Relocation on Saylor Creek Range, West Maintenance Complex

Figure 2-2b. Proposed Facility Relocation on Saylor Creek Range, North Maintenance Complex

The smoke generator heats an oil or an oil-based mixture to evaporate it, then mixes the vapor with cool external air at a controlled rate so it condenses to a mist. This screen can then be sustained as long as the generator is supplied with oil, and—especially if a number of generators are used—the screen can build up to a considerable size. They may be used in fixed posts widely dispersed over the battlefield, or mounted on specially adapted vehicles such as the M56 Coyote generator shown above.

2.5.1.3 Aircraft Operations

Changes to aircraft operations would occur under Alternative 1. As noted above, all existing standard operating procedures and management practices would be followed and restriction/avoidance measures adhered to when undertaking aircraft operations within the MHRC.

Landing Zones on JBR

To support infiltration/exfiltration training requirements of JTAC training, nine LZs, consisting of 50- by 50-feet gravel pads, would be constructed on JBR for use by helicopters and V-22 aircraft (Figure 2-3). The LZs are sized to support a single V-22 aircraft. Currently, V-22 landings do not occur on JBR but the aircraft does occasionally operate in restricted airspace above JBR and generally in special use airspace associated with the MHRC (USAF 2014). Currently, helicopters occasionally land on existing JBR roads and two-tracks, however, this is done no more than 10 times per year. Proposed helicopter operations, therefore, would average 4 weeks per year (or 28 days), with no more than two landings per day, totaling 56 operations per year. The V-22s would operate 2 weeks per year (or 14 days) with no more than four landings per day, totaling 28 operations per year. As mentioned earlier, aircraft landings and takeoffs would occur in restricted airspace and be managed by Mountain Home AFB Air Traffic Control and JBR personnel to ensure that no safety issues would be introduced to local civil and commercial air traffic. The existing Mountain Home AFB's aggressive Bird/Wildlife Aircraft Strike Hazard (BASH) program would continue to be observed to minimize strike hazards, and Best Management Practices and Standard Operating Procedures described in the 2012 Mountain Home AFB INRMP to minimize effects to special-status species and habitat would be adhered to strictly (Mountain Home AFB 2012).

Assault Landing Zone

A 75- by 5,000-feet compacted gravel assault landing zone (ALZ) would be constructed in the southeast corner of SCR EUA (Figure 2-4), with operations occurring in the existing restricted airspace. In addition, a 200- by 500-feet aircraft parking apron on the southwest side of the strip would be constructed. The ALZ would accommodate unmanned aerial vehicles, helicopters, Special Forces aircraft, and V-22s. Fixed-wing aircraft would be authorized during the day only, while rotary aircraft would be authorized both day and night. Aircraft would land on average 30 days per year with up to three landings/takeoffs per day. These operations would be conducted by aircraft already operating in MHRC airspace and would not introduce any increases in the number of operations nor in the type of aircraft using the airspace. Again, aircraft landings and takeoffs would occur in restricted airspace and be managed by Mountain Home AFB Air Traffic Control and JBR personnel to ensure that no safety issues would be introduced to local civil and commercial air traffic. The existing BASH program would continue to be observed to minimize strike hazards, and Best Management Practices and Standard Operating Procedures described in the 2012 Mountain Home AFB INRMP to minimize effects to special-status species and habitat would be adhered to strictly (Mountain Home AFB 2012).

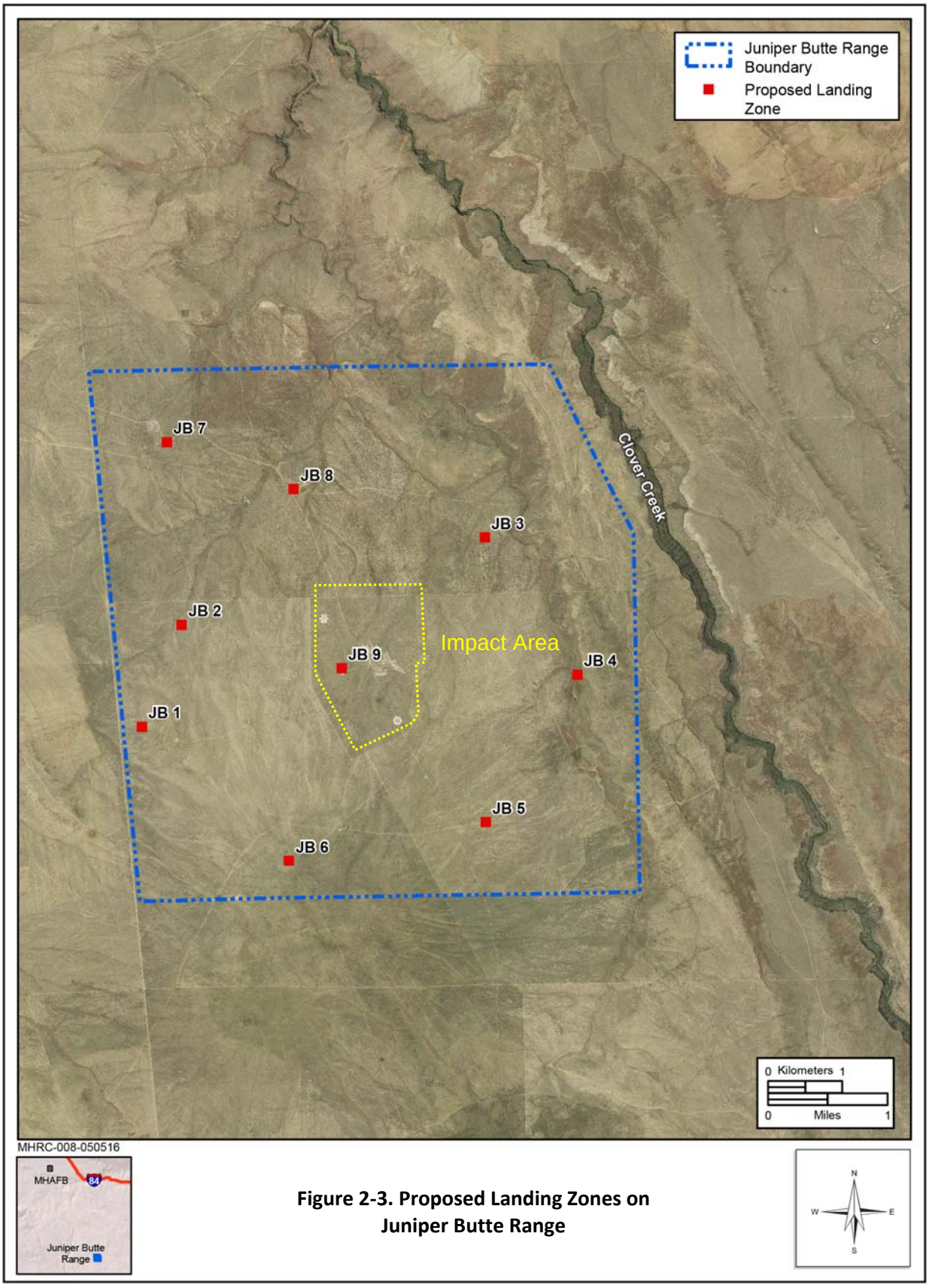

Figure 2-3. Proposed Landing Zones on Juniper Butte Range

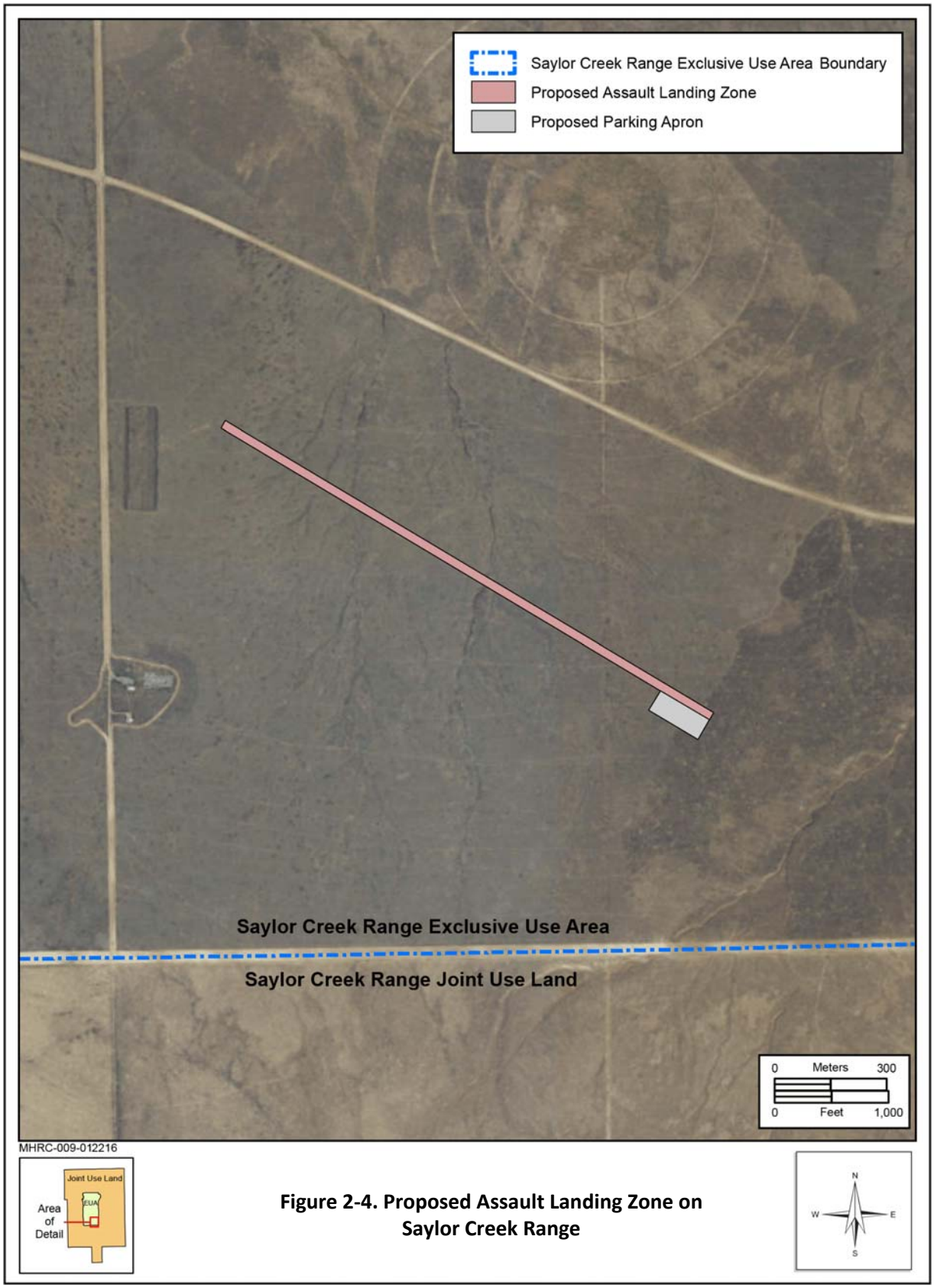

Figure 2-4. Proposed Assault Landing Zone on Saylor Creek Range

2.5.1.4 Target Improvements

As part of a continuous need to update targets, Alternative 1 would include two primary target improvements listed below. The improvements would not compromise any USAF management agreements with federal and state agencies, involve any other operations than those already allowed under the JBR Withdrawal Act (Public Law 105-261) (i.e., continuance of electronic targeting), and would continue to follow the management actions and mitigation measures identified in the ETI ROD (e.g., continued grazing and land management to minimize wildfires). Furthermore, all existing SOPs and BMPs would be followed and restriction/avoidance measures adhered to when improving and operating at the targets. These target improvements would provide better integrated, air-to-ground training for aircrews and ground-based personnel.

- Add up to six additional ND targets on JBR inside the 12,141-acre JBR boundary, but outside the current 662-acre impact area (Figure 2-5). These targets would be 2 acres in size and placed to minimize ground disturbance, especially to avoid slickspot peppergrass sites.
- Modify existing ND-1 target array. This 640-acre site comprises targets that consist of tanks and armored vehicles. Under Alternative 1, the number of vehicle targets would be reduced and additional target sets including urban villages, tanks, SAM sites, and anti-aircraft artillery sites would be built.

2.5.1.5 Munitions Improvements

Table 2-2 (following the figure) lists munitions improvements that would occur under both action alternatives. The No-Action Alternative, which corresponds to existing use, is also listed. For detailed descriptions of these munitions types please refer to Appendix A. Overall, use of 5.56mm, 7.62mm, and .50 Cal small arms munitions would increase within the EUA. New munitions within the EUA would include a few small arms (.22 Cal, 9mm, .45 Cal and 10 gauge), grenades (40mm MK19 Mod 3, M203/320), anti-tank rockets (66mm Light Anti-Tank Round, 84mm AT4), and physical munitions such as ground burst simulation, flare pens, star clusters, and artillery simulator. Mortars (60mm, 81mm, and 120mm) would be fired within the EUA and 120mm mortars from FPs in the JUL. Artillery (105mm, 155mm, HIMARS) would be fired from FPs in the JUL only.

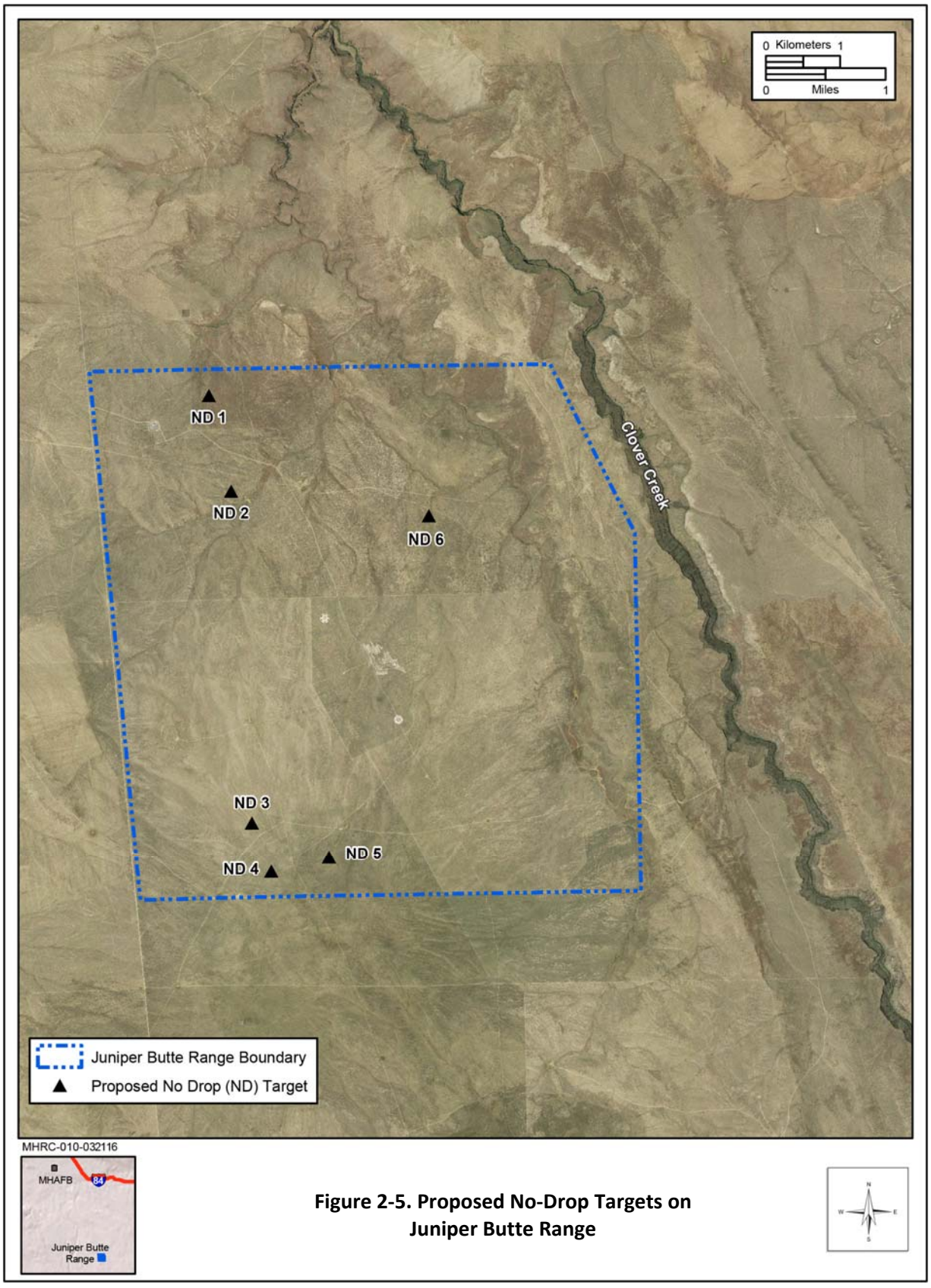

Figure 2-5. Proposed No-Drop Targets on Juniper Butte Range

Table 2-2. Current and Proposed Air-to Ground and Ground-to-Ground Munitions Totals for Saylor Creek Range

Weapon[1]	Munition	Annual Rounds		
		Alternative 1	*Alternative 2*	*No-Action Alternative*
Small Arms				
5.56mm	Ball/Tracer/Simulated Munition	70,000	70,000	30,000
7.62mm	Ball/Tracer/Simulated Munition	225,000	225,000	200,000
.22 Cal	Ball/Tracer	200	200	0
9mm	Ball/Tracer/Simulated Munition	1,000	1,000	0
.45 Cal	Ball/Tracer	1,000	1,000	0
.50 Cal	Ball/Tracer	65,000	65,000	50,000
10 Gauge (shotgun)	Slugs/Buckshot	100	100	0
BDU/Guided Bomb Unit (GBU)				
BDU33		5,837	5,837	5,837
BDU50		957	957	957
BDU56		22	22	22
GBU38		52	52	52
GBU31		41	41	41
GBU12		163	163	163
GBU10		11	11	11
Rockets				
Rocket Practice		1,088	1,088	1,088
Rocket White Phosphorus		89	89	89
Mortars				
60mm	Target Practice	600	600	0
	Smoke	50	50	0
	Infrared (IR) Illumination	50	50	0
	Conventional Illumination	50	50	0
	White Phosphorus	50	50	0
81mm	Target Practice	600	600	0
	Smoke	50	50	0
	IR Illumination	50	50	0
	Conventional Illumination	50	50	0
120mm	Target Practice	400	300	0
	Smoke	50	35	0
	IR Illumination	25	15	0
	Conventional Illumination	25	15	0
	White Phosphorus	25	15	0
Artillery				
105mm	Target Practice	200	0	0
	Smoke	25	0	0
	IR Illumination	25	0	0
	Conventional Illumination	25	0	0
	White Phosphorus	25	0	0
155mm	Target Practice	40	0	0
	Smoke	50	0	0
	IR Illumination	50	0	0
	Conventional Illumination	50	0	0
	White Phosphorus	25	0	0
HIMARS/MLRS		100	0	0

Table 2-2. Current and Proposed Air-to Ground and Ground-to-Ground Munitions Totals for Saylor Creek Range

Weapon[1]	Munition	Annual Rounds		
		Alternative 1	*Alternative 2*	*No-Action Alternative*
Grenades				
40mm MK19 Mod 3	Target Practice	8,000	800	800
M203/320	Target Practice	1,000	0	0
	Smoke	20	0	0
	Illumination Stars	20	0	0
Anti-Tank Rockets				
66mm Light Anti-Tank Round	21mm/35mm Subcaliber	25	0	0
84mm Anti-Tank 4	9mm Training Round	1,000	0	0
Physical				
Ground Burst Simulation		100	100	0
Artillery Simulator		50	50	0
Star Clusters		50	50	0
Flare Pens		50	50	0

Source: Current weapons authorizations are identified in the Mountain Home Range Complex (MHRC) Range Handbook (Mountain Home AFB 2015a) and AFI 13-212 (USAF 2012d). Use of practice and white phosphorous rockets analyzed in USAF 2007b.

2.5.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

2.5.2.1 Ground-Based Operations and Range, Facility, and Target Improvements

Under Alternative 2 ground-based operations and improvements for the ranges, facilities, and targets would be the same as described under Alternative 1. However, Alternative 2 would differ in the type and number of munitions used and no FPs would be established outside of SCR EUA boundaries.

2.5.2.2 Munitions Improvements

Alternative 2 would not employ the following munitions in SCR (see Table 2-1):

- Grenades (M203/M320 Grenade Launcher) using practice, smoke, and illumination munitions. The use of 40mm MK19 Mod 3 grenades would not increase under Alternative 2.
- Artillery (105mm, 155mm, MLRS, and HIMARS) using training, smoke, illumination, and white phosphorus marking munitions.
- Anti-Tank rockets (66mm Light Anti-Tank Weapon, 84mm Anti-Tank [AT4]).

In addition, 120mm mortars would not be fired from the JUL under Alternative 2, but would be employed, along with 60mm and 81mm mortars, in the EUA.

2.5.3 No-Action Alternative

The No-Action Alternative represents the continuance of military training as identified in the current Comprehensive Range Plan and munitions/ordnance use described in the MHRC Handbook (Mountain Home AFB 2015a) and authorized under AFI 13-212 (USAF 2012d). No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions (see Table 2-2) would be implemented. This alternative would restrict the ability to train in a realistic manner, particularly where joint forces are operating in the same battlefield environment.

2.6 Documents Incorporated by Reference

In accordance with CEQ regulations for implementing NEPA and with the intent of reducing the size of this document, the following material is incorporated by reference. These documents are part of the administrative record and are available upon request from 366 Civil Engineer Squadron.

- F-35A Operational Basing Final Environmental Impact Statement (USAF 2013).
- Integrated Natural Resources Management Plan for Mountain Home, Small Arms Range, SCR, JBR, and MHRC Sites (Mountain Home AFB 2012).
- Sustainable Ranges Report to Congress, Department of Defense (DoD 2012).
- F-35A Training Basing Final Environmental Impact Statement (USAF 2012a).
- Proposed Royal Saudi Air Force F-15SA Beddown Final Environmental Assessment (USAF 2012b).
- Proposed Explosive Ordnance Disposal Detonation Site on Juniper Butte Range Final Environmental Assessment (USAF 2012c).
- Comprehensive Range Plan, Mountain Home Range Complex (Mountain Home AFB 2011a).
- 366th Fighter Wing Plan 3208-11 Hazardous Waste Management Plan (Mountain Home AFB 2011b).
- Idaho Joint Land Use Study (Idaho Department of Commerce 2010).
- Wildland Fire Management Plan (Mountain Home AFB 2007).
- Republic of Singapore Air Force F-15SG Beddown Final Environmental Assessment (USAF 2007a).
- Employment of the 2.75-Inch Rocket at Saylor Creek Air Force Range Final EA (USAF 2007b).
- Mountain Home AFB Integrated Cultural Resource Management Plan (Mountain Home AFB 2011c).
- Vegetation Management at Juniper Butte Range Final Environmental Assessment (Mountain Home AFB 2002).
- Enhanced Training in Idaho Final Environmental Impact Statement (USAF 1998a).
- Enhanced Training in Idaho Record of Decision (USAF 1998b).
- Operations on Saylor Creek Range Environmental Assessment (USAF 1976).

2.7 Summary of Environmental Impacts by Alternative

Table 2-3 summarizes the potential environmental impacts by resource area for Alternative 1, Alternative 2, and the No-Action Alternative.

Table 2-3. Summary of Potential Environmental Impacts			
Resource Area	**Alternative 1**	**Alternative 2**	**No-Action Alternative**
Acoustic Environment	• Construction activities would occur within boundaries of ranges where no adjacent communities are found or people reside. • Noise from convoy training would occur infrequently in a sparsely populated area and be consistent with normal commercial truck traffic that currently exists. • With the exception of noise generated by the HIMARS rocket launches, all other munitions-generated noise would remain within JUL boundaries. • No population would be affected by munitions from any of the proposed new FPs. • Peak noise levels above 115 decibels (dB) would extend into 1,000 acres past the SCR along the west side but would still be at least 2 miles from the nearest farmhouse along the Bruneau River. • Noise level changes would be minor and imperceptible to any residents living within the MHRC affected environment. • No incompatible land uses would result from noise level changes. • Short-term startle effects to wildlife inhabiting areas adjacent to construction activities could occur, but would not be significant as wildlife would be expected to move to adjacent habitat. • Proposed munitions employment would not cause significant impacts to domesticated animals or wildlife.	• All noise levels would be the same as identified under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles at the FPs on SCR. Therefore, no munitions-generated peak noise would extend outside SCR boundaries.	• Noise levels would remain unchanged from existing conditions.

Table 2-3. Summary of Potential Environmental Impacts			
Resource Area	**Alternative 1**	**Alternative 2**	**No-Action Alternative**
Land Management and Use	• No change to land ownership resulting from construction and changes in operations. Minor changes to grazing and temporary public access. • No significant impacts to recreation resulting from noise-level changes. • Range and target upgrades would not introduce significant impacts that would adversely affect adjacent visual landscapes.	• Impacts would be the same as described under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles and construction of the FPs on SCR. Public access and grazing would remain consistent with existing conditions.	• No change to current land use patterns or management.
Safety	• Aircraft mishaps would not perceptibly increase. • No additional safety impacts resulting from bird/wildlife aircraft strike hazards are anticipated. • All proposed surface danger zones (SDZs) would be wholly contained within the SCR EUA except for the HIMARS, mortars, and artillery. No SDZs would fall outside of the SCR boundary. • Fire risk associated with HIMARS would be reduced due to clearing of 1 acre of vegetation around the FP; a fire crew would be present during launches to extinguish potential fires, and fire-resistant vegetation would be planted around the FP to retard any fires from spreading quickly.	• Safety impacts would be the same as described under Alternative 1, the only exception would be the elimination of the practice rounds of artillery, mortars, rockets, and missiles at the FPs on SCR. As a result, the SDZs would remain within the SCR EUA, and wildfire risk would remain similar to existing conditions.	• No change from existing conditions.
Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites	• No new hazardous materials or hazardous waste streams would be introduced. • The ability to continue storage and disposal of spent munitions would not be significantly impacted. • Alternative 1 would not involve the use or disposal of toxic materials. • No identified contaminated sites would be disturbed.	• Impacts would be the same as described under Alternative 1, the only difference would be fewer munitions expended.	• No change from existing conditions.

Table 2-3. Summary of Potential Environmental Impacts			
Resource Area	**Alternative 1**	**Alternative 2**	**No-Action Alternative**
Air Quality	• Proposed construction emissions would not exceed 250 tons per year for any criteria pollutant. • Proposed operations would not result in net emissions increases for any of the criteria pollutants in excess of 250 tons per year. • In terms of greenhouse gases (GHGs) emissions of equivalent carbon dioxide would incrementally increase; however, emissions would not exceed the 25,000 metric tons per year guideline identified for GHG emissions.	• Impacts would be the same as described under Alternative 1, the only difference would be fewer munitions expended and therefore, a lesser amount of emissions.	• No change to local or regional air quality.
Transportation	• In general, construction traffic would result in minor, temporary, and intermittent increases in the use of roadways during construction activities. • Increase in traffic as a result of the convoy operations would be minimal, increasing annual traffic counts by a maximum of 80 vehicle trips on Highway 51 and Clover-Three Creek Road; increasing Average Daily Trips by less than one vehicle trip.	• Impacts would be the same as described under Alternative 1.	• Traffic within the MHRC would remain unchanged from current conditions.
Natural Resources	• Given the limited scope of disturbance and the lack of native vegetation and high-quality habitats in areas proposed for construction, there would be no significant impacts to vegetation under Alternative 1. • No adverse impacts would occur to wildlife during construction or operations. • No wetlands would be impacted. • No threatened, endangered, or special-status species would be affected by construction or changes in operations.	• Impacts would be the same as described under Alternative 1.	• No change from current conditions.
Cultural Resources	• There would be no impacts to historic properties, archaeological, traditional, or unevaluated sites from Alternative 1.	• Impacts would be the same as described under Alternative 1.	• No change from current conditions.

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3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 Analysis Approach

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that a NEPA document should consider, but not analyze in detail, those areas or resources *not* potentially affected by the proposal. Therefore, a NEPA document should not be encyclopedic; rather, it should be succinct and to the point. Both description and analysis in an EA should provide sufficient detail and depth to ensure that the agency (i.e., USAF) took a critical look at all resources potentially impacted by an action. NEPA also requires a comparative analysis that allows decision makers and the public to differentiate among the alternatives. This EA focuses on those resources that would be affected by the proposed operational changes in the Idaho MHRC.

CEQ regulations (40 CFR §§ 1500-1508) for NEPA also require an EA to discuss impacts in proportion to their potential magnitude and present only enough discussion of peripheral issues as necessary to demonstrate why more study is not warranted. The analysis in this EA considers the current (baseline) conditions of the affected environment and compares those to conditions that might occur should the USAF implement one of the alternatives.

3.1.1 Resources Carried Forward

Based on the components of the Proposed Action and comments resulting from interagency coordination, the USAF identified the area or environment potentially affected by the proposed operations changes at the MHRC. As a result, eight resource categories were identified for detailed analysis based on their potential to be impacted by Alternative 1, Alternative 2, and the No-Action Alternative. These included the acoustic environment; land management and use; safety; hazardous materials and waste, toxic substances and contaminated sites; air quality; transportation; natural resources; and cultural resources.

3.1.2 Resources Not Carried Forward and Justification

Several resources were not evaluated in this EA because it was determined that implementing any of the alternatives would have negligible to no impacts, justification of these determinations follows. The resources not carried forward for detailed analysis are airspace management and use, earth resources (including soils and topography), water resources (including groundwater, surface water, floodplain, and wetlands), socioeconomics (including population, economics, housing, public and emergency services, and utilities), environmental justice, and protection of children and the elderly. A brief explanation of the reasons why each resource was eliminated from further consideration in this EA is provided below.

3.1.2.1 Airspace Management and Use

Under the Proposed Action there would be no changes to airspace management or use as analyzed most recently in the F-35A Operational Basing Final Environmental Impact Statement (USAF 2013). This document analyzed "other" aircraft use to cover occasional use by both fixed wing and rotary aircraft. Aircraft operating at the proposed training facilities (e.g., LZs and ALZ) already fly in MHRC airspace so no new aircraft would be introduced. Additionally, the number of aircraft operations would not change; rotary- and fixed-wing aircraft would instead land on the ALZ as part of existing training instead of only flying above in MHRC airspace. This would be the case for rotary-wing aircraft (i.e., helicopters and V-22s) landing at proposed LZs; instead of just operating in MHRC airspace they would incorporate use of

the LZs as part of existing training. Management of the airspace would remain consistent with existing practices where see and avoid is predominantly employed over the ranges. Therefore, because there are no impacts to airspace management and use, this resource category was eliminated from further analysis.

3.1.2.2 Earth Resources

Implementing Alternative 1 or 2 would involve minimal excavation or removal of up to 18 acres of soils as a result of constructing the maintenance area, ALZ, LZs, FP gravel pads, and roads to the FPs. The majority of the construction would occur on annual grasslands, which are not considered high-quality habitat areas, are not near or adjacent to any permanent water bodies, have been exposed to increased human activity, or on already disturbed barren soils. Implementing best management practices to stabilize soils and control sedimentation during construction and demolition activities would minimize potential impacts from erosion and sedimentation. No prime farmland soils are located in the areas proposed for construction. Construction and demolition activities would, therefore, not significantly alter the soils and topographic features of the area and were eliminated from further analysis.

3.1.2.3 Water Resources

No water resources are located within the immediate vicinity of Alternative 1, Alternative 2, or the No-Action Alternative, and would not involve withdrawals from, or discharges to, groundwater; affect surface waters such as streams; involve development to impact floodplains; or affect wetlands. In 2007, a Wetland Delineation and Request for Jurisdictional Determination Report was completed for areas on Mountain Home AFB, SCR, and JBR. None of the six wetlands identified on SCR and JBR are considered jurisdictional (i.e., do not receive protection under Section 404 of the Clean Water Act) nor would they be affected by proposed construction (Mountain Home AFB 2012). Therefore, no impacts to water resources would occur and water resources were eliminated from further analysis.

3.1.2.4 Socioeconomics

Under Alternative 1, Alternative 2, and the No-Action Alternative, there would be no changes in military or civilian personnel; therefore, population numbers, housing, public schools, healthcare facilities, emergency (fire and police) services, or the provision of potable water, wastewater treatment, power, and communications would not be affected. Over a period of 1 year, there would be minor construction that would provide minimal short-term economic benefits to the local economy. The work would be performed by contractors from the regional work force or from elsewhere in Idaho. Because these are temporary jobs that would be filled by the existing regional work force, there would be no major effects on area population, increases in housing demand, or in providing public, emergency, and utility services in the region. Therefore, only negligible effects to the socioeconomic character of the surrounding communities are anticipated, and this resource was eliminated from further analysis.

3.1.2.5 Environmental Justice and Protection of Children and Elderly

Populations that are subject to environmental justice considerations (i.e., low-income and minority populations) as well as children and the elderly are not located within or near the affected environment of Alternative 1, Alternative 2, and the No-Action Alternative. The closest population that could support low-income and minority populations, as well as children and the elderly is located 25 miles northwest

of SCR and 50 miles northwest of JBR. Therefore, no impacts to low income and minority populations, children, or the elderly are anticipated and this resource was eliminated from further analysis.

3.2 Acoustic Environment

This section discusses the noise environment under baseline conditions. Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water and are sensed by the human ear. Sound is all around us. Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). Noise analysis thus requires assessing a combination of physical measurement of sound, physical and physiological effects, plus psycho- and socio-acoustic effects. The response of different individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual. Noise may also affect wildlife through disruption of nesting, foraging, migration, and other life-cycle activities.

Noise and sound are expressed in logarithmic units of dB. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995). The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a doubling (or halving) of the sound's loudness when there is a 10-dB change in sound level.

3.2.1 Noise Metrics

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human sensitivity. It is common to add the "A" to the measurement unit (e.g., dBA) to identify that the measurement has been made with this filtering process. In this document, the dB unit refers to A-weighted sound levels. Impulsive sounds such as a sonic boom or ordnance detonation produce sound waves with predominately low frequency sounds and "C-weighting" filters less low frequencies, thus creating a more realistic representation of the noise experienced. "C-weighting" is typically applied to impulsive sounds and is denoted by the unit "dBC."

In accordance with DoD guidelines and standard practice for environmental impact analysis documents, the noise analysis herein uses the following A-weighted noise descriptors or metrics: Maximum Sound Level (L_{max}), Sound Exposure Level (SEL), and Onset-Rate Adjusted Day-Night Average Sound Level (L_{dnmr}). Ordnance noise levels are expressed in Peak metrics.

3.2.1.1 Maximum Sound Level

The highest A-weighted integrated sound level measured during a single event in which the sound level changes value with time (e.g., an aircraft overflight) is called the maximum A-weighted sound level or L_{max}. During an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the receptor, and returns to the background level as

the aircraft recedes into the distance. L_{max} defines the maximum sound level occurring for a fraction of a second. For aircraft noise, the "fraction of a second" over which the maximum level is defined is generally 1/8 second, and is denoted as "fast" response (American National Standards Institute 1988). Slowly varying or steady sounds are generally measured over a period of 1 second, denoted as "slow" response. In this EA, L_{max} is one of the metrics used in the analysis of speech interference.

3.2.1.2 Sound Exposure Level

The SEL is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., aircraft overflights) have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. SEL provides a measure of total sound exposure of the entire acoustic event, but it does not directly represent the sound level heard at any given time. During an aircraft flyover, SEL captures the total sound energy from the beginning of the acoustic event to the point when the receptor no longer hears the sound. It then condenses that energy into a 1-second period of time and represents the total sound exposure received. SEL is the best metric to compare noise levels from overflights. For sound from aircraft overflights, which typically last more than 1 second, the SEL is usually greater than the L_{max} because an individual overflight takes seconds and the L_{max} occurs instantaneously. Analysis of speech interference and sleep disturbance employs the SEL metric.

3.2.1.3 Onset-Rate Adjusted Day-Night Average Sound Level

Military aircraft operating in MHRC airspace generate a noise environment that is somewhat different from that around airfields. Rather than regularly occurring operations like at airfields, activity in airspace is highly sporadic. Individual military overflight events also differ from typical community noise events at airfields in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, with rates of up to 150 dB per second. The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of airspace activity is L_{dnmr}. The term 'monthly' in L_{dnmr} refers to the noise assessment being conducted for the month with the most operations or sorties—the so-called busiest month.

3.2.1.4 C-Weighted Day-Night Average Sound Level

Supersonic noise is described using C-weighted Day-Night Average Sound Level (DNL) (or CDNL). This metric captures the cumulative, impulsive characteristics of supersonic noise during a day-night average. In addition, the metric considers changes in the number of sonic booms per month as a measure of effects. Peak overpressures measured in pounds per square foot provide a measure of potential impacts from sonic booms.

3.2.1.5 Peak Noise Level

For impulsive sounds, the true instantaneous sound pressure is of interest. For munitions, explosions, and sonic booms, this is the Peak pressure of the shock wave and can be represented in dB and/or in physical units of pounds per square foot. The Peak noise level more closely resembles how the human ear perceives sound and is completely unweighted. The Peak metric is typically used for noise generated by small- and large-caliber weapons and is measured by the single event Peak level that is likely to be exceeded by 15 percent of the firing events, or Peak 15. Peak noise levels used for planning purposes for small arms begin at 87 dB above which incompatible lands uses occurs. Large caliber weapons and

artillery Peak noise levels do not have a significance level; however, it can be anticipated that noise complaints will be moderate at Peak noise levels of 115 dB. Below 110 dB, these low frequency sounds are barely noticeable because the human ear does not hear low frequencies as well as middle or high frequency sounds. Weather conditions can change how loud the sound may be at a particular location. Large-caliber weapons generate low frequency noise which is not affected as much by the weather as high frequencies, therefore, sound levels may change due to different weather conditions.

3.2.2 Affected Environment

The affected acoustic environment includes people, locations, and wildlife exposed to elevated noise levels generated by existing airspace and ground-based training that may change under Alternative 1, Alternative 2, and the No-Action Alternative. Prediction of aircraft noise in an airspace environment requires two sets of data. The first is a quantitative understanding of aircraft operations: numbers of aircraft, their speeds, altitudes, and locations. The second derives from the physical modeling of the noise itself, which is then accumulated for all aircraft operations. These sortie-operations (i.e., each aircraft flight within a single airspace unit) in the MHRC, which have been described in Chapter 2, were derived from the Mountain Home Airspace Manager and from previous environmental documents (refer to Section 2.6 for a list and brief description of these documents).

Table 3.2-1 presents historic baseline operations in the MHRC airspace (USAF 2013). The information is broken down into total annual average aircraft operations (includes aircraft operating out of Mountain Home AFB, the Idaho National Guard, and other transient users) and then presents a subset of this information for Mountain Home AFB F-15E/SG aircraft. SCR and JBR lie under the Jarbidge North MOA.

Table 3.2-1. Airspace Annual Average Operations and Noise Levels

Airspace Unit	Total Aircraft Operations	F-15E/SG Aircraft Baseline[1]	dB L_{dnmr}
Jarbidge North/Restricted Areas 3202/3204/South MOAs[2]	10,800	7,898	64
Owyhee North/South MOAs	9,700	7,770	64
Paradise East MOA	3,695	3,347	<45
Paradise West MOA	4,756	4,407	<45
Total[3]	**28,951**	**23,442**	**--**

Source: USAF 2013.

Notes:

[1]Includes only based F-15E/SG aircraft for Mountain Home AFB.

[2]Jarbidge includes operations at SCR underlying R-3202 and JBR underlying R-3204.

[3]Totals provided only as a general trend of activity and not directly linked to the number of operations generated from the airfield.

3.2.2.1 Subsonic Aircraft

The primary noise metric calculated by MR_NMAP for this assessment is L_{dnmr}. This DNL quantity is presented for each of the six MHRC MOAs—Jarbidge North and South, Owyhee North and South, Paradise North and South MOAs) (Figure 3.2-1). These airspace units would be used by aircraft conducting improved air-to-ground training proposed under Alternatives 1 and 2, and continued air-to-ground training found under the No-Action Alternative. Noise levels for the Jarbidge North MOA include operations in restricted airspace over both the SCR and JBR. The Jarbidge North and Owyhee North MOAs are the most intensely used airspace units in MHRC and noise levels in these two MOAs are 64 L_{dnmr} (see also Table 3.2-1).

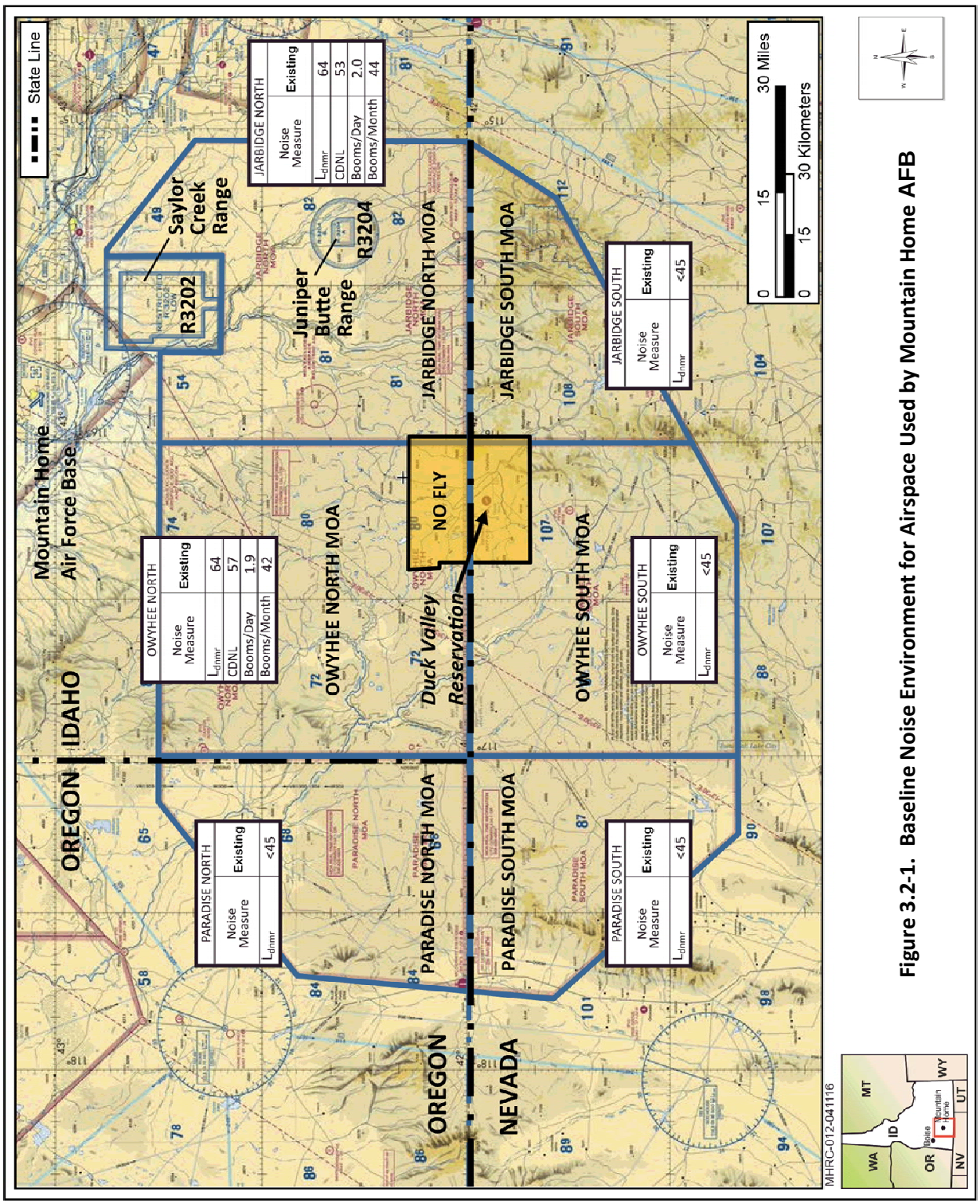

Figure 3.2-1. Baseline Noise Environment for Airspace Used by Mountain Home AFB

Although L_{dnmr} provides the most widely accepted cumulative metric, it does not offer an intuitive description of noise conditions. People often desire to know the loudness of individual aircraft during a flyover. The SEL metric, as a single-number representation of a noise energy dose, meets this need. Table 3.2-2 presents SEL values at representative altitudes in feet above ground level (AGL) for aircraft currently using the MHRC (. Typically, the noise environment is dominated by aircraft performing the majority of operations, in this case the F-15s.

Table 3.2-2. Sound Exposure Level in decibels for Aircraft at Various Altitudes[1]

Aircraft Type	Airspeed (knots)	Altitude in Feet AGL			
		500	***1,000***	***2,000***	***5,000***
F-15E	550	115	110	104	95
F-15SG	550	115	110	104	95
A-10	325	94	88	81	71
C-130	160	95	90	84	75
V-22	220	92	88	84	77
H-47	110	96	94	89	84

Source: SELCalc2 (USAF 2002) for SEL modeling. Aircraft-generated noise analyzed in USAF 1998a, 2007a, 2012a/b, and 2013.
Note: [1]Level flight, steady high-speed conditions.

3.2.2.2 Supersonic Aircraft

Supersonic operations are allowed in Owyhee North and Jarbidge North MOAs and ATCAAs at altitudes above 10,000 feet MSL, except over the Duck Valley Indian Reservation where it is prohibited. Supersonic flight is also permitted above 30,000 feet MSL in the ATCAAs above all the other MOA airspace; however, sonic booms generated at these high altitudes rarely reach the ground. Under existing conditions, supersonic operations in the Jarbidge North and Owyhee North generate an estimated 44 and 42 booms per month, respectively.

3.2.2.3 Munitions

Noise metrics used to depict munitions use depend upon the size of the weapon and whether or not explosives are used. The peak noise metric is used because during ordnance noise events the duration of each event is very short and a time averaging noise metric (such as DNL) does not capture the effect of the noise. For munitions noise, people notice the single event or series of single events with a startle-like reaction rather than annoyance (as measured by time-averaging) that is associated with aircraft noise.

Only inert, air-to-ground BDUs and electronically guided bomb units are authorized on SCR and only inert BDU-33s on JBR. As presented in Table 2-1, the number of munitions used under the No-Action Alternative presents continuation of existing conditions. As inert bombs do not generate noise events, noise associated with these types of ordnance is not discussed in this EA. Other ordnance, such as small-caliber weapons and target practice artillery and grenades do produce noise events and their use is listed in Table 2-1 under the No-Action Alternative (i.e., continuation of existing conditions). Generally, noise created by these weapons, and particularly small arms, extend down range, in the direction of fire, with a lesser amount of noise generated behind the firing line. On SCR, small arms are generally aimed towards the center of the EUA and produce negligible noise levels outside SCR JUL boundaries. Peak noise levels from .50 caliber small arms firing (the loudest noise generator under existing conditions) decrease to below 87 dB Peak noise level in approximately 1.5 miles from the existing FPs; the distance to the JUL boundary is well over 4 miles from the FPs. No populations or housing areas are affected by

noise generated at SCR. Only inert BDUs are used on JBR, small arms and target practice artillery are not permitted. Therefore, no noise events are generated on JBR under existing conditions.

3.3 Land Management and Use

Land use, as addressed in this section, includes land ownership and planning, local government planning and zoning, and management of state and federal public lands. Aircraft-related noise is discussed as it pertains to land use compatibility in areas underlying MHRC airspace. The primary land status category under MHRC airspace is federal public lands, although small portions of lands are state or privately owned. Federal land in the affected area consists predominantly of that managed and administered by the BLM and DoD. Special Land Use Management Areas, such as Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, and Areas of Critical Environmental Concern also are located under MHRC airspace and are typically administered by federal agencies. State, federal, and privately managed lands are addressed in this section.

3.3.1 Affected Environment

3.3.1.1 Land Management and Use under the MHRC Airspace

Both SCR and JBR are located within the sparsely populated Owyhee County. Over 75 percent of the land within the county is federally owned by the BLM. The remaining land is private at 17.5 percent and 6.7 percent is state-owned land. Less than 1 percent is owned by city and county jurisdictions (Figure 3.3-1). Over 93 percent of the land within Owyhee County is used for grazing, with the remaining areas consisting of mainly agricultural and forest lands (Idaho Department of Commerce 2010).

The land within SCR includes that leased from the State of Idaho as well as land that is withdrawn from all forms of appropriation, including mining and mineral leasing laws, under PLO No. 1027 of November 2, 1954, and as amended by PLO No. 3192 of August 2, 1963, and PLO No. 4902 of September 16, 1970. Overall management and use of the withdrawn lands are the responsibility of the USAF, including land rehabilitation, prevention, suppression of fires, and ordnance cleanup. The EUA is a designated impact area that consists of 12,840 fenced acres in the center of the range. The remaining acreage surrounding the EUA is the JUL and is jointly managed and used by the USAF and BLM. The BLM manages grazing within the JUL and has issued grazing permits for this area.

JBR was established with the JBR Withdrawal Act under PLO No. 105-261 in 1998 to augment SCR. JBR is fenced into four main areas to separate the grazing areas from the targets. In September 2001, the MHRC was completed as part of the ETI initiative and included establishment of JBR, five 1-acre ND target complexes, ten 1-acre EC threat emitter sites, use of Grasmere EC site, and 20 0.25-acre threat emitter sites. Electronic bombing sites ND-1, ND-4, ND-5, and ND-7 are all withdrawn for the use of the USAF; ND-9 is on leased private property. The 20 quarter-acre threat emitter sites are held by right of way issued from the BLM to the USAF. The ten 1-acre EC threat emitter sites were created by the JBR Withdrawal Act, PLO No. 105-261 and withdrawn for USAF use. The Grasmere EC site is held by lease agreement with the BLM.

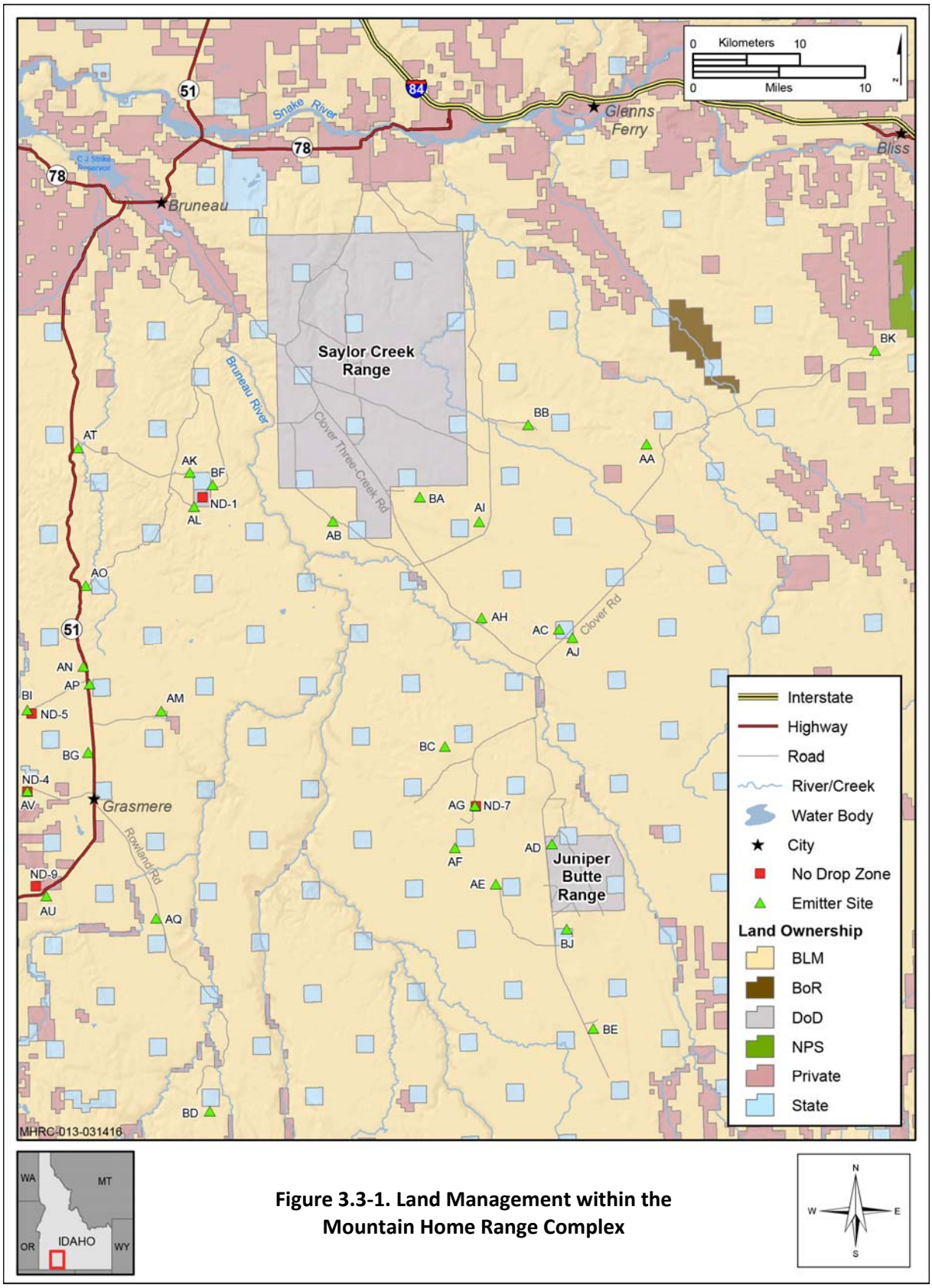

Figure 3.3-1. Land Management within the Mountain Home Range Complex

In a 1996 Settlement Agreement between the USAF and the Shoshone-Paiute Tribes, the USAF agreed, absent compelling national security circumstances, military contingencies, or hostilities, not to fly below 10,000 feet AGL over the present boundaries of Duck Valley Indian Reservation. However, military aircraft voluntarily do not fly below 15,000 feet AGL for training operations. Additionally, no supersonic operations are permitted over the Duck Valley Indian Reservation (USAF 1998a), military aircraft avoid the town of Owyhee, Nevada in a radius of 5-nautical miles (USAF 1998a), and 366 FW complies with all other terms contained within the 1996 Settlement Agreement. Exceptions are made during emergencies, such as aircraft mechanical problems or avoidance of weather.

3.3.1.2 Special Land Use Areas

The BLM, in accordance with Section 603(c) of the Federal Land Policy and Management Act of 1976, reports to Congress on the federal lands under its management suitable for inclusion in the National Wilderness Preservation System. Inclusion of land into the National Wilderness Preservation System is intended to preserve areas in a primitive state that possess little evidence of human activity. The Wilderness Act of 1964 identified criteria for evaluating areas for wilderness characteristics and gave direction on how designated wilderness areas should be managed. The major factors evaluated for each Wilderness Study Area included wilderness qualities such as naturalness, size, solitude, and special features; additional wilderness quality factors include multiple resource benefits, balancing the geographic distribution of wilderness areas, diversity of natural systems, and manageability. Subject to certain exemptions, use of motor vehicles or other motorized equipment, landing of aircraft, and construction of structures and roads are prohibited in designated Wilderness Areas. Each federal agency is responsible for evaluating, nominating, managing, and protecting designated and potential wilderness areas within the lands they manage. There is one designated Wilderness Area—the Bruneau-Jarbidge Rivers Wilderness—that underlies MHRC airspace and is located to the south of SCR and west of JBR (Figure 3.3-2).

The Wild and Scenic Rivers Act (16 U.S. Code [USC] §§ 1271-1287)—Public Law 90-542, approved October 2, 1968, (82 Statute 906) established a National Wild and Scenic Rivers System and prescribed the methods and standards through which additional rivers may be identified and added to the system. Located under MHRC airspace and west of SCR are the Bruneau and Sheep Creek Rivers, which were designated Wild and Scenic Rivers in 2009.

Other special land uses include the Saylor Creek Wild Horse Herd Management Area, which is located adjacent to the eastern boundary of SCR and encompasses 94,992 acres. The BLM is required to manage this herd. The Morley Nelson Snake River Birds of Prey National Conservation Area borders the northwest corner of SCR and underlies portions of the MHRC airspace. This National Conservation Area was established by Congress in 1993 to protect a unique desert environment that supports North America's highest density of nesting raptors and is managed by the BLM. The Hagerman Fossil Beds National Monument is located about 30 miles east of SCR and is managed by the National Park Service. Two state parks, Bruneau Dunes and Three Island, are located about 5 miles to the northwest and 10 miles to the northeast, respectively, from SCR boundaries.

With the exception emitter site AA, no other MHRC ranges, facilities, emitter sites, and targets are located in special land use designated areas.

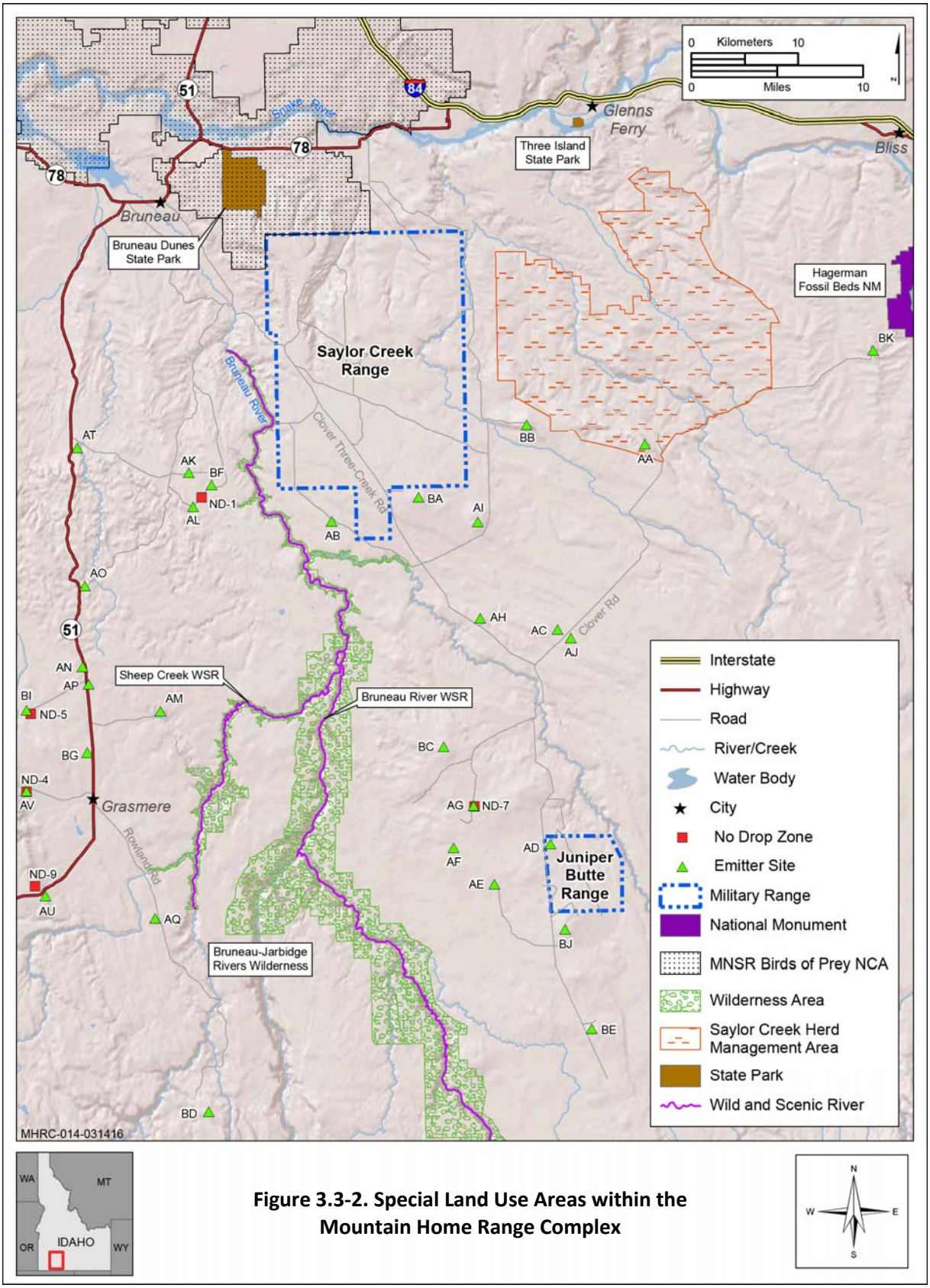

Figure 3.3-2. Special Land Use Areas within the Mountain Home Range Complex

3.3.1.3 Range Management

Grazing occurs on SCR, outside of the EUA, and across lands underlying MHRC airspace. Grazing is administered by the BLM and Idaho Department of Lands, including permits, fee collection, and maintenance. However, to provide for safety while managing the lands, and ensure compliance with applicable laws, the BLM and Mountain Home AFB have agreed to confer and coordinate training and grazing activities occurring within SCR boundaries.

Grazing within JBR is allowed and used as a management tool to reduce standing biomass and reduce wildland fire risk. The USAF has a grazing lease agreement with one lessee, which is managed by 366 Civil Engineer Squadron. Grazing is permitted on 10,790 acres of JBR for a maximum period of 60 days between April 1 and June 30. Grazing is prohibited on the emitter sites and all but one ND target area as they are fenced. Grazing on ND-1 is administered under a BLM grazing permit and is under the control of the BLM (366 OSS/OSR 2006).

3.3.1.4 Recreation

All of the SCR JUL is open for public uses including hunting, camping, and off-highway vehicle use. In addition, the Idaho Centennial Trail crosses through the western portion of SCR JUL and is open to all forms of travel including foot, horseback, bicycle, and off-highway vehicle. The Bruneau River Canyon, which includes the Bruneau-Jarbidge Rivers Wilderness Area and Bruneau River Wild and Scenic River, is located approximately 1 mile west of SCR JUL boundaries. About 4.5 miles west of the SCR EUA, is the Bruneau Canyon Overlook and Bruneau River Take-Out. The region is used for various recreational pursuits including rafting, fishing, hiking, hunting, and primitive camping. To the north of SCR is Bruneau Dunes State Park, which contains two small lakes and an improved camping area. Hiking, picnicking, fishing, and camping opportunities are provided in this state park; however, no swimming is allowed.

JBR and associated ND targets and emitter sites are not located immediately adjacent to any local, state, or federally designated natural areas. No hunting is allowed within any impact areas supporting military training. The closest special use area is the Bruneau-Jarbidge Rivers Wilderness Area at almost 10 miles west of JBR boundaries. Outside of JBR boundaries, the majority of the land is managed for grazing by the BLM and State of Idaho. Hunting and prospecting are the primary recreational pursuits in this high elevation desert region.

3.3.1.5 Visual

Visual resources describe the scenic values of landscapes. The BLM, the primary administrative entity for lands underlying MHRC airspace, uses its Visual Resource Management system to inventory scenic values and establish management objectives for those values on public lands. Visual Resource Management classes identify the degree of acceptable visual change within a characteristic landscape. A classification is assigned to public lands based on the guidelines established for scenic quality, visual sensitivity, and visibility (BLM 2015). The following outlines the classes and identifies whether the affected environment coincides with these areas.

Class I. Provides primarily for natural ecological changes only. It is applied to wilderness areas, some natural areas, and similar situations where management activities are to be restricted. Under MHRC airspace, Class I BLM-identified areas include the Bruneau and Jarbidge Rivers, as well as Clover Creek (BLM 2015).

Class II. Changes in the basic elements caused by a management activity may be evident in the characteristic landscape, but the changes shall remain subordinate to the visual strength of the existing character. There are several streams identified as Class II areas under MHRC airspace (BLM 2015).

Class III. Contrasts to the basic elements caused by management activity may be evident and begin to attract attention in the landscape, but the changes shall remain subordinate in the existing landscape. The Lower Bruneau Canyon is found under MHRC airspace (BLM 2015) and about half of the emitter and ND sites are located adjacent to areas identified as Class III (USAF 1998a). However, none of these sites are visible from the canyon.

Class IV. Contrasts may attract attention and be a dominant feature in the landscape in terms of scale, but the change shall repeat the basic element of the characteristic landscape. Both SCR and JBR, as well as the other half of emitter and ND sites, are found within areas designated as Class IV (USAF 1998a).

3.4 Safety

This section addresses ground, flight, and ordnance safety associated with activities conducted by DoD and allied forces operating on MHRC. These operations include activities at the ranges, as well as training conducted in the MHRC airspace.

Flight safety evaluates aircraft flight risks such as aircraft mishaps and Bird/Wildlife-Aircraft Strike Hazards (BASH). Ground safety, particularly at the SCR EUA and JBR fenced-off area, examines munitions safety and fire risk and management most commonly related to use of defensive countermeasures and ordnance.

Ground safety associated with construction is not addressed within this EA; all construction would be compliant with Occupational Safety and Health Administration (OSHA) and antiterrorism/force protection requirements, and no changes to existing ground safety procedures would occur. Day-to-day operations and maintenance activities conducted on MHRC are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by USAF Occupational Safety and Health requirements.

3.4.1 Affected Environment

The affected environment for safety includes MHRC airspace with primary focus on the potential for aircraft mishaps, i.e., crashes and BASH. Because construction and weapons use are included with this action, potential fire risk and management from these activities are also evaluated.

3.4.1.1 Aircraft Mishaps

Aircraft mishaps are classified as A, B, C, or D (Table 3.4-1). Class A mishaps are the most severe with total property damage of $2 million or more or a fatality and/or permanent total disability. Comparison of Class A mishap rates for various aircraft types, as calculated per 100,000 flying hours, provide the basis for evaluating risks among different aircraft and levels of operations. Historic data from fiscal year 1972 to the present indicate that the average historical mishap rate for every 100,000 flying hours was 2.37 for the F-15s. In the past 5 years, Class A mishap rates have decreased and for the F-15s it was 2.11 (Air Force Safety Center [AFSC] 2016).

Table 3.4-1. Aircraft Class Mishaps		
Mishap Class	**Total Property Damage**	**Fatality/Injury**
A	$2,000,000 or more and/or aircraft destroyed	Fatality or permanent total disability
B	$500,000 or more but less than $2,000,000	Permanent partial disability or three or more persons hospitalized as inpatients
C	$50,000 or more but less than $500,000	Nonfatal injury resulting in loss of one or more days from work beyond day/shift when injury occurred
D	$20,000 or more but less than $50,000	Recordable injury or illness not otherwise classified as A, B, or C

Source: DoD 2011.

Aircraft flight operations in the MHRC are governed by standard flight rules. Additionally, under the Commander 366 FW, the 366 Operations Group is the designated operating agency for the range and is responsible for operational monitoring, administration, and general safety of the MHRC. MHRC activity must comply with AFI 13-212, *Range Planning and Operations,* Volume 1 and supplements/addendums (USAF 2012d). Aircraft mishap rates are calculated using 100,000 flight hours. These mishap rates do not differentiate between accidents at the airfield or while training in the airspace. Therefore, the mishap rate for the MHRC reflects the same 1.06 accident rate as at the airfield. Safety records indicate only one Class A mishap occurred within the MHRC since 2000.

Please note, that in emergency situations, all models of F-15 aircraft can jettison fuel to reduce aircraft gross weight for flight safety. When circumstances require it, fuel jettisoning is permitted above 5,000 feet AGL and only over unpopulated areas. AFI 11-2F-F15v3, *F-15 Operations Procedures*, covers fuel dumping procedures, and local operating policies define specific fuel dumping areas for the base.

As noted in Section 2.4.1.1, GPS, SAR, and communications jamming has occurred twice in the past. Prior to these training episodes, the 746th Test Squadron together with the 366 FW notified the Federal Aviation Administration (so that pilots are alerted through the Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures were implemented. The Mountain Home AFB Public Affairs also notified local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. However, in the event of a safety issue, such as visually observing non-participating aircraft, communications jamming halts immediately and does not resume until the aircraft's safe passage through the airspace.

3.4.1.2 Bird/Wildlife Aircraft Strike Hazard

Bird/wildlife aircraft strike hazards, or BASH, and the danger it presents is a primary safety concern for aircraft operations. BASH constitutes a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur in a populated area. Aircraft can encounter birds at nearly all altitudes up to 30,000 feet MSL; however, most birds fly close to the ground. According to the AFSC BASH statistics, more than 50 percent of bird/wildlife strikes occur below 400 feet, and 90 percent occur at less than 2,000 feet AGL (AFSC 2007). Of these strikes, approximately 67 percent occur in the airfield environment (AFSC 2007). Waterfowl present the greatest BASH potential due to their congregational flight patterns and because, when migrating, they can be encountered at altitudes up to 20,000 feet AGL. Raptors also present a substantial hazard due to their size and soaring flight patterns. In general, the threat of BASH increases during March and April and from August through November due to migratory activities.

The Air Force BASH program was established to minimize the risk for collisions of birds/wildlife and aircraft and the subsequent loss of life and property. In accordance with AFI 91-202, *U.S. Air Force Mishap Prevention Program* (USAF 1998c), each flying unit in the Air Force is required to develop a BASH plan to reduce hazardous bird/wildlife activity relative to airport flight operations. The intent of each plan is to reduce BASH issues by creating an integrated hazard abatement program through awareness, avoidance, monitoring, and actively controlling bird and animal population movements. Some of the procedures outlined in the plan include issuing bird hazard warnings, initiating bird/wildlife avoidance procedures when potentially hazardous bird/wildlife activities are reported, and submitting BASH reports for all incidents.

The 366 FW maintains an aggressive program to minimize BASH potential. Over the past 20 years, aircraft based at Mountain Home AFB have experienced an average of less than 10 bird strikes per year. Most of these incidents resulted in little or no damage to the aircraft, and none resulted in a Class A mishap.

3.4.1.3 Munitions

Aircraft delivered inert BDUs and small-caliber munitions are currently used in the SCR EUA; only cold-spot BDU-33s are authorized in the JBR impact area. There are designated safety buffers that surround each target area to ensure personnel safety when the targets are active. Inert practice bombs dropped from aircraft have a safety buffer known as a weapons danger zone (WDZ). The size and shape of WDZs are calculated based on a number of parameters including type of ordnance used, speed and altitude of aircraft, and distance from the target when ordnance is dropped. Small arms and ground-based ordnance also have safety buffers, but are known as SDZs. The size and shape of these SDZs are also calculated according to the weapons used, distance from target, and the distance the munition can travel (USAF 2012e). A Hazard Area is a composite of all WDZs, SDZs, Laser SDZs, and Directed Energy Weapon Danger Zones for all authorized weapon delivery events, and represents operational hazards as well as residual hazards following munitions deliveries. For purposes of this EA, SDZs are the focus of the analysis because the only changes proposed apply to ground-delivered munitions. As such, Figure 3.4-1 illustrates a composite of all the SDZs at SCR. As depicted, all SDZs remain within the confines of the SCR EUA.

3.4.1.4 Fire Risk and Management

Contractors operating JBR and SCR provide fire management and response for the ranges and associated facilities. The fire management and response staff and equipment meet the requirements of the USAF Fire Protection Operation and Fire Prevention Program (AFI 32-2001). However, under the Support Agreement between 366 FW and the BLM Lower Snake River District (July 2008), the BLM provides firefighting support for all lands outside the SCR EUA, JBR, emitter sites, and ND targets. For lands within the SCR EUA and JBR, the BLM only supplies help when requested.

Fire activity underlying the MHRC airspace, resulting from lightning, occurs regularly during the May through November fire season. Fires in SCR EUA and JBR impact area from training activities are usually small because of expeditious detection and response. Outside of the managed ranges, wildfires tend to be larger. This is because the majority of Owyhee County is quite remote, fires are not detected until they have spread quite far and are creating a great deal of smoke, and the response time is long due to the distances involved (Mountain Home AFB 2007).

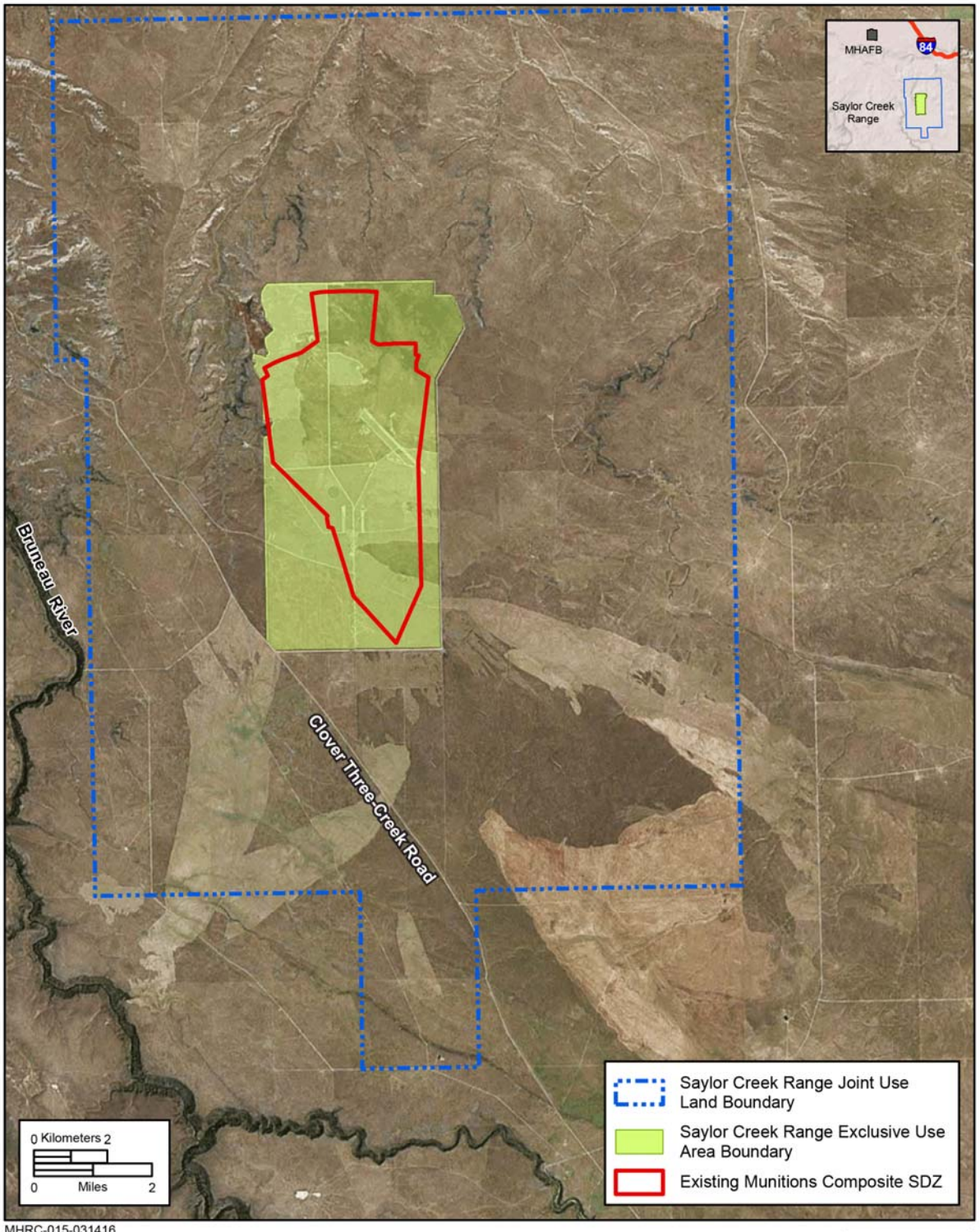

Figure 3.4-1. Existing Surface Danger Zones for Small-Caliber Weapons

Fire prevention within SCR EUA and JBR impact area includes reduction of ignition sources, management of vegetation and fuels, and maintenance of firebreaks. Fire risk is higher in the impact areas due to ordnance use and around the range facilities resulting from maintenance activities. Mountain Home AFB, therefore, employs a program of annually reducing fine fuels in the SCR EUA and JBR impact area and commonly implements aggressive fire suppression June through August. During dry years, the fire season can extend from May to November (Mountain Home AFB 2012). Both SCR and JBR support fire suppression equipment and personnel, ensuring rapid response to any fires that may start. Mountain Home AFB also precludes the use of flares, "hot-spot" training ordnance, and pyrotechnic devices during high, very high, and extreme fire risk conditions. Implementing these fire management and suppression programs has substantially reduced both the number and extent of fires occurring on the ranges (Mountain Home AFB 2012).

3.5 Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites

Hazardous materials are chemical substances that pose a substantial hazard to human health or the environment. They are regulated under several federal programs administered by the U.S. Environmental Protection Agency (USEPA), including the Comprehensive Environmental Response, Compensation, and Liability Act, Emergency Planning and Community Right-to-Know Act, Toxic Substances Control Act, and the Resource Conservation and Recovery Act (RCRA). DoD installations are required to comply with these laws along with other applicable federal, state, and DoD regulations, as well as with relevant orders including EO 13148, *Greening the Government Through Leadership in Environmental Management*.

Hazardous materials may include flammable and combustible liquids, compressed gasses, solvents, paints, paint thinners, pesticides, petroleum, oil, and lubricants, and other toxic chemicals including hazardous wastes.

Hazardous waste is waste considered dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. Waste commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes are determined to be hazardous wastes if they characteristics of ignitability, corrosivity, reactivity, or toxicity.

Toxic substances are specific substances whose manufacture, processing, distribution, use, or disposal are restricted by the Toxic Substances Control Act (40 CFR §§ 700-766) because they may present unreasonable risk of personal injury or health of the environment. They include asbestos containing materials, lead-based paint, polychlorinated biphenyls, and radon.

In 1986, Congress created the Defense Environmental Restoration Program (DERP) to address contaminated sites. The DERP addresses the identification and cleanup of hazardous substances and military munitions remaining from past activities at U.S. military installations and formerly used at defense sites. Within the DERP of the DoD there are several program categories; the Installation Restoration Program, Formerly Used Defense Sites, Military Munitions Response Program, and Base Realignment and Closure.

3.5.1 Affected Environment

The affected environment for hazardous materials and waste, toxic substances, and contaminated sites consists of the facilities and targets associated with SCR EUA, JBR impact area, emitters, and ND sites.

3.5.1.1 Hazardous Materials and Waste

Hazardous materials used at SCR, JBR, and the emitter sites include diesel, gasoline, or liquefied petroleum gas (propane) fuel for generators; oil; and lead acid batteries. Materials are stored in approved containers and have Safety Data Sheets. Each agency or shop using a hazardous material is responsible to have these Safety Data Sheets readily available for all personnel using the products.

All personnel handling materials and wastes are required to implement the Hazardous Materials/Wastes Strategies in the 366 FW Plans 3208-10, Hazardous Waste Management Plan and 3209-10, Hazardous Material Emergency Response Planning and Response Plan. Response to spills are identified in the Hazardous Material Emergency Planning and Response Plan (Mountain Home AFB 2008). Although this plan is specific to MHAFB and MHRC withdrawn lands, any spills occurring off USAF controlled property, i.e. private or BLM lands, would be cleaned-up in accordance with the plan and under the consultation of the land owner.

Range residues are inert ordnance items dropped on SCR and JBR and are considered non-hazardous solid wastes. Items are stored in fenced residue storage areas on SCR and JBR until they are demilitarized, certified, and transferred to recycling centers or permitted landfills by a certified range residue removal contractor.

3.5.1.2 Toxic Substances

Regulated toxic substances typically associated with buildings and facilities include asbestos containing material, lead-based paint, and polychlorinated biphenyls. In coordination with the Asbestos Program Officer, qualified civil engineering personnel at Mountain Home AFB determine the presence of asbestos containing material in facilities scheduled for maintenance, repair, and construction or demolition. The Bioenvironmental Engineer Office is responsible to determine the presence of lead-based paint prior to any construction activities. Materials, especially discarded oil products, may be screened for polychlorinated biphenyls contamination prior to disposal. Building 1296 is a polychlorinated biphenyls storage area (Mountain Home AFB 2012).

3.5.1.3 Contaminated Sites

Potential hazardous waste contamination areas are investigated as part of the Defense Environmental Restoration Program. The DoD developed the Defense Environmental Restoration Program to identify, investigate, and remediate potentially hazardous material disposal sites on DoD property prior to 1984. As part of Defense Environmental Restoration Program, DoD created the Environmental Restoration Program and the Military Munitions Response Program. These programs were instituted to satisfy the requirements of Comprehensive Environmental Response, Compensation, and Liability Act and RCRA for former and current hazardous waste sites. Military Munitions Response Program manages ranges slated for closure when the military department decides to close a range. At that time, the appropriate clean-up activities and closure processes are determined through DoD guidelines.

On SCR, there is one RCRA Solid Waste Management Unit site that is not covered under the Federal Facilities Agreement and three Areas of Concern. Site OT-37 originally consisted of six burial sites then OT-19 was added for a combined ten sites. Two other burials sites AOC 6 and 11 have been investigated. All the sites are currently in a No Further Action Required status and there are no land use controls designated for these sites (Idaho Department of Environmental Quality 2015).

3.6 Air Quality

Air quality is defined by ambient air concentrations of specific pollutants determined by the USEPA to be of concern related to the health and welfare of the general public and the environment. Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. The Clean Air Act of 1963 and amended in 1970 identified six common air pollutants of concern, called *criteria pollutants*. The criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). Criteria pollutants are the only air pollutants with national air quality standards that define allowable concentrations of these substances in ambient air (Idaho Department of Environmental Quality 2016). Air quality in a region is classified as nonattainment, attainment, or unclassified. Nonattainment is an area that has exceeded an allowable concentration of a criteria pollutant within the last 3 years. Attainment is the category given to an area with no violations in the last 3 years, and Unclassified is the category given to an area with insufficient data.

Primary pollutants, such as CO, SO_2, Pb, and some particulates, are emitted directly into the atmosphere from emission sources. Secondary pollutants, such as O_3, NO_2, and some particulates, are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes. Suspended PM less than or equal to 10 microns in aerodynamic diameter (PM_{10}) and PM less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$) are generated as primary pollutants by various mechanical processes (for example, abrasion, erosion, mixing, or atomization) or combustion processes. However, PM_{10} and $PM_{2.5}$ can also be formed as secondary pollutants through chemical reactions or by gaseous pollutants that condense into fine aerosols. In general, emissions that are considered "precursors" to secondary pollutants in the atmosphere (such as volatile organic compounds [VOCs] and oxides of nitrogen [NO_x], are considered precursors for O_3) are the pollutants for which emissions are evaluated to control the level of O_3 in the ambient air.

Under the Clean Air Act amendments, the USEPA established National Ambient Air Quality Standards (40 CFR § 50) for the specific pollutants and are listed in Table 3.6-1; Idaho has adopted these same standards. These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects.

Table 3.6-1. National Ambient Air Quality Standards			
Air Pollutant	**Averaging Time**	**National Ambient Air Quality Standards**	
		Primary	***Secondary***
CO	8-hour	9 ppm	None
	1-hour	35 ppm	None
Pb	Rolling 3 month average	0.15 µg/m^3	0.15 µg/m^3
NO_2	Annual	53 ppb	53 ppb
	1-hour	100 ppb	None
SO_2	3-hour	None	0.5 ppm
	1-hour	75 ppb	None
PM_{10}	24-hour	150 µg/m^3	150 µg/m^3
$PM_{2.5}$[1]	Annual	12 µg/m^3	15 µg/m^3
	24-hour	35 µg/m^3	35 µg/m^3
O_3	8-hour	0.070 ppm	0.070 ppm

Legend: ppm = parts per million, ppb = parts per billion, µg/m^3 = micrograms per cubic meter.
Source: USEPA 2016a.

In addition to the ambient air quality standards for criteria pollutants, national standards exist for hazardous air pollutants (HAPs) which are regulated under Section 112(b) of the 1990 Clean Air Act Amendments. The National Emission Standards for HAPs regulate emissions from stationary sources such as energy plants and paint shops (40 CFR §§ 61 and 63). Mobile source HAPs are called Mobile Source Air Toxics (MSATs) representing compounds emitted from highway vehicles and non-road equipment that are known or suspected to cause serious health and environmental effects.

Unlike criteria pollutants, there are no ambient air quality standards for MSATs. The primary control methodologies instituted by federal regulation for MSATs involve technological improvements for reducing HAP content in fuel and altering engine operating characteristics to reduce the volume of pollutants generated during combustion. MSATs would be the primary HAPs emitted by mobile sources during construction and aircraft operations. The equipment used during construction would likely vary in age and have a range of pollution reduction effectiveness. No new stationary sources would be introduced and construction would be operated intermittently over a large area, producing short-term negligible amounts of HAPs. Therefore, neither National Emission Standards for HAPs or MSAT emissions are considered further in this analysis.

3.6.1 Affected Environment

The affected environment for generated emissions includes MHRC. MHRC is located in Owyhee County, Idaho, and is under the jurisdiction of the Idaho Department of Environmental Quality. MHRC is located within the Idaho Intrastate Air Quality Control Region #63 which consists of 22 counties in central Idaho, including Owyhee County. Air quality in Owyhee County is generally considered very good because it is remote, sparsely populated, and supports little industry. Consequently, ambient pollutant concentrations have rarely been monitored. The nearest monitoring stations are located in Boise, approximately 50 miles northwest of Mountain Home AFB and in a highly urbanized area.

Air quality in this region is designated as either in “attainment” or “unclassifiable/attainment” with the National Ambient Air Quality Standards for all criteria pollutants (40 CFR 81.313); therefore, no conformity analysis is required.

Ground-based emissions sources derived from ground-based MHRC operations include generator operations and munitions use. Generator operations include diesel and liquefied petroleum gas

generators at various locations on the MHRC and emissions were reported in the 2015 Air Emissions Inventory. Small arms emissions at SCR EUA are presented in Table 3.6-2. Emissions were based on the number and types presented in Table 2-1 and calculated using the USEPA Emission Factors, Chapter 15, Ordnance Detonation (USEPA 2016b). Emissions generated by BDU-33 employment are negligible; mobile source emissions generated by government owned-vehicles and maintenance equipment also is minimal.

Table 3.6-2. Operational Emissions for MHRC

	Pollutants in Tons per Year						
	CO	***NO_x***	***VOCs***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***	***CO_2e[1]***
Stationary Sources	2.84	3.06	1.82	0.01	0.11	0.11	10.41
Munitions	0.53	0.04	0.00	0.00	0.01	0.01	0.34
Total Baseline Emissions	**3.37**	**3.1**	**1.82**	**0.01**	**0.12**	**0.12**	**10.75**

Legend: CO_2e = carbon dioxide equivalent.
Note: [1]CO_2e is measured in metric tons per year.

3.6.2 Greenhouse Gas Emissions

GHGs are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Science indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is producing negative environmental, economic, and social consequences across the globe. Review of the USEPA GHG inventory website (https://ghgdata.epa.gov/ghgp/main.do) indicates that GHG emissions are not measured in Owyhee County. However, in nearby Elmore County (where Mountain Home AFB is located), GHG emissions total 3,724,199 metric tons in June 2015 (USEPA 2015).

In an effort to reduce energy consumption, reduce GHGs, reduce dependence on petroleum, and increase the use of renewable energy resources the Air Force has implemented a number of renewable energy projects. The Air Force has established fiscal year 2020 GHG emissions reduction targets of 34 percent from a FY 2008 baseline for direct GHG emissions and 13.5 percent for indirect emissions. Examples of Air Force-wide GHG reduction projects include energy efficient construction, thermal and photovoltaic solar systems, and energy conservation programs (USAF 2012f). The Air Force continues to promote and install new renewable energy projects.

3.6.3 Climate Change Adaptation

In addition to assessing GHG emissions, the analysis must also assess how climate change might impact Alternative 1 and its mission. It must also identify what adaptation strategies could be developed in response. This is a global issue for DoD. As is clearly outlined in the Quadrennial Defense Review Report of February 2010, the DoD needs to adjust to the impacts of climate change on facilities and military capabilities. DoD already provides environmental stewardship at hundreds of installations throughout the U.S. and around the world, working diligently to meet resource efficiency and sustainability goals as set by relevant laws and EOs. In 2008, the National Intelligence Council judged that more than 30 U.S. military installations would face elevated levels of risk from potentially rising sea levels. DoD's operational readiness hinges on continued access to land, air, and sea training and test space. Consequently, the DoD is completing a comprehensive assessment of all installations to assess the potential impacts of predicted climate change on its missions and adapt as required.

The Quadrennial Defense Review Report goes on to illustrate that DoD would work to foster efforts to assess, adapt to, and mitigate the impacts of climate change. Within the U.S., the DoD would leverage the Strategic Environmental Research and Development Program, a joint effort among DoD, the Department of Energy, and the USEPA, to develop climate change assessment tools.

Due to its location, lands within the MHRC are not subject to rising sea levels; however, according to the USEPA Climate Change website, over the last century, the average annual temperature in the Northwest has risen by about 1.3 degrees Fahrenheit over the last century, with temperatures projected to increase by approximately 3 to 10 degrees Fahrenheit by the end of the century. Precipitation has also been in a decline in both the amount of total snowfall and the proportion of precipitation falling as snow. Changes in average annual precipitation in the Northwest are likely to vary over the century; however, summer precipitation is projected to decline by as much as 30 percent, with less frequent but heavier downpours (USEPA 2016c).

3.7 Transportation

Ground traffic and transportation refer to roadway and street systems, the movement of vehicles on roadway networks, and mass transit. A surface transportation network may include many different types of facilities that serve a variety of transportation modes, such as vehicular traffic, public transit, and non-motorized travel (e.g., pedestrians and bicycles). The relative importance of various transportation modes is influenced by development patterns and the characteristics of transportation facilities. In general, compact areas that contain a mixture of land uses tend to encourage greater use of public transit and/or non-motorized modes, especially if pedestrian, bicycle, and transit facilities provide desired connections and are well operated and well maintained. More dispersed and segregated land uses tend to encourage greater use of passenger cars and other vehicles, particularly if extensive parking is provided.

3.7.1 Affected Environment

The affected environment for transportation includes the Owyhee County road network that provides access to the MHRC facilities, ranges, emitter sites, and ND targets.

Regional and Local Circulation

Primary roads that provide access to the MHRC include State Highways 51 and 78, as well as Interstate 84. Located west of SCR and JBR, State Highway 51 is a two-lane highway that travels in a north-south direction. It was classified by the Idaho Transportation Department under the Rural Functional Classification Map for 2015 as a minor arterial road. In 2014, the most recent information available, it had an Average Daily Traffic (ADT) count of 110 vehicles at the intersection of State Highway 51 and State Highway 78 and at the town of Riddle (Idaho Transportation Department 2014, 2015). State Highway 78 is classified as a major collector road and runs primarily west-east and is located northwest of SCR. In 2014 it had an ADT count of 110 vehicles at the intersection of State Highway 51 and State Highway 78, as well as at the town of Grand View. Interstate 84 is classified as a principal arterial highway that runs east-west across the state, and provides access from the north to State Highway 78 (see Figure 1-3). In 2014, it had an ADT of 170 vehicles at the intersection with U.S. Highway 30, which is classified as a minor arterial road (Idaho Transportation Department 2014, 2015).

Most of the remaining roads within the MHRC are either unimproved or simply graded to provide access to ranchers, recreationists, and land managers. Traffic volumes on these roads are primarily low. The

primary access road for SCR and JBR is Clover-Three Creek Road, which runs north-south from Bruneau to Three Creek. This road is a well-maintained gravel road that enters SCR from the northwest and crosses the southwest portion of the range. In 2015, Idaho Transportation Department did not assign Clover-Three Creek Road a functional classification; however, it is an important connector road through the sparsely populated region of Owyhee County (Idaho Transportation Department 2015). The most recent ADT count that Idaho Transportation Department has available for this road is 96 vehicle trips taken in 1996 (Idaho Transportation Department 2016).

3.8 Natural Resources

Natural resources include living, native, and naturalized plant and animal species, both terrestrial and aquatic, and the habitats within which they occur. For purposes of this EA, natural resources are divided into three major categories: vegetation, wildlife, and special-status species. Plant communities and associations are referred to as *vegetation*, while animal species are generally referred to as *wildlife*. Habitat can be defined as the resources and conditions present in an area that produce occupancy, including survival and reproduction, by a given organism (Hall *et al.* 1997). *Special-status species* are defined as: 1) federally listed plant and animal species and their habitats that are protected under the Endangered Species Act of 1973 (16 USC § 1531 *et seq.*); and 2) other special-status species, including state-listed species that are not federally listed, other species of special concern identified by state and federal agencies, species covered under the Migratory Bird Treaty Act (16 USC §§ 703-712), and the Bald and Golden Eagle Protection Act (16 USC §§ 668-668d).

The existence and preservation of natural resources are intrinsically valuable; however, these resources also provide recreational, aesthetic, and socioeconomic values to society. The analyses in this EA focus on species or vegetation types that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute.

3.8.1 Affected Environment

The affected environment for natural resources includes areas impacted by construction, noise, or disturbance associated with Alternative 1, Alternative 2, and the No-Action Alternative. These natural resources are described in detail in the Mountain Home AFB Integrated Natural Resource Management Plan and summarized below (Mountain Home AFB 2012).

3.8.1.1 Vegetation

SCR is located within the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem. This ecosystem is characterized by diverse landforms and vegetation types including flat sage-brush covered plateaus to mountainous woodlands and grasslands (Mountain Home AFB 2012). An ecosystem survey, conducted at SCR in 1996, found areas within the EUA to be highly disturbed as a result of wildland fires, training activities, prescribed burning, reseeding, weed invasion, and road maintenance. These areas tend to be dominated by weed species including cheatgrass (*Bromus tectorum*), annual kochia (*Kochia* sp.), and Russian thistle (*Salsola kali*). The majority of areas within JUL at SCR has been burned since 2000 (approximately 54,000 acres) and supports various species seeded by Mountain Home AFB, primarily crested wheatgrass (*Agropyron cristatum*) or cheatgrass/Sandberg bluegrass (*Poa secunda*) communities (Mountain Home AFB 2012).

JBR and associated emitter sites and ND targets are also located within the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem. Historically, Wyoming big sagebrush (*Artemisia tridentata*

wyomingensis) stands dominated the landscape with other minor plant communities including rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus*). However, current vegetation is a mixture primarily of shrub-steppe and non-native plant species resulting from wildfires and grazing. Juniper Butte has burned on multiple occasions and the sagebrush native grasslands that were once present have converted to other grasslands. These resulting grasslands are dominated by rabbitbrush, as well as non-native crested wheatgrass and intermediate wheatgrass (*Thinopyrum intermedium*), both of which were seeded following various fire events (Mountain Home AFB 2012).

3.8.1.2 Wildlife

Mountain Home AFB actively manages wildlife and habitats on Air Force lands within the MHRC, ranges, emitter sites, and ND targets. Management is carried out in cooperation with the BLM, USFWS, and Idaho Fish and Game. Wildlife habitat is managed in a variety of ways including vegetation manipulation/removal, post-fire rehabilitation, and grazing practices. Since 1996, a variety of wildlife studies has been conducted on SCR, JBR, and associated emitter sites and ND sites, which include raptors, sage grouse, small mammals, and general wildlife surveys. As of 2012, 71 species had been recorded during surveys at SCR, 60 species at JBR, and 76 species at the ND targets and emitter sites (Mountain Home AFB 2012). Common wildlife species known to occur on MHRC lands include elk (*Cervus canadensis*), pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), short-eared owl (*Asio flammeus*), Canada goose (*Branta canadensis*), mourning dove (*Zenaida macroura*), and western rattlesnake (*Crotalus oreganus*). There is no suitable habitat for amphibians on SCR, JBR, ND targets, and emitter sites, and no observations have occurred in these areas.

3.8.1.3 Special-Status Species

Table 3.8-1 lists federally listed threatened or endangered species present within Owyhee County, Idaho. One flora species, slickspot peppergrass (*Lepidium papilliferum)*, is a threatened species with proposed critical habitat (USFWS 2016a) and is known to occur throughout JBR. Slickspot peppergrass' threatened status became effective on September 16, 2016 (USFWS 2016b). Since 2000, annual surveys for the peppergrass have occurred at JBR and 16 permanent monitoring transects have been established (Mountain Home AFB 2012). A letter was sent on April 20, 2016, to the USFWS notifying them of the USAF's preparation of an EA and avoidance of any special status species (see Appendix D).

Table 3.8-1. Federally Listed Threatened or Endangered Species Present within Owyhee County, Idaho

Common Name/Scientific Name	Federal Status	Present within Affected Environment?
Yellow-billed Cuckoo (*Coccyzus americanus*)	T	No, habitat not present
Bull Trout (*Salvelinus confluentus*)	T	No, habitat not present
Slickspot peppergrass (*Lepidium papilliferum*)	T	Yes, occurs on JBR
Gray wolf Northern Rocky DPS (*Canis lupus*)	D	No, potential habitat present
Snake River physa snail (*Physa natricina*)	E	No, habitat not present
Bruneau Hot springsnail (*Pyrgulopsis bruneaunsis*)	E	No, habitat not present

Legend: E = Endangered, T = Threatened, PT = Proposed Endangered, D = Delisted due to Recovery, DPS = Distinct Population Segment.
Source: USFWS 2016c.

Table 3.8-2 lists special-status fauna species protected under the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, or Idaho Fish and Game Species of Greatest Conservation Need that are known to occur at SCR, JBR, ND targets, and emitter sites. As presented in Section 3.4.1, the 366 FW maintains an aggressive program to minimize bird (including migratory birds and eagles) aircraft strike hazard potential. Over the past 20 years, Mountain Home AFB based aircraft have experienced an average of less than 10 bird strikes per year.

Table 3.8-2. Special-Status Species Known to Occur at Saylor Creek Range, Juniper Butte Range, No-Drop Targets, and Emitter Sites

Common Name	Scientific Name	Status	Location
Birds			
Sage sparrow	*Amphispiza belli*	BCC, PIF, BLM3, IDPNS	All
Black-throated sparrow	*Amphispiza bilineata*	BLM4, IDPNS	Emitter site AI
Golden Eagle	*Aquila chrysaetos*	BCC, PIF, IDPNS	All
Western burrowing owl	*Athene cunicularia*	BCC, PIF BLM5, IDPNS	All
Ferruginous hawk	*Buteo regalis*	BCC, PIF, BLM3, IDPNS	All
Greater sage-grouse	*Centrocercus urophasianus*	BCC, PIF, BLM2, IDPNS	All
Loggerhead shrike	*Lanius ludovicianus*	BCC, PIF, BLM3, IDPNS	All
Long-billed curlew	*Numenius americanus*	USFWSTS, BLM5, PIF, IDPNS	SCR
Sage thrasher	*Oreoscoptes montanus*	BCC, PIF, BLM5, IDPNS	All
Western pipistrelle	*Pipistrellus hesperus*	BLM5, IDPNS	SCR, JBR
Brewer's sparrow	*Spizella breweri*	BCC, PIF, BLM3, IDPNS	All
Mammals			
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM3, IDPNS	Possibly SCR
Western small-footed myotis	*Myotis ciliolabrum*	BLM5, IDPNS	SCR, JBR
Long-eared myotis	*Myotis evotis*	BLM5, IDPNS	SCR
Yuma myotis	*Myotis yumanensis*	BLM5, IDPNS	SCR
Kit fox	*Vulpes macrotis*	BLM4, IDPNS	JBR, Emitter sites

Sources: Mountain Home AFB 2012; Idaho Fish and Game 2016; USFWS 2008; Partners in Flight (PIF) 2004.
Notes: USFWSTS=BCC=Bird of Conservation Concern, PIF=DoD PIF Priority Species, SSS=Idaho Fish and Game special-status species in Owyhee County, BLM3=Bureau of Land Management Type 3 sensitive species, BLM4=Type 4 sensitive species, BLM5=Type 5 sensitive species, and IDPNS=Idaho Protected Nongame Species.

3.9 Cultural Resources

Cultural resources include, but are not limited to, buildings, structures, objects, prehistoric and historical archaeological resources, or any other physical evidence of human activity considered important to a culture for scientific value, traditional use, or other reasons.

Significant cultural resources are those generally over 50 years of age that are listed in, or determined eligible for listing in, the National Register of Historic Places (NRHP) based on having met one or more of the following criteria for significance defined in 36 CFR 60.4:

(a) Association with events that have made a significant contribution to the broad patterns of history or prehistory;
(b) Association with the lives of persons significant in our past
(c) Represent unique or distinctive architectural characteristics of a type, period, method of construction or possess high artistic values or the work of a master;
(d) Have yielded, or may be likely to yield, information important in history of prehistory.

In addition to historic significance, a cultural resource must also retain integrity, which is the ability to convey said historic significance. The NRHP criteria recognize sevens aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. A resource must retain several, if not all of these aspects, to be considered eligible for listing in the NRHP. For archaeological resources, eligibility is generally determined under Criterion D for the ability to provide important information in prehistory and/or history. The assessment of integrity for archaeological properties depends on the data requirements of an applicable research design. This includes the identification of appropriate physical remains in an intact depositional (horizontal or vertical) context. Once a federal agency has determined a cultural resource to be significant, the agency has a responsibility to manage the resource as a historic property.

While there are multiple laws, regulations, and executive orders that govern the identification and management of cultural resources on Mountain Home AFB, the main regulatory drivers are Section 110 and 106 of the National Historic Preservation Act of 1966 (NHPA) [54 U.S.C. 300101 et seq.] and associated regulations [36 CFR 800]. Section 110 of NHPA requires all federal agencies to identify historic properties on their landholdings while Section 106 of NHPA requires all federal agencies to take into account the effects of their undertakings on historic properties and seek to avoid, minimize, or mitigate adverse effects to these properties (36 CFR 800.1(a)). Section 106 also requires agencies to consult with federally recognized Indian tribes and other stakeholders with a vested interest in the undertaking. Mountain Home AFB consults with federally-recognized tribes on a recurring basis, to include non-scheduled consultations when required (see Section 1.5.2 for information on stakeholder consultation).

In meeting the requirements of Section 106 of NHPA, Mountain Home AFB has entered into a Programmatic Agreement (PA) (Mountain Home AFB 2015b) with the State Office of Historic Preservation (SHPO) that defers routine compliance authority to a professionally qualified Cultural Resources Manager (CRM) for undertakings determined to have no historic properties present or no adverse effect on identified historic properties. In the event of adverse effect to historic properties, Mountain Home AFB is required to consult with the SHPO and stakeholders, as appropriate. Mountain Home AFB provides annual accounting of the applied use of the PA to the SHPO.

3.9.1 Affected Environment

3.9.1.1 Prehistoric and Historic Contexts

The prehistory of southwestern Idaho began approximately 12,000 years ago with small bands of people that are generally considered big game hunting cultures. Subsistence practices and settlement patterns shifted as time continued, as well as the technologies the people of southwestern Idaho utilized. The lifeways of Native Idahoans shifted markedly with the influx of Euroamericans emigrating west. Multiple lines of evidence (historical, linguistic, and ethnographic) suggest that American Indian Tribes with historic ties to southern Idaho include the Shoshone, Paiute, and Bannock.

Mining, cattle ranching, and sheep ranching become important Euroamerican industries in the 19th century that have persisted to some degree today. The city of Mountain Home developed as a result of the Oregon Short Line Railroad and served as a commercial center for surrounding ranches. The city continued to expand when the railroad was completed.

The military history of Mountain Home began in 1942 when the Mountain Home Air Force Base and SCR were established in response to World War II. During World War II, pilots used SCR, among four other precision bombing ranges in the region, for bombing training. After World War II, the base was deactivated and the Mountain Home Army Air Field became a subbase for Gowen Field. However, the pilots from Gowen Field continued to use the ranges and the PBRs until 1949, when the base was reactivated as a Strategic Air Command (SAC) base. During the Korean War, Mountain Home AFB supported three separate Air Resupply and Communications wings that trained in psychological warfare, covert operations, and unconventional warfare for deployment overseas. SCR was reduced to nearly its present size in 1963 and was further changed to its present configuration in 1970. The Tactical Air Command assumed control of Mountain Home AFB and SCR in 1966 until it became an Air Combat Command installation in 1992. See Appendix E for an expanded discussion of the prehistory and history of the area.

3.9.2 Area of Potential Effects

In conformance with Section 5 of the PA and 36 CFR 800.3 and 800.4(a)(1), the Mountain Home AFB has established the undertaking and determined the Area of Potential Effects (APE). The APE consists of the geographic area within which the undertaking may directly or indirectly cause alterations in the character or use of an historic property. Because the undertaking includes multiple locations and activity types within the broader Mountain Home Range Complex (MHRC), the APE is defined as the Saylor Creek Range, emitter sites, Grasmere EC, and Juniper Butte Range and all established access routes between these facilities.

3.9.2.1 Archaeological Resources

As documented in the 2011 Mountain Home AFB ICRMP, all Mountain Home AFB landholdings have been fully inventoried for historic properties. This resulted in the identification of 839 archaeological resources within the APE.

On SCR, eight hundred twelve (812) archaeological resources have been recorded. Of these, seventy-seven (77) sites have been determined ineligible while seven hundred thirty-five (735) are considered, or have been formally determined, eligible for listing in the NRHP. In 2007, the 14 archaeological sites located within the SCR EUA (but outside of the target areas) were tested for NRHP eligibility. Only one site, 10-OE-5377, was determined eligible for listing in the NRHP. Site 10 OE-5377 is a multi-component open campsite/sheep camp (Mountain Home AFB 2011c).

On Juniper Butte, 26 archaeological sites have been identified. Of these sites, nine (9) have been formally determined eligible for inclusion in the NRHP (Table 3.9-1). One NRHP-eligible archaeological site is located on emitter site BA; however, the site is currently preserved in situ through capping with gravel (Mountain Home AFB 2011c). No cultural resources have been identified on the Grasmere EC.

Table 3.9-1. Archaeological Sites on JBR		
Trinomial	**Prehistoric/Historic**	**NRHP Eligibility**
10-OE-7129	Multi-Component	Eligible
10-OE-7132	Multi-Component	Eligible
10-OE-5873	Prehistoric	Eligible
10-OE-5884	Prehistoric	Eligible
10-OE-7115	Prehistoric	Eligible
10-OE-7128	Prehistoric	Eligible
10-OE-5853/7114	Unknown	Eligible
10-OE 7112/7113	Unknown	Eligible
10-OE-7116	Unknown	Eligible

3.9.2.2 Architectural Resources

Buildings and facilities on SCR were constructed between 1968 to the present and buildings on JBR were constructed in 2002. None of these facilities are greater than 50 years old and none meet the criteria for exceptional Cold War significance (Mountain Home AFB 2011c). Site 10-OE-8098, the remnants of a World War II control tower located in the northwestern portion of SCR, is eligible for listing in the NRHP. One Civilian Conservation Corp constructed dam (Pothole Reservoir Dam) also located on SCR is eligible for listing in the NRHP (Mountain Home AFB 2011c). Neither of these structures are in areas affected as part of the proposed action.

3.9.3 Traditional Cultural Properties

No traditional cultural properties are identified to date on SCR or JBR; however, the ranges fall within an area of concern to several American Indian Tribes with historical ties to the area.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

Chapter 4 presents the scientific and analytical basis of the potential environmental consequences of two action alternatives and the no-action alternative. To define the potential consequences, this chapter overlays the components of the action alternatives described in Chapter 2 onto the affected environment described in Chapter 3. Each of the environmental resources described in Chapter 3 is affected to a different degree and has a different method of analysis. NEPA requires a comparative analysis that allows decision-makers and the public to differentiate among the alternatives. This EA focuses on those resources that would be affected by the operational changes and improvements proposed in the MHRC.

Irreversible and irretrievable effects are discussed in Section 4.10.3. Cumulative effects of the alternatives with other past, present, and foreseeable future actions are presented in Section 4.11.

4.2 Acoustic Environment

Noise impacts result from perceptible changes in the overall noise environment that increase annoyance or affect human health. Annoyance is a subjective impression of noise wherein people apply both physical and emotional variables. To increase annoyance, the cumulative noise energy must measurably increase. Human health effects such as hearing loss and noise-related awakenings can result from exposures to noise. The evaluation criteria used in this noise analysis include the potential for:

- Employees to be subjected to continuous noise exceeding OSHA limits. This evaluation criteria is based on OSHA standards (29 CFR Section 1910.95(b)(1), whereby employees should not be subjected to continuous noise exceeding 90 dBA for durations lasting more than 8 hours per day (OSHA 2016) and intermittent noise of; 92 dB at six hours; 95 dB at four hours; 97 dB at 3 hours. As the noise level get louder the allowable duration lessens until 115 dB at ¼ hour or less.
- A long-term increase in cumulative noise levels to 65 dB DNL or greater, where it would be generally incompatible with residential land use. This evaluation criteria is based on research that indicates about 87 percent of the non-working population is not highly annoyed by outdoor sound levels below 65 DNL (Federal Interagency Committee on Urban Noise 1980). The nearest residences are farmhouses located near the Bruneau River and in the communities of Bruneau and Grasmere.

4.2.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

Under Alternative 1, many activities would generate potential noise impacts within the affected environment of MHRC. These include ground-based construction activities, military vehicle operations, and weapons use; and airspace-generated operations include aircraft overflights. The following is a description of the proposed activity and the magnitude of impact that would be anticipated to the acoustic environment if Alternative 1 were implemented.

4.2.1.1 Effects of Noise on Population

Construction

Construction would generate noise levels from operating heavy equipment including graders, excavations, and pavers as well as smaller equipment such as generators and pneumatic tools. Construction activities would occur within the boundaries of the SCR EUA, JBR, and ND-1 where no adjacent communities are found or people reside. Therefore, no significant impacts to populations would be introduced by the short-term and temporary construction activities.

Training

Convoy Training is proposed between the towns of Bruneau and Grasmere on paved Highway 51 and on the gravel Clover-Three Creek Road between SCR and JBR (see Figure 1-3). This region of Owyhee County that surrounds SCR and JBR is primarily open grassland. It is very sparsely populated, with the nearest community, Bruneau, located about 17 miles northwest of SCR and almost 50 miles northwest of JBR. Convoy training would entail up to 10 vehicles (5-ton trucks), two times every 3 months primarily Monday through Friday, with the exception of 3 to 4 weekends per year to support Air National Guard Drill weekends. Convoy training would occur from 8:00 a.m. to 10:00 p.m.; however, 70 percent would occur during daylight hours. Noise levels for a 5-ton truck would be similar to a mid-sized dump truck, which emits a maximum noise level of about 75 dB at 50 feet from the truck (Federal Highway Administration 2006).

At Bruneau, noise associated with Alternative 1 would be generated by trucks conducting convoy training. It would be expected that noise levels could be as high as 75 dB during the brief moments when the convoy trucks pass by a residence. However, this would occur very infrequently and be consistent with normal commercial truck traffic that currently exists, such as large trucks hauling cattle. Thus, noise related to convoy training would be less than significant to populations if Alternative 1 were implemented.

Target Improvements would involve the addition of six ND targets in the JBR and refurbishment of existing ND-1. Aircraft-generated noise would be expected from aircraft operating overhead in MHRC airspace. However, aircraft currently use this airspace and no new types or number of aircraft would be added. As presented in Figure 3.3-1, noise levels would remain consistent with those found under existing conditions, and remain below 65 dB L_{dnmr}. Aircraft training at the new and improved ND targets would not introduce significant impacts to the acoustic environment if Alternative 1 were implemented.

Communications Jamming and *Smoke Generators* are proposed and would generate noise levels consistent with a heavy truck. In this remote landscape, no residences would be affected by noise. Therefore, no significant impacts to the acoustic environment due to these training activities are anticipated if Alternative 1 were implemented.

Munitions

Firing Positions within the SCR JUL would be used to fire mortars, HIMARS, and other weapons from the JUL into the EUA. Rounds would be inert and the launch noise would be the only noise experienced. Alternative 1 would add and/or increase munitions use on SCR as shown in Table 2-1. Currently, small arms used on SCR are 5.56mm, 7.62mm, and .50 cal (Mountain Home AFB 2015a, USAF 2012d). Under Alternative 1 their use would increase by 133, 12, and 30 percent, respectively. In addition, small

amounts of .22 cal, 9mm, and shotgun munitions would be used on SCR. All of the proposed small arms FPs would be adjacent to the existing maintenance facility and weapons would be fired to the north. The greatest increase of small arms range noise would be the 5.56mm, but this type of munitions is the quietest of the rounds expended. All of the small arms noise would be expected to remain within the SCR EUA with low-frequency noise levels at 110 dB Peak. Low frequency peak noise levels are not heard as well as mid- to high- frequency sounds and because the nearest population center is 17 miles away, it is unlikely that any noise generated in the SCR would be heard. Less than significant impacts to the acoustic environment from small arms use is anticipated if Alternative 1 were implemented.

The *HIMARS* rocket launch system would be the loudest artillery proposed for use on SCR. Rocket launch noise would be loudest when the weapon is fired and continue until the rocket propellants are expended, which is about 4 seconds. The HIMARS is a rocket launched weapon used for long distance artillery, capable of distances over 16 miles (see Appendix A). However, for training ranges, a Reduced Range Practice Rocket is employed, which has a range from 8 to 10 miles. An inert warhead is used so that the only noise generated is associated with the rocket launch. The proposed HIMARS FPs would be FP 2, 4, and 6 as shown in Figure 4.2-1.

HIMARS noise was not modeled directly for MHRC because it has not been used at the range. However, Joint Base Lewis-McCord (in the State of Washington) employs the Reduced Range Practice Rocket proposed for MHRC, and it was used as a surrogate to generate noise contours for Alternative 1. Based on this analysis, noise levels over 115 dB peak would extend off SCR JUL along the west side**,** downrange from the target. They would also extend east and south, adjacent to the FPs. Noise exposure would affect about 1,000 acres along the west side; 1,000 acres on the east side behind FP 6; and about 1,000 acres to the south around FP 4. HIMARS rockets would only be used 100 times per year, translating into 8 times a month, and the noise duration of the launches lasts only a few seconds.

As noted above, HIMARS Peak noise levels above 115 dB would extend into 1,000 acres past the SCR JUL boundary, along the west side. Firing Points 2 and 6, firing at targets 2 and 130 (see Figure 4.2-1) would generate elevated noise levels in the direction of the farmhouses near Bruneau River. Assuming an even distribution of FP and target combinations, this would constitute one seventh of the total combinations, or 14 percent, or 14 annual rounds. Because the nearest population center is 17 miles away, it is unlikely that any noise generated in the SCR would be heard. Because these elevated noise levels would be intermittent and not cause hearing loss risks, less than significant impacts to human populations is anticipated with HIMARS use if Alternative 1 were implemented.

Aircraft Operations

LZs on JBR. The metric used to identify noise levels at the LZs is SEL. In contrast to a time-averaged metric, such as L_{dnmr} that is a cumulative measurement of noise through a given time period, SELs were used because they describe single event noise levels. Table 4.2-1 shows representative SELs that would be generated directly over the receiver for aircraft using MHRC, and specifically for rotary- and fixed-wing aircraft now proposed to land at the LZs on JBR.

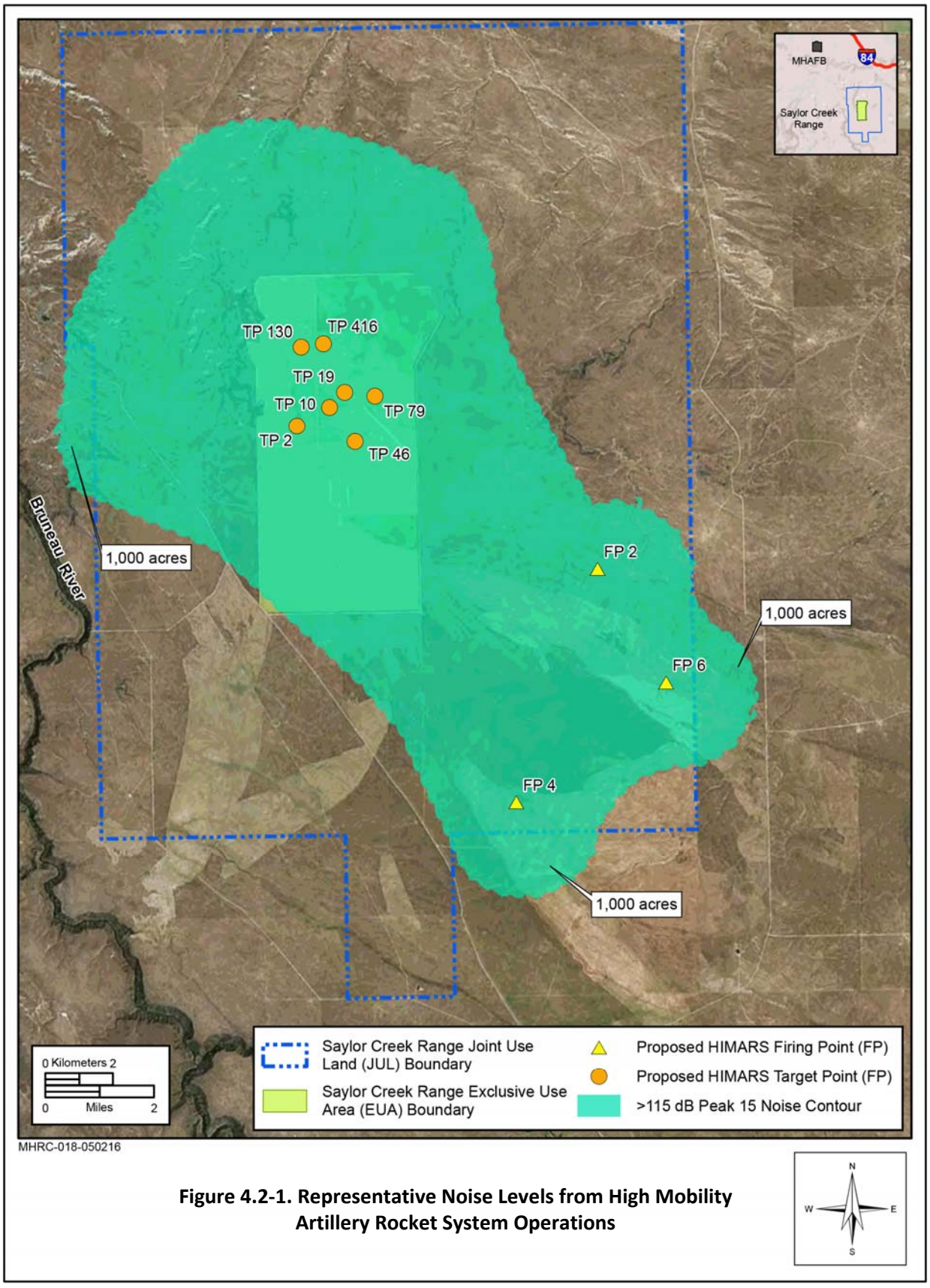

Figure 4.2-1. Representative Noise Levels from High Mobility Artillery Rocket System Operations

Table 4.2-1. Sound Exposure Level in dB under the Flight Track for Aircraft at Various Altitudes[1]

Aircraft Type	Airspeed (units)	Altitude in Feet Above Ground Level			
		500	***1,000***	***2,000***	***5,000***
Fixed-Wing Aircraft					
F-15E	550	115	110	104	95
F-15SG	550	115	110	104	95
A-10	325	94	88	81	71
C-130	160	95	90	84	75
C-23	160	84	79	75	68
C-145	160	84	79	75	68
Rotary-Wing Aircraft					
V-22	220	92	88	84	77
CH-47	110	96	94	89	84

Source: SELCalc2 (USAF 2002) for SEL modeling. Aircraft-generated noise was analyzed in USAF 1998a, 2007a, 2012a/b, and 2013.
Note: [1]Level flight, steady high-speed conditions.

The SELs indicate that the rotary-wing aircraft proposed to land and depart in the JBR have SELs ranging between 92 and 96 dB. Helicopter operations, which include landings and departure, would be 4 weeks per year with two operations per day for an annual average of 56 operations. The V-22 would operate 2 weeks per year with four operations per day, or 56 operations annually. Combined helicopter and V-22 operations would equal 112 operations at the LZs. While landing and departing noise would be generated, the LZs are over 15 miles from the nearest community of Three Creek, to the south (see Figure 1-3). Based upon the relative quietness of the helicopters and V-22, the limited number of operations, and the distance from the nearest receptors, noise generated by rotary-wing aircraft operations in JBR introduce less than significant changes to the acoustic environment. When compared to fixed-wing aircraft operating over JBR, the CH-47 helicopter, at 500 feet would generate 19-dB less SEL than the F-15Es. For perspective purposes, a 20-dB difference is equivalent to a 100-fold increase in noise levels. This would mean that one F-15E generates the same amount of noise as 100 CH-47 helicopters. Besides the differences in the noise levels of rotary-wing aircraft compared with fixed-wing fighter jets, the number of rotary-wing operations would be relatively small. Total airspace operations in the Jarbidge North MOA, which overlies JBR, currently is 10,800 with 7,898 operations by fixed-wing fighter aircraft, the other 2,902 operations comprise the rotary-wing aircraft and larger fixed-wing aircraft such as the C-130.

ALZ: Aircraft operating on the ALZ in the SCR EUA would consist of helicopters, V-22, and C-130 aircraft, the same aircraft that currently operate in MHRC airspace overlying the range. The ALZ would be used 30 days per year with no more than three landings and takeoffs per day. Similar to the LZs, the ALZ is located at a distance too far from human receptors for noise generated at this location to be heard; and operations would comprise approximately 1 percent of the total operations in Jarbidge MOA. The SELs are presented in Table 4.2-1 to illustrate what would be heard by people visiting and any wildlife living in the area if they were overflown by aircraft. Compared with existing aircraft operating in the MHRC, noise level changes would be minor and imperceptible to any residents living on or near the MHRC.

In summary, in terms of the acoustic environment and effects to populations, none of the activities under Alternative 1 would introduce significant noise level changes to the scattered and isolated populations residing in this area of Owyhee County. Under Alternative 1, no significant impacts from construction and training-generated noise are anticipated to populations residing in the MHRC.

4.2.1.2 Land Use Compatibility

Construction

Noise resulting from construction activities would be temporary and would not result in incompatible land uses or be inconsistent with current land use agreements. No significant impacts to land use compatibilities would result from construction-generated noise.

Training

Convoy training would occur on pre-existing roads and trails. Noise introduced by this training would be infrequent and temporary and therefore, would not introduce any significant impacts to affect land use compatibilities.

Munitions

Increased noise on SCR from HIMARS operations would occur within the JUL area, which is primarily used for grazing and some recreational activities. However, these areas within the JUL would be closed during operational activities. Noise outside of the SCR EUA under Alternative 1 would primarily result from HIMARS operations. Noise levels over 115 dB peak, extending off the SCR along the west side downrange from the target, and at the east and south adjacent to the FPs, would occur over undeveloped BLM land. The temporary and intermittent noise levels generated by HIMARS operations would not change land use patterns, ownership, or management plans and policies; however, increases in noise generated by HIMARS operations could be considered incompatible with recreational land use. Therefore, negligible incompatible land uses would be introduced by implementing Alternative 1. This is justified because the area around SCR that could be impacted by HIMARS-generated noise is not commonly used for recreating.

Aircraft Operations

As discussed above, there would be no noticeable change in the acoustic environment resulting from aircraft operations; therefore, no significant impacts to land use compatibility.

4.2.1.3 Domesticated Animals and Wildlife

Construction

Noise associated with construction activities at SCR, JBR, and ND-1 would be temporal in frequency and duration. All construction at SCR would occur within the EUA and, therefore, have no effect on domesticated animals. At JBR, grazing is currently allowed in areas proposed for the LZs. Construction, however, would occur outside of the permitted grazing period and, therefore, would have no effect on domesticated animals. Short-term startle effects to wildlife inhabiting areas adjacent to construction activities could occur, but would not be significant as wildlife would be expected to move to adjacent habitat.

Training

Noise associated with convoy training would be infrequent and similar to vehicle traffic currently operating in this remote area. No effects to domesticated animals or wildlife would occur due to convoy training noise.

Munitions

Single event Peak noise levels greater than 115 dB generated by HIMARS training would extend off SCR's JUL into approximately 1,000 acres to the west, 1,000 acres to the east, and 1,000 acres south of the range. HIMARS training would occur infrequently, with approximately 100 rockets being fired annually. Domesticated animals and wildlife could experience short-term startle effects during these training activities, which could include increased heart rate, running, and temporary displacement (Manci et al. 1988; Bowles 1995). FPs 1, 2, 3, 4, and 6 are located within known sage grouse habitat, while FP 5 is approximately 0.6 miles away from known sage grouse habitat. Acoustic communication is very important in reproductive behaviors of sage grouse as female sage grouse use male vocalizations to find leks within the habitat, and when choosing a mate. Therefore, noise can interfere with the ability of females to find and choose mates. Noise can also increase predation risk by masking sounds of approaching predators (Blickley 2013; Patricelli et al. 2013). Therefore, operations at these FP sites would be restricted and occur outside of the breeding and nesting seasons (March through June) to minimize adverse impacts to sage grouse.

Domesticated animals and wildlife inhabiting areas on and adjacent to SCR, however, have been exposed to range training and operations noise levels for decades. In addition, HIMARS rockets would only be used 100 times per year and the noise duration of the launches lasts only a few seconds. Therefore, it is not anticipated that proposed munitions employment would cause significant impacts to domesticated animals or wildlife if Alternative 1 were implemented.

Aircraft Operations

As discussed earlier, under Alternative 1, there would be no noticeable change in the acoustic environment resulting from aircraft operations (see Figure 3.3-1). Therefore, no significant impacts are anticipated to domesticated animals or wildlife if Alternative 1 were implemented.

4.2.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.2.2.1 Effects of Noise on Population

Noise generated by construction and convoy training would be similar as described under Alternative 1. No significant impacts to the acoustic environment of populations would result from construction activities. Bruneau residents may occasionally hear trucks associated with the convoy, but these instances would be infrequent and not create any significant impacts.

In terms of munitions, all noise levels would decrease but not noticeably, when compared to Alternative 1. This results from the elimination of artillery, anti-tank rockets, M203/320 grenades, and the HIMARS. Therefore, no munitions-generated noise would extend outside SCR boundaries and no significant impacts would be anticipated from implementing Alternative 2.

Aircraft operations under Alternative 2 would be the same as described for Alternative 1. No perceptible changes in the acoustic environment would be experienced by populations underlying the MHRC airspace. Therefore, no significant impacts would be expected from aircraft operations if Alternative 2 were implemented.

4.2.2.2 Land Use Compatibility

Under Alternative 2, land use compatibility impacts would be the same as those described for Alternative 1, with the exception being lower noise levels with the elimination of the HIMARS. No significant impacts to land use compatibilities would result from construction, training, munitions, or aircraft operations if Alternative 2 were implemented.

4.2.2.3 Domesticated Animals and Wildlife

Under Alternative 2, impacts to domesticated animals and wildlife would be the same as those described for Alternative 1, with the exception being lower noise levels with the elimination of the HIMARS in the JUL. No significant impacts would result to domesticated animals and wildlife from construction, training, munitions, or aircraft operations if Alternative 2 were implemented.

4.2.3 No-Action Alternative

No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternatives 1 or 2 would be implemented.

4.2.3.1 Population

The acoustic environment under the No-Action Alternative would remain similar to existing conditions presented in Sections 3.2.2.1 and 3.2.2.2, and Figure 3.2-1. No construction would occur, no new training would be introduced, and small arms munitions, BDUs, and guided bomb units would remain the same as baseline conditions. The majority of aircraft operating in MHRC airspace would be the F-15E/SGs based at Mountain Home AFB, which generate noise levels of 64 dB L_{dnmr} in MHRC airspace and SELs of 115 dB (at 500 feet) (see Table 3.2-2). As such, no significant impacts to populations underlying MHRC airspace would result from implementing the No-Action Alternative.

4.2.3.2 Land Use Compatibility

Under the No-Action Alternative, military training would continue as identified in the current Comprehensive Range Plan, and presented in Section 3.2.2. Therefore, no impacts to land use compatibility in terms of the acoustic environment would be anticipated if the No-Action Alternative were implemented.

4.2.3.3 Domesticated Animals and Wildlife

Under the No-Action Alternative, military training would continue as identified in the current Comprehensive Range Plan, and presented in Section 3.2.2. Therefore, no changes in the acoustic environment of domesticated animals and wildlife would occur when comparing the No-Action Alternative with existing conditions. In summary, no significant impacts to domesticated animals and wildlife in the acoustic environment would occur if the No-Action Alternative were implemented.

4.3 Land Management and Use

This analysis examines the extent to which the operational changes would be consistent with state, regional, and local conservation and development plans and zoning regulations. Changes in land use from new construction are analyzed to determine compatibility with existing and planned uses. In addition, the analysis assesses changes in noise levels around the ranges in terms of potential impacts to

recreation. When compared to baseline conditions, land use plans, and land use regulations, the magnitude of the change represents the level of impacts.

4.3.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

4.3.1.1 Land Management

Construction activities would primarily occur on lands currently owned, under the jurisdiction, or managed by the USAF. For those emitter sites proposed on BLM, state property, or private property, agreements would be approved prior to any land-clearing activities. No prime farmland would be impacted through implementation of Alternative 1.

FP's 1, 2, 3, 5, and 6 would be located on federal, public lands withdrawn for the use of the USAF within the SCR JUL. FP 4 would be located on state land; however use as an FP would be coordinated with the State Department of Lands before implementation of Alternative 1. Operational changes within the MHRC would be consistent with existing land uses; public laws and orders; the ETI ROD; Settlement Agreement; and state, regional, and local conservation and development plans and zoning regulations. In addition, the construction and operation of the FPs would not alter the existing grazing permits. Potential restrictions for accessing grazing allotments may be needed. However, all necessary coordination with grazing allotment lessees, the BLM, the public, local law enforcement, and the State of Idaho would occur to minimize effects to grazing needs and public transportation.

No new airspace would be established and no changes to existing airspace would occur under Alternative 1. The proposed new ground-based munitions would require establishment of new SDZs to provide the required safety buffer for each new weapon added at SCR. However, all proposed SDZs would be wholly contained within the SCR (see Section 4.4.1 for detailed information about SDZs). Changes in operations and noise levels would not alter land use patterns, ownership, or management plans and policies. Alternative 1 would not result in incompatible land uses; therefore, impacts to land management under Alternative 1 would not be significant.

4.3.1.2 Recreation

With the exception of the new FPs within the SCR JUL, recreational use of the MHRC would not change significantly under Alternative 1 when compared to the No-Action Alternative. Recreation use would only be restricted within the JUL during the times when firing of inert munitions on the new firing positions would occur. Closure of the area around the FPs would occur at most 30 days a year for approximately 2 hours per day, and primarily on weekdays. Public notices concerning FP-area closures would be announced through press releases, land management agencies alerted, and military personnel would patrol the area to ensure that the public is not present within the area during operations. While the closures would introduce short-term, negligible impacts to recreationists, these would not be considered a significant affect. This is because the majority of the operations would occur during the weekday hours when few recreationists venture out to the area, as well as this region adjacent to SCR does not attract many recreationists.

4.3.1.3 Visual

Visual intrusions under Alternative 1 would be minimal, consistent with the No-Action Alternative, and would not alter the BLM Visual Resource Management Class of the area. There would not be permanent

alterations to the landscape and the degree of contrast would be considered "none" as not attracting attention to itself. As a result, impacts to visual resources would not be significant under Alternative 1.

4.3.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.3.2.1 Land Management

Impacts to land management under Alternative 2 would be similar to those found with Alternative 1; no significant impacts to land management, plans, or policies if Alternative 2 were implemented. No prime farmland would be impacted through implementation of Alternative 2.

4.3.2.2 Recreation

Impacts to recreational resources under Alternative 2 would be the same as that described under Alternative 1 with the exception of the number and type of munitions expended. Under Alternative 2, munitions would be similar to Alternative 1, however, artillery, anti-tank rockets, M203/320 grenades, and the HIMARS would be eliminated. As a result, noise from munitions expenditures would not extend outside of SCR JUL boundaries. No significant recreational impacts are anticipated if Alternative 2 were implemented.

4.3.2.3 Visual

Impacts to visual resources under Alternative 2 would be similar to those found under Alternative 1; no significant impacts to visual resources if Alternative 2 were implemented.

4.3.3 No-Action Alternative

Under the No-Action Alternative, existing conditions with military training continuing as identified in the current Comprehensive Range Plan and described in Section 3.3.1. No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions would be implemented. As a result, there would be no significant impacts to land management and use under the No-Action Alternative.

4.4 Safety

This section analyzes the safety issues associated with aircraft mishaps, BASH, munitions use, and fire risk and management. Construction and convoy training would be typical of any similar construction project and normal highway traffic safety and not yield extraordinary risks and is not discussed further.

4.4.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

4.4.1.1 Aircraft Mishaps

As presented in Section 3.4.1.1, aircraft mishaps are rare in the MHRC and the number would not be expected to increase under Alternative 1. The communications jamming exercises would present a flight risk to aircraft operating within the MHRC and vicinity, but as noted in Section 2.4.1.1, prior to these training episodes, the 746th Test Squadron together with the 366 FW would notify the Federal Aviation Administration (so that pilots are alerted through the Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures were implemented. The

Mountain Home AFB Public Affairs would also notify local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. However, in the event of a safety issue, such as visually observing non-participating aircraft, communications jamming would halt immediately and would not resume until the aircraft's safe passage through the airspace. Therefore, no significant impacts to aircraft mishaps are anticipated if Alternative 1 were implemented.

4.4.1.2 Bird/Wildlife Strike Hazards

Additional aircraft operations would occur at the LZs and the ALZ; however, with strict adherence to current BASH plan actions and avoidance measures, no significant increases of BASH incidents are anticipated. Therefore, no significant safety impacts resulting from BASH are anticipated if Alternative 1 were implemented.

4.4.1.3 Munitions

Ground-based munitions, as well as mortars, artillery, grenades, and rockets would increase (see Table 2-1) under Alternative 1. Aircraft munitions and their associated WDZs would remain as currently designated in the MHRC. However, proposed new ground-based munitions would require establishment of new SDZs to provide the required safety buffer for each new weapon added at SCR. Figure 4.4-1 shows Alternative 1 SDZs compared to the existing SDZs. All proposed SDZs would be wholly contained within the SCR EUA except for the HIMARS, 120mm mortars, and artillery, which would be fired from areas within the JUL. The HIMARS, 120mm mortar, and artillery SDZs in the JUL would be adjacent to the FPs and follow the round's path toward the target points, located inside the SCR EUA. All SDZs would fall within the SCR JUL boundaries. Safety impacts would not be considered significant by introducing new munitions or ordnance use. This is because the majority of munitions operations would remain within SCR EUA boundaries, where public access is already restricted, and when the FP sites in the JUL are in use, public notices concerning FP-area closures would be announced through press releases, land management agencies alerted, and military personnel would patrol the area to ensure that access to the FP sites is prohibited.

4.4.1.4 Fire Risk and Management

Under Alternative 1, the majority of munitions do not have a great potential to cause fires and would not likely increase fire risks. The HIMARS, however, does emit flames during launch. To minimize the potential of fire risk from HIMARS employment, 1 acre surrounding the FP would be cleared of all vegetation, fire resistant vegetation would be planted around the FP to act as a fire break, and trained fire crews would be present during launches to extinguish any fire ignitions. These actions would greatly reduce the risk of fire in the launch area. In addition to HIMARS, smoke generators would be used in SCR; however, the fire risk would be minimal. No open flames are created by the smoke generators; however, if, in the rare occasion that the smoke-generating fuel tank was breached, then there would be the potential to ignite dry grass and spread. While this would be extremely rare, it would present a negligible increase in fire risk. Again, trained fire crews would be present during launches to extinguish any fire ignitions quickly. An increase in munitions that use white phosphorus as a marking device would occur under Alternative 1. These munitions include mortars (60mm, 120mm) and artillery (105mm, 155mm). Rockets with white phosphorus are currently used on the SCR. Safety measures implemented with the use of these rockets would also occur during the use of any other munitions with white phosphorus. The white phosphorus munitions would also only be used when a range control officer (RCO) is present, so that if a munition lands outside the EUA, the EOD can be notified immediately. In

the event that munitions with white phosphorus land outside the EUA, an EOD team and fire crew would be immediately dispatched to the site to ensure that a hazard does not exist to the public, wildlife, or livestock. Fire suppression support would be provided by the Range's contractor or the Bureau of Land Management (BLM) depending on the time of year. Fire crews would be increased as needed as the fire risk increases. With the implementation of these BMPs, fire risk would be minimal. In summary, no significant fire risk and management impacts from munitions are anticipated if Alternative 1 were implemented.

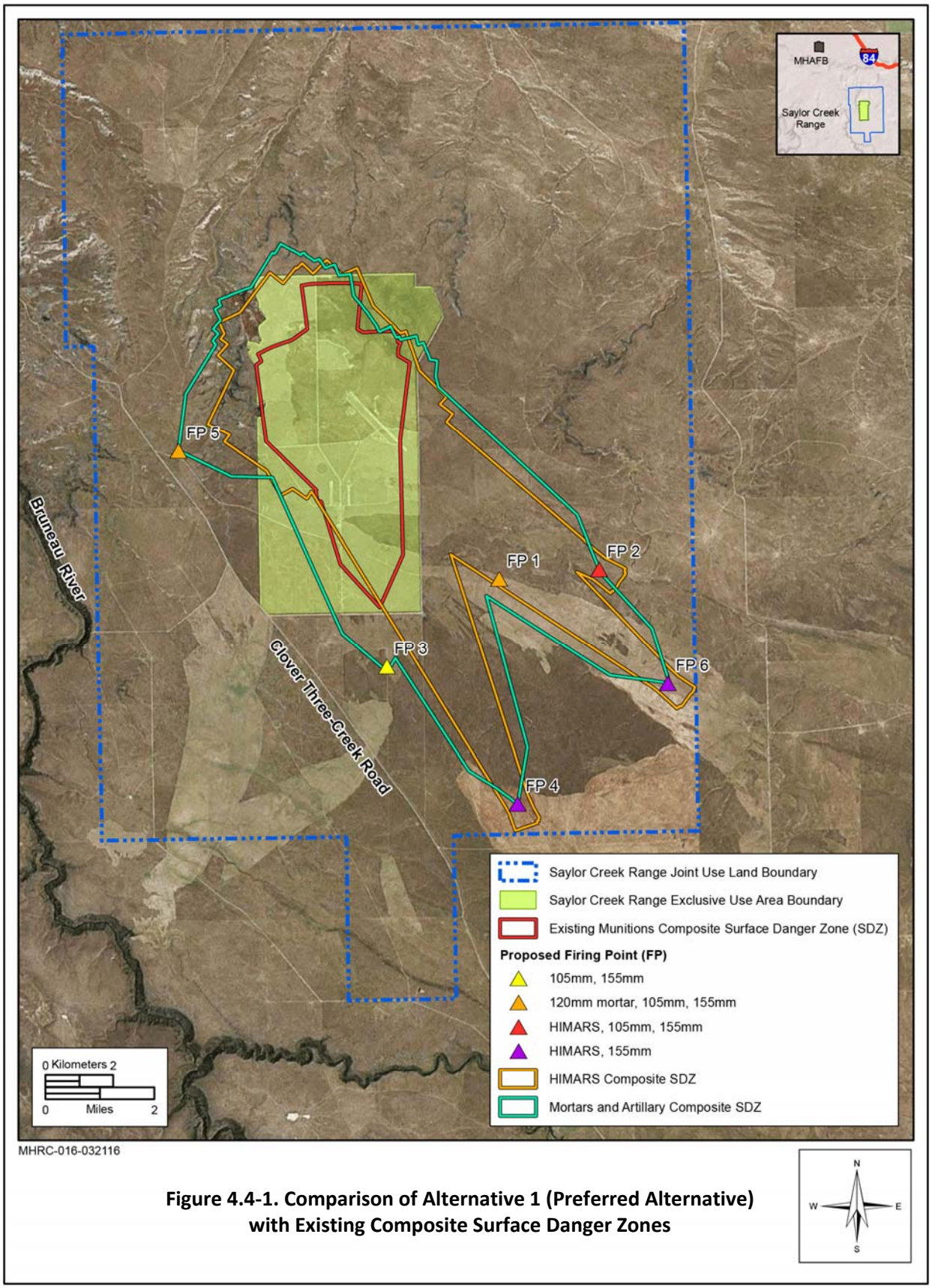

Figure 4.4-1. Comparison of Alternative 1 (Preferred Alternative) with Existing Composite Surface Danger Zones

Past safety concerns regarding fire potential to surfaces under the V-22 during landing operations have been examined by both the Department of the Navy and the scientific community (Department of the Navy 2008). Available data indicate that with exhaust deflectors operating at normal capacity, V-22 exhaust should not heat the ground to a temperature high enough to support combustion of plant-based materials. The combined test flight and operational hours of the V-22 aircraft to numerous unprepared LZs at bases and ranges throughout the U.S. (including sites in Alabama, Arizona, California, Florida, Maryland, Nevada, New Mexico, North Carolina, and Virginia) have resulted in only one documented grass fire. This grass fire was attributed to the exhaust of a CV-22 about 10 miles southwest of Troy, Alabama, and the probable cause was determined to be an interruption in the operation of the exhaust deflector system. There have been no fires documented with the exhaust deflectors operating normally.

The fact that the LZs would be cleared of vegetation and a 50- by 50-foot gravel pad constructed would minimize the potential for possible grass fires in this area. Therefore, if Alternative 1 were implemented there would be negligible fire potential at the proposed LZs.

In summary, Alternative 1 would not impose significant impacts to fire risk and management activities.

4.4.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.4.2.1 Aircraft Mishaps

Aircraft operations would be the same as Alternative 1. While there is a flight risk associating with communication jamming, the Federal Aviation Administration, through their Notice to Airmen, would be notified and the date and time of the exercise posted; regional and local air traffic controllers would be alerted to divert air traffic around the affected jamming area; a press release would be sent to local newspapers indicating the day(s) and time(s) of the training exercises for local community purposes; and military personnel operating the jamming equipment would immediately discontinue the jamming exercise if unidentified/non-participating aircraft are observed. Therefore, no significant impacts to aircraft mishaps are anticipated if Alternative 2 were implemented.

4.4.2.2 Bird/Wildlife Aircraft Strike Hazards

Impacts from BASH would be the same as described for Alternative 1 and would have negligible impacts when compared to the No-Action Alternative; therefore, no significant impacts are anticipated if Alternative 2 were implemented.

4.4.2.3 Munitions Use

Under Alternative 2, all SDZs would be contained within the SCR EUA boundaries. This results from the elimination of artillery, anti-tank rockets, M203/320 grenades, and the HIMARS. Therefore, no significant impacts to safety would be anticipated from implementing Alternative 2.

4.4.2.4 Fire Risk and Management

Because the HIMARS rockets would not be used under Alternative 2, fire risks and management would remain consistent with the No-Action Alternative; therefore, no significant impacts to fire risk and management are anticipated under Alternative 2.

4.4.3 No-Action Alternative

No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternatives 1 or 2 would be implemented.

4.4.3.1 Aircraft Mishaps

When compared to existing conditions, aircraft mishaps would not change under the No-Action Alternative; therefore, no significant aircraft mishap impacts are anticipated.

4.4.3.2 Bird/Wildlife Aircraft Strike Hazards

The No-Action Alternative would not change BASH risks when compared to existing BASH conditions; therefore, no significant BASH impacts are anticipated by implementing the No-Action Alternative.

4.4.3.3 Munitions

Under the No-Action Alternative, there would be no increase or change in the amount or type of munitions employed in the MHRC. Current SDZ boundaries would remain unchanged and no significant impacts would be introduced by using munitions.

4.4.3.4 Fire Risk and Management

Under the No-Action Alternative, fire risk and management would not change when compared to existing conditions. The No-Action Alternative therefore, would not introduce any new or significant impacts to fire risk and management.

4.5 Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites

Impacts to hazardous materials, wastes, and toxic substances would be adverse if increased storage, use, removal, and disposal would exceed the capabilities of existing plans, procedures, and infrastructure to handle the materials, and cause an increased risk of uncontrolled releases and major environmental compliance violations. Contaminated sites could be significantly impacted if the action alters the site such that it no longer meets the condition of federal and state remedial agreements.

4.5.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

Most of Alternative 1 involves activities that do not normally affect hazardous materials, waste, toxics, or contaminated sites. The exception is the use of munitions and construction-related materials and wastes. Convoy training, communications jamming, target improvements, and smoke generators would not likely have any effect on hazardous materials and waste plans and procedures, and therefore not addressed further in this resource analysis.

4.5.1.1 Hazardous Materials and Waste

Construction activities would generate small amounts of wastes such as concrete, metal, and wood. All wastes generated during construction would be handled in accordance with MHRC protocols according to the construction contract. No other activity associated with Alternative 1 has a potential to generate hazardous wastes. In summary, Alternative 1 would not introduce significant impacts to the use, storage, or disposal of hazardous materials or wastes.

Under Alternative 1 additional ordnance would be fired in SCR at quantities above that currently expended on SCR. Some of these items, such as HIMARS rockets and artillery shells would be considered

range residue. In accordance with PLOs 1027 and 4902, 366 Explosive Ordnance Disposal shop performs range clearance annually and these items would be included during the annual clearance. As is current practice with spent munitions, the items would be placed in the fenced residue holding area with the other range residue. The amount of ordnance would increase, but current practices are already in place to gather the spent munitions and neither the capacity to handle or store these munitions would be constrained. Similar to current munitions, these items would be demilitarized, then considered non-hazardous, certified as such, and then transferred to recycling centers or permitted landfills by a certified range residue removal contractor. Therefore, no significant impacts to hazardous materials and waste are anticipated if Alternative 1 were implemented.

4.5.1.2 Toxic Substances

Alternative 1 would not require use of toxic materials. The only potential for toxic materials would be if facility planned for demolition had any asbestos-containing materials or lead-based paint. However, no facilities with these substances are identified for demolition at this time. Alternative 1 would not introduce significant toxic substances impacts if it were implemented.

4.5.1.3 Contaminated Sites

Alternative 1 would not disturb or add any ordnance to OT-37/OT-19 or AOC burial site 6 located within the EUA on SCR (Figure 4.5-1). No contaminated sites are identified in JBR. Implementing Alternative 1 would not introduce new types of hazardous materials, exceed Mountain Home AFB's ability to store and dispose of hazardous waste in the MHRC, require the use of toxic substances or change how toxic substances are handled when encountered, or disturb any contaminated sites in the SCR EUA; no sites occur on JBR. No new ranges would be proposed for Alternative 1 and no existing ranges would be proposed for closure so there would be no impacts to the Military Munitions Response Program. Therefore, no significant impacts to contaminated sites if Alternative 1 were implemented.

4.5.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.5.2.1 Hazardous Materials and Waste

Wastes generated during construction activities for Alternative 2 would be similar to those described under Alternative 1 and create no significant impacts. Under Alternative 2, the use of artillery, anti-tank rockets, M203/320 grenades, and the HIMARS are eliminated. Therefore, only negligible changes to range residue would result from implementing Alternative 2 when compared to the No-Action Alternative.

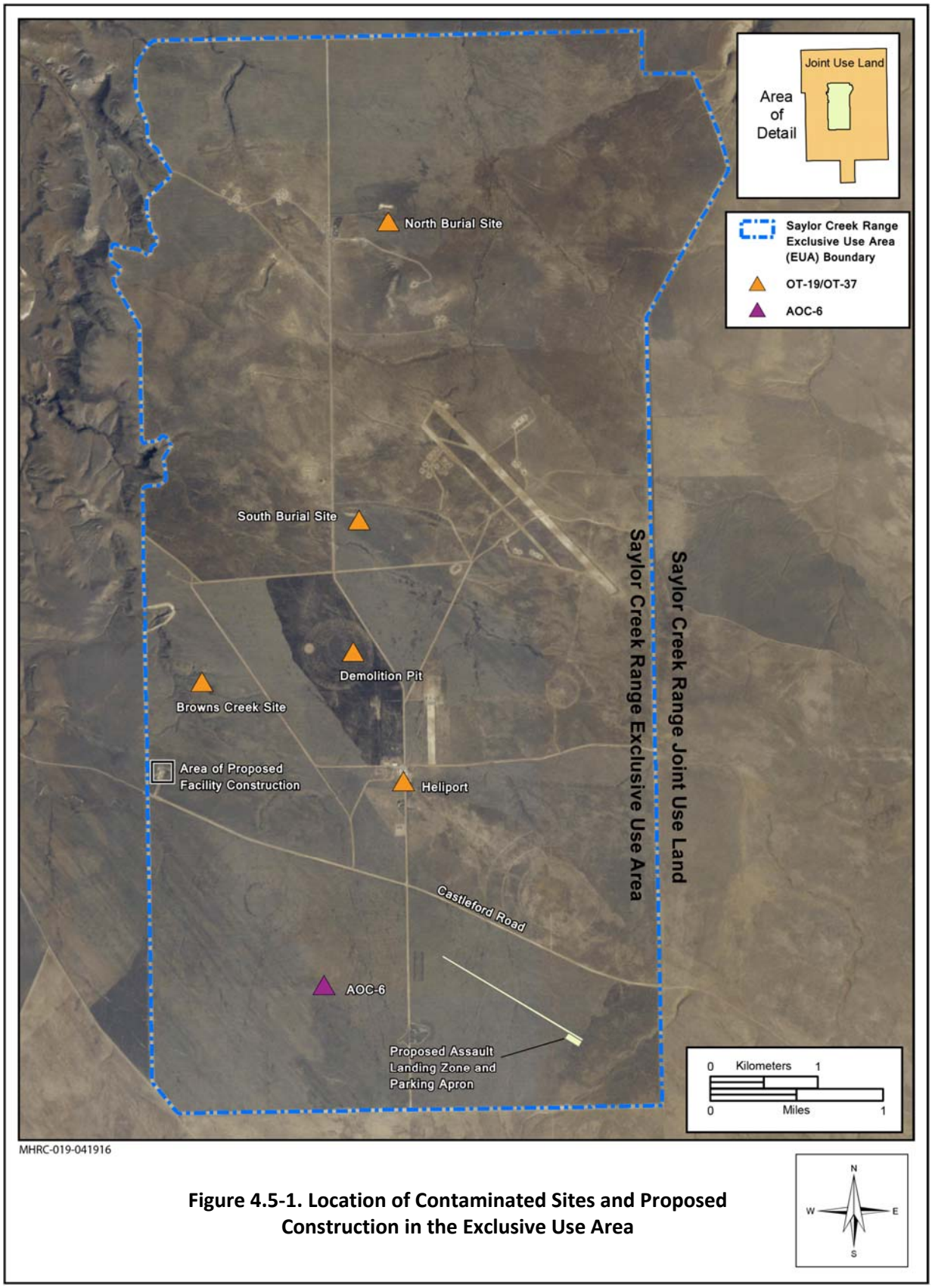

Figure 4.5-1. Location of Contaminated Sites and Proposed Construction in the Exclusive Use Area

4.5.2.2 Toxic Substances

Under Alternative 2, similar to Alternative 1, no toxic substances would be introduced and the potential to discover such substances would be negligible. Alternative 2 would not introduce significant toxic substances impacts if it were implemented.

4.5.2.3 Contaminated Sites

Alternative 2 would not disturb or add any ordnance to existing contaminated sites on SCR and there are no such sites identified on JBR. Implementing Alternative 2 would not introduce new types of hazardous materials, exceed Mountain Home AFB's ability to store and dispose of hazardous waste in the MHRC, require the use of toxic substances or change how toxic substances are handled when encountered, or disturb any contaminated sites in the SCR EUA; no sites occur on JBR. Therefore, no significant impacts to contaminated sites if Alternative 2 were implemented.

4.5.3 No-Action Alternative

No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternatives 1 or 2 would be implemented.

4.5.3.1 Hazardous Materials and Waste

When compared to existing conditions, there would be no change to the use, storage, or disposal of hazardous materials and waste under the No-Action Alternative. Therefore, implementing the No-Action Alternative would not introduce significant impacts to hazardous materials and wastes.

4.5.3.2 Toxic Substances

Under the No-Action Alternative, there would be no change to the operations and management of toxic substances when compared to existing conditions. Implementing the No-Action Alternative, therefore, would not introduce significant impacts to toxic substances.

4.5.3.3 Contaminated Sites

Under the No-Action Alternative, conditions would continue at existing contaminated sites on SCR; none are identified on JBR. It is anticipated that no significant impacts would be introduced at any of the identified contaminated sites, if the No-Action Alternative were implemented.

4.6 Air Quality

Air quality impacts within the affected environment were reviewed for potential impacts in light of federal, state, and local air pollution standards and regulations; please refer to Section 3.6 for detailed discussion of air quality resource definitions and analytical methodology for evaluating impacts. For purposes of this analysis, 250 tons per year, per pollutant were used as a threshold to trigger further evaluation of potential air quality impacts. While the majority of emissions would be generated by mobile sources, this approach was undertaken for conservative analysis purposes. This particular threshold is used by the USEPA in their New Source Review standards as an indicator for impact analysis for listed new major stationary sources in attainment areas. Per this standard, any major new stationary source that exceeds 250 tons per year, for any listed pollutant, must conduct further analysis to demonstrate that these impacts would not cause a substantial degradation of air quality under the Prevention of Significant Deterioration regulations.

Under Alternatives 1 or 2, construction and operational activities would result in air pollutant emissions.

4.6.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

4.6.1.1 Construction

Several facilities are proposed to improve operations in the MHRC. Six FPs within SCR, and nine additional LZs within JBR, would be constructed consisting of 50- by 50-feet gravel pads. In addition, a 60- by 75-feet maintenance building, a 30 by 30 feet control tower, and a 75- by 5,000-feet compacted gravel ALZ and associated parking apron would be constructed within the SCR EUA. Table 4.5-1 summarizes the construction emissions associated with Alternative 1. Data presented in the table below indicate that proposed construction emissions would not exceed 250 tons per year for any criteria pollutant. Indeed, the total emissions would be fractions of this threshold. Therefore, it is not anticipated that implementing Alternative 1 construction activities would significantly affect regional air quality.

Table 4.5-1. Proposed Construction Emissions

Construction Year	Pollutants in Tons per Year						
	CO	***NO_x***	***VOC***	***SO_x***	***PM_{10}***	***$PM_{2.5}$***	***CO_2***
2017	0.31	0.72	0.06	0.01	37.85	3.83	70
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**250**

Legend: CO_2 = carbon dioxide.

4.6.1.2 Operations

Air quality impacts from operations were determined by evaluating the net increase in emissions associated with the proposed operational changes in the MHRC. Operational emissions would be primarily produced by mobile sources and would not occur at the same time as construction emissions. Additional mobile sources under Alternative 1 include: 1) vehicle operations associated with convoy operations using 5-ton trucks, 2) smoke generators used for target concealment, and 3) additional use of munitions. Stationary sources include (but are not limited to) existing emissions generated by, for example, emergency generators, boilers, and fuel storage.

Smoke generators create “smoke” by instantaneously vaporizing fog oil, also known as standard grade fuel oil number 2, in a specialized exhaust manifold then when the vapor hits cold air it condenses into tiny droplets making an obscurant cloud. Since the fog oil vaporizes into a fog. This process does not burn the oil and the resulting cloud or emissions are the same composition and quantity put through the smoke generator. In this case, the Mark 56 generator consumes 80 gallons per hour at 0.0038 tons per gallon. It is operated for a two week period assuming five days per week and eight hours per day resulting in 24.6 tons per year of fog oil that volatizes into 24.6 tons of particulate matter that all is under 2.5 microns and all is considered volatile organic compounds (U.S. Army Corps of Engineers 1997).Table 4.5-2 presents a summary of annual emissions that would be generated under Alternative 1 when compared to existing conditions (i.e., the No-Action Alternative). The operations changes within the MHRC would result in net emission increases for all pollutants when compared to baseline. However, these emissions would remain below the major source threshold of 250 tons per year. Alternative 1 would not introduce amounts of pollutant emissions to significantly affect regional air quality or exceed any major source thresholds.

Table 4.5-2. Proposed Annual Operational Emissions Under Alternative 1							
Activity	**Pollutants in Tons per Year**						
	CO	***NO_x***	***VOCs***	***SO_x*[1]**	***PM_{10}***	***$PM_{2.5}$***	***CO_2e*[2]**
Convoy Training	0.05	0.12	0.01	0.00	0.00	0.01	0.16
Smoke Generator	0.00	0.00	24.6	0.00	24.6	24.6	0.00
Munitions	2.60	0.15	0.00	0.00	1.76	1.77	11.02
Total Emissions due to Alternative 1	**2.65**	**0.27**	**24.61**	**0**	**26.36**	**26.38**	**11.18**
Baseline Annual Emissions	**3.37**	**3.1**	**1.82**	**0.01**	**0.12**	**0.12**	**10.75**
Total Annual Emissions (Existing Conditions plus Proposed)	**6.02**	**3.37**	**26.43**	**0.01**	**26.48**	**26.50**	**21.93**
Net Change	**2.65**	**0.27**	**3.46**	**0**	**5.21**	**5.23**	**11.18**
Major Source Threshold	250	250	250	250	250	250	-
GHG Threshold	-	-	-	-	-	-	25,000
Net CO_2e Life Cycle Change in Metric Tons							**11.18**

Notes:
[1]The emission factor for SO_x is based on the maximum possible sulfur content allowed in JP-8 by the fuel specification MIL-DTL-83133G (April 2010). Use of JP-8 with lower sulfur content directly translates to reductions in SO_x emissions.
[2]CO_2e = carbon dioxide equivalent, is presented in metric tons per year.

4.6.1.3 Greenhouse Gases

Revised draft guidance from the CEQ, dated December 18, 2014, recommends that agencies consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action. The guidance also emphasizes that agency analyses should be commensurate with projected GHG emissions and climate impacts, and should employ appropriate quantitative or qualitative analytical methods to ensure useful information is available to inform the public and the decision-making process in distinguishing between alternatives and mitigations. It recommends that agencies consider 25,000 metric tons of CO_2e emissions on an annual basis as a reference point below which a quantitative analysis of GHG is not recommended, unless it is easily accomplished based on available tools and data.

The USEPA issued the *Final Mandatory Reporting of Greenhouse Gases Rule* on September 22, 2009. GHGs covered under this rule are CO_2, methane, NO_x, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. The equivalent CO_2, or CO_2e, rate is calculated by multiplying the emissions of each GHG by its global warming potential and adding the results together to produce a single, combined emissions rate representing all GHGs. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_2e are required to submit annual reports to USEPA.

Emissions resulting from Alternative 1 operations would incrementally increase regional emissions of CO_2e. The net change in operational emissions, however, would not exceed the 25,000 metric tons per year guideline identified for GHG emissions. No significant impacts to GHG emissions are anticipated if Alternative 1 were implemented.

4.6.1.4 Climate Change Adaptation

According to the USEPA, climate changes in the northwest are predicted to include reduction of annual precipitation and changes in how much snow is accumulated and when it melts. Warmer winters, with rain instead of snow, reduce soil moisture, snow accumulation, and the amount of water produced from snow melt. Changing stream flows would likely strain water management and worsen existing competition for water (USEPA 2016c). Reduced availability of freshwater is also likely to occur, with implications for the base and communities in the arid region encompassing MHRC. With drought, temperature increases, and increased potential for invasive (less fire resistant) species associated with climate change, and wildfires are predicted to increase (USEPA 2016c). Surrounded by open and agricultural lands, MHRC could be subject to increased wildfires. and the need to employ strategies and policies to prevent and combat them. However, it is not anticipated that increased wildfires would significantly affect the USAF mission supported at the MHRC. Strategies to operate under these conditions (e.g., cessation of ordnance and flare use when fire risk is high) would need to be devised and vegetation management activities adapted to combat increased wildland fire risks.

As climate science advances and it better determines if and how human-generated factors may affect climate, the DoD would regularly reevaluate climate change risks and opportunities to develop policies and plans to manage its effects on the operating environment, missions, and facilities. Managing the national security effects of climate change requires the DoD to work collaboratively, through a whole-of-government approach, with local, state, and federal agencies.

In summary, implementing Alternative 1 would not introduce impacts to significantly affect climate change adaptation nor would climate change significantly alter the MHRC mission.

4.6.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.6.2.1 Construction

Under Alternative 2, ground-based operations and improvements for the ranges, facilities, and targets, would be similar to that described under Alternative 1. However, no FP construction would occur under Alternative 2. Therefore, construction emissions under Alternative 2 would be slightly less than that described under Alternative 1, with no significant impacts.

4.6.2.2 Operations

Under Alternative 2, operations would remain similar to Alternative 1, with the exception of certain munitions operations and the exclusion of the FPs. Alternative 2 would not allow the use of the following munitions: grenades (M203/M320 Grenade Launcher) using practice, smoke, and illumination munitions; artillery (155mm, MLRS, HIMARS) using training, smoke, illumination, and white phosphorus marking munitions; and anti-tank rockets (66mm Light Anti-Tank Weapon, 84mm AT4). As a result of the fewer numbers of munitions and ordnance employed, pollutant emissions would be less under Alternative 2 when compared to Alternative 1.

Table 4.5-3 presents a summary of annual emissions generated under Alternative 2 compared to existing conditions. The operations changes within the MHRC would result in net emission increases for all pollutants when compared to baseline. However, these emissions would remain well below the major source threshold of 250 tons per year and not introduce any significant impacts under Alternative 2.

Table 4.5-3. Proposed Annual Operational Emissions Under Alternative 2							
Activity	**Pollutants in Tons per Year**						
	CO	***NO_x***	***VOCs***	***SO_x[1]***	***PM_{10}***	***$PM_{2.5}$***	***CO_2e[2]***
Convoy Training	0.05	0.12	0.01	0.00	0.00	0.01	0.16
Smoke Generator	0.00	0.00	24.6	0.00	24.6	24.6	0.00
Munitions	.32	0.06	0.00	0.00	0.03	0.01	0.44
Total Emissions due to Alternative 1	0.37	0.18	24.61	0	24.63	24.62	0.6
Current Annual Emissions	**3.37**	**3.1**	**1.82**	**0.01**	**0.12**	**0.12**	**10.75**
Total Annual Emissions (Baseline + Proposed)	3.74	3.28	26.43	0.01	24.75	24.74	11.35
Net Change	***0.37***	***0.18***	***24.61***	***0***	***24.63***	***24.62***	***0.6***
Major Source Threshold	250	250	250	250	250	250	-
GHG Threshold	-	-	-	-	-	-	25,000
Net CO_2e Life Cycle Change in Metric Tons							**0.6**

Notes:
[1]The emission factor for SO_x is based on the maximum possible sulfur content allowed in JP-8 by the fuel specification MIL-DTL-83133G (April 2010). Use of JP-8 with lower sulfur content directly translates to reductions in SO_x emissions.
[2]CO_2e = carbon dioxide equivalent, is presented in metric tons per year.

4.6.2.3 Greenhouse Gases

Emissions due to operations activities under Alternative 2 would incrementally increase regional emissions of CO_2e. However, the net change in operational emissions would not exceed the 25,000 metric tons per year guideline applied to GHG emissions or exceed the major source threshold of 250 tons per year. Therefore, no significant impacts to regional air quality are anticipated if Alternative 2 were implemented.

4.6.2.4 Climate Change Adaptation

Impacts to operations from climate change would be similar to that described under Alternative 1. In summary, implementing Alternative 2 would not introduce impacts to significantly affect climate change adaptation in this region of Idaho nor would climate change significantly alter the MHRC mission.

4.6.3 No-Action Alternative

Under the No-Action Alternative, military training would continue as identified in the current Comprehensive Range Plan and described in Section 3.6. No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions would be implemented. As a result, there would be no significant impacts to air quality under the No-Action Alternative.

4.7 Transportation

Impacts to transportation would be considered adverse if the local road network were to deteriorate making travel difficult on these primarily graveled roads or limit public access.

4.7.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

Under Alternative 1, construction activities on SCR and JBR would take about 1 year, and occur between late 2016 and 2017. Construction equipment would be driven to proposed construction areas and kept on-site for the duration of the respective activity. Construction workers would drive daily in their personal vehicles to and from the construction site. The access roads to the new FPs within the JUL

would be improved by adding a gravel road base to the existing dirt base, two-track roads. In general, construction traffic would result in minor increases in the use of roadways during construction activities; however, increases would be temporary and intermittent, occurring only during active construction periods and should not deteriorate or preclude public use of the local road network.

Once operational, traffic associated with the FPs would be minimal and intermittent, with an average of one vehicle trip no more than 30 days per year, usually occurring during the weekday. Convoy training also would be conducted on improved and unimproved roads underneath MHRC airspace on Highway 51 between Bruneau and Grasmere, and on Clover-Three Creek Road between SCR and JBR (see Figure 1-3). Convoy training would entail up to 10 vehicles (5-ton trucks), two times every 3 months primarily Monday through Friday, with the exception of 3 to 4 weekends per year to support Air National Guard Drill weekends. Convoy training would occur from 8:00 a.m. to 10:00 p.m.; however, 70 percent would occur during daylight hours. Increases in traffic as a result of the convoy operations would be minimal. Annual daily traffic counts would increase by a maximum of 80 vehicle trips on Highway 51 and Clover-Three Creek Road; increasing Average Daily Trips by less than one vehicle trip. In addition, the convoys would not cause any delay or shut down of traffic during operations, but would move aside to let traffic pass.

As noted in Section 2.4.1.1, GPS, SAR, and communications jamming has occurred twice in the past. Prior to these training episodes, the 746th Test Squadron together with the 366 FW would notify the Federal Aviation Administration (so that pilots are alerted through the Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures were implemented. The Mountain Home AFB Public Affairs would also notify local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. However, in the event of a safety issue, such as visually observing non-participating aircraft, communications jamming halts immediately and does not resume until the aircraft's safe passage through the airspace. Therefore, implementing Alternative 1 would not introduce significant impacts to transportation.

4.7.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

Impacts to transportation under Alternative 2 would be similar to that described under Alternative 1, with the exception that Alternative 2 does not include constructing new FPs. No significant impacts are anticipated to transportation if Alternative 2 were implemented.

4.7.3 No-Action Alternative

Under the No-Action Alternative, military training would continue as identified in the current Comprehensive Range Plan and described in Section 3.7. No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternative 1 would be implemented. As a result, there would be no significant impacts to transportation under the No-Action Alternative.

4.8 Natural Resources

The existence and preservation of natural resources are intrinsically valuable; however, these resources also provide subsistence, recreational, aesthetic, and socioeconomic values to society and should be

protected to the best means possible, and as required by law. Impact analysis was conducted using knowledge of wildlife, vegetation, wetlands, and special-status species occurrence data, where available, based on where construction-related ground disturbance, training, and operations would likely occur. Contributing factors considered when assessing direct and indirect impacts on natural resources are based upon determinations of the importance, rarity, and sensitivity of the resource; as well as the duration and frequency of the impact source. This section analyzes the potential for direct or indirect impacts to natural resources, as defined in Section 3.8 *Natural Resources*. Impacts due to noise associated with Alternative 1 and alternatives are discussed in *Acoustic Environment,* Sections 4.2.1.5 and 4.2.2.5, Domesticated Animals and Wildlife. A discussion of potential impacts to natural resources due to BASH and fire risk are found in the *Safety*, Sections 4.4.1.2/4.4.2.2 and 4.4.1.4/4.4.2.4, Bird/Wildlife Aircraft Strike Hazards and Fire Risk and Management, respectively.

4.8.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

4.8.1.1 Vegetation

The potential effects to vegetation under Alternative 1, are limited to areas where ground disturbing activities would take place. A total of approximately 17.46 acres of vegetation would be permanently removed under Alternative 1. ALZ construction at SCR would occur within 10.92 acres of annual grasslands in the EUA, in areas that have been highly disturbed by fires and military training, and contain low densities of native vegetation. These areas also receive increased human activity, and are not considered high-quality habitat areas. The proposed maintenance building and tower construction would occur on approximately 0.12 acres of barren land. In addition, 2.08 acres of crested wheatgrass, 2.67 acres of annual grasslands, and 1.25 acres of native/non-native seed mix habitat would be cleared for the construction of the gravel pads for the FPs within the JUL. Approximately 0.01 acre of crested wheatgrass, 0.01 acre of annual grassland, and 0.005 acre of native/non-native seed mix habitat would be removed for construction of roads to the FPs within the JUL.

At JBR, nine LZs are proposed for construction (see Figure 2-3) and would each require clearing an approximate 2,500 square feet area (0.06 acre), totaling 22,500 square feet (0.54 acre). Eight of the LZs (totaling 0.48 acre) would be constructed in areas dominated by rabbitbrush/Sandberg's bluegrass. The ninth LZ, JB 2 (totaling 0.06 acre), would be located in areas dominated by the native Wyoming big sagebrush. Larger stands of Wyoming big sagebrush were avoided while determining the location of JB 2.

In summary, given the limited scope of disturbance and the lack of native vegetation and high-quality habitats in areas proposed for construction, there would be no significant impacts to vegetation under Alternative 1 if it were implemented.

4.8.1.2 Wildlife

Wildlife inhabiting areas proposed for construction activities could experience temporary or permanent displacement as a result of increased human activity and habitat removal. Due to the absence of high-quality habitat present at areas proposed for construction on SCR, construction-related ground disturbance would not reduce regional population numbers or distribution of common wildlife, or its associated habitats. Ground disturbance associated with LZ and ND target construction at JBR would not represent a significant reduction in habitat for wildlife species inhabiting these areas. General

disturbance to wildlife inhabiting areas with increased munitions training and helicopter landings could occur; however, wildlife species currently inhabiting these areas are exposed to and have likely habituated to increased human activity and noise levels. An increased mortality risk to wildlife inhabiting areas where munitions would be fired and/or dropped could occur, but would be highly unlikely. Therefore, no significant impacts to wildlife are anticipated as a result of Alternative 1.

4.8.1.3 Special-Status Species

Slickspot peppergrass, a threatened species, occurs throughout JBR; however, proposed LZ and ND target locations would not be established where the plant has been identified during surveys or within habitats that contain slickspot microsites. All proposed locations; however, would be surveyed prior to construction-related activities to ensure no slickspot peppergrass plants are present in areas designated for clearing and/or disturbance. Vegetation removal required for the proposed HLZs would occur mostly in non-native, disturbed habitat and would not represent a significant loss to any special-status species that may currently use these areas. However, 0.06 acre of Wyoming big sagebrush habitat would be removed for the construction of one of the LZ's on JBR, which provides habitat for slickspot peppergrass pollinators. Effects to slickspot peppergrass pollinators would be negligible given the limited scope of disturbance and that adherence to Best Management Practices and Standard Operating Procedures relating to slickspot peppergrass would continue under Alternative 1, as outlined in the 2012 Integrated Natural Resources Management Plan (Mountain Home AFB 2012). With the implementation of survey prior to construction and avoidance of impacts to slickspot microsites and habitat components, then the USFWS has made a "no effect" determination.

In addition, slickspot peppergrass has been documented to occur adjacent to Clover-Three Creek Road in the vicinity of Juniper Butte Range. Although Clover-Three Creek Road is one of the proposed convoy training areas, Best Management Practices and Standard Operating Procedures relating to slickspot peppergrass would, as outlined in the 2012 Integrated Natural Resources Management Plan (Mountain Home AFB 2012), would also be applied to convoy training to avoid both new ground disturbance in previously undisturbed areas and inadvertent trampling of slickspot peppergrass plants. Therefore, there would be no significant impacts to the slickspot peppergrass.

Special-status fauna species would be expected to experience similar impacts as wildlife species, and also to use similar adjacent habitat areas. In addition, as discussed in Section 4.4, Safety, additional aircraft operations would occur at the LZs and the ALZ; however, with strict adherence to current BASH plan actions and Best Management Practices described in the 2012 Mountain Home AFB INRMP (Mountain Home AFB 2012), no significant impacts to migratory birds and eagles are anticipated. In summary, no significant impacts to special-status flora and fauna species is expected to occur under Alternative 1.

4.8.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

4.8.2.1 Vegetation

Proposed construction activities under Alternative 2 are similar to those in Alternative 1, with the exception being Alternative 2 does not include constructing new FPs. A total of 11.46 acres of vegetation would be permanently removed under Alternative 2. As stated under Alternative 1, ALZ construction in the SCR EUA would occur within 10.92 acres of annual grasslands. Eight of the LZs (totaling 0.48 acre)

would be constructed in areas dominated by rabbitbrush/Sandberg's bluegrass. The ninth LZ, JB 2 (at 0.06 acre), would be located in an area dominated by native Wyoming big sagebrush. Therefore, Alternative 2 would not introduce significant impacts to vegetation if it were implemented.

4.8.2.2 Wildlife

Potential impacts to wildlife species under Alternative 2 would be similar to those resulting from Alternative 1, except artillery, anti-tank rockets, grenades, and HIMARS are eliminated and there would not be the need to construct FPs at SCR. Therefore, no significant adverse impacts to wildlife are anticipated as a result of implementing Alternative 2.

4.8.2.3 Special-Status Species

Potential impacts to special-status species under Alternative 2 would be similar to those described under Alternative 1, except artillery, anti-tank rockets, grenades, and HIMARS are eliminated and there would not be the need to construct FPs at SCR. As found under Alternative 1, disturbance of slickspot peppergrass would be avoided. Therefore, no significant impacts to special-status species as a result of implementing Alternative 2 are anticipated.

4.8.3 No-Action Alternative

No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternatives 1 or 2 would be implemented.

4.8.3.1 Vegetation

Under the No-Action Alternative, there would be no new ground disturbance or vegetation removal resulting from construction of FPs or ND targets, and no changes to existing MHRC training and operations would occur. Therefore, conditions would remain consistent with existing conditions and no significant impacts to vegetation would occur under this alternative.

4.8.3.2 Wildlife

Under the No-Action Alternative, there would be no new ground disturbance or vegetation removal resulting from construction of FPs or ND targets, and no changes to existing MHRC training and operations would occur. Therefore, conditions would remain consistent with existing conditions and no significant impacts to wildlife would occur under this alternative.

4.8.3.3 Special-Status Species

Under the No-Action Alternative, there would be no new ground disturbance or vegetation removal resulting from construction of FPs or ND targets, and no changes to existing MHRC training and operations would occur. Therefore, conditions would remain consistent with existing conditions and no significant impacts to special-status species would occur under this alternative.

4.9 Cultural Resources

Assessment of Effects

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may be the result of physically altering, damaging, or destroying all or part of a resource, altering characteristics of the surrounding environment that contribute to the importance of the resource, introducing visual, atmospheric, or audible elements that are out of character for the period

the resource represents (thereby altering the setting), or neglecting the resource to the extent that it deteriorates or is destroyed.

The APE was determined to include the entirety of the proposed training areas, which allowed for broad consideration of adverse effect to the volume of archaeological resources during project planning. Because Mountain Home AFB practices prescriptive avoidance of adverse effects to historic properties, the undertaking was designed to avoid all known archaeological resources within the APE. Therefore, in compliance with Section VI. (4) of the PA and 36 CFR 800.5(b), Mountain Home AFB has made a determination of No Adverse Effect for the undertaking. SHPOs from Nevada and Oregon have concurred with this determination (see Section 1.5.1 and Appendix D). Details of avoidance measures are provided in detail for each project alternative below.

Consistent with 36 CFR 800.13, if previously unidentified archaeological resources are inadvertently discovered during construction, the Inadvertent Discovery Plan in the ICRMP is followed—the material remains are left in place, work immediately ceases within 100ft. of the find(s), and the CRM is contacted. Work may be resumed only after the appropriate actions are taken by the CRM.

4.9.1 Alternative 1 (Preferred Alternative): Full Improvement and Operational Changes to Enhance Integrated Training

4.9.1.1 Convoy Operations on MHRC

Under Alternative 1, convoy training would occur on existing roads between Bruneau and Grasmere, and on Clover-Three Creek Road between SCR and JBR. This training would occur on existing roads and within the bound of the road berms when conducting threat scenarios. Portable trailers would be used to disrupt communications from satellites. These trailers would be parked on existing paved surfaces.

Saylor Creek Range and Juniper Butte Range have been intensely surveyed for archaeological resources. While there are archaeological resources located outside of the defined road margins, operations would not extend outside of the existing road footprint. Additionally, no additional roads would be constructed, modified, or removed, and equipment and any associated ground disturbance shall remain within the designated road footprints. Therefore, no archaeological resources would be adversely affected as a result of convoy training.

4.9.1.2 Firing Positions within the JUL

Under Alternative 1, up to six areas within the JUL would be used as FPs for inert mortars, rockets, and HIMARS to targets inside the EUA. Gravel pads (50 by 50 feet) would be constructed at each of the FPs to prevent fires.

Saylor Creek Range has been intensely surveyed for archaeological resources. This data was utilized during project planning to avoid archaeological resources through the placement of a 10 acre protective buffer around each site boundary. Additionally the firing positions are placed along existing access roads and no new road construction or secondary access is required to access the proposed locations. All construction staging and training equipment shall remain within the designated areas. Therefore, no archaeological resources would be adversely affected as a result of placement of the firing positions.

4.9.1.3 Maintenance Building and Control Tower

Under Alternative 1, Buildings 51 and 61 would be demolished and two new facilities would be constructed in the SCR EUA: a maintenance building and a control tower. Neither of the existing buildings are eligible for listing because they are less than 50 years old and do not meet the criteria for exceptional Cold War significance (Mountain Home AFB 2011c). Site 10-OE-8098, the remnants of a World War II control tower located in the northwestern portion of SCR, is eligible for listing in the NRHP. One Civilian Conservation Corp constructed dam (Pothole Reservoir Dam) also located on SCR is eligible for listing in the NRHP (Mountain Home AFB 2011c). Neither of these facilities would be impacted by Alternative 1.

In terms of archaeological resources, the SCR EUA has been intensely inventoried for archaeological resources and there are none within the proposed buildings footprints or the surrounding area. A more heavily developed portion of the range, access to the new facilities would be on existing developed roads. Therefore, no archaeological resources would be adversely affected on SCR as a result of construction.

4.9.1.4 Smoke Generators

Under Alternative 1, smoke generators would be used to obscure targets within the SCR EUA. The EUA has been intensely inventoried for archaeological resources and there no archaeological resources within the proposed buildings footprints or the surrounding area. A more heavily developed portion of the range, access to the new facilities would be on existing developed roads. Therefore, no archaeological resources would be adversely affected as a result of placement or use of smoke generators.

4.9.1.5 Landing Zones on JBR

Under Alternative 1, nine additional LZs, consisting of 50- by 50-feet gravel pads, would be constructed on JBR.

Juniper Butte Range has been intensely surveyed for archaeological resources. These data were utilized during project planning to avoid archaeological resources through the placement of a 10 acre protective buffer around each site boundary. Additionally the LZs are placed along existing access roads and no new road construction or secondary access is required to access the proposed locations. All construction staging and training equipment shall remain within the designated areas. Therefore, no archaeological resources would be adversely affected as a result of placement of the firing positions.

4.9.1.6 Assault Landing Zone

Under Alternative 1, a 75- by 5,000-feet compacted gravel ALZ would be constructed in the southwest corner of the SCR EUA. A parking apron (200 by 500 feet) would be constructed on the southwest side of the strip.

Saylor Creek Range EUA has been intensely surveyed for archaeological resources. There are no documented archaeological sites within the proposed construction footprint. Additionally the ALZ is located along existing access roads and no new road construction or expansion is required to access the proposed locations. All construction staging and training equipment shall remain within the designated

areas. Therefore, no archaeological resources would be adversely affected as a result of construction of the assault landing zone.

4.9.1.7 No-Drop Targets

Under Alternative 1, up to six additional ND targets would be added on JBR outside the impact area. These targets would be 2 acres in size. Additionally, the existing ND-1 target array would be modified to include less vehicle targets but more target sets including urban villages, tanks, a SAM site, and an anti-aircraft artillery site.

Juniper Butte Range has been intensely surveyed for archaeological resources. This data was utilized during project planning to avoid archaeological resources through the placement of a 10 acre protective buffer around each site boundary. Additionally the No Drop Targets would be placed along existing access roads and no new road construction or secondary access is required to access the proposed locations. All construction staging and training equipment would remain within the designated areas. Therefore, no archaeological resources would be adversely affected as a result of placement of the No Drop Targets.

4.9.1.8 Munitions

Under Alternative 1, additional types and amounts of ground-based inert munitions would be used on SCR.

Inert munitions are currently used on SCR. Proposed new firing points have been located at least 10 acres from known archaeological sites and along established roads. Munitions shall be fired into established target areas. Therefore, no archaeological resources would be adversely affected as a result of use of additional types of inert munitions.

4.9.2 Alternative 2: Partial Improvement and Operational Changes to Enhance Integrated Training

Under Alternative 2, the impacts to cultural resources from ground-based operations and improvements for the ranges, facilities, and targets would be the same as described under Alternative 1.

Operationally, Alternative 2 training impacts would be similar to Alternative 1, with the exception of munitions operations and construction of FPs. Alternative 2 would not allow the use of mortars, artillery, anti-tank rockets, and anti-tank missiles from FPs within the JUL. Although mortars would be fired within the SCR EUA, impacts would be confined to already disturbed areas. Therefore, no significant impacts to cultural resources would occur as a result of implementing Alternative 2.

4.9.3 No-Action Alternative

Under the No-Action Alternative, military training would continue as identified in the current Comprehensive Range Plan and described in Section 3.9. No changes to aircraft and ground-based operations would occur, and no improvements to facilities, targets, or munitions associated with Alternatives 1 or 2 would be implemented. Therefore, no significant direct or indirect impacts to cultural resources would occur by implementing the No-Action Alternative.

4.10 Other NEPA Considerations

4.10.1 Unavoidable Adverse Effects

Implementation of either Alternative 1 or Alternative 2 would not result in the unavoidable loss of any resources.

4.10.2 Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires analysis of the relationship between a project's short-term impacts on the environment and the effects those impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This means that choosing one option may reduce future flexibility in pursuing other options, or that committing a resource to a certain use may eliminate the possibility for other uses of that resource.
Implementing Alternative 1 or 2 would not result in impacts that would reduce environmental productivity, permanently narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the general welfare of the public.

4.10.3 Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irreversible effects at MHRC are associated with construction and fuel use for military training.

For MHRC, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary, such as air emissions from construction, or longer lasting, but negligible (e.g., air emissions from mobile sources associated with military training).

The Proposed Action, as found under Alternative 1 or Alternative 2, would constitute an irreversible or irretrievable commitment of non-renewable or depletable resources, for the materials, time, money and energy expended during military training activities. Consumption of fossil fuels and energy would occur during construction and operation activities. Fossil fuels (gasoline and diesel oil) would be used to power construction equipment and vehicles. Electrical power would be used for lighting and operations. The energy consumed for project construction and operation represents a permanent and non-renewable commitment of these resources.

Materials for construction of new facilities would be irretrievably committed. Use of these materials represents a further depletion of natural resources. Operations and maintenance activities are considered a long-term non-renewable investment of these resources.

Land that would be physically altered by construction would be committed to the new use for the foreseeable future and would represent a permanent commitment of the land, for the life of the project, from open land available recreational purposes to a developed use.

Manpower and funding used to construct any facility would result in irreversible fiscal resource commitments.

However, under Alternative 1, construction of range facilities and FP sites would occur on up to approximately 5,400 square feet of land previously disturbed and include the clearing of up to 17.46 acres of vegetation. Under Alternative 2, construction of range facilities would occur on up to approximately 5,400 square feet of land previously disturbed and include the clearing of up to 11.46 acres of vegetation. These construction and ground-disturbing activities would not adversely impact wetlands or terrestrial communities. Irretrievable resource commitments are, therefore, confined to buildings and infrastructure associated with construction. These construction activities would consume limited amounts of material typically associated with paving and exterior construction (i.e., concrete, steel, sand, and brick). Energy would also be expended and irreversibly lost as fuel and electricity would be used during construction.

Training operations would involve consumption of nonrenewable resources, such as gasoline used in vehicles and jet fuel used in aircraft. Use of training ordnance would involve commitment of chemicals and other materials. None of these activities would be expected to substantially affect environmental resources.

4.11 Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis within an environmental document should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with either Alternative 1 or Alternative 2. The scope must consider other projects that coincide with the location and timetable of this alternative. It must also evaluate the nature of interactions among these actions.

In this section, an effort has been made to identify past and present actions in the region and those reasonably foreseeable actions that are in the planning phase at this time. Actions that have a potential to interact with either Alternative 1 or 2 are included in this cumulative analysis. This approach enables decision-makers to have the most current information available so that they can evaluate the environmental consequences of operational changes at MHRC.

4.11.1 Past, Present, and Reasonably Foreseeable Actions Relevant to Alternative 1 or Alternative 2

The only past and present actions that are relevant to the alternatives are those undertaken by the military using the airspace and ranges in the MHRC. The majority of the land area comprising the MHRC is located in Owyhee County. The county is remote with little population, close to 83 percent is controlled by federal or state agencies, 11 percent is classified as rangeland, and the other 4 percent is privately owned (Owyhee County 2010). The primary federal land management agency is the BLM (e.g., grazing, hunting, prospecting, and recreating) and state lands are managed (e.g., grazing and timber) for school endowments. These agencies would continue to implement their land management policies accordingly and would not be impacted by implementing any of the alternatives. Therefore, no actions by other federal, state, and local management agencies would incrementally create cumulative effects when considered with Alternative 1, Alternative 2, or the No-Action Alternative.

The USAF would continue to coordinate with federal and state agencies that have land management responsibilities under MHRC airspace and adjacent to ranges, ND target sites, and emitters to ensure USAF activities do not conflict with their management objectives. These coordination efforts have occurred over many years and would continue under Alternative 1, Alternative 2, or the No-Action Alternative.

4.11.1.1 Past Actions

Mountain Home AFB and SCR have been military installations since 1942. During this time, the base has grown, been developed, and supported numerous kinds of aircraft (USAF 1976). Past actions most relevant to assessment of the operational changes at the MHRC started in 1992. To support rapid deployment of a major force to trouble spots around the world, the USAF relocated 366 FW to Mountain Home AFB. A new concept for peace-time basing, 366 FW consisted of F-16, F-15C, F-15E, and KC-135 aircraft that trained and fought together as a unit. 366 FW increased operations in all of the MOAs associated with MHRC and currently operates and maintains MHRC under the direction of Mountain Home AFB (USAF 1992, 1996, 2002, 2007a).

In 1998, the USAF established the 12,000-acre JBR southeast of Mountain Home AFB (USAF 1998a). This range, located underneath the Jarbidge North MOA, enhanced the training capabilities of 366 FW by providing increased realism, flexibility, and quality in training. In September of 2001, the MHRC was completed as part of the ETI Initiative. The initiative included JBR, five ND target complexes, 10 one-acre EC threat emitter sites, and 20 smaller threat emitter sites. The first practice ordnance was dropped on JBR on April 5, 2002.

In 2007, additional munitions and training ordnance were added to SCR training operations by the Idaho Air and Army National Guards; these included the 2.75-inch rocket and M156 White Phosphorus munition (USAF 2007b). In 2012, an explosive ordnance disposal and demolition site was added to JBR to render safe BDU-33s and flares to support 366 FW and the Idaho Air National Guard (USAF 2012c).

Recent changes in the MHRC airspace include the Paradise MOA Expansion, which extended the eastern boundary of the Paradise MOA in Nevada and Oregon to the east, and lowered the floor altitude from 14,500 feet MSL to 10,000 feet MSL or 3,000 feet AGL, whichever is higher. These changes provide additional high-altitude ATCAA airspace and lower altitude MOA airspace over prior airspace configurations. Overall, expansion of the ATCAAs atop the laterally extended MOAs provides substantially more training airspace for aircraft between 18,000 and 50,000 feet MSL (USAF 2010).

4.11.1.2 Present Actions

The only present action is continued training on SCR and JBR, grazing, and limited amount of recreation under the airspace as presented under the No-Action Alternative.

4.11.1.3 Foreseeable Future Actions

Two actions within MHRC, independent of the Proposed Action and would be implemented irrespective of a decision on the proposed MHRC operational changes. These projects are still in the planning stages; however, they could have cumulative impacts on resources within the affected environment. The first project is the likely extension of the JBR land withdrawal (Juniper Butte Range Withdrawal Act, 112 Statute 2226) that expires in 2023. Per the Act, prior to the extension, the USAF must evaluate the environmental effects of extending the withdrawal and hold at least one public meeting in Idaho

regarding that evaluation (Section 2915(c)(1-2)). The second project involves special use airspace modifications; however, this action may be considered along with the range extension action. The airspace changes could include extension of special use airspace and/or reconfigurations of airspace floors and ceilings. These future actions; however, are currently in the pre-planning stages and no further information is available at this time. If these proposals were to come to fruition the USAF would complete applicable NEPA documentation and conduct the associated public notification and involvement.

4.11.2 Analysis of Cumulative Effects

The following analysis considers how the impacts of these other actions might affect or be affected by either Alternative 1 or Alternative 2, and whether such relationships would result in potentially substantial or consequential additive impacts when considered together.

4.11.2.1 Acoustic Environment

Noise generated in the acoustic environment would generally be due to military aircraft operations flying in the MHRC, land management agency aircraft and vehicles, and private vehicles (e.g., cars, trucks, 4-wheelers) for managing cattle, recreating, and/or hunting. The majority of aircraft currently operating in MHRC airspace is military, and generate noise levels of 64 dB L_{dnmr} and SELs of 115 as discussed in Section 3.2.2. When considered cumulatively, noise levels would increase slightly but remain consistent with existing conditions. Therefore, no significant cumulative impacts to populations, land use compatibilities, or domesticated animals and wildlife are anticipated.

4.11.2.2 Land Management and Use

Both military training and land management activities would continue as outlined in the USAF Comprehensive Range Plan and applicable federal and state land management agency Resource Management Plans; no prime farmlands would be affected. When impacts from either Alternative 1 or Alternative 2 and past, present, and reasonably foreseeable actions are considered, there would be negligible impacts. Land management would not change and use of the lands would remain consistent with existing conditions; therefore, no significant cumulative land management and use impacts are anticipated under Alternatives 1 or 2.

4.11.2.3 Safety

Safety conditions would not change when impacts of either Alternative 1 or Alternative 2 and past, present, and reasonably foreseeable actions are considered. Munitions use would change but existing safety procedures would ensure that risk to human health would not increase. BASH would remain consistent with current conditions, the risk of aircraft mishaps would not rise, and continued adherence to existing fuel management activities and fire response procedures would preclude increased fire risks. Therefore, no significant cumulative safety impacts are anticipated under Alternatives 1 or 2.

4.11.2.4 Hazardous Materials and Waste, Toxic Substances, and Contaminated Sites

No new hazardous materials, hazardous waste, or toxic substances would be introduced or disposed when considering potential impacts of either Alternative 1 or Alternative 2 with past, present, and reasonably foreseeable actions; nor would contaminated sites would be affected. Therefore, no

significant cumulative impacts to hazardous materials and waste, toxic substances, and contaminated sites are anticipated.

4.11.2.5 Air Quality

The air quality, in this region of attainment for all criteria pollutants, would remain unchanged when potential impacts of either Alternative 1 or Alternative 2 are considered with past, present, and reasonably foreseeable actions. Emissions of GHG would be introduced; however, they would not exceed established USEPA guidelines or increase evolving climate changes. No significant cumulative impacts to air quality are anticipated.

4.11.2.6 Transportation

Area traffic and road networks would remain consistent with existing conditions when consideration is given to either Alternative 1 or Alternative 2 and past, present, and reasonably foreseeable actions. As such, no significant cumulative impacts are anticipated to transportation under either Alternative 1 or 2.

4.11.2.7 Natural Resources

When impacts resulting from either Alternative 1 or Alternative 2 and past, present, and reasonably foreseeable actions are considered, there would be no significant cumulative impacts. Vegetation and wildlife would continue to be managed according to agency Resource Management Plans or by private landowners. Special-status species would continue to be protected by federal and state regulations and managed according to USAF and agency Resource Management Plans; no adverse cumulative effects to these species are anticipated.

4.11.2.8 Cultural Resources

Alternative 1 or Alternative 2 impacts, when considered with impacts resulting from past, present, and reasonably foreseeable actions would not adversely impact archaeological, architectural, or Traditional Cultural Properties. Adherence to existing management and avoidance procedures would continue to be implemented; therefore, no significant cumulative impacts to cultural resources are anticipated.

4.12 Potential Mitigation Measures

Adherence to mitigation measures prescribed in the following would continue regardless of the alternative chosen for implementation.

- the SCR PLO No. 1027 of November 2, 1954, as amended by PLO No. 3192 of August 2, 1963 and PLO No. 4902 of September 16, 1970;
- the JBR Withdrawal Act, PL 105-261;
- Programmatic Agreement between Mountain Home AFB and the Idaho State Historic Preservation Agency;
- the ETI ROD and Supplemental ROD mitigation measures and management actions; and
- the INRMP for SCR and JBR, ICRMP for SCR and JBR, and Biological Opinions with the U.S. Fish and Wildlife Service associated with SCR and JBR range activities.

The INRMP and ICRMP have specific measures for avoiding sensitive species and significant cultural resources. These measures include planning training exercises and construction areas to avoid resources and placing restrictions on cantonment, vehicle use, and other aspects of exercise requirements so that

the mission is achieved with the least amount of impact to resources. Digging and ground disturbance is not allowed without prior evaluation and approval.

Specific SOPs incorporated into the project to reduce impacts include:

- Slickspot peppergrass
  - All proposed LZ and ND target locations on the JBR will be surveyed prior to construction-related activities to ensure no slickspot peppergrass plants are present in areas designated for clearing and/or disturbance.
  - Convoy training along Clover-Three Creek Road will avoid both new ground disturbance in previously undisturbed areas and inadvertent trampling of slickspot peppergrass plants.
- Migratory birds
  - The existing Mountain Home AFB's aggressive Bird/Wildlife Aircraft Strike Hazard (BASH) program will continue to be observed to minimize strike hazards, and Best Management Practices and Standard Operating Procedures described in the 2012 Mountain Home AFB INRMP to minimize effects to special-status species and habitat will be adhered to strictly.
- Sage grouse
  - No firings from FPs in the JUL will occur during sage grouse breeding season (March-June).
- Convoy training notification
  - Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office.
- GPS jamming
  - Prior to a training episode, the 746th Test Squadron together with the 366 FW will notify the Federal Aviation Administration (through their Notice to Airmen) and air traffic control centers (for active notification and navigational assistance to pilots) as to the dates and timing of the jamming exercises to ensure commercial and civil aircraft avoidance procedures are implemented. The Mountain Home AFB Public Affairs will also notify local officials, BLM, and the public through public service announcements and newspaper advertisements to ensure safe navigational operations during the jamming exercises. In the event of a safety issue, such as visually observing non-participating aircraft, communications jamming will halt immediately and not resume until the aircraft's safe passage through the airspace.
- FP safety measures
  - Public access to the SCR JUL and grazing allotments will be restricted during firing by blocking Clover-Three Creek Road into the SCR. The USAF will coordinate with local, state, and federal agencies prior to firing to ensure the safety of non-participating parties per DoD Instruction 1322.28, Realistic Military Training Off Federal Property. Before the training events, the Idaho Transportation Department, Owyhee County Transportation Department, local BLM and Idaho land management agencies, local law enforcement (Owyhee County Sheriff's Office), and the public will be alerted through either public service announcements or personal communication by the base Public Affairs office. The Owyhee County Sheriff's

Office will assist in restricting access to the JUL, but range personnel will ensure that the area is cleared before firing commences.

- To minimize the potential of fire risk from HIMARS employment, 1 acre surrounding the FP will be cleared of all vegetation, fire resistant vegetation will be planted around the FP to act as a fire break, and trained fire crews will be present during launches to extinguish any fire ignitions.
- munitions with white phosphorus will only be used when a range control officer (RCO) is present, so that if a munition lands outside the EUA, the EOD can be notified immediately. In the event that munitions with white phosphorus land outside the EUA, an EOD team and fire crew will be immediately dispatched to the site to ensure that a hazard does not exist to the public, wildlife, or livestock. Fire suppression support will be provided by the Range's contractor or the Bureau of Land Management (BLM) depending on the time of year. Fire crews will be increased as needed as the fire risk increases.

No additional mitigation measures are required to implement either Alternative 1 or Alternative 2, as no significant or adverse impacts were identified.

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Appendix D Coordination and Consultation

DRAFT EA PUBLIC COMMENTS AND RESPONSES

This section of Appendix D contains comments received from federal, state, and local agencies, as well as the general public during the public comment period for the Draft Environmental Assessment (EA) for Operational Changes and Range Improvements in the Mountain Home Range Complex. The public comment period began on June 1, 2016 with the Draft EA Notice of Availability published in the *Mountain Home News*, *The Idaho Statesman*, and *Twin Falls Times-News*. A second Notice of Availability was also placed in the above newspapers extending the comment period to July 25, 2016. In accordance with the National Environmental Policy Act (NEPA), all comments were reviewed and taken into consideration by the Air Force in its decision-making process. Responses were provided for all substantive comments and incorporated into the Final EA. Substantive comments are those that identify issues and concerns related to the Proposed Action and Alternatives and/or directly relate to the analyses and findings presented in the EA. Non-substantive comments are those that express a conclusion, an opinion, or a vote for or against the proposal itself; or that otherwise state a personal preference or opinion.

The following (Table D-1) presents the United States Air Force's Comment and Response Process. All comments received were considered equally. The responses refer to the Draft EA, and the response may refer to the location in the document where information for clarification can be found. Where amended information is included, the reader is directed to that section of the Final EA where the change was made.

Table D-1. Comments Received during Public Comment and Review Period

Organization	*Comment*	*Response*
Billy F Richey Special Assistant for Military Affairs	Page 2-6 Line 32 "firing by blocking portions of the Clover-Three creek Road that go into SCR." Are you block the entry into SCR or actually blocking "Clover-Three Creek Road. Recommend adding clarification of where the blockage would be and add to a diagram, possible Figure 2-1 where the road blockage would be.	Revised text to say: Public access to the SCR JUL would be restricted during firing by blocking the entry road (off Clover-Three Creek Road) into the SCR. The access points to the JUL have been noted on Figure 2-1. Annually, approximately 380 additional mortars (120mm) would be fired within the EUA along with 80 60mm and 750 81mm mortars. Potential restrictions for accessing grazing allotments may be needed. However, if this activity is chosen for implementation, all necessary coordination with grazing allotment lessees, the BLM, the public, and the State of Idaho would occur to minimize effects to grazing needs and public transportation.
	Page 2-8 line 2-5 and line 13 This provides a discussion of buildings 51 and 61 but there is no figure to display where these buildings are. Recommend add them to a figure.	The buildings to be demolished have been added to Figure 2-2b.
	Page 2-10 Line 11 EA states that the Assault Landing Zone will be located in the "Southwest" Corner of SCR EUA and refers to Figure 2-4. However Figure 2-4 show the area to be highlighted in red in the "Southeast" corner of SCR EUA.	The text has been corrected to identify the Assault Landing Zone is in the southeast corner of the SCR EUA.
Kurt Miers Bureau of Land	Will there be any expected use for munitions with depleted uranium?	No depleted uranium rounds are authorized for use on MHRC.

Table D-1. Comments Received during Public Comment and Review Period

Organization	*Comment*	*Response*
Management	Once a range (small arms) has been identified, it is BLM's practice not take back that area. Will clean-up of small arms ranges (lead from expended rounds) be covered under the DERP?	*Added to Section 3.5.1.3:* The Military Munitions Response Program manages the clean-up of small arms ranges when the military decides to close the range. This program falls under the Defense Environmental Restoration Program and the specific details about clean-up activities are determined during the closure process under DoD guidelines. Since the existing and proposed ranges would not be planned for closure, details about closure have not been established. *Added to Section 4.5.1.3*: No new ranges would be proposed for Alternative 1 and no existing ranges would be proposed for closure so there would be no impacts to the Military Munitions Response Program.
Kurt Miers Bureau of Land Management	Is there any certifications on clean-up activities that will be conveyed to the BLM once an area has been cleared i.e. quarterly or annual, or final reports.	Clean-up activities fall into two broad categories on the MHRC, range maintenance and environmental restoration. No planned changes to either range maintenance or environmental restoration activities would occur as a result of the proposed action and current notification procedures, if any, would continue.
	How will BLM be notified of any spills of hazardous material i.e. fuel, oil or munitions on federal lands managed by the BLM?	*Added to Section 3.5.1.1:* MHAFB Spill Plans only address the withdrawn lands owned and operated by the USAF in dealing with spills. There are reporting notifications to the base environmental and fire department. If spills occur on BLM or any other non-USAF lands then we would notify that land owner as soon as practicable after discovery and take steps to mitigate the spill immediately.
Jill Newton Public Commentor	Please accept this card as notification of my approval of the Draft EA proposal as requested by the U.S. Air Force. I encourage a strong military and agree with any and all changes the Air Force deems necessary.	Your support for the proposed action at Mountain Home AFB is noted, has become part of the official project record, and has contributed to the decision-making process.

Table D-1. Comments Received during Public Comment and Review Period

Organization	*Comment*	*Response*
Rebecca Palmer State Historic Preservation Officer, Nevada State Historic Preservation Office	The SHPO has reviewed the subject document and does not recommend any changes.	Your acknowledgement of Mountain Home AFB's determination of no effects is noted, has become part of the official project record, and has contributed to the decision-making process.
Jamee N. Fiore, MHP Historic Preservation Review Officer Idaho State Historic Preservation Office	The Idaho State Historic Preservation Office (SHPO) concurs and finds a determination of No Historic Properties Affected. Please consider this the official Idaho SHPO Section 106 comment for this project.	Your concurrence with Mountain Home AFB's determination of no effects is noted, has become part of the official project record, and has contributed to the decision-making process.
Dennis Griffin, Ph.D., RPA Oregon Parks and Recreation Department	Our office recently received a report summarizing the proposed project and we understand that its affects as they relate to lands within the State of Oregon are limited to issues of airspace. As such, our office believes that the proposed improvements will result in no effect to any archaeological resources within Oregon. Under federal and state law archaeological sites, objects and human remains are protected on both public and private land in Oregon. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If traditional cultural properties exist within the airspace affected by this project, consultation with all appropriate tribes needs to occur prior to project implementation.	Your concurrence with Mountain Home AFB's determination of no effects is noted, has become part of the official project record, and has contributed to the decision-making process. Please refer to Section 1.5.2 for the consultation/coordination with American Indian Tribes.

Table D-1. Comments Received during Public Comment and Review Period

Organization	*Comment*	*Response*
Dennis Mackey Acting State Supervisor U.S. Fish and Wildlife Service	**Endangered Species Act** At this time, only one species with status under the Act, *Lepidium papilliferum* (slickspot peppergrass), is known to occur within the draft EA project area. Slickspot peppergrass was originally proposed for listing as endangered on July 15, 2002. Effective December 7, 2009, the species was listed as threatened under the Act (74 FR 52014–52064, October 8, 2009, p. 52014). Subsequently, the United States District Court for the District of Idaho ordered on August 8, 2012 that the final rule listing slickspot peppergrass as a threatened species under the Act, be vacated and remanded for further consideration consistent with the court's decision. This 2012 court decision reverted the species back to its July 15, 2002 pre-listing status; thus, the current status of slickspot peppergrass under the Act is proposed for listing as endangered. As slickspot peppergrass is currently proposed for listing under the Act, section 7 conference is only required if a Federal action agency determines that their action may jeopardize the continued existence of the species. On February 12, 2014, the Service published a Federal Register Notice which addressed the Court's request that a specific definition of foreseeable future for slickspot peppergrass be provided. In this same Federal Register Notice, the Service also proposed that threatened status be reinstated for slickspot peppergrass under the Act. A final determination as to whether or not threatened status will be reinstated for slickspot peppergrass is anticipated to be published in the Federal Register before the end of 2016. If a determination to reinstate threatened status is made for this species, all new and ongoing actions that may affect slickspot peppergrass will require section 7 consultation. The effects of many ongoing MHAFB actions on slickspot peppergrass have been addressed through previous section 7 consultation documents (USFWS 2012, entire; USFWS 2010, entire). The Service is available to provide technical assistance to the MHAFB on section 7 requirements for ongoing or new actions that may affect species and their habitats, including slickspot peppergrass. We further recommend that the final EA address potential effects to slickspot peppergrass for the proposed new actions as described below.	Text at Section 4.8.1.3 was added to say: If there is a determination to reinstate threatened status for the slickspot peppergrass species, then the USAF will undertake section 7 consultation as required.

Table D-1. Comments Received during Public Comment and Review Period

Organization	*Comment*	*Response*
Dennis Mackey Acting State Supervisor U.S. Fish and Wildlife Service	**Slickspot Peppergrass** The draft EA describes implementation of pre-project surveys and conservation measures associated with proposals for the six new No-Drop (ND) Targets, the modification of the existing ND-1 target array, and nine new Helicopter Landing Zones in the MHRC. These proposed military training improvements have been designed and located to avoid adverse impacts to slickspot peppergrass and its habitat. The Service applauds MHAFB's continued commitment to adhere to Best Management Practices and Standard Operating Procedures relating to slickspot peppergrass as described in the 2012 Integrated Natural Resource Management Plan (INRMP; Air Force 2012, entire) for these proposed MHRC improvements. The draft EA also contains a proposal for convoy training to occur on the side of improved and unimproved public roads in the MHRC. One area identified for convoy training is on Clover Three Creek Road between Saylor Creek Range and Juniper Butte Range. As slickspot peppergrass has been documented to occur adjacent to Clover Three Creek Road in the vicinity of Juniper Butte Range, it is possible that slickspot peppergrass and its habitat may be impacted by convoy training exercises through trampling of plants or through ground disturbance in slickspot microsites by vehicles or personnel near Clover Three Creek Road or other road side areas known to contain the species. The Service recommends that the final EA include a description of potential effects to slickspot peppergrass as well as to incorporate conservation measures to avoid or minimize potential impacts to road side slickspot peppergrass sites associated with the proposed convoy training. For example the final EA could indicate whether conservation measures such as Best Management Practices and Standard Operating Procedures for slickspot peppergrass will also be applied to convoy training on MHRC public roads to avoid both new ground disturbance in previously undisturbed areas and inadvertent trampling of slickspot peppergrass plants. The Service further recommends that MHAFB pursue section 7 consultation, as appropriate, if proposed road side convoy training activities may result in effects to slickspot peppergrass and its habitat. It is the Service's intent to continue to work cooperatively with MHAFB so any section 7 conference or consultation, if needed, will be concluded in a timely manner. The Service is available to provide additional technical assistance to MHAFB regarding potential section 7 needs for ongoing or new actions.	The following was added at the beginning of the second paragraph in Section 4.8.1.3: In addition, slickspot peppergrass has been documented to occur adjacent to Clover-Three Creek Road in the vicinity of Juniper Butte Range. Although Clover-Three Creek Road is one of the proposed convoy training areas, Best Management Practices and Standard Operating Procedures relating to slickspot peppergrass would, as outlined in the 2012 Integrated Natural Resources Management Plan (Mountain Home AFB 2012), would also be applied to convoy training to avoid both new ground disturbance in previously undisturbed areas and inadvertent trampling of slickspot peppergrass plants.

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Organization	*Comment*	*Response*
Dennis Mackey Acting State Supervisor U.S. Fish and Wildlife Service	**Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act** The draft EA states that the golden eagle (*Aquila chrysaetos*) is present within the Project area. The golden eagle is federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The Service has developed guidance for permitting non-lethal take of the golden eagle over the past few years. Guidelines and additional information on protection of golden eagles are available on the Service's website at https://www.fws.gov/birds/management/managed-species/eagle-management.php (last accessed June 17, 2016). In addition, research has shown that many migratory bird species are in decline, facing a growing number of threats on their migration routes and in both their summer and winter habitats. The greatest threat to birds, and to all wildlife, continues to be the loss or degradation of habitat due to human development and disturbance. The draft EA includes discussion of avoidance of impacts to migratory birds, including golden eagles, associated with the proposed MHRC Project. The Service recommends that the preferred alternative in the final EA address migratory birds through best management practices to minimize effects of the proposed action on migratory birds as described in the Bird/Wildlife-Aircraft Strike Hazards (BASH) plan and the MHAFB 2012 INRMP.	Prior to Table 3.8-2, added the following text: As presented in Section 3.4.1, the 366 FW maintains an aggressive program to minimize bird (including migratory birds and eagles) aircraft strike hazard potential. Over the past 20 years, Mountain Home AFB based aircraft have experienced an average of less than 10 bird strikes per year. The following text added to 4.8.3.1: In addition, as discussed in Section 4.4, Safety, additional aircraft operations would occur at the LZs and the ALZ; however, with strict adherence to current BASH plan actions and Best Management Practices described in the 2012 Mountain Home AFB INRMP (Mountain Home AFB 2012), no significant impacts to migratory birds and eagles are anticipated.

Dennis Mackey Acting State Supervisor U.S. Fish and Wildlife Service	**National Seed Strategy for Rehabilitation and Restoration** As a participating agency in the Plant Conservation Alliance, the Service is committed to implementation of the goals identified in the 2015 - 2020 National Seed Strategy for Rehabilitation and Restoration. This Strategy is national in scope and engages both Federal and non-Federal partners working together toward habitat restoration on public, tribal, state, municipal, and private lands. The Strategy recognizes the importance of healthy native plant communities as an essential foundation for ecosystem integrity and diversity. We encourage each of our partners, including MHAFB, to protect native plants by ensuring that native plant populations and their communities are maintained, enhanced, and restored. The National Seed Strategy can be viewed on-line at: http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/plants/seedstrategy.Par.66250.File.dat/SeedStrategy081215.pdf (last accessed June 17, 2016).	Noted.
Katie Fite, Wildlands Defense, Public Commentor	Wildlands Defense was not sent a copy of the USAF's 2016 Proposed EA and FONSI: EA for Operational Changes and Range Improvements in the MHAFB Complex.	Thank you for your comment. We have added your name to the mailing list for this and future NEPA projects on Mountain Home AFB.
Katie Fite, Wildlands Defense, Public Commentor	WLD was alarmed when reading the proposal, and seeing that the USAF has prepared only the most minimal and cursory NEPA analysis. This is despite the serious adverse direct in direct and cumulative impacts this proposed expansion of military activities would have on all elements of the environment across vast areas of public lands. An Environmental Impact Study is required to take a serious and hard look at all that the project may entail. This represents a de facto military Land Grab - with sprawling new emitter/NoDrop sites, alarming and dangerous military convoys on the Bruneau-Grasmere road, apparent increase in use of highly dangerous and hazard substances like white phosphorus, and great;ly expanded use of helicopters or other very intrusive, loud and wildlife and recreation disturbing aircraft and activity.	The EA took a “serious and hard look” at impacts associated with the Proposed Action. The Proposed Action does not include incorporation of new lands not currently managed by the DoD, an increase in noise or hazardous substances, or impacts due to the minimal use of public roads by military convoys.

Katie Fite, Wildlands Defense, Public Commentor	The EA dramatically underplays the role of the USAF in starting fires and harming and fragmenting habitats in Owyhee County and the region.	The likelihood of fire from military operations associated with the Proposed Action is analyzed in Sections 4.4.1.4, 4.4.2.4, and 4.4.3.4. As discussed in Section 4.4.1.4, the majority of the munitions would not cause fires due to ongoing procedures at the SCR. Fires associated with HIMARS would be prevented by vegetation clearance, planting of fire resistant vegetation, and presence of fire crews during all firing.
Katie Fite, Wildlands Defense, Public Commentor	All aspects of the noise, visual impacts and startle effects, pollutants, toxic and hazardous and dangerous materials used and that will pollute the land, air, water and wildlife of the region must be assessed.	Impacts to these resources were assessed in the EA—noise (Section 4.2), visual (Section 4.3), hazardous materials and waste (Section 4.5).

Katie Fite, Wildlands Defense, Public Commentor	The AF must assess the full range of adverse effects of the combined impacts of this activity along with the ever-shifting load of the existing currently incrementally authorized activities (under a series of segmented NEPA documents) that are currently taking place across the Ranges and MOAs. There is no valid current analysis of the drastic environmental toll the piece-mealed current Military Training activities is taking to serve as a baseline. The AF tries to shoehorn this minimal and self-serving EA for incremental significant expansion of the Military Disturbance Footprint across the public lands of the region, and de facto new Land Grab, in under claimed analyses in documents that were never finalized. Example: The highly controversial Saudi Bed-Down proposal, the F-35s (Sonic Hell war planes that are even worse than the Sonic Hell generated by the F-15s and other planes).	The EA provides an analysis of cumulative impacts (the Proposed Action and alternatives in relation to past, present, and reasonably foreseeable actions) in Section 4.11. Baseline information was used from the No Action Alternatives for the Proposed Royal Saudi Air Force F-15SA Beddown Final EA (USAF 2012b) and the F-35A Training Basing Final EIS (USAF 2012a). These documents were finalized even though Mountain Home AFB was not selected for the F-35A beddown and the Royal Saudi Air Force F-15SA beddown was not implemented.
Katie Fite, Wildlands Defense, Public Commentor	This EA does a great disservice to Idaho and our native biodiversity, wildlife and recreational resources. Slickspot peppergrass, sage-grouse, pygmy rabbit, kit fox, burrowing owl, long-billed curlew, migratory songbirds, antelope, bighorn sheep, mule deer, elk - ALL will be significantly adversely impacted by this significant incremental expansion in military activity in SW Idaho. Wilderness, WSRs, Lands with Wilderness characteristics - all are jeopardized by this military expansion and the intensified unassessed level and manner of military training that will ensue.	Impacts to wildlife and special status species are analyzed in Section 4.8; wilderness lands in Section 4.3. Changes in operations and range improvements under the Proposed Action would not significantly impact these resources.

Katie Fite, Wildlands Defense, Public Commentor	These impacts include increased fire that will burn highly significant sage-grouse habitats, and exotic invasive spread risk (includes the forage kochia weed as an exotic invasive species).	As discussed in Section 4.4.1.4, the majority of the munitions would not cause fires due to ongoing procedures at the SCR. Fires associated with HIMARS would be prevented by vegetation clearance, planting of fire resistant vegetation, and presence of fire crews during all firing. Forage kochia (*Kochia prostrata)* is a fire resistant perennial plant. Although it can spread, it is not considered invasive.
Katie Fite, Wildlands Defense, Public Commentor	White Phosphorus is used in War Crimes and should never be used by the military - and especially in these extremely fire prone landscapes.	White phosphorus is used as a marking device for certain types of munitions. It is currently used on the SCR with restrictions—a Range Control Officer must be present to notify EOD and fire crew if munitions falls outside the EUA. These restrictions would continue with the use of additional munitions using white phosphorus. Additional description of impacts has been added to Section 4.4.1.3. A BMP has been added to the document with these restrictions.

Katie Fite, Wildlands Defense, Public Commentor	The Air Force is doing just what it claimed it would not when it got the JBR Range, remote emitter and No Drop sites that have already significantly fragmented and destroyed habitats - i.e. expanding its on the ground footprint and cancerously seeking MORE sites and proposing to inflict GREATER disturbance across public lands- including dangerous military convoys using dangerous and hazardous devices and materials. This is Training - Training results in MISTAKES.	Most components of the Proposed Action would occur on either the SCR or the JBR, both established ranges. Equipment used in convoy operations includes trucks and other wheeled tactical vehicles, pyrotechnics to simulate improvised explosive devices, and blank ammunition for simulated ambushes. This activity would occur on the side of the road and would not block roadways. No dangerous or hazardous materials would be included in the training operations.
Katie Fite, Wildlands Defense, Public Commentor	Is any of the expansion related to the routes of the Gateway Transmission Line EIS?	Actions would occur primarily on the SCR and JBR, neither of which are on proposed routes of the Gateway Transmission EIS.
Katie Fite, Wildlands Defense, Public Commentor	The Air Force must prepare an EIS to fully assess all of its current activities - and to consider ROLLING BACK the severe disturbances relating from near non-stop loud, grinding military overflights in many areas that make recreating on public lands intolerable - and that adversely impact native wildlife, and a cause a host of other disturbances as well.	With the implementation of several standard operating procedures to reduce impacts to slickspot peppergrass, sage grouse, and public safety, the Proposed Action and alternatives would not have a significant impact on any resources and that an EIS was not required.