



Final

Environmental Assessment

Volume I

Addressing the Establishment of
Urban Close Air Support (CAS)
Air and Ground Training Spaces near
Mountain Home Air Force Base, Idaho



November
2018



PRIVACY ADVISORY

This Final EA is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR Part 989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions. Letters or other written or oral comments provided may be published in the EA. As required by law, comments provided will be addressed in the EA and made available to the public. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, phone numbers, and emails addresses will not be published in the Final EA.

Cover Sheet

Final Environmental Assessment Addressing the Establishment of Urban Close Air Support (CAS) Air and Ground Training Spaces near Mountain Home Air Force Base, Idaho

Responsible Agencies: U.S. Air Force (USAF); Air Combat Command; 366th Fighter Wing.

Affected Location: Urban centers located near Mountain Home Air Force Base (AFB), Idaho.

Report Designation: Final Environmental Assessment (EA).

Abstract: This EA supports USAF's *Environmental Impact Analysis Process* for the proposed establishment of ground and airspace training areas in nine urban centers near Mountain Home AFB to accommodate Urban CAS proficiency training operations by F-15E and F-15SG aircrews of the 366th Fighter Wing with ground support from Joint Terminal Attack Controllers. Once these air and ground spaces are identified and use is coordinated, USAF would redistribute the existing Urban CAS training operations among the nine selected urban centers (including Mountain Home AFB).

The proposed training operations would be limited to coordinated flight and ground tracking, identification, locating, and completion of an electronically simulated engagement of designated targets across a range of large, medium, and small urban centers. Targets would be designated from the aircraft using low-power, eye-safe lasers. Aircraft would be flown at an altitude of 10,000 to 18,000 feet above ground level within a 30-nautical mile operating area for each urban center. Ground teams would support flight tracking within the ground area directly underlying the operational airspace using radio communication equipment. Realistic Urban CAS training requires that all members of each ground support team behave in a manner typical of any community member to avoid drawing attention to themselves or the operations. Thus, ground support personnel would be unarmed and dressed in plain clothes. Members of each ground support team would be inside civilian vehicles driving along paved streets and paved roadways during training operations. To facilitate aircrew tracking of identified targets, ground support may stop along the side of a paved roadway in areas that provide broad lines of sight. Ground support personnel may be positioned on publicly accessible paved roads located anywhere within the ground operating area, such as in vehicles driving along streets or parked along the side of a road. Individuals among the ground teams may momentarily exit the vehicle onto sidewalks or in parking lots to establish or re-establish communications with aircrews. Ground support would not interfere with civilian traffic or pedestrians. All activities would be conducted in accordance with local laws and ordinances and with the goal of leaving no trace of their activities.

Written comments and inquiries regarding this document should be directed by email to Ms. Noelle Shaver at noelle.shaver@us.af.mil, or by postal mail at the following address:

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FINAL

**ENVIRONMENTAL ASSESSMENT
ADDRESSING THE ESTABLISHMENT OF
URBAN CLOSE AIR SUPPORT (CAS)
AIR AND GROUND TRAINING SPACES NEAR
MOUNTAIN HOME AIR FORCE BASE, IDAHO**

VOLUME I



AIR COMBAT COMMAND

NOVEMBER 2018

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Abbreviations and Acronyms

°F	degrees Fahrenheit	FAA	Federal Aviation Administration
µg/m ³	micrograms per cubic meter	FAR	Federal Aviation Regulation
366 FW	366th Fighter Wing	FFOR	Friendly Forces
AFB	Air Force Base	ft	foot (feet)
AFI	Air Force Instruction	GHG	greenhouse gas
AGL	above ground level	GPS	Global Positioning System
ALTRV	Altitude Reservation	ITD	Idaho Transportation Department
ANG	Air National Guard	IR	infrared
ANSI	American National Standard Institute	JO	Joint Order
AOCI	Area of City Impact	JTAC	Joint Terminal Attack Controller
ARFF	Aircraft Rescue Fire Fighting	L _{eq}	equivalent sound level
ASN	Aircraft Safety Network	L _{max}	maximum sound level
ATC	Air Traffic Control	LOA	Letter of Agreement
ATCAA	Air Traffic Control Assigned Airspace	MHRC	Mountain Home Range Complex
BASH	Bird/Wildlife Aircraft Strike Hazard	MOA	military operations area
BLM	Bureau of Land Management	MSL	mean sea level
CAA	Clean Air Act	MTR	military training route
CAS	Close Air Support	NAAQS	National Ambient Air Quality Standards
CEQ	Council on Environmental Quality	NEPA	National Environmental Policy Act
CFR	Code of Federal Regulations	NGB	National Guard Bureau
CO	carbon monoxide	NHPA	National Historic Preservation Act
dB	decibels	NM	nautical mile(s)
dba	A-weighted decibels	NO ₂	nitrogen dioxide
DNL	day-night sound level	NOTAM	Notice to Airmen
DOD	Department of Defense	NO _x	oxides of nitrogen
DODD	Department of Defense Directive	NRHP	National Register of Historic Places
DODI	Department of Defense Instruction	O ₃	ozone
EA	Environmental Assessment	OPFOR	Opposing Forces
EIS	Environmental Impact Statement	PM _{2.5}	particulate matter less than 2.5 microns in diameter
EO	Executive Order		

PM ₁₀	particulate matter less than 10 microns in diameter
POE	port of entry
ppb	parts per billion
ppm	parts per million
RA	restricted area
RAPCON	Radar Approach Control
RNAV	Area Navigation
ROEs	Rules of Engagement
ROI	region of influence
SEL	sound exposure level
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	oxides of sulfur
SUA	Special Use Airspace
tpy	tons per year
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compounds
ZLC ATCC	Salt Lake City Air Traffic Control Center

1. Purpose of and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) supports a proposal by the 366th Fighter Wing (366 FW) of the U.S. Air Force (USAF) to establish ground and airspace training areas at urban centers near Mountain Home Air Force Base (AFB) where aircrews from the 366 FW can conduct Urban Close Air Support (CAS) training operations with ground support from Joint Terminal Attack Controllers (JTACs).

1.2 Organization of this Document

This EA analyzes the potential for significant environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative. The environmental documentation process associated with preparing the EA is carried out in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality's (CEQ's) *Regulations Implementing NEPA* (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508); and the *Environmental Impact Analysis Process* (32 CFR § 989) USAF regulations for implementing NEPA.

This EA is organized into two volumes. Volume I includes the six sections of the main EA document. Volume II includes all associated appendices. **Section 1** provides history and background information, the project location, and the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and alternatives, including the No Action Alternative. **Section 3** provides existing conditions and analyses of potential impacts from the Proposed Action and alternatives. **Section 4** provides analysis of potential cumulative impacts. **Section 5** lists the preparers of this document. **Section 6** lists the references used in the preparation of this document. **Appendix A** includes the public and stakeholder coordination list. **Appendix B** includes the data used for the noise impacts analysis and a preliminary review of noise impacts from other aircraft. **Appendix C** provides the calculations and methodology used to assess impacts on air quality. **Appendix D** provides documentation for the National Historic Preservation Act (NHPA) Section 106 coordination with the Idaho State Historic Preservation Office. **Appendix E** provides safety information for the training laser system that would be used for the Proposed Action.

1.3 Background

Since the 1990s, CAS operations have been increasingly required in urban combat areas (JCS 2014). As such, Urban CAS in combat was established as a subset of CAS operations to which aircrews and ground forces must become trained. The wartime mission of the 366 FW includes the provision of air support during combat. Therefore, maintained currency, proficiency, and operational readiness in CAS, including Urban CAS, is required. Urban CAS is comprised of air and ground assets working as one operating unit, integrally linked in all communication and coordination efforts to identify, track, and neutralize threats.

During combat, Urban CAS operating environments typically range from small towns to large cities with corresponding extents of vertical development (e.g., tall buildings), population sizes, and cultural and community dynamics. Urban CAS aircraft commonly provide supporting firepower in offensive and defensive operations to destroy, disrupt, suppress, neutralize, or delay hostile forces. The speed, range, maneuverability, and selection of integrated weapons systems of the aircraft involved work together allowing CAS assets to attack targets that other friendly and allied forces may not be able to engage effectively (JCS 2014). When conditions for air operations are permissive, CAS can halt enemy attacks, help create breakthroughs, destroy targets, cover retreats, and guard flanks. While achieving these objectives, air and ground operations must be conducted in accordance with Department of Defense Directive (DODD) 2311.01E, *DoD Law of War Program* and Rules of Engagement (ROEs), which specifies that U.S. military forces will adhere to the following guidelines:

- Act with proportionality, replying to hostility with only as much force as needed to eliminate the enemy
- Distinguish combatants from noncombatants, and distinguish military objectives from protected places to minimize collateral damage
- Prevent unnecessary suffering by safeguarding certain fundamental human rights of those involved in a conflict.

During Combat, the planning and execution of Urban CAS missions is especially difficult because these missions either require or inevitably involve the following:

- operations in “urban canyons” (i.e., artificial canyons created by multistory buildings)
- deconfliction of multiple aircraft operating within a confined airspace
- operation in accordance with the ROEs
- difficulty in threat analysis because of information, environmental, and visibility constraints
- overload of visual cues associated with civilian traffic, presence of buildings, and varied landscape
- presence of noncombatants proximal to identified threats
- potential for collateral damage during engagement
- increased risk of friendly fire with other allied air and ground teams in the area (JCS 2014).

These combat operational circumstances cause tactical difficulties in properly identifying and locating potential targets while discerning and protecting Friendly Forces (FFOR). Both are critical for successful execution of Urban CAS missions. Readiness for Urban CAS missions requires that air and ground crews train fully and intensively to gain practical experience and improve mission survivability while responding to the following situations:

- *Loss of, or inability to maintain, communication.* Urban terrain inhibits communications equipment and can absorb or reflect transmitted signals.
- *Difficulty identifying targets.* Vertical development makes it difficult for aircrews to identify target combatants and may require specific positioning and orientation attack headings to achieve line-of-sight with an identified target. Ground-level observers may be positioned on upper floors of buildings to improve visibility. In combat situations, ground teams (e.g., JTACs) mark and designate their positions or CAS target locations visually with an infrared (IR) laser pointer, electronically with a Global Positioning System (GPS) grid, or with a gridded reference graphic to guide aircraft tracking.
- *Difficulty maneuvering aircraft over urban terrain.* Aircraft navigation over and through urban terrain can be more difficult than over natural terrain because maps do not show vertical development of urban terrain.
- *Requirement for navigational aids.* Rapid movement from position to position can create confusion between aerial and ground observers as to friendly and enemy locations. Familiarity with the characteristics of urban terrain allows aircrews to discern key features in this environment. Navigational aids, such as GPS, have reduced but not eliminated this challenge. The use of the GPS and handheld laser pointers or designators eases the problems associated with night navigation, orientation, and target identification.
- *Conditions of limited visibility.* Limited visibility may occur because of fog, smoke, or dust on the battlefield, but occurs most frequently because of operations extending into hours of darkness. Night navigation systems may be degraded because of interference induced by buildings and enemy GPS jamming equipment. Ability to provide CAS during times of limited visibility and adverse weather demands a higher level of proficiency that can only come about through dedicated, realistic CAS training. Aircrews and JTACs must routinely and consistently train together during such conditions to overcome visual limitations when the aircrew have only sensors and systems to guide them.
- *Artificial lighting.* Rapidly changing lighting conditions from day/night operations and the effects from operating within terrain with artificial lighting impacts how the target presents against its background and the measures required to ensure an aircrew can distinguish it from its surroundings. Additionally, the artificial lighting of urban environments can limit the usefulness of night vision equipment because lights from buildings, streets, airports, and industrial areas can create glare and reduce visibility (JCS 2014).

Currently, Mountain Home AFB is home to three fighter squadrons (two F-15E squadrons and the Republic of Singapore Air Force squadron of F-15SGs) under operational control of the 366 FW. Aircraft based at Mountain Home AFB conduct more than 90 percent of their flight training in the Mountain Home Range Complex (MHRC). The MHRC consists of the Saylor Creek and Juniper Butte training ranges as well as airspace that consists of 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 (ft) above mean sea level (MSL). The MOAs within MHRC airspace are Paradise North, Paradise South, Owyhee North, Owyhee South, Jarbidge North, and Jarbidge South. Additionally, other aircraft from Air Combat Command, Air National Guard, sister services, and foreign allies regularly train in the MHRC.

Although F-15Es and F-15SGs are flown through all nearby airspaces, military training routes (MTRs), MOAs, Federal Aviation Administration (FAA) and ATCAA -controlled airspaces, all authorized Urban CAS training is currently restricted to Mountain Home AFB and its ranges (Mountain Home AFB 2015a, Mountain Home AFB 2017).

In this EA, Urban CAS operations are discussed in terms of training events, training operations, and sorties. A training event involves a collection of training operations conducted within a 24-hour period. A training operation involves the roundtrip (i.e., departure and return) flights of multiple F-15E and/or F-15SG aircraft from the installation to meet a defined training objective. The roundtrip flight of each aircraft out to and returning from the training area is one sortie operation (i.e., flight operation).

The baseline total for airfield sorties and operations at Mountain Home AFB is approximated at 60,559 operations per year and includes all Mountain Home AFB and transient aircraft operations (AFCEC 2017). Annually, approximately 160 training events involving approximately 960 sortie operations are conducted on the installation for Urban CAS training. Thus, the annual total of Urban CAS operations represents approximately 1.5 percent of the installation's annual baseline for airfield sortie operations.

The existing proficiency training in Urban CAS on the installation involves operating unarmed F-15E and F-15SG aircraft between 10,000 and 18,000 ft above ground level (AGL) within a 30-nautical mile (NM) operating area. JTACs support aircrews from the ground area directly underlying the operational airspace. Ground support personnel are dressed and behave in a manner that is consistent with the civilian community to avoid drawing attention to the operations. To facilitate aircrew tracking of identified targets, lead JTACs may be positioned in or on buildings in areas that provide broad lines of sight. Remaining ground support personnel may be positioned anywhere on the installation, such as in vehicles driving along streets or parked along the side of a road, walking along sidewalks, or walking into or out of buildings.

1.4 Project Location Description

Mountain Home AFB, located in southwestern Idaho approximately 45 miles southeast of Boise (see **Figure 1-1**), occupies 6,844 acres of land and supports three squadrons of F-15E/SG aircraft under the operational control of the 366 FW. The assets owned and controlled by the installation include the Small Arms Range, Rattlesnake Radar Station, Middle Marker, C.J. Strike Dam Recreation Annex, and the MHRC (Mountain Home AFB 2017a). The MHRC (see **Figure 1-1**) is managed by the 366 FW and comprises Saylor Creek Range, Juniper Butte Range, target and emitter sites, and over 9,026 square nautical miles of Special Use Airspace (SUA).

Saylor Creek Range encompasses approximately 109,466 acres and is approximately 25 miles southeast of Mountain Home AFB. Juniper Butte Range encompasses approximately 12,112 acres (662 acres are fenced off for operations and the other 11,450 acres leased to support grazing) and is located approximately 50 miles southeast of Mountain Home AFB (Mountain Home AFB 2017a). SUA over Saylor Creek Range includes Restricted Area (RA) R-3202 and SUA over Juniper Butte Range includes RAs R-3204A and R-3204B (see **Figure 1-1**). These areas are critical to the readiness of combat aircrews from Mountain Home AFB.

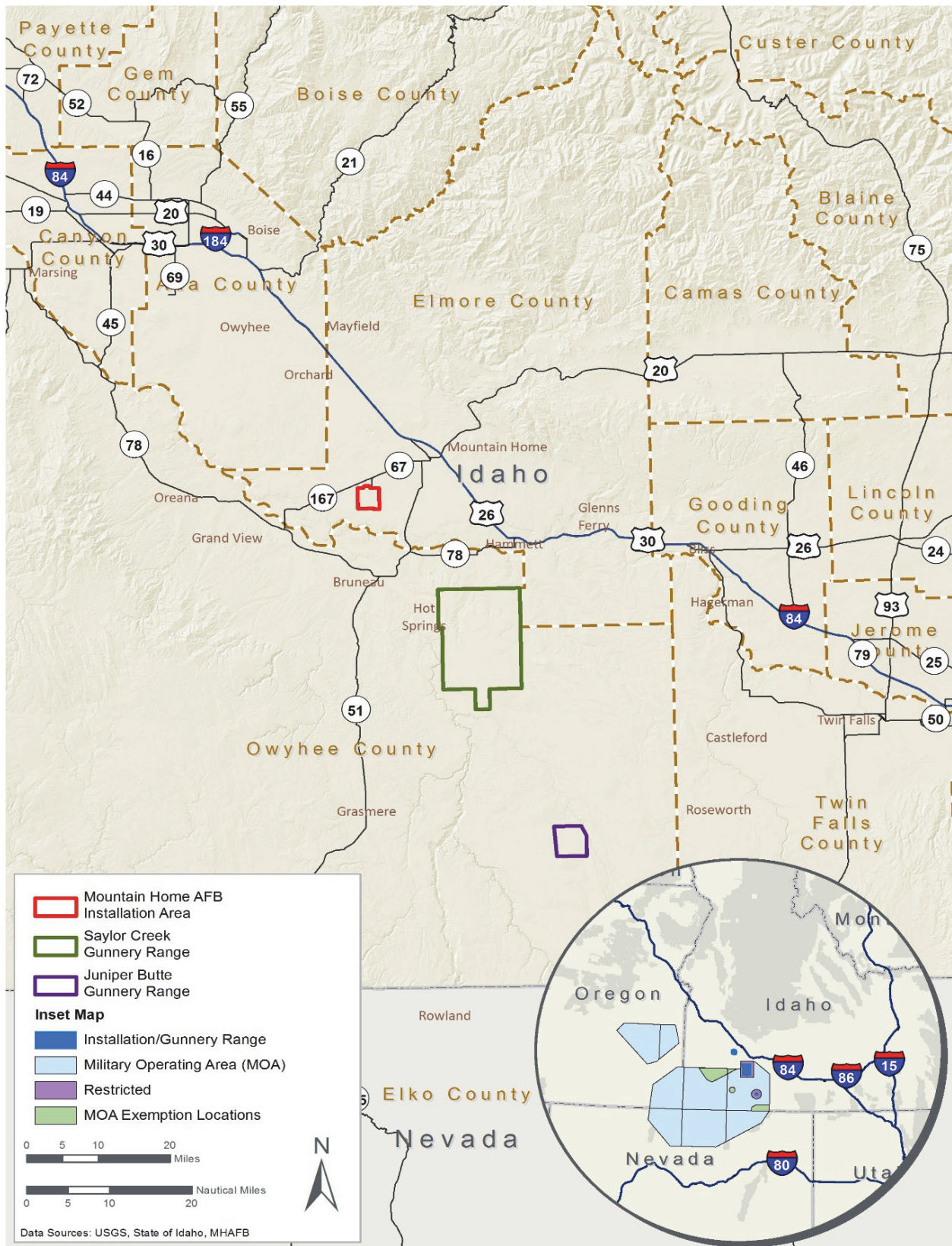


Figure 1-1. Mountain Home AFB and Surrounding Area

The installation has a population of approximately 8,547 people (Mountain Home AFB 2015b). Vertical development on the installation is constrained to accommodate flight safety requirements along the flight line. Generally, the developed land area is in the central to northern portion of the installation.

1.5 Purpose of and Need for the Proposed Action

Purpose. The purpose of the Proposed Action is to ensure F-15E and F-15SG aircrews from the 366 FW can conduct Urban CAS proficiency training to identify, track, and perform in-air laser designation of targets within the full range of urban ground and airspace environments with ground support from JTACs. Fully practicing the laser designation processes in varied urban settings is critical. Without this element of training, gaining a practical understanding of, and operational familiarity with, the environmental challenges that can disrupt the laser targeting efforts cannot occur. This would result in "negative training," or training that is inadequate to a point that it would compromise mission safety and survivability during combat. Only this combination of training conditions would adequately simulate the current mission realities of urban combat.

Need. Urban CAS is comprised of air and ground assets working as one operating unit integrally linked in all communication and coordination efforts to identify, track, and neutralize threats. The successes of Urban CAS missions hinge on the proficiency and operational readiness of air and ground teams who coordinate and execute them. To be adequately prepared for combat, increase the survivability of air and ground teams (i.e., JTACs), and avoid collateral damage to civilians, aircrews and JTACs must train fully and intensively together in urban settings that realistically simulate the urban environments encountered in combat. The Proposed Action is needed because there are no designated urban environments that can be reliably used by F-15E and F-15SG aircrews and ground support teams to fulfill the Urban CAS aircrew proficiency-training requirement.

1.6 NEPA and Other Compliance Requirements

NEPA is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions before those actions are taken. NEPA helps decision makers make well-informed decisions based on an understanding of the potential environmental consequences. NEPA established the CEQ, which is charged with the development of implementing regulations and ensuring federal agency compliance with NEPA. The process for implementing NEPA is outlined in 40 CFR §§ 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*.

CEQ regulations specify that an EA be prepared to provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact or an Environmental Impact Statement (EIS). The EA aids in an agency's compliance with NEPA when an EIS is unnecessary and facilitates preparation of an EIS when one is required.

Air Force Policy Directive 32-70, *Environmental Quality*, states that USAF will comply with applicable federal, state, and local environmental regulations and standards for environmental stewardship including those identified in 32 CFR § 989.

In compliance with NEPA, USAF will determine if this EA is the appropriate level of the EIAP for the Proposed Action described in **Section 2.1**. This EA will determine whether the Proposed Action would result in significant impacts. If significant impacts were predicted, then USAF would decide whether to provide mitigation to reduce impacts below the level of significance, undertake the preparation of an EIS, or abandon the Proposed Action. This EA will also be used to guide USAF in implementing the Proposed Action in a manner consistent with USAF standards for environmental stewardship should the Proposed Action be approved for implementation.

USAF is required to manage impacts on protected species and their habitats, floodplains, and wetlands in accordance with Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management*, which includes the USAF guidance for compliance with the Endangered Species Act, Executive Order (EO) 11988, *Floodplain Management*, and EO 11990, *Protection of Wetlands*. Although intermittent populations of federal- and state-listed species, floodplains, and wetlands are within several of the urban centers where Urban CAS training could occur, the proposed training activities would not impact these resources. No impacts would be expected because operations would not involve ground disturbance and would avoid areas where protected species and their habitats exist.

NEPA requires consideration of impacts to cultural resources (40 CFR § 1508.8). Federal agencies' responsibility for protecting historic properties is defined primarily by Section 106 of the NHPA. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties in accordance with 36 CFR § 800. Cultural resources also may be covered by state and local laws. USAF manages impacts on cultural and historical resources in accordance with AFI 32-7065, *Cultural Resources Management*. Pursuant to these regulatory and USAF policy requirements, the USAF is coordinating with the Idaho State Historic Preservation Office (see **Appendix D**). Because ground teams would operate under strict protocols of prescriptive avoidance of buildings and facilities of cultural or historical importance and avoidance of areas where archeological resources are known, or may potentially occur, impacts from the Proposed Action on these resources are not expected.

1.7 Intergovernmental and Stakeholder Coordination

NEPA requirements help ensure environmental information is made available to the public during the decision-making process and prior to actions being taken. CEQ NEPA regulations state, "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action. This process shall be termed scoping." EO 12372, as amended to EO 12416, *Intergovernmental Review of Federal Programs*, requires federal agencies to provide opportunities for consultation by elected officials of state and local governments that would be directly affected by a federal proposal.

In compliance with NEPA, the USAF notified relevant agencies, stakeholders, and federally recognized tribes about the Proposed Action and alternatives (see **Appendix A** for stakeholder and public involvement materials). Through this notification process, these relevant agencies and groups were offered the opportunity to provide comments on the Proposed Action and potential impacts that could occur. The 30-day stakeholder review period occurred from February 6, 2018 through March 8, 2018. Additionally, Mountain Home AFB hosted the

following series of public scoping meetings to inform local communities of the Proposed Action over the following dates:

- March 5, 2018 from 3:00 pm to 6:00 pm at the Twin Falls Public Library, 201 Fourth Avenue East, Twin Falls, ID 83301
- March 6, 2018 from 5:00 pm to 7:00 pm at the Glenns Ferry High School Library, 639 North Bannock Street, Glenns Ferry, ID 83623
- March 7, 2018 from 5:00 pm to 7:00 pm at the American Legion Hall, 410 Roosevelt Avenue, Grandview ID 83624
- April 12, 2018 from 1:00 pm to 3:00 pm at the Eagle Public Library, 100 N Stierman Way, Eagle, ID 83616
- April 12, 2018 from 6:00 pm to 7:45 pm at the Meridian Library (Main Branch), 1326 West Cherry Lane, Meridian, ID 83642
- April 13, 2018 from 4:00 pm to 6:00 pm at the Boise Main Library, Marion Bingham Room, 715 South Capitol Boulevard, Boise, ID 83702
- April 16, 2018 from 5:00 pm to 7:00 pm at The American Legion (VFW Post 26), 515 East 2nd South Street, Mountain Home, ID 83647
- May 2, 2018 from 5:00 pm to 8:00 pm at the Boise Main Library, Marion Bingham Room, 715 South Capitol Boulevard, Boise, ID 83702

To facilitate the public scoping effort, Mountain Home AFB published the Draft Description of the Proposed Action and Alternatives on the installation's website. The 30-day public scoping comment period was initiated 5 March 2018 and ended 17 April 2018. Scoping comments received after this date will continue to be considered and incorporated into **Appendix A** and the Administrative Record for this NEPA effort.

Upon completion of a Draft EA, a Notice of Availability will be published in the *Mountain Home News* and *The Idaho Statesman*. Copies of the Draft EA will also be sent to local libraries and the public will be invited to provide comments. Public and agency comments on the Draft EA will be considered prior to a decision being made on whether or not to sign a Finding of No Significant Impact. The NOA and public and agency comments will be included in **Appendix A** of the Final EA.

2. Description of the Proposed Action and Alternatives

This section describes the Proposed Action and the alternatives considered for implementation, including the No Action Alternative. The NEPA process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, as defined in **Section 1.5**. USAF NEPA regulations also specify the inclusion of a No Action Alternative against which potential impacts can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in accordance with CEQ and USAF NEPA regulations.

2.1 Proposed Action

USAF proposes to: 1) establish air and ground training spaces in urban centers located proximally to the installation and within Idaho that would adequately simulate the large, medium, and small urban centers encountered during combat, and 2) establish an Urban CAS aircrew proficiency training regime in the selected urban centers. This action would not increase sortie operations for the installation. Rather, it would distribute existing aircraft operations among the installation's ranges and airspaces and the air and ground spaces at the urban centers that are identified as also able to accommodate the proposed training. Ideally, the proposed training would occur across multiple urban centers to give the 366 FW scheduling options for available airspaces, and a variety of urban terrain that would accommodate realistic scenarios where operators would need to respond to unexpected complications.

Once all of the air and ground spaces that can accommodate the training are identified, and use is coordinated, all Urban CAS aircrew proficiency training operations would be redistributed from solely occurring on the installation and its ranges to include the additional locations. The proposed training would be limited to coordinated flight and ground activities to be completed by integrally linked aircrews and ground support teams (including JTACs) who would be in constant communication with each other throughout every training scenario. Ground support would be associated with one of two operating teams: FFOR or Opposing Forces (OPFOR; who, for training purposes would be identified as hostile threats). FFOR would work with aircrews to identify, locate, track, and mark OPFOR targets that may include individuals of the OPFOR team, or vehicles or buildings where gatherings of hostile groups would be simulated. Aircrews and FFOR teams would track targets until conditions for an aircrew-simulated engagement are deemed to be in accordance with the ROEs (see **Section 1.3**) (JCS 2014). The mock engagement would entail electronically locking onto an identified OPFOR target and completing a computer simulated combat engagement to neutralize the threat. Following this, aircraft would return to the installation. For ensured safety, all F-15E aircraft that would be used during Urban CAS aircrew proficiency training would be "clean," meaning that no munitions would be installed on the aircraft.

The Proposed Action includes six components: 1) aircraft, 2) personnel, 3) airspace, 4) ground operating areas, 5) air and accompanying ground operations, and 6) simulated munitions.

Sections 2.1.1 through 2.1.6 provide additional details regarding each component of the Proposed Action.

2.1.1 Aircraft

USAF proposes to conduct the proposed aircrew proficiency training operations using the existing F-15E and F-15SG aircraft based at Mountain Home AFB. It is assumed that F-15E aircraft would be flown for approximately two-thirds of all proposed training operations, with F-15SGs flown for the remaining one-third. Refer to **Section 2.1.5** for details on how operational totals were determined.

2.1.2 Personnel

The Proposed Action would use existing aircrew personnel operating at Mountain Home AFB. Ground support teams would use other active-duty military or military reserves JTAC personnel located near Mountain Home AFB who already operate in conjunction with installation operations. No personnel additions to Mountain Home AFB would be required as part of the Proposed Action. Aircrews would consist of two pilots and at least one weapons system operator per aircraft. Ground personnel involved in the training operations would form two operating teams: FFOR and OPFOR. Up to 15 personnel would simulate FFOR and would include JTACs. Up to 20 personnel would simulate OPFOR.

2.1.3 Airspace

USAF proposes to conduct these high-altitude training operations within an airspace area of 30 × 30 NM (or within a 15 NM radius) of the center point of each urban center. The operating airspace altitude would range between 10,000 and 18,000 ft AGL (between approximately 2 and 3.5 miles above the ground). Use of airspaces overlying the selected urban centers would vary depending upon availability to support proficiency training operations. All airspace operations would be coordinated with the appropriate air traffic controlling agency in accordance with USAF flight safety regulations and planning protocols. Notices to Airmen (NOTAMs) regarding planned airspace operations would be issued, as appropriate.

2.1.4 Ground Operating Areas

Ground support teams would operate in accordance with local, state, and federal regulations, including the Department of Defense Instruction (DODI) 1322.28, *Realistic Military Training off of Federal Property*, and would conduct Urban CAS training activities within the 30 NM of ground space that directly underlies the 30 NM airspace operating area designated for aircrew training at each selected urban center. The ground spaces that would be used for the proposed training would be limited to outdoor areas, whether owned by the public, city, or state, to which the general public have right of access. More specifically, ground teams would be driving along paved publicly accessible roads. Vehicles may, momentarily, park along the side of paved public roads, public sidewalks, or in public parking lots to allow individuals to exit the vehicles to establish or re-establish communications with aircrews. During operations, ground teams would not enter any buildings; operate near schools, hospitals, churches, or cemeteries; and would not operate in public parks. Use of routes and surface parking lots would be coordinated, as required by DODI 1322.28, with the appropriate government authorities.

2.1.5 Operations

Training Operations. For Urban CAS proficiency training, a “training event” is a collection of “training operations” that would take place within a single urban area on a given day (i.e., 24-hour period). Therefore, discussion in this EA may interchangeably address training events as training days. A typical sortie would be defined as the round-trip, or, a departure and return flight of a single aircraft to the installation. During a training operation, two (or a maximum of four) aircraft would depart the installation, enter the CAS wheel¹ outside of an urban area, enter the urban center airspace to conduct training (for a duration of 60 to 90 minutes), then return to the installation. Thus, a training operation would involve two (or a maximum of four) sorties.

Generally, only two aircraft would be in the urban center airspace at one time. However, fulfillment of proficiency training in operational transitions (or, “hand-offs”) from one pair of aircrews to another pair of aircrews would require presence of four aircraft in the CAS wheel. During an operational hand-off, the aircrew from a pair of aircraft actively tracking in the urban center airspace would communicate status of the operation to the aircrew of the two aircraft remaining in the CAS wheel. Then, the aircraft in the urban center would exit to the CAS wheel, and the aircraft waiting in the CAS wheel would enter the urban center to continue the tracking effort.

Each training operation would be followed by a 2- to 3-hour period of no flight activity during which ground support teams would organize for the next training operation.

A training event may involve day or a combination of day-night training operations. Day training would occur between the hours of 7 a.m. and 10 p.m. Night training would occur between the hours of 10 p.m. and 7 a.m.

Mountain Home AFB originally proposed 260 training events (involving 650 training operations) in the January 2018 Description of the Proposed Action and Alternatives. However, Mountain Home AFB decided to reduce the proposed number of operations by approximately 40 percent following coordination with the stakeholders and public communities during scoping efforts. Under the updated Proposed Action, 160 Urban CAS proficiency training events (involving 400² training operations) would be expected to be conducted across all identified urban centers annually during surges in preparation for deployment (i.e., surges). Of these surge training events:

- At least 75 percent (or 120) of the annual training events would involve day training operations. During day training, aircrews and ground support teams would conduct two training operations (including one between 7 a.m. and 12 p.m., and the other between 2 p.m. and 10 p.m.) per 24-hour period. On these days, an estimated maximum of 3 hours of dedicated flight activities over an urban center would be expected. At least 70 percent of the anticipated total number of day training operations would involve 2 aircraft flying in the CAS wheel and operating over an urban center. At least 30 percent of the total

¹ For purposes of this analysis, a CAS wheel would typically be a circular flight path that pilots would follow on the outskirts of the target area when not actively engaged in a training flight within the airspace operations area for an urban center.

² As appropriate, operational totals resulting in a decimal of 0.5 or greater, were rounded up to the nearest whole number; totals with a decimal of 0.4 or less were rounded down.

number of day training operations would involve 4 aircraft to incorporate proficiency training in operational hand-offs. Thus, a total of 240 day training operations, comprised of 624 sorties could be expected per year.

- At least 10 percent (or 16) up to a surge of 25 percent (or 40) of the anticipated annual training events would involve two day training and two night training operations within the 24-hour period. Each training operation would be followed by a 2- to 3-hour period of no flight activity during which ground teams would organize for the next training operation. On these training days, an estimated maximum of 6 hours of dedicated flight activities over an urban center would be expected. At least 95 percent of the anticipated total number of day-night training operations would involve 2 aircraft flying in the CAS wheel and operating over an urban center. At least 5 percent of the total number of day-night training operations would involve 4 aircraft to incorporate proficiency training in operational hand-offs. Assuming the surge percentage (i.e., 25 percent), a total of 160 combined day-night training operations involving 336 sorties could be expected during surges annually.
- Operations would be conducted in some combination of large, medium, and small urban centers. The anticipated envelope of training events and training operations that would be conducted in each category of urban center is provided in **Table 2-1**.

Table 2-1. Annual Envelope of Training Events for each Urban Center Size Category

Urban Center	Total Number of Training Events (Training Operations) ¹		Number of Day Training Events (Training Operations)		Number of Day-Night Training Events (Training Operations)	
	Projected Level	Surge Level	Projected Level	Surge Level	Projected Level	Surge Level
Large	60 (160)	160 (400)	45 (160)	120 (240)	15 (60)	40 (160)
Medium ²	50 (125)	160 (400)	38 (75)	120 (240)	13 (50)	40 (160)
Small ²	50 (125)	160 (400)	38 (75)	120 (240)	13 (50)	40 (160)

Table Notes:

1. For purposes of analysis, the surge level of training events and training operations represents the conservative scenario wherein the total number of operations would occur in one of the listed urban centers. Realistically, training is expected to occur across some combination of urban centers within the projected and surge levels for operations. The annual sum of operations would not exceed 160 training events.
2. Operational breakouts for Day and Day-Night training do not sum to the annual total because numbers with a decimal of 0.5 or greater were rounded up to the nearest whole number.

Table 2-2 provides the annual envelope for the anticipated total numbers of sorties associated with day and day-night training operations for each size category of urban center. Realistically, Urban CAS pilot proficiency training operations would be distributed across some combination of the selected urban centers. The distribution and analysis of training operations would occur as follows:

- Actual training levels for each selected urban center would vary between the projected and surge levels of training events indicated in **Table 2-2** for the respective size categories. If required, short-term fluctuations in operational levels (ranging between projected levels up to the surge level in preparation for deployment) over an urban center may be required to accommodate airspace deconfliction, flight safety, and requirements to increase trained pilot numbers to accommodate deployment cycles.

Table 2-2. Annual Envelope of Day and Day-Night Sortie Operations for each Urban Center Size Category

Day Training Operations ^{1, 2, 3}				
Urban Center	Total Day Training Operations		Total Day Training Sorties	
	Projected Level	Surge Level	Projected Level	Surge Level
Large	100	240	234	624
Medium	75	240	195	624
Small	75	240	195	624
Day-Night Training Operations ^{2, 4}				
Urban Center	Total Day-Night Training Operations		Total Day-Night Training Sorties	
	Projected Level	Surge Level	Projected Level	Surge Level
Large	60	160	126	336
Medium	50	160	105	336
Small	50	160	105	336

Table Notes:

1. For purposes of analysis, the surge level of training events and training operations represents the conservative scenario wherein all operations would occur in one of the listed urban centers. Actual training would vary within the envelope for each urban center. The annual sum of operations would not exceed 160 training events.
2. At least 75 percent of day training would involve two training operations per 24-hour period; 25 percent of day-night training would involve four training operations per 24-hour period. One sortie involves a round-trip (i.e., departure and return) flight to the installation of one aircraft.
3. At least 70 percent of day training sorties would involve two aircraft; 30 percent would involve four aircraft proficiency training in operational hand-offs.
4. At least 95 percent of day-night training sorties would involve two aircraft; 5 percent would involve four aircraft proficiency training in operational hand-offs.

- Concurrent training operations at more than one urban center would be expected for 20 to 30 percent of the proposed surge level training days (i.e., 160) annually across the selected urban centers. The ability to operate at more than one urban center would allow the 366 FW the flexibility to surge proficiency training operations from the indicated projected levels without concentrating the impacts of increased operations over any one urban center. Concurrent operations would be conducted at an anticipated maximum of two of the identified urban centers per training day and could involve day or day-night training operations.

To enable the most conservative estimation of impacts on resources for each urban center that could result from the proposed training, analysis in this EA will assume that the surge level of annual training events would occur in only one of the listed urban centers. Thus, **Tables 2-1** and **2-2** list the surge level of training days (i.e., 160) for the urban centers of each size category, and the surge level of day and day-night training sorties is calculated using this number.

Ground Operations. Ground teams (comprised of JTAC-certified operators) would be dressed in plain clothes and would be driving civilian vehicles to blend in with the community. As specified in **Section 2.1.4**, ground support personnel from either the FFOR or OPFOR ground teams may be positioned along paved publicly accessible roads anywhere within the 30 NM ground operating area for an urban center. During a training operation, members of each

ground support team would remain within their vehicles at all times unless they need to temporarily exit their vehicles to establish communications or improve visibility of aircraft and the local areas. In such instances, vehicles would be momentarily parked along the roadside, sidewalk, or in a surface parking lot. Operations would not require the use of any buildings, and would not be conducted in parks or near schools, hospitals, churches, or cemeteries.

FFOR would consist of up to five civilian type vehicles with up to three passengers per operating vehicle. FFORs would direct aircraft using a variety of tactical communication devices (e.g., frequency modulation radio, very high frequency radio, ultra high frequency, and satellite communication radios). Additionally, FFOR may use data link systems to receive or transmit analog or digital information to the aircrew. Each of these devices would be operated on pre-approved, dedicated military frequencies. OPFOR would use up to five civilian type vehicles in various convoy scenarios with up to four passengers per vehicle.

Realistic preparation for Urban CAS ground activities during deployments requires members of each ground support team to behave in a manner typical of any community member to avoid drawing attention to themselves or the operations. Ground team operations would be conducted only on paved public roadways, sidewalks, and parking lots, as specified for the ground operating areas, and would not interfere with civilian traffic or pedestrians. All ground operations would be coordinated with law enforcement, emergency services, and local governments to ensure awareness and safety. Further, all activities would be conducted in accordance with local laws and ordinances and with the goal of leaving no trace of their activities on cultural or natural resources. Any deviations from these restrictions would be coordinated and approved in accordance with DODI 1322.28.

Mission Scenarios. Prior to mission training operations, F-15E and F-15SG aircrews would maintain flight in a circular path, known as a CAS wheel, in the airspace that overlies the farther outskirts of town or the outermost edge of the 15 NM radius from the urban center point. Two, or a maximum of four, aircraft would fly in the CAS wheel at any one time. As described in **Section 2.1.5**, scenarios wherein four aircraft would fly in the CAS wheel would involve aircrew proficiency training in operational hand-offs during tracking efforts. Ground teams would be working within the urban center in accordance with their particular force position (FFOR or OPFOR). To begin a mission scenario, members of the FFOR team would contact aircrews flying in the CAS wheel with a request for air support to identify and locate a hostile threat (represented by the OPFOR). The aircraft would separate from the CAS wheel, fly toward the urban center point, and be guided with instrumentation and communication to identify, track, and simulate neutralization of the OPFOR.

The two aircraft would fly throughout the airspace overlying the city in a wedge formation where the lead aircraft would be positioned at a lower altitude and ahead of the second aircraft. The second aircraft serves to cover the lead aircraft from a higher altitude and reasonable distance behind, where visibility surrounding the first aircraft can be maintained. Flight tracking of OPFOR would continue until the point of simulated engagement. Upon mission completion, the aircraft would return to the installation.

2.1.6 Munitions Use

The proposed training operations would not involve use of weapons for simulated engagements. Munitions would not be loaded on the F-15Es or F-15SGs that are flown during the proposed proficiency training operations. Ground teams would not carry weapons.

All interactions between air and ground teams would be achieved through use of electronic equipment including tactical communication radios (e.g., frequency modulation, very high frequency, ultra high frequency, and satellite communication), navigational GPS for maintaining awareness of target locations, low-power, eye-safe IR training lasers for marking targets (from aircraft), and computer simulation systems on board the aircraft.

Aircrews would use an on-board targeting system to simulate laser-lock and engagement of identified targets. Only the training laser and the IR marker would be used during Urban CAS pilot proficiency training. The IR marker would only be used during night training operations.

The laser targeting system on the aircraft operates in two modes: training and combat (Mountain Home AFB 2018). Choosing between the training and combat laser involves deliberate button pushes of system menus distinct to each mode. Thus, it would be impossible to accidentally switch modes.

The IR marker that would be used to mark a target would not be hazardous to the unaided eye or persons using binoculars. Additionally, because the F-15E and F-15SG aircraft to be flown during Urban CAS training would be operating at or above 10,000 ft AGL, the emitted laser light from the aircraft would never be within the Nominal Ocular Hazard Distance (NOHD) from the ground to be hazardous to people or animals (USAF 2017). However, in an extremely unlikely event wherein an individual would stare directly into the laser beam using a telephoto lens or high-powered sniper scope, the laser would be visible and harmful. As an added measure of safety, aircrews would only use the IR marker at or higher than an altitude of 11,000 feet AGL. **Appendix E** provides the NOHDs³ for the training laser systems that would be used during the proposed proficiency training.

Ground teams would not use lasers to designate targets. Instead, they would guide aircrews to identified targets using only communication devices and verbal coordination.

2.2 Selection of Alternatives

Considering alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decision making, capable of implementation, and sufficiently satisfactory with respect to meeting the purpose of and need for the action. CEQ NEPA regulations define reasonable alternatives as those that are economically and technically feasible, and that show evidence of common sense. Certain requirements must be present or reasonably attainable to meet the purpose of and need for the Proposed Action.

³ The NOHD for a laser system is the distance from the source at which exposure to the energy emitted by the laser is no longer hazardous to the unaided eye or bare skin (Ascendent 2018).

In the USAF, selection standards are used to establish the parameters that must be met for alternatives to be considered reasonable and sufficient to adequately support a Proposed Action. For this EA, large, medium, and small urban centers to be selected to support Urban CAS training proficiency must have urban environments that fully enable the 366 FW to meet its proficiency training requirements, as stated in **Section 1.3**. To determine whether an urban center would adequately simulate the challenges operators face during combat, each center was evaluated by applying the following selection standards:

- A. **Must be located proximally to the installation.** Optimally, the selected small urban centers would be within a 30-mile radius of the installation to enable pre- and post-mission briefs with ground teams the same day as each training scenario. Medium and large urban centers would be within a 100-mile radius of the installation. This proximity would facilitate identification of a sufficient variety of medium and large urban environments within a distance that would enable at least 90 minutes of F-15E and F-15SG flight over an urban center without a requirement for refueling.
- B. **Must include a variety of population sizes and densities to adequately simulate the range of community dynamics and civilian traffic encountered during urban combat.** For this EA, a large urban center would have a population of greater than 60,000 people, a medium urban center would have a population of 10,000 to 60,000 people, and a small urban center would have a population between 400 and 10,000 people. Large urban centers of the indicated size would provide a highly dynamic environment with large civilian traffic volumes, medium urban centers of the indicated size would provide a moderately dynamic environment with medium civilian traffic volumes, and small urban centers of the indicated size would provide a less dynamic environment with small civilian traffic volumes. Therefore, the populations described above that are typical of large, medium, and small urban centers in Idaho would provide the varied characteristics necessary to attain realistic training.
- C. **Must have the physical attributes required to adequately simulate the challenges presented by various populated urban environments encountered during combat.** Physically distinct operating areas provide dedicated spaces wherein air traffic can be more efficiently and safely controlled to accommodate flight training activities. Therefore, to accommodate the proposed proficiency training in Urban CAS, the selected large, medium, and small urban centers must meet the following conditions.

Large Urban Center(s)

- Must be physically distinct from (i.e., not associated with) any other large urban centers or metroplex areas (e.g., Boise-Nampa-Meridian Metroplex). If associated with any other large urban center, the larger of the urban centers should be prioritized for selection.
- Must have multiple buildings with vertical development at or exceeding 10 stories (approximately 100 ft) within 4 square city blocks (where approximately 280,000 square ft [6.4 acres] equals one city block),
- Must not have overlapping 30 NM operating areas with any other large urban centers. If multiple, physically distinct, large urban centers have overlapping

operating areas, the larger of the urban centers should be prioritized for selection.

Medium Urban Center(s)

- Must be physically distinct from any other medium urban center(s)
- Must not have overlapping 30 NM operating areas with any other medium urban center. If multiple medium urban centers have overlapping operating areas, the larger of the urban centers should be prioritized for selection.

Small Urban Center(s)

- Can have overlap in operating areas with other selected small urban centers
- Must encompass at least eight discrete commercial or residential properties within one square city block.

- D. **Must have development features indicative of the required extents of artificial lighting that would simulate the range of built environments encountered during day and night combat missions.** Cultural, or artificial, lighting is defined as the sum of lights that illuminate a developed area at night. Artificial lighting in an urban environment can be a challenge to both air and ground parties when attempting to identify, track, and engage points of interest. This is especially difficult during night operations. Typically, the brightest artificial lighting in an urban environment is associated with street lamps, lights in and on buildings, outdoor entertainment venues, industrial areas, hospitals, airports, and marinas, as well as lights used to enhance scenery near buildings that point directly into the sky (Martin Prosperity Institute 2013, Kyba et al. 2015). Even with light emission ordinances intended to reduce light pollution, the sum light emission from these development features into the sky would represent the majority of night light emitted for each city.

Studies indicate that large urban centers typically have all the aforementioned development features and associated lighting (Martin Prosperity Institute 2013, Kyba et al. 2015). Medium urban centers have many of these features, but to a lesser extent because there is less infrastructure and development required to accommodate the inhabiting populations. Small urban centers are less developed, and emitted light sources are primarily residential areas, interspersed commercial businesses (e.g., retail shops or convenience stores), and hospitals. To accommodate the proposed proficiency training, the selected large, medium, and small urban centers should encompass development features consistent with these analytical observations.

2.3 Alternatives Carried Forward for Analysis

The possible urban center alternatives that meet the purpose of and need for the Proposed Action were identified and evaluated against the selection standards. Twenty-two large, medium, and small urban centers were initially considered for the Proposed Action because they exist within the proximity constraints established to facilitate training briefs and to avoid refueling requirements. However, to be considered adequate to accommodate the proposed Urban CAS training, the urban centers must also have the population sizes and densities to simulate the community dynamics of vehicle and pedestrian traffic; be physically distinct from other urban centers; and, must have development features indicative of artificial lighting to

simulate the range of built environments encountered during combat. Thus, to be carried forward for analysis as part of the Proposed Action, an urban center must meet all four selection standards listed in **Section 2.2**. **Table 2-3** provides a comparison of urban center alternatives to the selection standards.

As shown in **Table 2-3**, 9 of the 22 urban centers initially considered meet the selection standards identified in **Section 2.2** to be carried forward for analysis in this EA. **Table 2-4** provides the list of selected urban centers and the urban center centerpoint locations for their respective 30 NM operating areas.

Figure 2-1 shows the installation, MHRC, existing military airspaces, and MTRs (i.e., instrument routes and visual routes) proximal to the installation and the selected urban centers. Also shown are the proposed operating areas overlying each of the identified urban centers.

For this EA, the analysis of impacts on the human environment and natural resources assumes that the anticipated annual surge level of Urban CAS proficiency training operations required by the 366 FW would be distributed to any one of the nine urban centers that meet the selection standards. **Tables 2-5** and **2-6** present the analysis envelope of Urban CAS training up to an anticipated surge level of 160 annual training events (960 sorties). The annual numbers of day and day-night training events presented in **Tables 2-4** and **2-5** follow the assumptions specified in **Section 2.1.5**. These numbers represent the projected and surge levels of training operations (and sorties) that could be conducted, and the surge level of training that could result from implementing the Proposed Action at any one location. Because it is unlikely that the total number of training events would be conducted at any one urban center, but instead would be conducted across some combination of the nine urban centers, actual impacts from implementing the Proposed Action within the annual Urban CAS proficiency training envelope for each urban center likely would be less than the conservative assessment.

Table 2-3. Comparison of Urban Center Alternatives to Selection Standards

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Large (Population >60,000 individuals)				
Boise	45 miles (39 NM) northwest of the installation	226,570	Encompasses multiple buildings and/or structures with vertical development exceeding 10 stories within 4 square city blocks.	<p>Highly developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 large airport, 2 small airports, 4 heliports • 1 bus station • More than 50 educational facilities ranging from primary school through colleges and universities • 46 distinct neighborhoods • approximately 500 commercial businesses • 4 hospitals, 3 hospices, 2 intermediate care facilities, 1 behavioral health facility • 39 hotels • 1 large outdoor sports/entertainment arena. <p>Most common industries include retail, manufacturing, scientific/open technical/professional, tourism, freight (rail, truck, and air), medical, mining, and agriculture.</p>
Meridian	52 miles (45 NM) northwest of the installation	99,926	Is associated with the Boise Metroplex. Does not encompass multiple buildings and/or structures with vertical development exceeding 10 stories within 4 square city blocks.	<p>Highly developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 heliport • 2 bus stations • More than 31 educational facilities ranging from primary school through colleges and universities • 79 commercial businesses • 3 hospices, 4 intermediate care facilities • 9 hotels. <p>Most common industries include manufacturing, construction, retail, professional/ scientific/technical, health care and social assistance, finance and insurance, and educational services.</p>

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Large (Population >60,000 individuals) (continued)				
Nampa	60 miles (52 NM) northwest of the installation	93,590	Associated with the Boise Metroplex. Does not have multiple buildings and/or structures with vertical development exceeding 10 stories within 4 square city blocks.	<p>Highly developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 3 small airports and 1 heliport • 1 bus station • More than 37 educational facilities ranging from primary schools through colleges and universities • 90 commercial businesses • 2 hospitals, 3 hospices, 1 intermediate care facility • 9 hotels. <p>Most common industries include construction, manufacturing, retail, agriculture/forestry/fishing and hunting, professional/scientific/technical, accommodations and food services, and public administration.</p>
Medium (Population 10,000 to 60,000 individuals)				
Burley	110 miles (96 NM) southeast of the installation	10,474	Physically distinct from other urban centers and operating areas; surrounded by agricultural lands.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 small airport • 16 educational facilities (primary and college/university) • 36 commercial businesses • 1 hospital, 1 hospice, 1 rehabilitation center • 7 hotels. <p>Most common industries include manufacturing, agriculture/forestry/fishing and hunting, retail, and other services (except for public administration).</p>

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Medium (Population 10,000 to 60,000 individuals) (continued)				
Caldwell	59 miles (51 NM) northwest of the installation	54,660	Associated with the Boise Metroplex.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 3 small airports and 1 heliport • 1 bus station • 29 educational facilities (primary to college/university), • 42 commercial businesses • 1 hospital • 6 hotels. <p>Most common industries include manufacturing, retail trade, construction, and administrative/support and waste management services.</p>
Eagle	51 miles (44 NM) northwest of the installation	26,089	Associated with the Boise Metroplex.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 heliport • 2 bus stations • 8 educational facilities (primary and college/university) • 21 commercial businesses • 2 hospices, 1 intermediate care facility • 1 hotel. <p>Most common industries include manufacturing, professional/scientific/technical services, retail trade, and construction.</p>
Garden City	44 miles (38 NM) northwest of the installation	11,890	Associated with the Boise Metroplex.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 2 bus stations • 8 educational facilities (primary to college/university) • 15 commercial businesses • 1 hospice, 1 behavioral health facility. <p>Most common industries include other services (except public administration), manufacturing, retail, and construction.</p>

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Medium (Population 10,000 to 60,000 individuals) (continued)				
Jerome	72 miles (63 NM) southeast of the installation	11,636	Physically distinct from other urban centers; surrounded by agricultural lands. Operating area overlaps with the Twin Falls operating area.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 small airport • 17 educational facilities (primary and college/university) • 19 commercial businesses • 1 hospital, 1 intermediate care facility • 5 hotels. <p>Most common industries include agriculture/forestry/fishing and hunting, manufacturing, construction, and retail.</p>
Kuna	57 miles (50 NM) northwest of the installation	19,200	Associated with the Boise Metroplex	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 3 small airports • 2 bus stations • 18 educational facilities (primary to college/university) • 12 commercial businesses • 3 hospices, 3 intermediate care facilities. <p>Most common industries include retail trade; construction; public administration; and professional, scientific, and technical services.</p>
Mountain Home	8 miles (7 NM) north of the installation	14,824	Physically distinct from other urban centers and operating areas; surrounded by agricultural lands.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 3 small airports and 1 heliport • 11 educational facilities (primary to college/university) • 37 commercial businesses • 1 hospital • 7 hotels. <p>Most common industries include public administration, manufacturing, retail, transportation and warehousing.</p>

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Medium (Population 10,000 to 60,000 individuals) (continued)				
Twin Falls	98 miles (85 NM) southeast of the installation	49,202	Physically distinct from other urban centers; surrounded by agricultural lands.	<p>Moderately developed. Lighting associated with:</p> <ul style="list-style-type: none"> • 1 small airport and 2 heliports • more than 25 educational facilities (primary schools to colleges/universities) • 167 commercial businesses • 3 hospitals, 3 hospices, 4 intermediate care facilities • 1 large outdoor entertainment arena • 10 hotels. <p>Most common industries include retail, manufacturing, construction, food, transportation, and warehousing.</p>
Small (Population 400 to 10,000 individuals)				
Bruneau	18 miles (16 NM) south of the installation	701	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	<p>Low-density development. Lighting primarily associated with exiting residences, 1 small airport, and 2 educational facilities serving primary through secondary students.</p> <p>Predominant industries are agriculture, forestry, and fishing.</p>
Glenns Ferry	28 miles (24 NM) southeast of the installation	1,278	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	<p>Low-density development. Lighting primarily associated with commercial and transportation facilities and residences. City encompasses:</p> <ul style="list-style-type: none"> • 1 small airport and 1 heliport • 3 schools serving primary through secondary • 2 hotels. <p>Most common industries supported include education, retail, and health care.</p>

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Small (Population 400 to 10,000 individuals) (continued)				
Grand View	20 miles (17 NM) southwest of the installation	457	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	Low-density development. Lighting primarily associated with existing residences and interspersed businesses. City encompasses: <ul style="list-style-type: none"> • 51 commercial businesses • 1 educational facility serving primary and middle school students • 1 hotel. Most common industries include agriculture, construction, and manufacturing.
Mountain Home AFB	0 miles	3,238	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	Low-density development. Lighting primarily associated with existing facilities typical of a military air installation including the security gates, streetlights, taxiways and runway, residential areas, and administrative, recreational, and operational buildings.
Hammett ⁷	21 miles (18 NM) southeast of the installation	458	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	Low-density development. Lighting primarily associated with existing residences and commercial buildings such as a post office, general store, and trading post.
Hot Springs ⁷	20 miles (17 NM) southeast of the installation	412	Does not encompass at least eight discrete commercial and/or residential properties within one square city block.	Low-density development. Lighting primarily associated with existing residential and agricultural structures.
King Hill ⁷	46 miles (40 NM) southeast of the installation	324	Encompasses at least eight discrete commercial and/or residential properties within one square city block.	Low-density development. Lighting primarily associated with residential properties and commercial buildings.
Mayfield ⁷	25 miles (22 NM) northwest of the installation	No recorded population.	Sparsely developed.	Lacks artificial lighting. Area encompasses rural, sparsely developed, unincorporated land that is associated with the outskirts of Boise.

Urban Center	Selection Standards ¹			
	1	2	3	4
	Proximity to Installation statute miles (NM) ²	Population ³	Required Vertical Development or Physical Distinction ⁴	Development Profile (as an Indicator of Artificial Lighting) ⁵
Small (Population 400 to 10,000 individuals) (continued)				
Orchard ⁷	25 miles (22 NM) northwest of the installation	No recorded population.	Sparsely developed.	Lacks development required to generate artificial lighting. Unincorporated, generally vacant desert unincorporated land that is associated with the outskirts of Boise.
Oreana ⁷	27 miles (23 NM) west of the installation	No recorded population.	Sparsely developed.	Lacks development required to generate artificial lighting. Unincorporated, rural land in Owyhee County.
Prairie ⁷	30 miles (26 NM) northeast of the installation	No recorded population.	Sparsely developed.	Lacks development required to generate artificial lighting. Unincorporated land, rural, ranching community in Elmore County.

Table Notes:

1. Green indicates the urban center meets selection standards. Red indicates the urban center does not meet selection standard.
2. Locations of urban centers determined via statute mile distance measurements from the installation boundary to the nearest boundary of each urban center.
3. Populations presented for the urban centers are from the most recent U.S. Census Bureau (2010 and 2017) population estimates (USCB 2018, USCB 2017a).
4. Surrounding development and/or self-containment determined using three-dimensional viewing in Google Earth.
5. Development profiles provided via City-Data.com (City-Data.com 2017).
6. Prioritized for selection as the largest medium urban center proximal to the installation.
7. City-Data.com information to support a complete development profile was not available. Development profile is based upon Google Earth imagery of the area.

Table 2-4. Centerpoints of the Selected Urban Centers for Urban CAS Training

Urban Center	Centerpoint
<i>Large</i>	
Boise	43.606667, -116.223333
<i>Medium</i>	
Mountain Home	43.152333, -115.7055
Burley	42.535743, -113.792795
Twin Falls	42.563083, -114.479917
<i>Small</i>	
Grand View	42.992833, -116.097
Bruneau	42.882167, -115.790667
Glenns Ferry	42.961667, -115.3045
Hammett	42.945731, -115.466186
Mountain Home AFB	43.04963, -115.86562

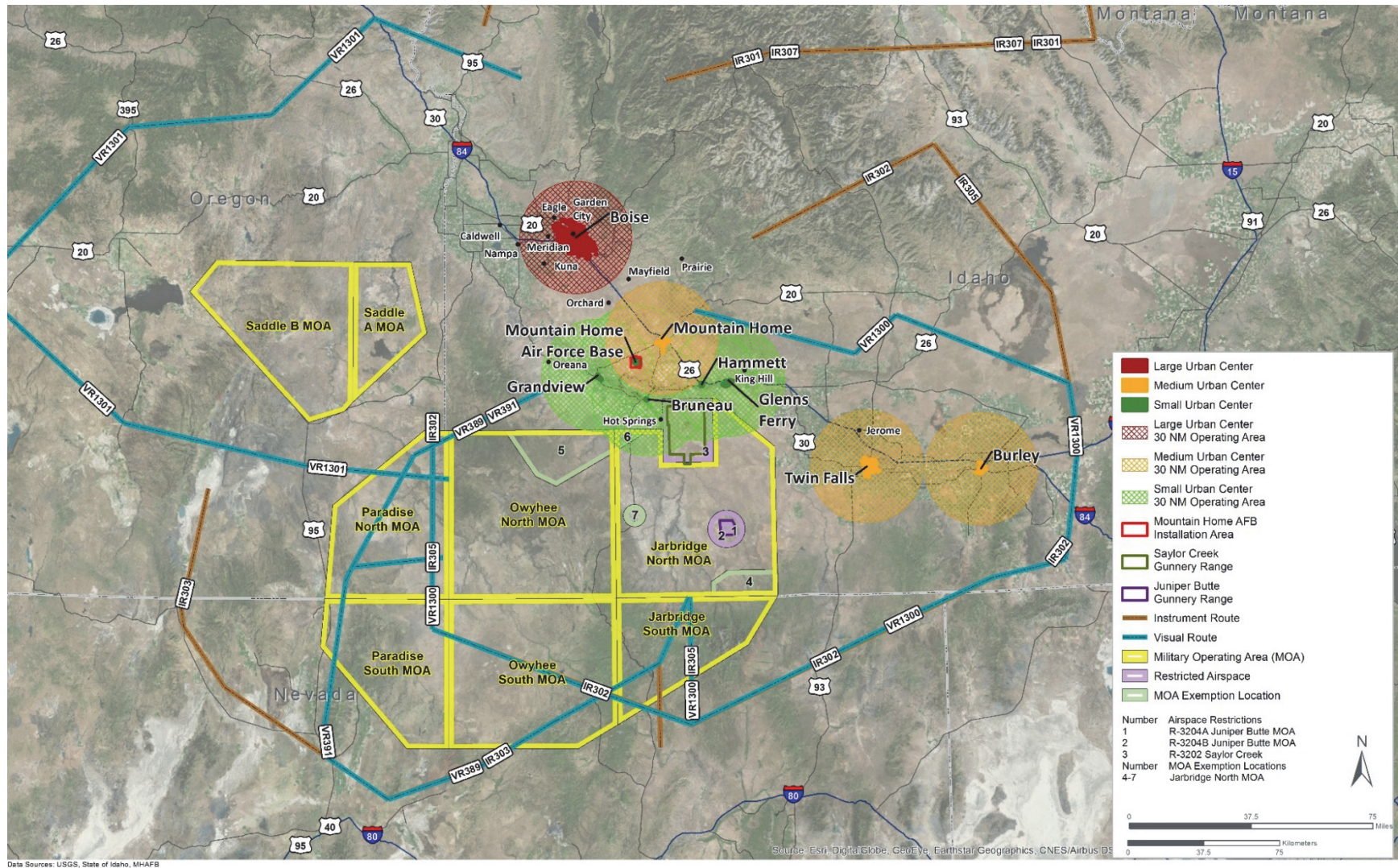


Figure 2-1. Existing Military Airspaces and Proposed Urban Center Operating Areas near Mountain Home AFB

Table 2-5. Annual Envelope of Training Events at each Urban Center

Urban Area	Total Number of Training Events (Training Operations) ^{1, 2}		Number of Day Training Events (Training Operations)		Number of Day-Night Training Events (Training Operations)	
	Projected Level	Surge Level	Projected Level	Surge Level	Projected Level	Surge Level
Large Urban Centers						
Boise	60 (160)	160 (400)	45 (100)	120 (240)	15 (60)	40 (160)
Medium Urban Centers						
Mountain Home	25 (63)	160 (400)	19 (38)	120 (240)	7 (25)	40 (160)
Burley	13 (31)	160 (400)	10 (19)	120 (240)	3 (13)	40 (160)
Twin Falls	13 (31)	160 (400)	10 (19)	120 (240)	3 (13)	40 (160)
Small Urban Centers						
Grandview	10 (13)	160 (400)	8 (15)	120 (240)	3 (10)	40 (160)
Bruneau	10 (13)	160 (400)	8 (15)	120 (240)	3 (10)	40 (160)
Glenns Ferry	10 (13)	160 (400)	8 (15)	120 (240)	3 (10)	40 (160)
Hammett	10 (13)	160 (400)	8 (15)	120 (240)	3 (10)	40 (160)
Mountain Home AFB	10 (13)	160 (400)	8 (15)	120 (240)	3 (10)	40 (160)

Table Notes:

1. Projected and surge levels of day, and day-night training events and training operations for an urban center were calculated using the proposed annual projected and surge levels of training events, respectively, for that urban center.
2. Numbers of operations calculated for urban centers were rounded to the nearest whole number if the distribution of operational totals resulted in a decimal number of 0.5 or greater. Thus, totals may not sum to the projected level of operations presented in **Section 2.1.5**.

Table 2.6. Annual Envelope of Day and Day-Night Training Operations at each Urban Center

Day Training Operations ^{1, 2, 3}				
Urban Area	Total Day Training Operations		Total Day Training Sorties	
	Projected Level	Surge Level	Projected Level	Surge Level
Large Urban Centers				
Boise	100	240	234	624
Medium Urban Centers				
Mountain Home	38	240	98	624
Burley	19	240	49	624
Twin Falls	19	240	49	624
Small Urban Centers				
Grandview	15	240	39	624
Bruneau	15	240	39	624
Glenns Ferry	15	240	39	624
Hammett	15	240	39	624
Mountain Home AFB	15	240	39	624
Day-Night Training Operations ^{2, 4}				
Urban Area	Total Day-Night Training Operations		Total Day-Night Training Sorties	
	Projected Level	Surge Level	Projected Level	Surge Level
Large Urban Centers				
Boise	60	160	126	336
Medium Urban Centers				
Mountain Home	25	160	53	336
Burley	13	160	26	336
Twin Falls	13	160	26	336
Small Urban Centers				
Grandview	10	160	21	336
Bruneau	10	160	21	336
Glenns Ferry	10	160	21	336
Hammett	10	160	21	336
Mountain Home AFB	10	160	21	336

Table Notes:

1. Calculated values were rounded to the nearest whole number; thus, operational totals may not sum as expected.
2. A training operation consists of a collection of aircraft departing from the installation to conduct the proposed Urban CAS proficiency training and returning to the installation. One training operation typically involves two aircraft, and thus, two sorties. One sortie involves one round trip (i.e., departure and return) flight to the installation for one aircraft. At least 75 percent of the total number of day training operations would involve two training operations per 24-hour period; 25 percent of day training operations would involve four training operations per 24-hour period.
3. At least 70 percent of the total number of day training operations would involve two aircraft; 30 percent of this total would involve four aircraft to accommodate aircrew proficiency training in operational hand-offs.
4. At least 95 percent of day-night training sorties would involve two aircraft; 5 percent of this total would involve four aircraft to accommodate aircrew proficiency training in operational hand-offs between aircrews.

2.4 No Action Alternative

USAF NEPA regulations require consideration of the No Action Alternative. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and other potential action alternatives can be evaluated. Under the No Action Alternative, USAF would not conduct Urban CAS proficiency training operations with ground support in urban centers around southern Idaho. Instead, Urban CAS aircrew proficiency training would continue to be conducted only on Mountain Home AFB and in the MHRC. Although aircrews would gain some benefit from coordinated ground and flight mission training on the installation and within the MHRC, neither of these assets would accommodate the required fidelity and challenges required to maintain actual proficiency and operational readiness, or to ensure increased survivability of air and ground teams in the Urban CAS combat environment.

The MHRC does not have the required population, vertical development, or artificial lighting to adequately simulate a medium or large urban environment. In fact, the MHRC does not have any capability to simulate the dynamic environment of an urban community. Urban areas provide real-time considerations, much like deployed operations, to ensure the mission would be executed without involving noncombatants and minimizing collateral damage. Further, although the installation and MHRC do have limited vertical development, they do not adequately simulate the challenges presented by the urban canyons of medium and large urban centers that are created by buildings of varying shapes and sizes. This unique problem presents multiple challenges associated with finding and tracking points of interest. Lastly, different levels and types of lighting are difficult to simulate on the MHRC. To provide artificial lighting that would adequately simulate the medium or large urban environment on the MHRC would require development of buildings with lighting infrastructure on the existing gunnery ranges. To preserve the life of the added lighting infrastructure required for Urban CAS training, the installation would have to limit weapons employment training operations on the gunnery ranges. Because the No Action Alternative fails to meet the purpose of and need for the Proposed Action, as described in **Section 1.5**, it is not a viable alternative. However, the No Action Alternative is carried forward for analysis in this EA to provide a baseline against which the impacts of the Proposed Action can be compared.

2.5 Alternatives Considered but Dismissed

2.5.1 Use of All Proximal Urban Centers

Under this alternative, air and ground spaces at all the identified large, medium, and small urban centers that meet the selection criterion for proximity would be considered. Although this alternative would provide several useful training environments, many of the included urban centers would not have the populations or development to accommodate the proposed training. As such, use of these areas does not meet at least one selection standard as identified in **Section 2.2**, would not meet the purpose and need as described in **Section 1.5**, and is not considered further for analysis. As noted in **Table 2-2**, the rationale for exclusion of large, medium, and small urban centers follows:

Large Urban Centers:

- The cities of Nampa and Meridian are physically associated with the Boise-Nampa-Meridian metroplex area. Additionally, the 30 NM operating areas for these cities would overlap with each other and the Boise operating area. Because these associated cities are smaller than Boise, they are not prioritized for selection. Because these areas do not meet the selection criteria for physical distinction, they are not considered further.

Medium Urban Centers:

- The cities of Caldwell, Eagle, Garden City, and Kuna are physically associated with the Boise metroplex area and would have overlapping operating areas. Because these areas do not meet the selection criteria for physical distinction, they are not considered further for the proposed training.
- Although physically distinct from any other urban centers, the city of Jerome would have an operating area that substantially overlaps the city of Twin Falls operating area. In accordance with the selection criteria requiring distinct and separated operating areas, the city of Jerome is excluded because it is smaller than Twin Falls.

Small Urban Centers:

- The cities of Hot Springs, King Hill, Mayfield, Orchard, Oreana, and Prairie are excluded because they fail to meet the selection criteria for population or physical development required to accommodate the proposed training.

2.5.2 Operations at Other Proximal Installations

Under this alternative, the 366 FW would conduct Urban CAS aircrew proficiency training operations at other installations or MOAs. Installations with the capacity to accommodate air combat support operations include Hill AFB in Utah, Nellis AFB in Nevada, the Urban Target Complex in Arizona, and Eglin AFB in Florida:

- Hill AFB is approximately 277 miles southeast of Mountain Home AFB, and 30 miles north of Salt Lake City, Utah. It supports a population of approximately 28,000 (USCB 2010a). The main base occupies a land area of 6,698 acres and the associated training range occupies an area greater than 950,000 acres (GlobalSecurity 2017a). However, the main base has limited vertical development (Hill AFB 2016). As such, the installation could adequately simulate a small urban center.
- Nellis AFB is approximately 600 miles south of Mountain Home AFB, and approximately 8 miles northwest of Las Vegas, Nevada. The main base occupies 11,300 acres, but the entire installation occupies an area of 3.1 square miles. Nellis AFB supports a population of 3,187 and is developed to accommodate flight training operations (USCB 2010b, GlobalSecurity 2017b). Vertical development on the installation is consistent with that of a small urban center.
- Urban Target Complex, known as “Yodaville,” is a U.S. Marine Corps weapons and tactical training area approximately 1,000 miles south of Mountain Home AFB and 5 miles north of the U.S./Mexico border (GlobalSecurity 2017c). The complex is in the unpopulated Gunnery Range of the Yuma Training Range Complex in Yuma, Arizona.

The ground operating area underlies the military restricted airspace R-2013W and was designed and developed to simulate the small urban centers encountered during combat.

- Eglin AFB is 60 miles east of Pensacola Florida, approximately 2,300 miles southeast of Mountain Home AFB. The installation supports a population of 2,274; has a land area that occupies 724 square miles, and more than 100,000 square miles of airspace to support testing and training operations; and has the development to simulate a small urban center (USCB 2010b, GlobalSecurity 2017d).

The identified installations are not considered viable alternatives to support optimized training because each fails to meet the selection standard for proximity to Mountain Home AFB. Distribution of the proposed Urban CAS proficiency training operations to these installations would present substantial and costly logistical challenges that would reduce training efficiency. Specifically, this alternative would add the following requirements: 1) fly clean F-15E and F-15SG aircraft to the installations, 2) schedule and transport JTAC support teams, 3) provide or schedule aerial refueling and tanker support, and 4) provide maintenance crews and equipment at the selected host location. Further, although these installations physically have available air and ground spaces to accommodate the proposed flight and ground activities, each installation would only simulate a small urban center environment. This operating environment is already simulated at Mountain Home AFB. Finally, none of these installations has the capacity meet the selection standards for population, extents of vertical development, and artificial lighting to adequately simulate large and medium urban centers, as identified in **Section 2.2**. Therefore, this alternative would not meet the purpose and need as described in **Section 1.5**, and is not considered further for analysis.

2.6 Identification of the Preferred Alternative

USAF has identified implementation of the Proposed Action in nine urban centers that meet the selection standards listed in **Table 2-3** as the preferred alternative.

2.7 Summary of Impacts

Table 2.7 lists the anticipated impacts that would result from implementing the Proposed Action and No Action Alternatives.

Table 2.7. Summary Impacts Table

Resource Area	Proposed Action Alternative	No Action Alternative
Noise	Adverse impacts would be minor and intermittent. Urban CAS aircrew proficiency training would result in a general intermittent increase in noise due to individual overflights. Overflights would generate distant noise that would be audible to individuals who are outdoors, but would not interfere with communication or awaken individuals from sleep. Therefore, adverse impacts would be minor.	Noise levels in the environment would remain unchanged from existing conditions. Commercial and civilian aircraft flight activities and traffic from nearby highways would continue to be the main sources of noise.
Air Quality	Long-term, minor, adverse impacts would occur from the intermittent generation of criteria and greenhouse gases (GHG) during Urban CAS aircrew proficiency training. Air emissions from aircraft flight during training events within the Urban CAS areas and minute amounts of emissions from ground vehicles would be below the General Conformity <i>rule de minimis</i> threshold surrogate of each criteria pollutant and would not contribute to a violation of any federal, state, or local air regulations. Because Urban CAS aircrew proficiency training already occurs in the Mountain Home AFB installation airspace and the Mountain Home Range Complex, and those flights would be redistributed to airspaces of nearby urban centers, GHGs emissions from the training flights would not change from existing conditions in the region or meaningfully contribute to the potential impacts of global climate change.	Air quality would remain in the environment would remain unchanged from existing conditions.
Airspace Management	Long-term, negligible to minor, intermittent, adverse impacts would occur. Because aircraft from Mountain Home AFB already fly throughout the airspaces of the identified urban centers for other training operations, impacts resulting from the need to deconflict private, commercial, and military air traffic to accommodate the flights dedicated to the Proposed Action are expected to be negligible to minor. The proposed training operations would not exceed the capacity of the airspaces overlying each of the urban centers, and therefore would not impede or otherwise limit existing aircraft operations.	Airspace management would remain unchanged when compared to existing conditions.
Land Use	Long-term, negligible, adverse impacts would occur. Pilot proficiency training operations would not require changes to existing or future land uses within the project area. Noise produced during training activities could have an impact on land uses associated with the Proposed Action; however, these impacts would be negligible. All ground activities would be conducted in accordance with local laws and ordinances and with the goal of leaving no trace of their activities. Therefore, impacts from the Proposed Action would be negligible.	Land use would remain unchanged when compared to existing conditions.

Resource Area	Proposed Action Alternative	No Action Alternative
Cultural Resources	No impacts would occur. Urban CAS aircrew proficiency training operations would not result in ground-disturbing activities nor any direct or indirect effects on historic properties that may exist in the air and ground operations areas. Mountain Home AFB consulted with the Idaho State Historic Preservation Officer and received concurrence on the determination that the Proposed Action would not have the potential to cause effects to historic properties.	Cultural resources would remain unchanged when compared to existing conditions.
Health and Safety	Intermittent, short-term, negligible, adverse impacts would occur as training flights are conducted into the future. Negligible impacts from the Proposed Action on flight safety would be expected because: 1) aircraft flight would continue to be conducted in accordance with standard flight rules and local operating procedures and policies, 2) the same number of training operations to be flown for the Proposed Action out of Mountain Home AFB are currently flown out of the installation; therefore, there would be no changes to the existing baseline for aircraft operations at Mountain Home AFB. The intermittent presence of ground teams within the ground operating areas would mimic existing conditions. Therefore, there would be negligible to no adverse impacts on health and safety.	Health and safety would remain unchanged when compared to existing conditions.

3. Affected Environment and Environmental Consequences

All potentially relevant resources were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and EIA 32 CFR § 989 guidelines, **Section 3** of this document focuses only on the resources considered potentially subject to impacts from the proposed Urban CAS aircrew proficiency training as implemented in the Proposed Action Alternative or the No Action Alternative. **Sections 3.1** through **3.6** present the potential environmental impacts for the following resource categories: noise, air quality, airspace management, land use, cultural resources, and health and safety. Impacts identified in **Section 3.1** through **Section 3.6** would be considered adverse, unless noted otherwise. Urban CAS training operations already occur on the installation at the proposed surge levels, and the negligible to minor impacts resulting from this operational tempo on the installation and MHRC have already been analyzed and addressed in accordance with NEPA (Mountain Home AFB 2015a, Mountain Home AFB 2017). Therefore, potential environmental consequences on Mountain Home AFB or MHRC are not discussed. All previously established procedures and agreements, such as the existing agreement with the Shoshone-Paiute tribe regarding flight activities over the Duck Valley Indian Reservation, would remain in effect.

Throughout the analysis in **Sections 3.1** through **3.6**, as applicable, the proposed area that could be impacted from the implementation of the Proposed Action Alternative is referred to as the “project area.” The term “project area” refers to the 30 NM airspace and ground operating areas associated with each of the nine urban centers proposed for Urban CAS aircrew proficiency training identified in **Section 2**. Where applicable, the airspace and ground operating areas of the urban centers are discussed individually.

Resource Categories Eliminated from Detailed Analysis

Based on the components of the Proposed Action, USAF focused on specific resource categories to define the environment potentially affected by the establishment of ground and airspace training areas in nine urban centers to accommodate Urban CAS proficiency training operations. Some resources would not be impacted by the Proposed Action Alternative or No Action Alternative. Resource categories that have been eliminated from further detailed study in this document and the rationale for eliminating them are presented below:

Utilities and Infrastructure. The Proposed Action Alternative and No Action Alternative would not increase the demand for electrical power, potable water, wastewater treatment, telephone lines, or fiber optics and would not include changes to infrastructure or utilities use in the nine urban centers. Additionally, no personnel additions to Mountain Home AFB would be required as part of the proposed Urban CAS aircrew proficiency training. Therefore, impacts on utilities and infrastructure would not be expected.

Hazardous Materials and Wastes. The Proposed Action Alternative and No Action Alternative would not result in an overall increase in training operations or aircraft based at Mountain Home AFB; therefore, overall fuel usage and maintenance activities would not increase. The Mountain

Home AFB *Hazardous Waste Management Plan* and *Integrated Contingency Plan* would continue to be followed to lessen the potential for a release and provide spill contingency and response requirements. Therefore, impacts on hazardous materials and wastes in the nine urban centers would not be expected.

Geological Resources. The Proposed Action Alternative and the No Action Alternative would not include ground disturbing activities and ground support teams would remain on publicly accessible paved roads at all times; therefore, increased rates of soil erosion or soil compaction would not be expected. As a result, no impacts on geological resources at Mountain Home AFB or the nine urban centers would be expected.

Biological Resources. The Proposed Action Alternative and the No Action Alternative would not result in ground disturbance or construction; therefore, disturbance, fragmentation, or removal of terrestrial and aquatic habitats would not occur and no effect on vegetation, wildlife, or protected species would be expected. Noise levels associated with the Proposed Action Alternative would not be of sufficient magnitude to result in the direct loss of individuals or reduce reproductive output. Simulated munitions would include low-power, eye-safe lasers which would have no potential to impact wildlife or protected species. Additionally, wildlife conservation and refuge areas such as the National Wildlife Refuge Areas present on islands within the Snake River, the Minidoka National Wildlife Refuge, and the Morley Nelson Snake River Birds of Prey National Conservation Area would be avoided by aircrews.

No additional effects on migratory birds would be expected because the overall number of air operations would remain the same, only distributed among the installation, MHRC, and the nine urban centers. The slight increase in aircraft operations within the urban center airspace operations areas would not have an appreciable effect on migratory birds. Takeoff and landing would continue to occur out of Mountain Home AFB. Aircrews would adhere to existing USAF flight safety regulations⁴ and Bird/Wildlife Aircraft Strike Hazard (BASH) protocols to avoid impacts on migratory birds (Mountain Home AFB 2012). Bird strikes rarely occur above altitudes of 3,500 AGL, and training over the urban centers would occur between 10,000 and 18,000 ft AGL (FAA 2018). Continuing adherence to existing BASH protocols would limit the potential adverse effects. Therefore, no effects on biological resources would be expected.

Section 3.6 provides additional details and analysis on flight safety.

Water Resources. The Proposed Action Alternative and No Action Alternative would not include any construction or ground disturbing activities, nor would they include the use of water resources. Additionally, ground support teams would remain on publicly accessible paved roads and would not enter wetland areas. Therefore, no impacts on water resources would be expected in the nine urban centers.

Socioeconomics. The Proposed Action Alternative and No Action Alternative would not include any activities that would require the temporary employment or relocation of workers.

⁴ USAF Flight Safety Regulations include the Air Force Instruction (AFI) 91-202, *The US Air Force Mishap Prevention program*, Air Force Manual (AFMAN) 91-223, *Aviation Safety Investigations and Reports*, Air Force Pamphlet (AFPAM) 91-212, *Bird Aircraft Strike Hazard (BASH) Management Techniques*, AFI 91-204, *Safety investigations and Reports (Bird Strike Reporting)*, and the AFI 32-7064, *Integrated Natural Resources Management Plan* (USAF 2018).

Additionally, the number of employees at Mountain Home AFB would remain the same. Therefore, impacts on the local economy from construction-related payroll taxes, sales receipts, and the indirect purchase of goods and services would not occur and impacts on socioeconomics at the nine urban centers would not be expected.

Environmental Justice. The environmental justice area of impact is the area within which potential impacts from a proposed action could occur. As defined by the CEQ, “the environmental justice area of impact is one that is considered to have disproportionately high percentage of minority or low-income residents, if the percentage of persons characterized as being a minority or low-income within the area of impact is either greater than 50 percent, or is disproportionately higher than the community of comparison”. CEQ also states, “A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds”. Because the training could occur anywhere within a 15NM radius of the selected city centers, every population existing within the operating area for an urban center would be equally as likely to experience effects. Based upon 2016 U.S. Census Bureau data for each of the nine urban centers identified as adequate to support the Proposed Action Alternative, minority and low-income populations were less than 50 percent of each city’s population (USCB 2016a, USCB 2016b). Therefore, the underlying communities would not have disproportionately high percentages of minority or low-income residents to be affected by the training. Additionally, under the Proposed Action Alternative and the No Action Alternative, changes in noise levels represent the only possible factor relevant to potential environmental justice impacts. As the analysis demonstrates in **Section 3.1**, noise levels of 65 day-night sound level (DNL) or greater would not impact any populations within the airspace or ground operations areas for the identified urban centers. Additionally, noise levels would be indistinguishable from current conditions. Because changes to the level of noise and land use are not anticipated from the Proposed Action Alternative or No Action Alternative, neither minority nor low-income groups would be disproportionately adversely impacted.

3.1 Noise

3.1.1 Definition of the Resource

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community’s quality of life, such as aircraft operations, construction, or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz are used to quantify sound frequency. The human ear responds differently to different frequencies. “A-weighting”, measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of

sound by humans. Sounds encountered in daily life and their sound levels are provided in **Table 3-1**.

Table 3-1. Common Sounds and Their Levels

Outdoor	Sound Level (dBA)	Indoor
Motorcycle from Rider's Position	100	Rock band
Gas lawnmower at 3 ft	90	Food blender at 3 ft
Downtown (large city)	80	Garbage disposal
Heavy traffic at 150 ft	70	Vacuum cleaner at 10 ft
Normal conversation	60	Normal speech at 3 ft
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room

Source: USEPA 1971

The sound pressure level noise metric describes steady noise levels, although few noises are, in fact, constant; therefore, additional noise metrics have been developed to describe noise including:

- Maximum Sound Level (L_{\max}) – L_{\max} is the maximum sound level in decibels. For example, when an aircraft is directly overhead.
- Equivalent Sound Level (L_{eq}) – L_{eq} is the average sound level in decibels of a given event or period of time.
- Sound Exposure Level (SEL) – SEL is a measure of the total energy of an acoustic event. It represents the level of a 1-second long constant sound that would generate the same energy as the actual time-varying noise event such as an aircraft overflight. SEL provides a measure of the net effect of a single acoustic event, but it does not directly represent the sound level at any given time.
- Day-night Sound Level (DNL) – DNL is the average sound energy in a 24-hour period with a 10 dB penalty added to the nighttime levels. Because of the potential to be particularly intrusive, noise events occurring between 10 p.m. and 7 a.m. are assessed a 10 dB penalty when calculating DNL. DNL is a useful descriptor for aircraft noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. DNL provides a measure of the overall acoustical environment, but as with SEL, it does not directly represent the sound level at any given time.

3.1.2 Existing Conditions

Existing sources of noise in the urban centers include existing high-altitude civilian, commercial, and military aircraft overflights, roadway traffic, and other noises such as minor industrial activities, lawn maintenance equipment, construction, and bird and animal vocalizations. Background noise levels (L_{eq} and DNL) were estimated for the urban centers and surrounding areas using the techniques specified in the *American National Standard Institute - Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term*

measurements with an observer present (ANSI 2013). **Table 3-2** lists the primary airports and roadways near each urban center, and outlines the estimated background noise levels for each.

Table 3-2. Predominant Sources of Existing Noise at the Urban Centers

Urban Center	Nearby Airports *	Primary Roadways	General Land Use Category	Background Noise (dBA)		
				L _{eq} Daytime	L _{eq} Nighttime	DNL
Large						
Boise	Gowen Field Red Baron Airpark Peaceful Cove Airport	Interstate-84 US Highway 26 US Highway 30 State Route 44	Urban or Noisy Suburban	55	49	57
Medium						
Mountain Home	Mountain Home AFB Mountain Home Municipal Airport Coyote Run Airport	Interstate-84 State Route 51 US Highway 30	Suburban	50	44	52
Burley	Hazelton Municipal Airport	Interstate-84				
Twin Falls	Joslin Field - Magic Valley Regional Airport	US Highway 93 US Highway 30				
Small						
Grand View	None	Route 167 State Route 78	Rural	38	32	40
Bruneau	Owen Ranches Incorporated Airport	State Route 78				
Glenns Ferry	Glenns Ferry Municipal Airport	Interstate-84 State Route 78 US Highway 30				
Hammett	Joslin Field - Magic Valley Regional Airport	Interstate-84 US Highway 26 US Highway 30				
Mountain Home AFB	Mountain Home AFB	Route 167 State Route 67				

Sources: AirNav 2017, ANSI 2013, USCB 2017b

Table Note:

* Listing of nearby airports is not comprehensive for each urban center. **Section 3.3.2** provides additional details regarding existing airports and air traffic for the proposed operating areas.

3.1.3 Environmental Consequences

This section discusses the impacts of the Proposed Action Alternative on the noise environment. Changes in noise would be considered significant if they would lead to a violation of any federal, state or local noise ordinance, or substantially increase areas of incompatible land use outside the installation.

3.1.3.1 PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative would have long-term, minor, adverse impacts on the noise environment. Long-term impacts would be due to a general intermittent increase in aircraft noise in the urban centers where the CAS training would take place. Noise from individual training operations would involve intermittent 60- to 90-minute tracking flights throughout the 30 NM airspace operations areas. As explained in **Section 2.3**, the surge level of training events and training operations that represent the conservative scenario (wherein 160 training events and 400 training operations would occur annually in any one of the nine urban centers) was used to determine the maximum potential level of impacts under the Proposed Action Alternative. However, actual training levels would vary between the projected and surge levels of training events for each urban center in its respective size category (see **Table 2-5**). Therefore, impacts resulting from the flight proficiency training would realistically be less than the conservative estimates. Under the conservative analysis, individual high-altitude overflights would be audible, but distant, to individuals who are outdoors. Overflights would not interfere with communication or awaken individuals from sleep. There would be no construction or construction-related noise associated with the Proposed Action Alternative. The Proposed Action Alternative would not lead to a violation of any federal, state or local noise ordinance, and would not create any areas of incompatible land use.

Air Operations. The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, and local noise control regulations. However, the Noise Control Act does specifically exempt military training activities and noise from aircraft overflights from all state and local noise regulations. In 1974, the U.S. Environmental Protection Agency (USEPA) provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. USAF's land use guidelines for noise exposure are outlined in AFI 32-7063, *Air Installations Compatible Use Zones Program*. **Table 3-3** provides a general overview of recommended noise limits from aircraft operations for land use planning purposes.

Table 3-3. Recommended Noise Limits for Land Use Planning

General Level of Noise	Percent Highly Annoyed	Aircraft Noise (DNL)	General Recommended Uses
Low	<15%	< 65 dBA	Noise-sensitive land uses acceptable
Moderate	15%-39%	65–75 dBA	Noise-sensitive land uses normally not recommended
High	>39%	> 75 dBA	Noise-sensitive land uses not recommended

Source: AFI 32-7063

NOISEMAP is a suite of computer programs and components developed by USAF to predict noise exposure due to aircraft operations. The DNL for the proposed aircraft operations over each urban center identified to support the proposed Urban CAS pilot proficiency training was calculated using NOISEMAP Version 7.3. **Table 3-4** outlines the estimated DNL in urban centers up to the surge training levels.

The estimated DNL under the CAS wheels would never exceed 37 dBA. This assumes that four-aircraft formations would operate in a CAS wheel and that it was always in the same location. The estimated DNL in the urban centers beyond the CAS wheels would be less than 35 dBA. This conservatively assumes that during each exercise two aircraft would continuously operate separately from the CAS wheel.

Table 3-4. Estimated Day-Night Sound Level in Urban Centers with Urban CAS Training

Urban Area	Surge Number of Sorties		Estimated Day-Night Sound Level [dBA DNL] ^{1,2}	
	Day Training	Day-Night Training	Under CAS Wheel	Beyond CAS Wheel
Large Urban Centers				
Boise	416	126	<35	<35
Medium Urban Centers				
Mountain Home	195	105	<35	<35
Burley, Twin Falls	195	105	<35	<35
Small Urban Centers				
Grandview, Bruneau, Glens Ferry, Hammett, Mountain Home AFB	195	105	<35	<35
Surge Levels for All Urban Centers				
All Urban Centers	624	336	37	<35

Source: USAF 2016

Table Notes:

1. Assumes four-aircraft formations would operate only at the CAS wheel in the in the airspace that overlies the farther outskirts of town, or the outermost edge of the 15 NM radius from the urban center point.
2. Assumes two aircraft would continuously operate separately from the CAS wheel, but within 15 NM radius from the urban center point.

The DNL from aircraft operations would be orders of magnitude less than 65-dBA DNL, the noise level below which all land uses are fully compatible. Less than 1 in 10 million individuals would be annoyed by this level of noise (Shultz 1978, Fidell 2003). Moreover, the overall level of noise under all training scenarios would be below the existing background levels and would blend naturally with the existing soundscapes in these areas. Overall noise levels may vary from year to year because of fluctuations in operational tempo of unit deployments, funding levels, and other factors, but would never exceed the surge levels provided in **Table 3-4**. Therefore, noise impacts from the proposed training operations would be minor.

Individual Overflights. Although operational noise levels would be too low to result in incompatibility with existing land uses, noise from individual F-15E and F-15SG overflights would generate distinct, yet distant, acoustical events. **Tables 3-5 and 3-6** list the SEL and L_{max} for high-altitude F-15E and F-15SG overflights under cruising conditions within an altitude range of 10,000 up to 20,000 ft AGL. Noise from Urban CAS training would be marginally greater than existing background levels outlined in **Table 3-2**. High-altitude F-15E and F-15SG overflights would be similar to, but slightly louder than, high altitude commercial aircraft overflights. Overflights would be audible, but distant, to individuals who are outdoors, and may be barely perceptible inside buildings during periods of extreme quiet (e.g., at night).

Table 3-5. Sound Levels for High-Altitude F-15E Overflights

Altitude (AGL)	One Aircraft ¹		Double-Formation ¹		Four-Aircraft Formation ^{1,2}	
	SEL (dBA)	L _{max} (dBA)	SEL (dBA)	L _{max} (dBA)	SEL (dBA)	L _{max} (dBA)
10,000	64.8	51.8	67.8	54.8	70.8	57.8
12,500	61.9	48.3	64.9	51.3	67.9	54.3
16,000	58.8	44.7	61.8	47.7	64.8	50.7
20,000	55.5	40.8	58.5	43.8	61.5	46.8

Source: USAF 2007a

Table Notes:

1. Assumes aircraft cruising at a speed of 280 knots and power settings of 73.5 percent within an altitude range of 10,000 up to 20,000 ft AGL.
2. Four-aircraft formations would only operate at the CAS wheel in the airspace that overlies the farther outskirts of town, or the outermost edge of the 15 NM radius from the urban center point.

Table 3-6. Sound Levels for High-Altitude F-15SG Overflights

Altitude (AGL)	One Aircraft ¹		Double-Formation ¹		Four-Aircraft Formation ^{1,2}	
	SEL (dBA)	L _{max} (dBA)	SEL (dBA)	L _{max} (dBA)	SEL (dBA)	L _{max} (dBA)
10,000	66.3	53.3	69.3	56.3	72.3	59.3
12,500	63.4	49.8	66.4	52.8	69.4	55.8
16,000	60.3	46.2	63.3	49.2	66.3	52.2
20,000	57.0	42.3	60.0	45.3	63.0	48.3

Source: USAF 2007a

Table Notes:

1. Assumes aircraft cruising at a speed of 280 knots and power settings of 73.5 percent within an altitude range of 10,000 up to 20,000 ft AGL.
2. Four-aircraft formations would only operate at the CAS wheel in the airspace that overlies the farther outskirts of town, or the outermost edge of the 15 NM radius from the urban center point.

The proposed aircraft activities would be over urban centers; therefore, an assessment of their potential to interfere with communication or sleep is provided. In general, unlike high-altitude Urban CAS training, louder low-altitude aircraft overflights can interfere with communication on the ground, and in homes, schools or other buildings. The disruption of routine activities in the home, such as radio or television listening, telephone use, or family conversation, can give rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. The threshold at which aircraft noise may begin to interfere with speech and communication is 75 dBA (DNWG 2009). This level is consistent with, and more conservative than, the thresholds outlined in the 2002 American National Standard Institute (ANSI) standard for classroom noise (ANSI S12.60-2002). The maximum sound level for F-15E aircraft at 10,000 ft AGL would be 54.8 dBA for a double formation overflight and 57.8 dBA for a four-aircraft formation (**Table 3-5**). The maximum sound level for F-15SG aircraft at 10,000 ft AGL would be 56.3 dBA for a double formation overflight and 59.3 dBA for a four-aircraft formation (**Table 3-6**). These sound levels would be appreciably lower than the threshold for speech interference. At 10,000 ft AGL, it would take more than one hundred F-15SG or F-15E aircraft flying over a single location simultaneously to interfere with

communication on the ground, or in homes, schools or other buildings. Therefore, noise impacts on speech communication would be negligible.

Sleep interference is another source of annoyance associated with louder low-altitude aircraft overflights. This is especially true because of the intermittent nature of aircraft noise, which can be more disturbing than continuous noises. Sleep disturbance is not just a factor of how loud, but also the duration of each noise event; therefore, sleep disturbance is best reflected with the SEL metric, which captures the total energy (i.e. level and duration) of each noise event. The threshold at which aircraft noise may begin to interfere with sleep is 90 dBA SEL (DNWG 2009). The SEL for F-15SG aircraft at 10,000 ft AGL would be 69.3 dBA for a double-formation overflight and 72.3 dBA for a four-aircraft formation (**Table 3-5**). These sound levels would be appreciably lower than the threshold for sleep interference. At 10,000 ft AGL, it would take more than one-hundred F-15SG or F-15E aircraft flying over a single location simultaneously to interfere with sleep. Therefore, noise impacts on sleep interference would be negligible.

It is possible that a range of aircraft, not included in this Proposed Action and not addressed in this EA, could conduct similar high-altitude Urban CAS operations with less than significant noise impacts on the underlying communities. However, if aircraft other than F-15E or F-15SG are flown during Urban CAS training in the future, either near Mountain Home AFB or over other urban centers, subsequent NEPA analysis and comprehensive noise modeling would be required to specifically address potential noise impacts of those activities. For reference purposes, noise levels for the F-15E, F-15SG, and other aircraft are provided in **Appendix B**.

Ground Operations. Ground operations would result in negligible impacts on the noise environment. Vehicles would generate automobile noise during ground operations which would naturally blend with other existing noise sources in the urban centers. These impacts would be negligible.

3.1.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, noise levels in the environment would remain unchanged when compared to the existing conditions described in **Section 3.1.2**. The predominant sources of noise generated in the urban centers identified for the Proposed Action Alternative would continue to be commercial and civilian aircraft flight activities and traffic from nearby highways. There would be no changes to existing military aircraft operations in the airspace overlying the region.

3.2 Air Quality

3.2.1 Definition of the Resource

Air pollution is the presence in the atmosphere of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, and vapor) such as to be injurious to human, plant, or animal life. Air quality as a resource incorporates several components that describe the levels of overall air pollution within a region, sources of air emissions, and regulations governing air emissions. The following sections include a discussion of the existing conditions and the environmental consequences of the Proposed Action Alternative and No Action Alternative.

3.2.2 Existing Conditions

USEPA Region 10 and the Idaho Department of Environmental Quality regulate air quality in Idaho. The Clean Air Act (CAA) (42 United States Code §§ 7401-7671q), as amended, assigns USEPA responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM₁₀] and particulate matter less than 2.5 microns in diameter [PM_{2.5}]), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program. The State of Idaho has accepted the federal standards.

Federal regulations designate areas in violation of the NAAQS as nonattainment areas. Maintenance areas are areas that have previously been designated as nonattainment and have been redesignated to attainment for a probationary period through implementation of maintenance plans. Federal regulations designate areas with levels below the NAAQS or not evaluated for compliance with NAAQS as attainment areas. **Table 3-7** lists the urban centers associated with the Urban CAS areas under the Proposed Action Alternative and their attainment status (USEPA 2017a).

Table 3-7. Attainment Status for Urban CAS Areas Associated with the Proposed Action Alternative

Urban Area	County	Attainment Status
Large Urban Centers		
Boise	Ada	Partial Maintenance Area for CO and PM ₁₀
Medium Urban Centers		
Mountain Home	Elmore	Unclassifiable/Attainment
Burley	Cassia	
Twin Falls	Twin Falls	
Small Urban Centers		
Grandview	Owyhee	Unclassifiable/Attainment
Bruneau		
Glenns Ferry	Elmore	
Hammett		
Mountain Home AFB		

Sources: USEPA 2017a, CFR 40 § 81.

Table 3-8 shows the monitored concentrations of criteria pollutants at the monitoring location closest to Mountain Home AFB. The closest monitoring station is in Boise, a highly urbanized area, and concentrations of pollutants are likely lower in the rural areas. Although annual 8-hour concentrations of O₃ and PM_{2.5} are greater than the primary air quality standards, they must be exceeded over a 3-year period to violate the NAAQS; hence, the attainment status.

Table 3-8. Air Quality Standards and Monitored Data

Pollutant	Air Quality Standard		Monitored Concentrations		
	Level	Averaging Period	2014	2015	2016
CO					
1-hour (ppm)	35	Not to be exceeded more than once per year	4.4	5.7	6.0
8-hour (ppm)	9		2.1	2.5	2.5
NO ₂					
1-year (ppb)	53	Annual mean	11.5	11.7	9.8
1-hour (ppb)	100	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	43	47	41
O ₃					
8-hour (ppm)	0.07	3-year average of the fourth highest daily maximum	0.065	0.064	0.072
SO ₂					
1-hour (ppm)	75	98th percentile, averaged over 3 years	5	3	4
3-hour (ppb)	0.5	Not to be exceeded more than once per year	No Data	No Data	No Data
PM _{2.5}					
24-hour (µg/m³)	35	98th percentile, averaged over 3 years	No Data	36	21
Annual mean (µg/m³)	12	Averaged over 3 years	No Data	9.5	8.4
Lead					
Rolling 3-month Average (µg/m³)	0.15	Not to be exceeded	0.00	0.07	0.00
PM ₁₀					
24-hour (µg/m³)	150	Not to be exceeded more than once per year over 3 years	61	91	72

Sources: 40 CFR § 50.1-50.12, USEPA 2017b

ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter

Climate and Greenhouse Gases. The southwest region of Idaho has varied climates. Historically, areas in southwest Idaho have average high temperatures ranging from 80 to 95 degrees Fahrenheit (°F) in the hottest months of July and August, with an average low temperature ranging from 5 to 25°F in the coldest months of December and January. Average annual precipitation range between 7 and 27 inches per year. The wettest months of the year are December and January with average precipitation between 1 and 4 inches (Idcide 2017).

EO 13693, *Planning for Federal Sustainability in the Next Decade*, outlines policies intended to ensure that federal agencies evaluate climate-change risks and vulnerabilities, and manage the short- and long-term effects of climate change on their operations and mission. The EO specifically requires agencies within the Department of Defense (DOD) to measure, report, and reduce their greenhouse gas (GHG) emissions from both their direct and indirect activities.

DOD has committed to reduce GHG emissions from non-combat activities 34 percent by 2020 (DOD 2016).

3.2.3 Environmental Consequences

Impacts on air quality would be considered significant if the total emissions would exceed the general conformity rule *de minimis* threshold values, or if the Proposed Action Alternative would contribute to a violation of any federal, state, or local air regulation.

3.2.3.1 PROPOSED ACTION ALTERNATIVE

Long-term, minor, adverse impacts on air quality would occur from a small increase in training events within the Urban CAS areas and minute amounts of emissions from ground vehicles. As explained in **Section 2.3**, analysis in this EA uses the surge level of training events and associated sortie operations to conservatively estimate the maximum potential for impacts under the Proposed Action Alternative. Because actual training levels would vary between the projected and surge levels of training events for each urban center in its respective size category, impacts resulting from conducting the flight proficiency training would realistically be less than the conservative estimates. Under the conservative analysis, emissions would not exceed the general conformity rule *de minimis* threshold values, and the Proposed Action Alternative would not contribute to a violation of any federal, state, or local air regulation.

The general conformity rule does not apply to attainment areas, in this case those associated with the Proposed Action Alternative. Additionally, emissions from aircraft operations above the mixing altitude of 3,000 ft AGL are considered clearly *de minimis* (of minimal importance). This is the altitude above which air emissions do not directly affect individuals on the ground. Therefore, in addition to the attainment areas, the general conformity rule does not apply to the Boise maintenance areas (40 CFR § 93.153 (c) (xxii)) because aircraft training operations would occur at altitudes between 10,000 and 18,000 ft AGL. Although the general conformity rule does not apply, the *de minimis* thresholds have been carried forward to determine the level of impacts under NEPA.

The Air Force's Air Conformity Applicability Model was used to estimate the total direct and indirect emissions from the Proposed Action Alternative, which have been compared to the *de minimis* thresholds to determine the level of impacts (USAF 2015). These emissions would exclusively be from training operations in the Urban CAS areas. The Proposed Action Alternative does not include any construction or major stationary sources of air emissions, and there would be no air emissions from these sources.

Table 3-9 lists total direct and indirect emissions resulting from the Proposed Action Alternative. Training operation emissions were estimated for worst-case training events in the Urban CAS areas. Emissions would be below the *de minimis* threshold of 100 tons per year (tpy) of each pollutant in all areas; therefore, impacts would be minor. All emissions from Urban CAS training events would be offset on a one-to-one basis at locations where the training events are currently being conducted.

Table 3-9. Annual Air Emissions Compared to De Minimis Thresholds

	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	<i>De minimis Threshold [tpy]</i>	<i>Exceeds De Minimis Thresholds? [Yes/No]</i>
Operations	12.2	48.1	15.7	4.3	8.1	9.4	100	No

Source: USAF 2015

Greenhouse Gases and Climate Change. This EA examines GHGs as a category of air emissions. It also looks at issues of temperature and precipitation trends to determine whether the project area or Proposed Action Alternative would be impacted by climate change. This analysis does not attempt to measure the actual incremental impacts of GHG emissions from the Proposed Action Alternative, primarily because there is a general lack of consensus on how to measure such impacts. Existing climate models have substantial variation in output, and do not have the ability to measure the actual incremental impacts of a project on the environment.

Because Urban CAS aircrew proficiency training flights are already being conducted within the installation's airspace and the MHRC at the operational levels proposed, and those flights would simply be redistributed across the nine urban centers (including Mountain Home AFB) identified for the Proposed Action Alternative, there would be no net change in GHG emissions from the Proposed Action. All GHG emissions in Urban CAS areas would be offset on a one-to-one basis by reductions in GHG emissions at the existing Urban CAS locations. **Table 3-10** outlines climate stressors and their potential effects on the Proposed Action Alternative. At this time, no future climate scenario or potential climate stressor would have appreciable effects on any element of the Proposed Action Alternative. These impacts would be negligible.

Table 3-10. Effects of Potential Climate Stressors on the Proposed Action Alternative

Potential Climate Stressor	Effects on the Proposed Action
More frequent and intense heat waves	Negligible
Longer fire seasons and more severe wildfires	Negligible
Changes in precipitation patterns	Negligible
Increased drought	Negligible
Harm to water resources, agriculture, wildlife, ecosystems	Negligible

3.2.3.2 NO ACTION ALTERNATIVE

Impacts on air quality would not be expected under the No Action Alternative. There would be no short- or long-term changes in emissions. Ambient air quality would remain unchanged when compared to existing conditions.

3.3 Airspace Management

For the purposes of this analysis, airspace management information pertains to all airspaces where proposed F-15E and F-15SG flight activities would occur during the proposed Urban CAS training.

3.3.1 Definition of the Resource

Airspace management is defined by USAF as the coordination, integration, and regulation of the use of airspace. The objective of airspace management is to meet military training and operational requirements through the safe and efficient use of available navigable airspace in a peacetime environment, while minimizing the impact on other aviation users and the public. Airspace management procedures assist in preventing potential conflicts or aircraft accidents associated with aircraft using designated airspace in the United States, including restricted military airspace.

The management of airspace is governed by federal legislation and military regulations and procedures, including AFI 13-201, *Airspace Management*. FAA has overall responsibility for managing airspace through a system of flight rules and regulations (i.e., Federal Aviation Regulations [FARs]), airspace management actions, and air traffic control (ATC) procedures. FAA accomplishes this through close coordination with state aviation and airport planners, military airspace managers, and other entities to determine how airspace can be used most effectively to serve all interests. Adherence to FARs, airspace management actions, and ATC procedures allow both military and civilian aircraft to operate in shared airspace safely.

The FAA *Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures* defines and provides the operational requirements for each of the various types or classes of airspace (FAA 2017a). USAF uses FAA Joint Order (JO) 7110.65, *Air Traffic Control*, and FAA JO 7610.4, *Memorandum of Agreement between Department of the Air Force and Federal Aviation Administration on Safety for Space Transportation and Range Activities*, established procedures for flying, airfield, and flightline operations at USAF airfields. The FAA has designated U.S. airspace into the following four types: controlled, uncontrolled, special use, and other (FAA 2017a). The categories and types of airspace are dictated by the complexity or density of aircraft movements, the nature of the operations conducted within the airspace, the level of safety requirements, and national and public interest in the airspace. The airspaces within and proximate to the proposed project area are defined as follows:

Controlled Airspace. Controlled airspace is a generic term that encompasses the different classifications (Class A, B, C, D, and E) of airspace and defines dimensions within which ATC service is provided to flights under instrument and visual meteorological conditions. All military and civilian aircraft are subject to FARs in controlled airspace. When overlapping airspace designations apply for the same airspace, the operating rules associated with the more restrictive airspace would apply. The following airspace classes are discussed in order from most restrictive to least restrictive (FAA 2017a):

- Class A airspace includes airspace from 18,000 ft above MSL up to and including 60,000 ft above MSL (FAA 2017a, SKYbrary 2017).
- Class B airspace typically extends from the surface up to 10,000 ft above MSL and is often associated with major airport complexes, such as the San Diego International Airport or the Las Vegas-McCarran International Airport (FAA 2017a).
- Class C airspace generally extends from the surface up to 4,000 ft above MSL (FAA 2017a). It is designed to provide additional ATC into and out of primary (i.e., commercial

service airports with more than 10,000 passenger boardings each year) and military airports where aircraft operations are periodically at high-density levels (AC 2003, FAA 2016a). The only primary airport within the project area is the Boise Airport.

- Class D airspace is generally from the surface to 2,500 ft above MSL (FAA 2017a). All traffic must maintain radio communication or have prior arrangements for operating within Class D airspace (AC 2003).
- Class E airspace can be described as general controlled airspace where more stringent airspace control has not been established up to 18,000 ft above MSL. Unless the floor of Class E airspace is designated as a lower altitude, Class E airspace begins at 14,500 ft MSL and extends up to, but not including, 18,000 ft MSL (FAA 2016b).

Victor Airways (noted on aeronautical charts with a “V” designator) serve general and commercial aviation between 1,200 ft AGL and 18,000 ft above MSL. These routes frequently intersect with the approach and departure paths of military and civilian airfields (USAF 2002a, FAA 2017b). In addition to Victor Airways, FAA has established low altitude Area Navigation (RNAV) routes (noted on aeronautical charts with a “T” designator). These routes were created to provide more direct routes for pilots operating under meteorological conditions that require the use of instruments rather than visual reference (FAA 2017b).

Uncontrolled Airspace. Uncontrolled (or, Class G) airspace is the portion of airspace that has not been designated as Class A, B, C, D, or E airspace and is, therefore, not subject to restrictions that apply to controlled airspace. Class G airspace extends from the surface to the floor altitude of the overlying Class E airspace. The floor altitude of Class E airspace can range between 700 ft AGL up to 14,500 ft above MSL (USAF 2002a). The floor altitude is dependent on the degree of airports and Victor Airways in the area. Transitional Class E airspace has a floor altitude of 700 ft AGL that transitions to 1,200 ft AGL to accommodate instrument approaches to airfields and airports. En Route Class E airspace has a floor altitude of 1,200 ft AGL, and is located in areas with multiple airports and Victor Airways. The floor altitude of Class E airspace is 14,500 ft above MSL when the area has few airports and Victor Airways (FAA Undated). Although uncontrolled airspace is not subject to FAA or ATC control, all military and civilian pilots must adhere to visual or instrument flight rules while operating in this airspace (FAA 2016b).

Special Use Airspace. SUA consists of airspace within which specific activities must be confined, or wherein limitations are imposed on aircraft not participating in those activities. SUAs are established in a coordinated effort with FAA to maintain safety by separating military and civilian flights. JO 7400.10, *Special Use Airspace*, provides a compiled list and definition of each designated SUA within the U.S. SUA near Mountain Home AFB and the urban centers consists of the following RAs (noted on aeronautical charts with “R” designator), MOAs, and Altitude Reservation (ALTRV) airspace:

- RAs are reserved for military operations and cannot be entered by private or commercial aircraft without permission from the controlling agency when that RA is active. RAs may be scheduled as active at other times by issuing a NOTAM or by the controlling agency at least 24 hours in advance (JO 7400.10).

- MOAs are established areas where there would be a high density of military aircraft conducting nonhazardous operations. Private and commercial aircraft may also use this airspace with permission from the controlling agency.
- ALTRV airspace is designated for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. Their use must be approved by the appropriate FAA facility (FAA 2017a).

The 366 FW would continue to use SUAs associated with the installation and the MHRC when conducting Urban CAS training operations in the Mountain Home AFB urban center. Therefore, the Proposed Action Alternative would not interfere with operations in SUA used by other installations and only SUA associated with Mountain Home AFB and MHRC are discussed further.

Other airspace. Military missions may also use airspace that is not categorized as SUA, but where limitations may still be imposed on nonparticipating aircraft. Other airspace near Mountain Home AFB and the urban centers are MTRs. MTRs are slightly less restrictive than SUAs; however, their purpose is also to minimize negative interactions between a military mission and nonparticipating aircraft. They are designated by FAA for low-altitude military operations (below 10,000 ft above MSL) at airspeeds in excess of 250 knots and are individually operated through the local military installation that is responsible for scheduling the routes. MTRs would not be used for the proposed Urban CAS training activities, and the proposed training activities would not interfere with existing MTR operations in the project area. Therefore, MTRs are not discussed further.

3.3.2 Existing Conditions

This section describes the airspace environments, associated airfields, and managing authorities for the 30 NM airspace operating area overlying each urban center identified for the proposed flight proficiency training. Throughout the project area, ATCAA is controlled by Salt Lake City Air Traffic Control Center (ZLC ATCC) unless otherwise specified. Discussion in this section begins with a complete description of airspace and airfield management at Mountain Home AFB to inform discussions for airspace management in nearby urban centers. **Figure 3-1** shows the airspaces near Mountain Home AFB, Mountain Home, Bruneau, Glenns Ferry, Grand View, and Hammett. **Figure 3-2** shows the airspaces associated with Boise. **Figure 3-3** shows the airspaces associated with Twin Falls and Burley.

3.3.2.1 MOUNTAIN HOME AIR FORCE BASE

Airfield Management. Urban CAS flight proficiency training that would occur at Mountain Home AFB would continue to be conducted within the 30 NM airspace operating area and underlying ground spaces on and proximal to the installation. Mountain Home AFB airfield has one runway, Runway 12/30, that is 13,510 ft long and runs northwest to southeast with a parallel taxiway and ladder taxiways (Woolpert 2017, GlobalAir 2018). Airfield operations, maintenance, and industrial facilities are located east of the runway. As noted in **Section 1.3**, the baseline total for airfield sorties and operations at Mountain Home AFB was approximated at 60,559 operations per year. Existing Urban CAS training on the installation involves 960 sortie operations (approximately 1.5 percent of the installation's operational baseline).

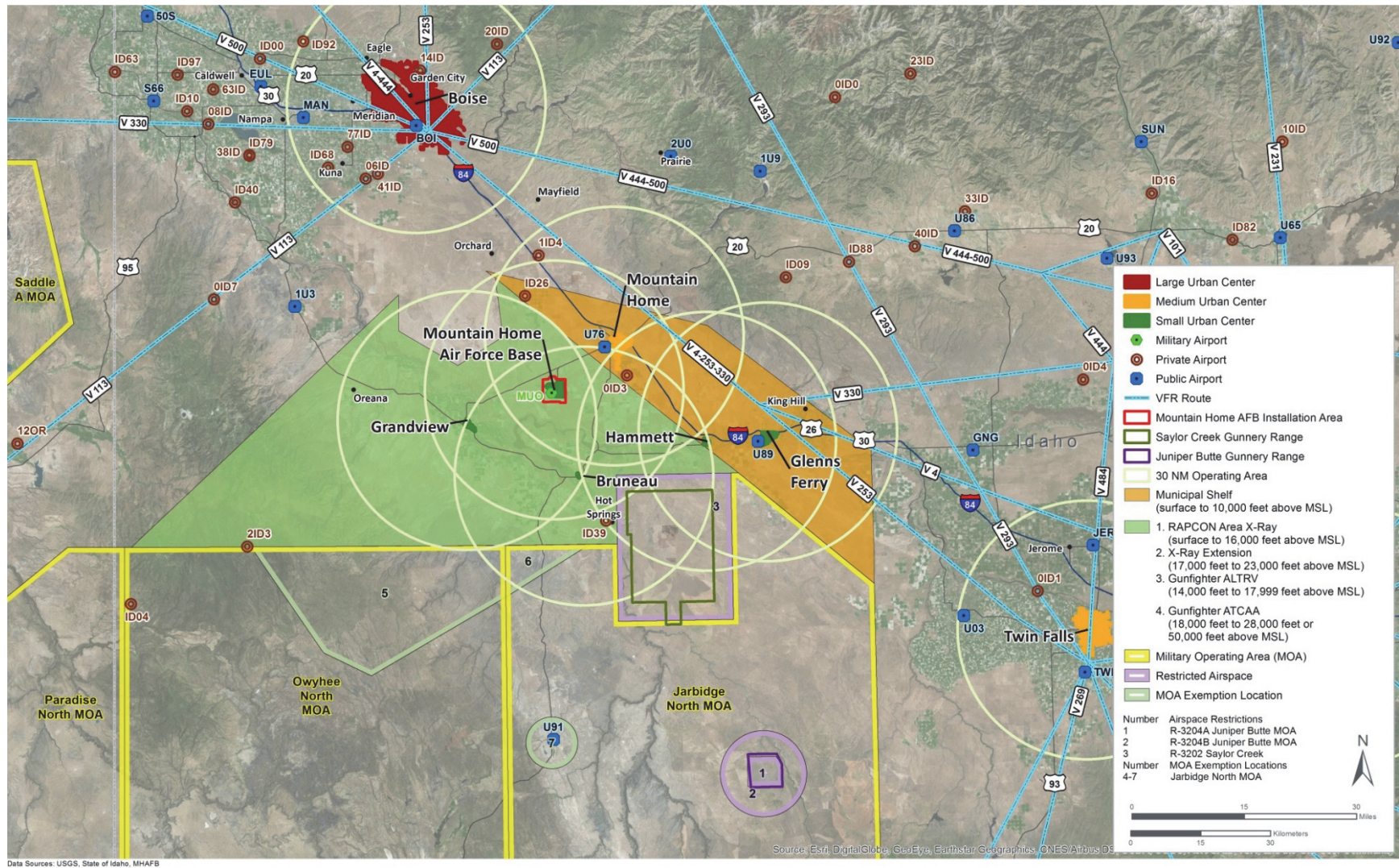


Figure 3-1. Airspace associated with Mountain Home AFB, Mountain Home, Bruneau, Glens Ferry, Grand View, and Hammett

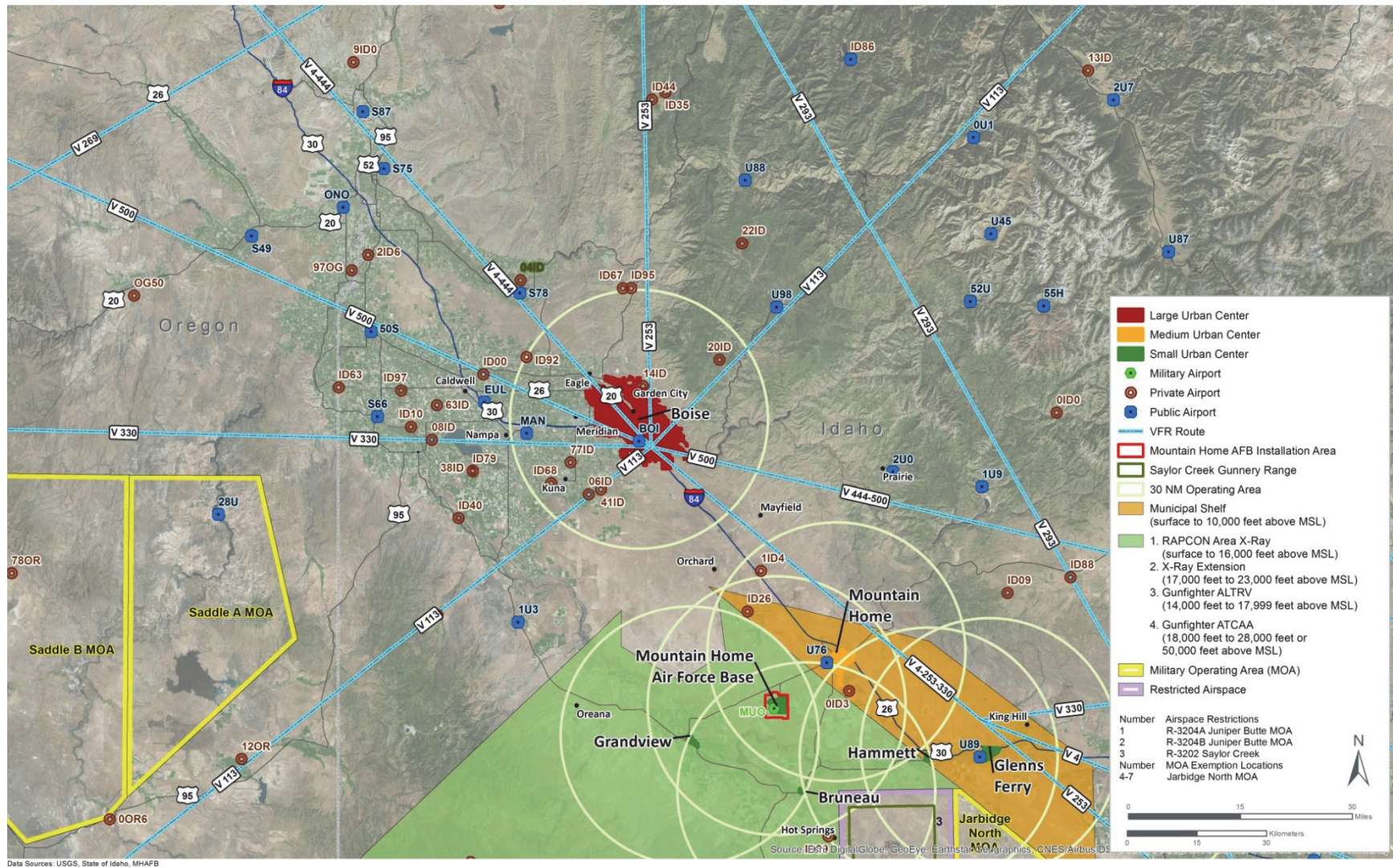


Figure 3-2. Airspace Associated with Boise

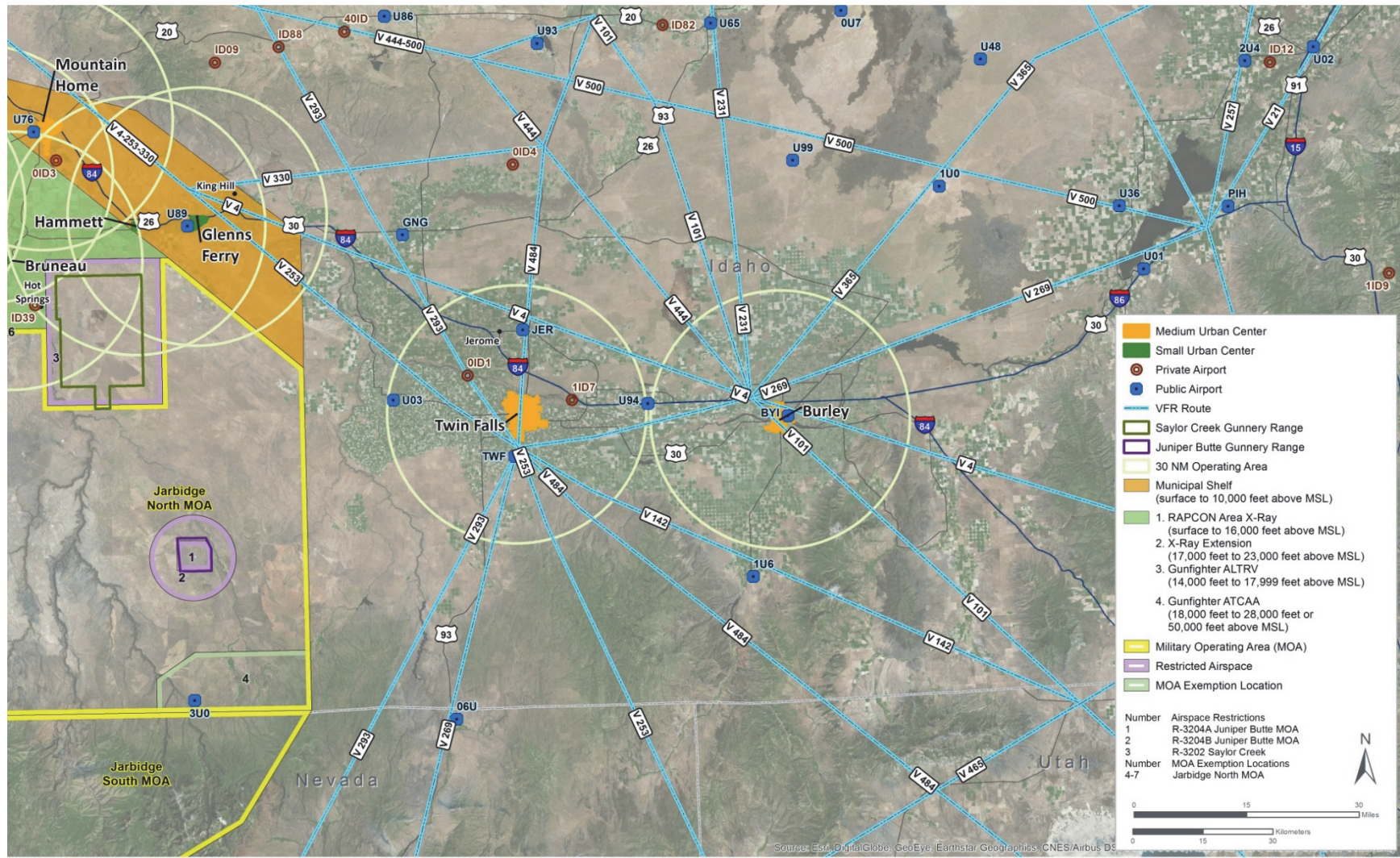


Figure 3-3. Airspace Associated with Burley and Twin Falls

Airspace. Airspaces overlying and used by the installation are layered from the ground surface up to 50,000 ft above MSL. Some of these airspaces require activation, or coordinated approval for sole use by the installation for specific operational purposes. Activation is coordinated with FAA and/or ZLC ATCAA, as appropriate, in accordance with existing airspace use agreements. In respective order, the airspaces associated with, and used by the installation include the following:

- **Class D Airspace.** Class D airspace encompasses a 5 NM radius around the Mountain Home AFB airfield and extends from the ground surface to 5,500 ft AGL. This airspace is activated specifically to accommodate arrivals to and departures from the installation. When Class D airspace is not activated, the airspace immediately overlying the airfield (i.e., surface to 18,000 ft above MSL) defaults to Class E designation and use constraints. The only Victor Route within the Mountain Home AFB airspace operations area is V-4-253-330 (see **Figure 3-1**) (VFRmap 2018).
- **Radar Approach Control (RAPCON) Area X-Ray Airspace.** RAPCON Area X-Ray airspace extends from the ground surface up to 16,000 ft above MSL and provides additional airspace for arrivals and departures between Mountain Home AFB and the MHRC. This airspace is where CAS training can occur over the installation and is active whenever operations are occurring within the MHRC.
- **X-Ray Extension Airspace.** By Letter of Agreement (LOA) with the ZLC ATCC, the installation is also permitted to use the layer of ATCAA that overlies the RAPCON Area X-Ray airspace and extends from 17,000 ft to 23,000 ft above MSL. The X-Ray Extension is generally activated daily when local flying operations are about to begin and is used to accommodate ATC coordination of departure and arrival flights into and out of the MHRC.
- **Municipal Shelf.** The Municipal Shelf airspace exists east of the installation and extends from the ground surface up to 10,000 ft above MSL (Schmidt 2018) (see **Figure 3-1**). The installation shares control of the RAPCON Area X-Ray airspace with ZLC ATCC to accommodate approaches flown into the Mountain Home Municipal Airport. The Municipal Shelf airspace is also used by the installation to accommodate approaches, upon request from the ZLC ATCC.
- **Gunfighter ALTRV and Gunfighter ATCAA.** The Gunfighter ALTRV and Gunfighter ATCAA airspaces are operated under an LOA with the ZLC ATCC and are controlled by the Cowboy Control Military Radar Unit. Activation of these airspaces requires coordination and approval from the Central Altitude Reservation Function of the FAA Air Traffic System Command Center and the ZLC ATCAA, respectively. The Gunfighter ALTRV extends from an altitude floor 14,000 ft to a ceiling of 17,999 ft above MSL and is the airspace layer which exists between the RAPCON Area X-Ray and X-Ray Extension airspaces. The use of the Gunfighter ALTRV is coupled with the ability to use the Gunfighter ATCAA, per the LOA with ZLC ATCAA. The Gunfighter ATCAA extends from an altitude floor of 18,000 ft to up to a ceiling that is either 28,000 ft or 50,000 ft above MSL, as approved by the ZLC ATCC (Schmidt 2018). When the Gunfighter ALTRV is activated, the altitude ceiling of the RAPCON Area X-Ray airspace is lowered to 13,999 ft above MSL and the X-Ray Extension is deactivated (i.e., use is prohibited).

- **MHRC.** The MHRC comprises several MOAs and RAs, which are controlled by the ZLC ATCAA and used by the 366 FW. The altitude ranges, operating schedules, and coordination requirements for each are described in **Table 3-11**.

Table 3-11. MHRC SUA Airspace

SUA	Vertical Limits	Time of Use
Paradise North MOA	3,000 ft AGL or 10,000 ft MSL (whichever is higher) to 17,999 ft MSL	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day)
Paradise South MOA	3,000 ft AGL or 10,000 ft MSL (whichever is higher) to 17,999 ft MSL	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day)
Owyhee North MOA*	100 ft AGL to 17,999 ft MSL	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day)
Owyhee South MOA	3,000 ft AGL or 10,000 ft MSL (whichever is higher up) to 17,999 ft MSL	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day)
Jarbridge North MOA*	100 ft AGL to 17,999 ft MSL	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day)
Jarbridge South MOA	3,000 ft AGL or 10,000 ft MSL (whichever is higher) up to 17,999 ft MSL.	0730-2200 mountain time Monday-Friday; other times by NOTAM (expected use 230 days/year, 12 hours/day).
R-3202 High	18,000 ft above MSL to 29,000 ft above MSL	0730-2200 local time, Monday through Friday, other times by NOTAM
R-3202 Low	Surface up to (but not including) 18,000 ft above MSL	0730-2200 local time, Monday through Friday, other times by NOTAM
R-3204A	Surface to 100 ft AGL	0730-2200 local time, Monday through Friday, other times by NOTAM
R-3204B	100 ft AGL up to (but not including) 18,000 ft above MSL	0730-2200 local time, Monday through Friday, other times by NOTAM.

Sources: VFRmap 2018, JO 7400.10, Schmidt 2018

Notes: * = Expected to be used most frequently under the Proposed Action Alternative (Richardson 2018)

Existing Airspace Use Constraints. Mountain Home AFB operations are not constrained by local airport operations and are coordinated with ZLC ATCC to ensure airspace de-confliction on the installation and in airspaces associated with local airports to the extent possible (Woolpert 2017). The Duck Valley Indian Reservation, located near the town of Owyhee, includes land area which underlies the near-center of MHRC airspace. In accordance with the 1996 collaboration and agreement between the Shoshone-Paiute and Mountain Home AFB, air operations are constrained in the airspaces overlying the reservation. The agreement designated a no-fly zone within 5 NM of the city of Owyhee, below 10,000 ft AGL or below 15,000 ft AGL, whenever possible.

3.3.2.2 BOISE

Airfield(s). The Boise Airport, which supports the most commercial air traffic of all of the public airports in the region, the Nampa Municipal Airport, and nine smaller private airfields are

encompassed within the proposed Boise airspace operations area (see **Figure 3-2**) (VFRmap 2018). During 2015, an average of 333 daily aircraft operations (121,545 annual aircraft operations) were reported for the Boise Airport (AirNav 2018a). During 2016, an average of 197 daily aircraft operations (70,905 annual aircraft operations) were reported for the Nampa Airport (AirNav 2018b). **Table 3-12** summarizes the users and types of operations that the Boise and Nampa airports supported in 2015 and 2016, respectively. Data are not available for the private airfields.

Table 3-12. Public Airport Operations within the Boise Airspace Operations Area

Airport (FAA Identifier)	Average Daily Operations (Average Annual Operations)	User Types and Percent of Operations
Boise Airport (BOI)	333 (121,545)	Commercial (33 percent), transient general aviation (33 percent), local general aviation (20 percent), air taxi (9 percent), military (5 percent).
Nampa Municipal Airport (MAN)	197 (70,905)	Local general aviation (56 percent), transient general aviation (44 percent), air taxi (less than 1 percent)

Sources: AirNav 2018a, AirNav 2018b

Note: Annual operations calculated by multiplying average daily number of aircraft operations by 365 days.

Airspace. The Boise airspace operations area encompasses Class C, E, and G airspaces. The Class C airspace immediately surrounds the Boise Airport and consists of an inner circle with a 5 NM radius surrounding the airfield and an outer circle with a 10 NM radius. The inner circle airspace extends from the ground surface up to 6,800 ft above MSL and the outer circle Class C airspace extends from between 4,200 and 4,600 ft above MSL up to 6,900 ft above MSL (Boise Airport 2010, VFRmap 2018). The Nampa Municipal Airport is under transitional Class E airspace that begins at 700 ft and transitions to 1,200 ft AGL. All of the Class E airspace within the Boise airspace operating area is transitional and has an altitude ceiling of either 18,000 ft above MSL or the lower limit of overlying airspace. Class G airspace within the Boise airspace operating area begins at the ground surface and extends to the altitude floor of the overlying Class E airspace, except for the areas where Class C or D airspaces begin at the ground surface (Boise Airport 2010, VFRmap 2018).

Victor routes that transect the Boise airspace operations area include V 4-444, V 4-253-330, V 113, V 253, V 293, V 330, V 444-500, and V 500 (see **Figure 3-2**) (VFRmap 2018).

Airspace Use Constraints. The only known airspace conflict within the Boise airspace operations area is that the use of Gunfighter ATCAA airspace associated with Mountain Home AFB affects the approach airspace to the Boise Airport. Flight hazards in the area include structures at less than 1,000 ft AGL, transmission lines, mountainous terrain, and parachuting operations areas (VFRmap 2018).

3.3.2.3 BURLEY

Airfield. The Burley Municipal Airport (FAA Identifier BYI) is the only airport within the proposed Burley airspace operations area (see **Figure 3-3**) (VFRmap 2018). During 2016, the airport supported an average of 76 operations per day (27,740 operations per year) that primarily consist of transient general aviation (72 percent) and local general aviation flights

(26 percent). Air taxi and military flights comprise the remaining 2 percent of operations from the airport (AirNav 2018c).

Airspace. The Burley airspace operations area encompasses Class E and G airspaces. Class G airspace begins at the ground surface and extends to the floor altitude of the overlying Class E airspace. Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL (VFRmap 2018).

Victor routes present include V 4, V 101, V 231, V 269, V 365, and V 444 (see **Figure 3-3**). Low altitude RNAV route T 331 is also present south of the Burley Municipal Airport (VFRmap 2018).

Airspace Use Constraints. Flight hazards in the area include obstacles such as structures at less than 1,000 ft AGL, transmission lines, mountainous terrain, and wind turbines (VFRmap 2018).

3.3.2.4 MOUNTAIN HOME

Airfield(s). The Mountain Home Municipal Airport (FAA identifier U76) is the only public airport within the proposed Mountain Home air operations area. During 2014, the airport supported an average of 48 aircraft operations per day (17,520 aircraft operations per year) that consisted of local general aviation (57 percent), transient general aviation (34 percent), and military flights (9 percent) (AirNav 2018d). Three private airfields are also present within the Mountain Home airspace operations area; however, user and operations data are not available for these airfields (see **Figure 3-1**).

Airspace. The Mountain Home airspace operations area encompasses Class D, E, and G airspaces. The Class G airspace begins at the surface and extends to the floor of the overlying Class E airspace. The Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL (VFRmap 2018). The Class D airspace is associated with the Mountain Home AFB airfield described in **Section 3.3.2.1**. Additionally, portions the Mountain Home airspace operations area are within the RAPCON Area X-Ray, X-Ray Extension, Municipal Shelf, Gunfighter ALTRV, and Gunfighter ATCAA airspaces (see **Figure 3-1**) (Schmidt 2018). When activated by the installation, the use of these airspaces must be coordinated as described in **Section 3.3.2.1**.

V 4-253-330 is the only Victor Airway present within the Mountain Home airspace operations area (see **Figure 3-1**) (VFRmap 2018).

Airspace Use Constraints. Flight hazards in the area include structures at less than 1,000 ft AGL, transmission lines, mountainous terrain, and wind turbines (VFRmap 2018).

3.3.2.5 TWIN FALLS

Airfield(s). Public airports located within the proposed Twin Falls airspace operations area include the Magic Valley Regional Airport, Jerome County Airport, and the Buhl Municipal Airport. **Table 3-13** summarizes the 2016-reported average number of operations per day and the types of operations that occur at the public airports in the area. Two private airfields are also present within the Twin Falls airspace operations area; however, data are not available for these airfields (see **Figure 3-3**).

Table 3-13. Public Airport Operations within the Twin Falls Airspace Operations Area

Airport (FAA Identifier)	Average Daily (Annual) Operations	User Types and Percent of Operations
Magic Valley Regional Airport (TWF)	75 (27,375)	Transient general aviation (48 percent), local general aviation (27 percent), air taxi (7 percent), commercial (4 percent), military (4 percent)
Jerome County Airport (JER)	70 (25,550)	Transient general aviation (84 percent), local general aviation (16 percent), military (< 1 percent)
Buhl Municipal Airport (U03)	41 (14,965)	Transient general aviation (80 percent), local general aviation (20 percent), air taxi (< 1 percent)

Sources: AirNav 2018e, AirNav 2018f, AirNav 2018g

Note: Annual operations calculated by multiplying average daily number of aircraft operations by 365 days.

Airspace. The Twin Falls airspace operations area encompasses Class D, E and G airspace. Class G airspace within the Twin Falls airspace operating area begins at the ground surface and extends to the altitude floor of the overlying Class E airspace (VFRmap 2018). The Class D airspace encompasses an approximately 2.5 NM radius around the Magic Valley Regional Airport and extends from the ground surface to 6,700 ft above MSL. The Class D airspace is only active when the Magic Valley Regional Airport Air Traffic Control Tower is operational. When the Air Traffic Control Tower is not operational, the Class D airspace reverts to Class E airspace that extends from the ground surface up to 18,000 ft above MSL (Magic Valley Airport 2012). Class E airspace within the Twin Falls airspace operations is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL. The Jerome County and Buhl Municipal airports underlie transitional Class E airspace (VFRmap 2018).

Victor Airways transecting the Twin Falls airspace operations area include V 4, V 142, V 253, V 269, V 293, and V 484 (see **Figure 3-3**).

Existing Airspace Use Constraints. Flight hazards in the area include structures at less than 1,000 ft AGL, transmission lines, and mountainous terrain (VFRmap 2018).

3.3.2.6 BRUNEAU

Airfield. The only public airport within the proposed Bruneau airspace operations area is the Mountain Home Municipal Airport, which is discussed under **Section 3.3.2.4**. Two private airfields are also present; however, data are not available for these airfields (see **Figure 3-1**).

Airspace. The Bruneau airspace operations area encompasses Class D, E, and G airspaces. The Class D airspace is associated with the Mountain Home AFB airfield described in **Section 3.3.2.1**. The Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL. The Class G airspace begins at the surface and extends to the floor of the overlying Class E airspace (VFRmap 2018). Additionally, portions the Bruneau airspace operations area are within the RAPCON Area X-Ray, X-Ray Extension, Municipal Shelf, Gunfighter ALTRV, Gunfighter ATCAA, R-3202, Jarbidge North MOA, and Owyhee North MOA airspaces (see **Figure 3-1**) (Schmidt 2018). When activated by the installation, the use of these airspaces must be coordinated as described in **Section 3.3.2.1**.

Existing Airspace Use Constraints. Flight hazards in area include structures at less than 1,000 ft AGL, transmission lines, and mountainous terrain (VFRmap 2018).

3.3.2.7 GLENN'S FERRY

Airfield. The Glenns Ferry Municipal Airport is the only airport within the proposed Glenns Ferry airspace operations area (see **Figure 3-1**) (VFRmap 2018). During 2015, the Glenns Ferry Municipal Airport supported an average of 5 operations per day (1,825 annual aircraft operations) that consisted of transient general aviation (88 percent), local general aviation (57 percent), and military flights (1 percent) (AirNav 2018h).

Airspace. The Glenns Ferry airspace operations area encompasses Class E and G airspaces. The Class G airspace begins at the surface and extends to the floor of the overlying Class E airspace. The Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL (VFRmap 2018). Additionally, portions the Glenns Ferry airspace operations area are within the RAPCON Area X-Ray, X-Ray Extension, Municipal Shelf, Gunfighter ALTRV, Gunfighter ATCAA, R-3202, and Jarbidge North MOA airspaces (see **Figure 3-1**) (Schmidt 2018). When activated by the installation, the use of these airspaces must be coordinated as described in **Section 3.3.2.1**.

Victor Airways transecting the Glenns Ferry airspace operations area include V 4, V 4-253-330, V 253, and V 330 (see **Figure 3-1**) (VFRmap 2018).

Existing Airspace Use Constraints. Flight hazards in the area include structures at less than 1,000 ft AGL, transmission lines, mountainous terrain, and wind turbines (VFRmap 2018). The only known airspace conflict within the Glenns Ferry airspace operations area is that use of the Municipal Shelf conflicts with the Glenns Ferry Municipal Airport arrival and departure airspace.

3.3.2.8 GRAND VIEW

Airfield. Other than the Mountain Home AFB airfield, no airports or airfields are present within the Grand View airspace operations area (see **Figure 3-1**) (VFRmap 2018).

Airspace. The Grand View airspace operations area encompasses Class D, E, and G airspaces. The Class G airspace begins at the surface and extends to the floor of the overlying Class E airspace. The Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL. The Class D airspace is associated with the Mountain Home AFB airfield described in **Section 3.3.2.1** (VFRmap 2018). The entire Grand View airspace operations area is within the RAPCON Area X-Ray, X-Ray Extension, Gunfighter ALTRV, and Gunfighter ATCAA airspace. Additionally, a portion of the Grand View airspace operations area is within the Owyhee North MOA airspace (see **Figure 3-1**) (Schmidt 2018). When activated by the installation, the use of these airspaces must be coordinated as described in **Section 3.3.2.1**.

Existing Airspace Constraints. Flight hazards in the area include structures at less than 1,000 ft AGL, transmission lines, and mountainous terrain (VFRmap 2018).

3.3.2.9 HAMMETT

Airfield. The only airport within the Hammett airspace operations area is the Glenns Ferry Municipal Airport, which is discussed in **Section 3.3.2.7** (see **Figure 3-1**) (VFRmap 2018).

Airspace. The Hammett airspace operations area encompasses Class E and G airspaces. The Class G airspace begins at the surface and extends to the floor of the overlying Class E airspace. The Class E airspace is transitional (i.e., begins at 700 ft and transitions to 1,200 ft AGL) and has an altitude ceiling of 18,000 ft above MSL (VFRmap 2018). Additionally, portions the Hammett airspace operations area are within the RAPCON Area X-Ray, X-Ray Extension, Gunfighter ALTRV, Gunfighter ATCAA, Municipal Shelf, R-3202, and Jarbidge North MOA airspaces (see **Figure 3-1**) (Schmidt 2018). When activated by the installation, the use of these airspaces must be coordinated as described in **Section 3.3.2.1**.

Victor Airways present include V 4, V 4-253-330, V 253, and V 330 (see **Figure 3-1**).

Existing Airspace Constraints. Flight hazards in the area include obstacles at less than 1,000 ft AGL, transmission lines, mountainous terrain, and wind turbines (VFRmap 2018).

3.3.3 Environmental Consequences

The significance of potential impacts on airspace management depends on the degree to which a proposed action would affect the airspace environment. Significant impacts could result if implementation of a proposed action would: 1) impose major restrictions on air commerce opportunities, 2) significantly limit airspace access to a large number of users, or 3) require major modifications to ATC systems.

3.3.3.1 PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative to distribute existing Urban CAS aircrew proficiency training operations among Mountain Home AFB, MHRC, and nine urban centers would result in long-term, negligible to minor, intermittent, adverse impacts on airspace management. As explained in **Section 2.3**, the surge level of training events and training operations that represent the conservative scenario (wherein 160 training events and 400 training operations would occur annually in any one of the nine urban centers) was used to determine the maximum potential level of impacts under the Proposed Action Alternative. However, actual training levels would vary between the projected and surge levels of training events for each urban center in its respective size category (see **Table 2-5**). Therefore, impacts resulting from the flight proficiency training would realistically be less than the conservative estimates.

Generally, adverse impacts on airspace management within the airspace operations areas of the nine urban centers would result from the need to deconflict private, commercial, and military air traffic to accommodate the flights dedicated to the proposed Urban CAS pilot proficiency training operations. Because aircraft from Mountain Home AFB already fly throughout the airspaces of the identified urban centers for other training operations, these impacts on airspace management are expected to be negligible to minor. The magnitude of the impacts would be dependent on the existing levels of air traffic within a particular airspace operations area where proposed flight training would occur.

Within each urban center's airspace operations area, the localized increases in air traffic under the Proposed Action Alternative would require increases in flight monitoring to ensure aircraft safety and reduce potential conflicting airspace usage, particularly near airports. Increases in air traffic near airports throughout the project area could result in changes to airport approach and departure patterns; however, these changes would be temporary and would have a

negligible adverse impact on airport function. No change to the configuration (i.e., size, shape, or location) of airspace is proposed or would be required to support implementation of the Proposed Action Alternative. Neither FAA and ATC capabilities nor commercial and general aviation activities would be limited; therefore, there would be no appreciable impacts on aviation safety or in airspace available for general use. Additionally, aircrews would be trained for and aware of all potential hazards present throughout the airspace operating areas. All routes would be reviewed for potential hazards and areas to be avoided before flying, and all USAF flight safety and BASH protocols would be adhered to. Additional information on aviation safety is provided in **Section 3.6, Health and Safety**.

Potential adverse effects would be minimized through the following actions:

1. Aircrews would coordinate with the ZLC ATCC or the appropriate ATC controlling agency and would adhere to applicable FARs, airspace management actions, USAF requirements, and FAA procedures. Such procedures include adherence to all applicable FAA flight rules when operating within controlled airspace and obtaining two-way radio communication with the appropriate ATC controlling agency when transiting through airspace associated with airports, airfields, or SUA.
2. Aircrews would conduct proposed pilot proficiency training operations in accordance with all existing requirements for the use of the RAPCON Area X-Ray, X-Ray Extension, Municipal Shelf, Gunfighter ALTRV, and Gunfighter ATCAA airspaces. Additionally, all necessary precautions would be taken while conducting training activities in uncontrolled airspace to avoid potential impacts on recreational aviators or any other aircraft.
3. The distribution of the proposed training operations in the airspace operations areas located across the airspace region would further minimize adverse effects on airspace management for the individual urban centers and would prevent appreciable impacts on the established capacities of their respective airspaces.

Long-term, minor, intermittent, adverse impacts on the Boise and Twin Falls airspace operations areas would be expected from the addition of the proposed training operations to the existing air traffic in the area. The increase in air traffic during each training event would be temporary and would result in a minor overall increase in air traffic within the Boise and Twin Falls airspace operations areas; therefore, the proposed training operations would not limit the ability of FAA and ATC to minimize the potential for conflicts through flight coordination and monitoring. Use of Gunfighter ATCAA airspace during training operations could have minor adverse effects the approach airspace to the Boise Airport; however, the Mountain Home Airspace Management Program would coordinate with FAA and ZLC ARTCC, as appropriate, to facilitate de-confliction to the extent possible. The proposed training operations would not exceed the capacity of the Boise and Twin Falls airspace operations areas or limit existing aircraft operations. Additionally, all procedures and precautions described in **Section 3.3.3.1** would be followed. Therefore, no significant impacts would be expected.

Long-term, negligible to minor, intermittent, adverse impacts on the Burley, Mountain Home, Bruneau, Glenns Ferry, Grandview, and Hammett airspace operations areas would be expected from the addition of the proposed training operations to the existing air traffic in the area. Adverse impacts would be similar to, but less than, those described for the Boise and Twin Falls

airspace operations areas because they support less air traffic. Therefore, there is less potential for conflicts in the areas. Minor adverse impacts on the Glenns Ferry Municipal Airport arrival and departure airspace would be expected if the installation has activated use of the Municipal Shelf; however, the Mountain Home Airspace Management Program would coordinate with FAA and ZLC ARTCC, as appropriate, to facilitate de-confliction to the extent possible. The proposed training operations would not exceed the capacity of the airspaces overlying each of the urban centers, and therefore would not impede or otherwise limit existing aircraft operations. Additionally, all procedures and precautions described in **Section 3.3.3.1** would be followed. Therefore, no significant impacts would be expected.

3.3.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, Urban CAS aircrew proficiency training operations would not be distributed among Mountain Home AFB, MHRC, and nine urban centers and conditions would remain as described in **Section 3.3.2**.

3.4 Land Use

3.4.1 Definition of the Resource

The term land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in master planning and local zoning laws. Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. However, there is no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A variety of land use categories result from human activity. Descriptive terms for human activity land uses often include residential, commercial, industrial, agricultural, institutional, and recreational.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential impacts on a project area and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use within the project area, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence.

3.4.2 Existing Conditions

All of the urban centers proposed for Urban CAS proficiency training are located within southern Idaho. The project area encompasses various existing land use categories dependent on the degree of development.

3.4.2.1 BOISE

The proposed Boise operations area primarily falls within Ada County and extends into Boise, Canyon, Elmore, and Gem Counties in southwest Idaho, with the Boise city center approximately 50 miles northwest of Mountain Home AFB. The Boise operating area

encompasses the cities of Boise, Eagle, Garden City, Kuna, and Meridian. The city of Nampa also partially falls within the Boise operations area. Boise, Eagle, Garden City, Kuna, and Meridian are within Ada County and Nampa is within Canyon County.

Ada County has adopted the Boise City Comprehensive Plan to apply to lands outside the Boise city limits but within an Area of City Impact (AOCI). The AOCI is an area that the city expects to annex. Boise City and Ada County have an adopted agreement on the administration of land use decisions with the AOCI. Eagle, Garden City, Kuna, Meridian, and Nampa are not a part of the AOCI (BCPDSD 2017). Land use categories within the Boise AOCI are broken down into six categories: Neighborhoods (high density, compact, suburban, or large lot), Commercial/Employment (commercial, office, or industrial), Mixed-use, Parks and Open Space, Public/Institutional (airport, public/quasi-public, or education), and Other (Boise State University Master Plan, planned community, slope protection, or buildable). While all of these land use categories are within the Boise operations area, the most abundant land use type is Neighborhood suburban (BCPDSD 2017). Land use categories outside of the AOCI include residential, commercial, industrial, public/quasi-public, planned communities, irrigated agriculture, non-irrigated agriculture, rangeland, open space and parks, state and federal rangelands, and environmentally sensitive areas (Ada County 2016). Noise sensitive receptors within the Boise operations area include approximately 152 education facilities, 6 hospitals, 15 hospices, 11 intermediate care facilities, 2 behavioral health facilities, 1 outdoor entertainment area, and 58 hotels. Other relevant resources within the project area include 1 large airport, 8 small airports, 7 heliports, 10 bus stations, approximately 717 businesses, 10 police stations, and 38 fire stations.

3.4.2.2 BURLEY

The City of Burley is within Cassia and Minidoka counties, approximately 110 miles southeast of Mountain Home AFB, and surrounded by agricultural lands. Land uses within the city limits include low density, medium density, high density, commercial, industrial, agricultural, and public land (Burley 2013). Noise sensitive areas include 16 educational facilities, 1 hospital, 1 hospice, 1 rehabilitation center, and 7 hotels. Other relevant resources within the Burley operations area include 1 small airport, 36 commercial businesses, 3 fire stations, and 2 police stations.

3.4.2.3 MOUNTAIN HOME

The City of Mountain Home is within Elmore County, approximately 8 miles north of Mountain Home AFB, and surrounded by agricultural lands. Land uses within Elmore County include general agriculture/grazing/forest, recreation, rural residential, neighborhood commercial, highway/interstate commercial, light industrial/manufacturing, heavy industrial/manufacturing, public airport hazard zone, air base hazard zone, air base commercial zone, planned community, planned unit development, and planned unit development district (Elmore County 2014). Noise sensitive areas include 11 educational facilities, one hospital, and 7 hotels. Other relevant resources within the Mountain Home operations area include 3 small airports and 1 heliport, 37 commercial businesses, 1 fire station, and 1 police station.

3.4.2.4 TWIN FALLS

The Twin Falls operations area is a moderately developed urban center that includes the cities of Twin Falls and Jerome, which are surrounded by agricultural lands. The City of Twin Falls is

within Twin Falls County, approximately 98 miles southeast of Mountain Home AFB. The City of Jerome is within Jerome County, approximately 72 miles southeast of the installation. Land uses within Twin Falls County include agricultural, areas of impact, commercial/industrial, public lands, and residential (Twin Falls County 2008). Land use categories within Jerome County include agricultural, rural residential, commercial, canyon, areas of city impact, commercial, dense residential, and industrial (Jerome County 2015). Noise sensitive areas include more than 42 educational facilities; 4 hospitals, 3 hospice facilities, 5 intermediate care facilities, 1 large outdoor entertainment area; and 15 hotels. Other relevant resources within the Twin Falls operations area include 2 small airports and 2 heliports, 186 commercial businesses, 6 fire stations, and 5 police stations.

3.4.2.5 BRUNEAU

The City of Bruneau is in Owyhee County approximately 18 miles south of Mountain Home AFB. Land uses within the county include agricultural, residential, confined animal feeding operations, multi-use, historical, industrial, and commercial uses (Owyhee County 2010). Noise sensitive areas include three schools and two hotels. Other relevant resources within the Bruneau operations area include one small airport and one heliport.

3.4.2.6 GLENN'S FERRY

Glenn's Ferry is a city in Elmore County approximately 28 miles southeast of Mountain Home AFB. Noise sensitive areas include three schools and two hotels. Other relevant resources within the Glenn's Ferry operations area include one small airport, one heliport, one fire station, and one police station.

3.4.2.7 GRAND VIEW

Grand View is a city in Owyhee County approximately 20 miles southwest of Mountain Home AFB. Noise sensitive areas include one school and one hotel. Other relevant resources within the Grand View operations area include 51 businesses and 1 fire station.

3.4.2.8 HAMMETT

Hammett is an unincorporated community in Elmore County approximately 21 miles southeast of Mountain Home AFB. Noise sensitive areas include existing residences. Other relevant resources within the Hammett operations area include commercial buildings such as a post office, general store, and trading post.

3.4.3 Environmental Consequences

The evaluation of impacts on land use is based on the level of sensitivity within land use categories affected by an action as well as by the compatibility of the action with the existing conditions of those land uses. Impacts would be considered significant if a proposed action were to cause inconsistency or noncompliance with existing land use plans or policies, be incompatible with adjacent land uses to the extent that public health or safety is threatened, conflict with planning criteria established to ensure the safety and protection of human life and property, preclude the viability of existing land uses, preclude continued uses or occupation of an area, or interfere with the uses or functions of recreation areas.

3.4.3.1 PROPOSED ACTION ALTERNATIVE

Long-term, negligible, adverse impacts on land use would be expected under the Proposed Action Alternative. As explained in **Section 2.3**, the surge level of training events and training operations that represent the conservative scenario (wherein 160 training events and 400 training operations would occur annually in any one of the nine urban centers) was used to determine the maximum potential level of impacts under the Proposed Action Alternative. However, actual training levels would vary between the projected and surge levels of training events for each urban center in its respective size category (see **Table 2-5**). Therefore, impacts resulting from the flight proficiency training would realistically be less than the conservative estimates.

Flight Operations. Under the Proposed Action Alternative, pilot proficiency training operations would not require changes to existing or future land uses within the project area. Noise produced during training activities could have an impact on land uses associated with the Proposed Action Alternative; however, these impacts would be negligible (see **Section 3.1.3, Noise**). The Department of Housing and Urban Development considers sites whose community noise exposure exceeds the DNL of 65 dBA to be considered noise-impacted areas. Noise-sensitive land uses (such as residential areas, hospitals, and schools) within the project area would experience noise events well below the recommended noise limits for aircraft flight activities (DNL of 65 dBA) because the estimated DNL at the ground surface under the CAS wheels would never exceed 37 dBA. Noise from individual F-15E and F-15SG overflights would generate distinct but distant acoustical events, which would not exceed SEL and Lmax of 72.3 dBA and 59.3 dBA, respectfully, for a four-aircraft formation (see **Table 3-5 in Section 3.1.3, Noise**). As a result, long-term, negligible, adverse impacts on land use would be expected.

Ground Operations. Realistic preparation for Urban CAS ground activities during deployments requires members of each ground support team to behave in a manner typical of any community member to avoid drawing attention to themselves or the operations. Ground teams would not interfere with civilian traffic or pedestrians or cause any changes to existing or future land use. All ground operations would be coordinated with law enforcement, emergency services, and local governments to ensure awareness and safety. Further, all activities would be conducted in accordance with local laws and ordinances and with the goal of leaving no trace of their activities. No construction or demolition would occur under the Proposed Action Alternative. Therefore, no impacts on land use would be expected from ground operations under the Proposed Action Alternative.

Impacts on land use within the proposed Boise, Mountain Home, Burley, Twin Falls, Bruneau, Grandview, Glenns Ferry, and Hammett operations areas would be as described for general land use impacts above. The Boise Comprehensive Plan has a goal to prevent and mitigate excessive noise exposure. The Proposed Action Alternative would not require changes to or violate current zoning within the operations areas and would be consistent with the planning goals respective to each urban center.

3.4.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, Urban CAS aircrew proficiency training operations would not be distributed among Mountain Home AFB, MHRC, and nine urban centers and conditions would remain as described in **Section 3.4.2**.

3.5 Cultural Resources

3.5.1 Definition of the Resource

Cultural resources is an umbrella term for buildings, structures, objects, archaeological sites, and traditional cultural properties listed in, or determined eligible for listing in, the National Register of Historic Places (NRHP). Historic properties are cultural resources that are generally 50 years of age or older and determined eligible for listing in the NRHP based on their 1) significance in history, 2) association with an important person in history, 3) engineering or architectural merit, or 4) data potential.

While multiple laws address the protection of cultural resources, the primary regulatory driver for a proposed action (undertaking) is Section 106 of the NHPA and its implementing regulations at 36 CFR § 800. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. In accordance with Section 106 of the NHPA (54 United States Code § 306108) and its implementing regulations at 36 CFR § 800, Mountain Home AFB reviewed the Proposed Action and determined it meets the definition of an undertaking per 36 CFR § 800.16(y).

3.5.2 Existing Conditions

The Proposed Action is limited to coordinated flights operating within established airspace thresholds while engaging in electronic tracking exercises with unarmed ground forces operating within existing publicly accessible areas (i.e., paved roads, rights-of-way, sidewalks). Therefore, no NHRP-listed or potentially listed locations would be accessed under the Proposed Action. Additionally, no ground disturbance that could affect archeological resources within the project area would occur under the Proposed Action.

3.5.3 Environmental Consequences

Analysis of adverse effects 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. Indirect impacts can occur from alterations to characteristics of the surrounding environment that contribute to the importance of the resource, introducing visual, atmospheric, or audible elements that are out of character with the property or that alter its setting or feeling.

3.5.3.1 PROPOSED ACTION ALTERNATIVE

The six components of the Proposed Action Alternative would not be expected to impact cultural resources. The Proposed Action Alternative would not result in ground-disturbing activities nor any direct or indirect effects on historic properties that may exist in the air and ground operations areas. The F-15E and F-15SG aircraft would operate at an altitude of 10,000 to 18,000 ft AGL during each training event and would not result in indirect impacts to cultural resources from noise or vibration. Additionally, the use of low-power, eye-safe lasers from aircraft would not impact cultural resources. The number of installation personnel participating in the training events is low and would therefore not impact cultural resources. Two ground support teams of 15 to 20 personnel would drive in civilian vehicles along paved publicly accessible roads and training events would not be conducted within parks or near schools, hospitals, churches, or cemeteries; therefore, ground teams would not impact cultural

resources. Personnel may momentarily exit the vehicles to acquire or re-acquire radio or visual contact with aircraft but would not enter buildings. Therefore, Mountain Home AFB determined that the Proposed Action Alternative would have no potential to cause effects to historic properties, assuming such properties were present, in accordance with 36 CFR § 800.3(a)(1). Mountain Home AFB consulted with the Idaho State Historic Preservation Officer and received concurrence on the determination the undertaking would not have the potential to cause effects to historic properties. Consultation materials are included in **Appendix D**.

3.5.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, Urban CAS aircrew proficiency training operations would not be distributed among Mountain Home AFB, MHRC, and nine urban centers and no impacts on cultural resources would be expected.

3.6 Health and Safety

3.6.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety address the well-being, safety, and health of members of the public and USAF personnel during the various aspects of the Proposed Action and alternatives.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. The proper operation, maintenance, fueling, and repair of aircraft and equipment also carry important safety implications. Activities that can be hazardous include transportation, maintenance and repair activities, and activities that occur in extremely noisy environments. Extremely noisy environments can mask verbal or mechanical warning signals such as sirens, bells, or horns.

USAF Flight Safety Regulations include the Air Force Instruction (AFI) 91-202, *The US Air Force Mishap Prevention Program*, AFMAN 91-223, *Aviation Safety Investigations and Reports*, AFPAM 91-212, *Bird Aircraft Strike Hazard (BASH) Management Techniques*, AFI 91-204, *Safety investigations and Reports (Bird Strike Reporting)*, and the AFI 32-7064, *Integrated Natural Resources Management Plan* (USAF 2018).

3.6.2 Existing Conditions

The following describes existing conditions for USAF flight safety and training operations. **Sections 3.6.2.1** through **3.6.2.8** describe general health, emergency services, and law enforcement information used to protect the health and safety for each urban center alternative for the Proposed Action Alternative.

Flight Safety. The primary public concern with regard to flight safety is the potential for aircraft accidents (or mishaps). In probability analysis, an aircraft mishap is considered to be a low-probability, high-consequence risk because pilots are trained, and aircraft are designed to ensure that aircraft accidents are rare events (Congressional Research Service 2003). An

increase in aircraft flight activities is often associated with an increased risk of aircraft mishaps. Although many investigations have been conducted to determine a direct cause and effect relationship between operational levels and aircraft mishaps, results are generally inconclusive because so many other unpredictable hazard factors (e.g., weather, operating environments, technical failures, terrorist actions, and pilot proficiency) can contribute to whether an accident actually occurs or is prevented (Congressional Research Service 2003).

Aircraft mishaps may occur as a result of mid-air collisions, collisions with man-made structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird/wildlife-aircraft collisions. Statistically, there is a higher probability for aircraft mishaps during take-off and landing operations at an airfield than of a mishap occurring during normal aircraft flight.

As discussed in **Section 3.3**, aircraft flight at Mountain Home AFB is governed by standard flight rules. Aircraft mishaps for all aircraft and user groups are classified as A, B, C, or D⁵. Assessment of existing flight safety conditions in this EA focuses on Class A mishaps because of their potentially catastrophic results. Several publicly accessible reporting forums (e.g., Flight Safety Foundation's Aviation Safety Network Database⁶ and USAF's Aviation Statistics⁷ web sites), provide aircraft mishap data. This publicly available information can be used to assess the flight safety record for an aircraft and/or a particular user group. Recently updated aviation safety reports indicate that a total of 25 Class A mishaps occurred in Idaho between 1950 and 2017 (ASN 2012, ASN 2018a, ASN 2018b). Of that total, 19 mishaps (76 percent) were associated with commercial and private aircraft flight activities; 6 mishaps (24 percent) were associated with military (specifically, USAF) flight activities originating from Mountain Home AFB (ASN 2012, ASN 2018a, ASN 2018b). F-15SG flight training out of Mountain Home AFB began in May 2009. Review of the mishap records for this aircraft show no history of crashes.

Of the six military Class A mishaps: three occurred more than 60 years ago, two occurred at least 20 years ago, and one occurred 15 years ago. All mishaps were reported to have occurred on or near the installation. Details on these mishaps follows:

- On August 27, 1996, an F-15C crashed in an area located immediately southwest of the installation following take-off (ASN 2018b).

⁵ Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$2 million, and/or destruction of an aircraft (ASN 2018a). Class B mishaps result in permanent partial disability or inpatient hospitalization of three or more personnel and/or a total cost of between \$500,000 and up to \$2 million. Class C mishaps involve an injury resulting in any loss of time from work beyond the day or shift on which it occurred, an occupational illness that causes loss of time from work at any time, or an occupational injury or illness resulting in permanent change of job and/or reportable damage of between \$50,000 and up to \$500,000. Class C mishaps and high accident potential, the most common types of accidents, represent unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public. Class D mishaps result in total cost of property damage of \$20,000 or more, but less than \$50,000; or a recordable injury or illness not otherwise classified as a Class A, B, or C mishap.

⁶ Aviation Safety Network web page: (<https://aviation-safety.net/database/databases.php>) reports mishaps for aircraft types, locations, and user groups. Reports mishap rates for aircraft platforms across all variants.

⁷ USAF Aviation Statistics web page (<http://www.safety.af.mil/Divisions/Aviation-Safety-Division/Aviation-Statistics/>) provides mishap rates for all variants of each type of aircraft.

- On October 21, 1998, an F-15E crashed during low altitude, terrain-following training flight (ASN 2012).
- On September 14, 2003, an F-16 from the Thunderbirds crashed during an airshow while performing aerobatics rather than normal flying (ASN 2018a).

In emergency situations, all models of the 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 ft AGL and only over unpopulated areas. AFI 11-2F-15 Volume 3, *F-15 Operations Procedures*, addresses approved circumstances and protocols for fuel jettison; local operating policies define specific fuel dumping areas for the installation.

Training Operations. DODD 4715.1E, *Environment, Safety, and Occupational Health*, and AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, provide industrial and general occupational safety guidance for implementation of the Occupational Safety and Health Administration standards in 29 CFR. AFI 91-203 consolidates Air Force Policy Directive 91-2, *Safety Programs*, and all Air Force Occupational Safety and Health 91-series standards. AFI 91-202, *The U.S. Air Force Mishap Prevention Program*, outlines and guides mishap prevention associated and program requirements, assigns responsibilities for program elements, and contains program management information. The purpose of these guidance documents is to minimize loss of USAF resources and to protect personnel from occupational deaths, injuries, or illnesses by managing risks. The 366 FW maintains an aggressive program to minimize BASH potential.

DOD established DODI 1322.28 to address coordination requirements to ensure safety of citizens when Urban CAS training activities are to be conducted. DODI 1322.28 establishes policy, assigns responsibilities, and provides procedures for planning, coordinating, and conducting realistic military training off federal property.

Fire operations within the Boise District, Bureau of Land Management (BLM) consists of approximately 4 million acres of public land in southwestern Idaho. It is comprised of the Owyhee, Bruneau, and Four Rivers Field Offices. The District Fire Organization is responsible for fire protection on BLM lands within the field offices. In addition, through cooperative and mutual aid agreements, the Boise BLM provides protection for various lands administered by the Forest Service, Idaho Department of Lands, county government, and local city/rural fire departments. This acreage is located in several counties including Ada, Adams, Canyon, Elmore, Gem, Owyhee, and Washington. Primary fire protection is provided by 12 fire engines, three dozers, two water tenders, and one helicopter (Boise District BLM 2016).

3.6.2.1 BOISE

Boise is highly developed with a population of 226,570. The Boise operations area, which also includes Eagle, Garden City, Kuna, Meridian, and part of Nampa, has a combined population of approximately 477,265. Within the Boise operations area, there are approximately 152 educational facilities ranging from primary school to college and university levels, six hospitals, 15 hospices, 11 intermediate care facilities, and two behavioral health facilities (City-Data.com 2017). Additionally, 10 police stations and 38 fire stations are present.

The Boise Fire Department's Operations Division has 250 firefighters at 17 fire stations, a Hazardous Materials Team, Aircraft Rescue Fire Fighting (ARFF) Team, Dive Team, and a Technical Rescue Team. They run 16 engine companies staffed with three firefighters each, three truck companies staffed with four firefighters each, and three ARFF vehicles staffed by five firefighters. The following equipment is cross staffed (i.e., if resources are needed, the crews assigned to that station respond in those specialty units) or covered seasonally: a heavy rescue truck, a quick response rope rescue truck, eight wildland firefighting vehicles, a dive company, a hazardous materials company, and a Type three All Hazards Incident Management Team (BFD 2018). The Boise Police Department is comprised of 409 employees consisting of 309 sworn police officers and 100 civilian support staff members (BPD 2018).

The Eagle Fire Department consists of 49 department personnel, 47 career safety personnel, and three fire stations. The Eagle Fire Department responds to and manages a variety of emergency incidents ranging from fire, hazardous materials, technical rescue, medical emergencies, vehicle collisions/extrications, and wildland incidents (EFD Undated). The City of Eagle Police Department is staffed with a police chief, two sergeants, eight patrol officers, two detectives, a code enforcement officer, and one administrative staff. Additionally, Eagle police officers can request assistance from Ada County Sheriff's deputies working outside of Eagle when needed (ACSO Undated a).

The North Ada County Fire and Rescue District serves Garden City. In 2010, the North Ada County Fire and Rescue District and the Boise Fire Department entered into a Joint Powers Agreement that made the Chief, one administrative assistant, and all operations and prevention staff of the North Ada County Fire and Rescue District employees of the Boise Fire Department (NACFRD Undated). As of 2006, the Garden City Police Department was comprised of twenty-nine sworn officers (Garden City 2006).

The Kuna Rural Fire District consists of nine full-time firefighters/paramedics, three full-time firefighter/emergency medical technicians, 20 paid volunteers, and one station. The Kuna Rural Fire District provides fire protection, 911 advanced life support ambulance service, rescue services, and wildland fire protection (KRFD Undated). The City of Kuna Police Department is staffed with a police chief, two field supervisors, eight deputies, two detectives, and a field services technician. Additionally, Kuna police officers can request assistance from Ada County Sheriff's deputies working outside of Kuna when needed (ACSO Undated b).

The Meridian Fire Department has 76 employees and five cross staffed fire stations. The department staffs four fire engines and one ladder truck daily. Fire Stations #4 and #5 house brush firefighting units, and Fire Station #2 houses the water tender. The Meridian Fire Department responds to and manages incidents including fire, emergency medical services and advanced life support first response, and technical rescue (MFD 2017, MFD 2011). The Meridian Police Department is comprised of 97 police officers and 26 civilian staff (Meridian 2018).

The Nampa Fire Department is staffed with a minimum of 20 firefighter/emergency medical technicians that operate five stations. Station #1 provides full-time staffed response with an Engine Company, Ladder Company, and Battalion Chief, and is home to a reserve engine, water tender, specialty rescue vehicle, and rehab vehicle. Stations #2, #3, #4, and #5 house

Engine Companies that respond to and manage incidents including fire, emergency medical services and advanced life support first response, hazardous materials, and technical rescue (Nampa 2011). As of Fiscal Year 2014, The City of Nampa Police Department was staffed with 113 sworn employees (NPD Undated).

3.6.2.2 BURLEY

Burley is moderately developed with a population of 10,474. There are 16 educational facilities ranging from primary school to college and university levels, one hospital, one hospice, and one rehabilitation center (City-Data.com 2017). Additionally, three fire stations and two police stations are present. The Burley Fire Department is staffed with a full-time Chief, 10 full-time employees, and 20 volunteers. As of 2015, the city of Burley's Fire Department is Emergency Medical Responder certified (Burley Undated). The Cassia County's Sheriff Department provides public safety for the city of Burley. The Department consists of 46 employees, not including jail staff and probation officers (Cassia County 2018).

3.6.2.3 MOUNTAIN HOME

Mountain Home is moderately developed with a population of 14,824. There are 11 education facilities ranging from primary school to college and university levels and one hospital in Mountain Home. Additionally, one fire station and one police station are present. The Mountain Home Fire Department is a volunteer department consisting of three fire stations with one ladder truck and three fire engines. Fire Station #1, the only manned station, is staffed from 8 a.m. to 5 p.m. Monday through Saturday (Mountain Home 2018). The Mountain Home Police Department has a total of 18 patrol officers (MHPD 2014). The Elmore County Sheriff's Office also provides public safety services for Mountain Home (Elmore County 2016).

3.6.2.4 TWIN FALLS

Twin Falls is moderately developed with a population of 49,202. The Twin Falls operations area, which also includes Jerome, has a population of approximately 60,838. There are more than 42 educational facilities ranging from primary school to college and university levels, four hospitals, three hospices, and five intermediate care facilities within the Twin Falls operating area (City-Data.com 2017). Additionally, six fire stations, and five police stations are present. The Twin Falls Fire Department has 42 employees at four fire stations (Twin Falls Undated). They run four engines, a ladder truck, a rescue rig, two tanker trucks, three brush trucks, and a hazardous materials/special operations trailer (TFFD 2017). The Twin Falls Police Department consists of over 100 employees, including 77 sworn police officers (TFPD 2017). The Jerome Fire Department consists of 14 full-time staff, 12 part-time members, and two stations. The Jerome Fire Department responds to and manages incidents including fire, disaster, and medical emergencies (Jerome 2010a). The Jerome Police Department consists of a police chief, 18 full-time sworn officers, three reserve/part-time officers, one animal control/code enforcement officer, and a records manager (Jerome 2010b).

3.6.2.5 BRUNEAU

Bruneau is considered a low-density development with a population of 701. There are two educational facilities serving primary through secondary students and one fire station (City-Data.com 2017). The Bruneau Fire Protection District is a volunteer department (FireCARES 2018a). The Owyhee County Sheriff, which employs 12 full-time and two part-time patrol deputies, provides public safety for Bruneau (Owyhee County Undated).

3.6.2.6 GLENN'S FERRY

Glenn's Ferry is considered a low-density development with a population of 1,278. There are three schools serving primary through secondary students, one fire station, and one police station (City-Data.com 2017). The Glenn's Ferry Fire Department is a volunteer department (FireCARES 2018b). With a substation in Glenn's Ferry, the Elmore County Sheriff's Office provides public safety (Elmore County 2016).

3.6.2.7 GRAND VIEW

Grand View is considered a low-density development with a population of 457. There is one school serving primary through middle school students and one fire station (City-Data.com 2017). The Grand View Rural Fire Protection District is a volunteer department (FireCARES 2018c). The Owyhee County Sheriff, which employs 12 full-time and two part-time patrol deputies, provides public safety for Grand View (Owyhee County Undated).

3.6.2.8 HAMMETT

Hammett is considered a low-density development with a population of 458. There are no schools in Hammett (City-Data.com 2017). Hammett is located within the district boundary of Glenn's Ferry Joint School District 192; therefore, children in Hammett attend school in Glenn's Ferry, which is approximately nine miles east (ID HTL 2018). The closest fire department to Hammett is the Glenn's Ferry Fire Department (FireCARES 2018b). The Elmore County Sheriff's Office provides public safety for Hammett (Elmore County 2016).

3.6.3 Environmental Consequences

Any increase in safety risks is considered an adverse impact on safety. Significant impacts on safety would occur if a proposed action would do either of the following:

- Substantially increase risks associated with the safety of USAF personnel or the general public
- Introduce a new safety risk for which USAF is not prepared or does not have adequate management and response plans in place.

3.6.3.1 PROPOSED ACTION ALTERNATIVE

Operations conducted on Mountain Home AFB, MHRC, and other facilities are performed in accordance with applicable USAF safety regulations, published Air Force Technical Orders, and standards prescribed by USAF Occupational Safety and Health requirements.

The Proposed Action Alternative would result in intermittent, short-term, negligible, adverse impacts on the health and safety of operation personnel and the surrounding community members. Impacts on health and safety resulting from Urban CAS aircrew proficiency training would be similar at all urban centers; therefore, large, medium, and small urban centers are discussed collectively in this resource section. As explained in **Section 2.3**, the surge level of training events and training operations that represent the conservative scenario (wherein 160 training events involving 400 training operations would occur annually in any one of the nine urban centers) was used to determine the maximum potential level of impacts under the Proposed Action Alternative. However, actual training levels would vary between the projected and surge levels of training events for each urban center in its respective size category (see

Table 2-5). Therefore, impacts resulting from the flight proficiency training would realistically be less than the conservative estimates.

Flight Safety. Negligible impacts from the Proposed Action Alternative on flight safety would be expected because: 1) aircraft flight would continue to be conducted in accordance with standard flight rules and local operating procedures and policies, 2) the same number of training operations to be flown for the proposed Urban CAS aircrew proficiency training out of Mountain Home AFB are currently flown out of the installation; therefore, there would be no changes to the existing baseline for aircraft operations at Mountain Home AFB. Additionally, through adherence to established flight standards for pilot proficiency and safety procedures, the potential for aircraft mishaps under the Proposed Action Alternative would be extremely unlikely.

Training Operations. Aircrew proficiency training could result in negligible impacts on the health and safety of operations personnel and the surrounding community members. In accordance with DODI 1322.28, coordination with appropriate authorities would occur and all ground operations would strictly adhere to local ordinances and state and federal laws ensuring citizen safety. All local, state, and federal regulations enforcing traffic safety and law enforcement would be adhered to during all training operations. No impacts on emergency service response time would result from the Proposed Action Alternative.

The intermittent presence of ground teams within the ground operating areas would mimic existing conditions. Because ground support teams would be unarmed, dressed in plain clothes, and behaving as ordinary citizens, potential for impacts on health would be negligible and there would be little chance that the actions would contribute to a reduced level of safety. Further, ground teams would follow all traffic safety laws and would stop to park along a paved road, sidewalk, or parking lot when conditions are safe. As such, it is unlikely that they would block or disrupt civilian traffic or activities.

Aircrews and FFOR teams would track targets until conditions for an aircrew-simulated engagement are deemed safe and would be conducted in accordance with ROEs. The mock engagement would entail electronically locking onto an identified OPFOR target and completing a computer simulated combat engagement to neutralize the threat. Targets would be designated using low-power, eye-safe IR training lasers from altitudes that would eliminate the potential for harm on humans or animals on the ground; therefore, no impacts on health and safety would result from the use of computer simulated combat engagement. For ensured safety, all F-15E and F-15SG aircraft used during Urban CAS aircrew proficiency training would be “clean,” meaning that no munitions would be installed on the aircraft and would be fully inspected prior to take off. Use of airspace overlying the selected urban centers would vary depending upon availability to support proficiency training operations; therefore, the aircraft operations would be intermittent over individual urban centers. To ensure aircraft safety, all airspace operations would be coordinated with the appropriate air traffic controlling agency in accordance with USAF flight safety regulations and planning protocols and Notices to Airmen regarding planned airspace operations would be issued, as appropriate.

3.6.3.2 NO ACTION ALTERNATIVE

Under this alternative, the Proposed Action Alternative would not be implemented and the existing conditions for health and safety would remain as described in **Section 3.6.2**. Urban

CAS aircrew proficiency training would continue to be conducted only on Mountain Home AFB and in the MHRC. Although aircrews would gain some benefit from coordinated ground and flight mission training on the installation and within the MHRC, neither of these assets would accommodate the required fidelity and challenges required to maintain actual proficiency and operational readiness, or to ensure increased survivability of air and ground teams in the Urban CAS combat environment.

4. Cumulative Impacts

The CEQ regulations for implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR §§ 1500–1508). A cumulative impact is defined as the following (40 CFR § 1508.7):

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative impacts are most likely to arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with, or in proximity to, a proposed action would be expected to have more potential for a relationship than more geographically separated actions.

CEQ's guidance for considering cumulative impacts states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant." The first step in assessing cumulative impacts involves identifying and defining the scope of other actions and their interrelationship with a proposed action or alternatives. The scope must consider other projects that coincide with the location and timeline of a proposed action and other actions.

This cumulative effects analysis focuses on past, present, and reasonably foreseeable future projects related to the establishment of air and ground training spaces in urban centers located proximally to Mountain Home AFB and the establishment an Urban CAS aircrew proficiency training regime in the selected urban centers. For the purposes of this analysis, the temporal span of consideration is the period of training beginning in 2018 and through the next 5 years. The spatial span of consideration, or the region of influence (ROI), includes the project area and an additional 10 NM outside of the airspace and ground operating areas proposed for use.

4.1 Projects Considered for Potential Cumulative Impacts

This section provides decision makers with the cumulative effects of the Proposed Action by determining the incremental contribution of the Proposed Action Alternative together with past, present, and reasonably foreseeable future actions. **Sections 4.1.1** and **4.1.2** summarize past, present, and reasonably foreseeable future actions within the region that could interact with implementation of the Proposed Action Alternative. The following sections briefly describe each on-installation action and major regional actions, present the proponent and the timeframe (e.g., past, present/ongoing, future) of the action, and indicate which actions have the potential to cumulatively interact with the Proposed Action Alternative.

4.1.1 Past Actions

4.1.1.1 ON-INSTALLATION PROJECTS

Mountain Home AFB has been a military installation since 1942, and during this time the installation has supported numerous types of aircraft (USAF 1976). Past actions most relevant to assessment of the operational changes at Mountain Home AFB and 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 aircraft based at Mountain Home AFB increased operations in all of the MOAs associated with MHRC (see **Section 3.3.2, Airspace Management**) and currently operates and maintains MHRC under the direction of Mountain Home AFB (USAF 1992, USAF 1996, USAF 2002b, USAF 2007b).

No substantial on-installation construction or development projects have been completed within the recent past that warrant consideration regarding cumulative impacts. The majority of construction to establish airfield pavements, interior roads, and base infrastructure was completed approximately 70 years ago. The base infrastructure has expanded since that time to accommodate changes in the installation's mission and fluctuations in population. Facility improvements and demolition actions continue, as needed to maintain space-use efficiency and optimized operations.

4.1.1.2 OFF-INSTALLATION PROJECTS

The urban centers proposed for the Urban CAS air and ground training spaces are located within a region with environments that range from large urban centers to primarily agricultural areas with little to no developed roads, fire protection, emergency services, schools, utilities, or a predictable water source. Therefore, development throughout the region has occurred more frequently in some areas relative to others and some areas have remained undeveloped. In general, the region has seen increases in general and commercial airspace use; developed areas; and infrastructure, energy, and transportation projects. The following resources were used to characterize past projects and overall environment of the ROI:

- Blueprint Boise (Boise 2017)
- Boise Airport Master Plan Study Update (Boise Airport 2016)
- Burley Comprehensive Plan (Burley 2013)
- Elmore County 2014 Comprehensive Plan (Elmore County 2014)
- City of Twin Falls Community Strategic Plan 2030 (Twin Falls 2012)
- Master Plan Update Joslin Field, Magic Valley Regional Airport (Magic Valley Airport 2012)
- Owyhee County Comprehensive Plan (Owyhee County 2010)
- Solar Energy Industries Association Factsheet: Solar Spotlight Idaho (SEIA 2017)
- Renewable Northwest Energy Projects Map (Renewable Northwest 2018)

- Idaho Transportation Department District 3 and 4 Overviews (ITD 2018a, ITD 2018b)

4.1.2 Present and Reasonably Foreseeable Future Actions

4.1.2.1 ON- AND OFF-INSTALLATION USAF PROJECTS

Beddown of Additional Republic of Singapore Air Force F-15SGs. This proposed project would result in the beddown of additional RSAF F-15SG aircraft under the 366 FW at Mountain Home AFB. The beddown would include an increase the number of F-15SGs stationed at the installation from 14 to 20; construction of support facilities and infrastructure; and increases in personnel, aircraft operations, and munitions use.

The additional F-15SGs would arrive by the second quarter of 2019 and would result in a total of 62 aircraft on the installation. Eight facility projects directly related to the beddown would be implemented in 2018 through 2020. The additional 207 operations and support personnel would include active-duty, U.S. and RSAF personnel (officer, enlisted, and civilian) and contractor support. Overall, installation personnel would increase five percent. Annual sorties at the airfield would increase by approximately 12 percent, annual operations would increase by approximately 14 percent, and sortie-operations would increase by approximately 17 percent. No aspect of the Proposed Action Alternative would alter the structure or overall nature or use of the local or remote airspace units. All proposed increases in munitions would be inert/training practice rounds, and no increases in live munitions at the MHRC would occur (Mountain Home AFB 2017b).

Changes in MHRC Range Operations. This project would upgrade existing ground-based operations, facilities, targets, and munitions to enhance integrated air and ground-based training within the MHRC. These changes would enable the installation to meet training requirements associated with air strike control missions, Survival Evasion Resistance Escape training, JTAC training, Combined Arms Training missions, and CAS missions. To enhance aircrew air-to-ground training, USAF proposed improvements and additions to facilities in the Saylor Creek Range, target upgrades and additions on Juniper Butte Range, changes in the envelope for ground-based operations in the MHRC, and increases to existing and new munitions release activities. No new airspace would be established and no changes to existing airspace configurations would occur under the Proposed Action Alternative. An EA for this project was completed in May 2017 and concluded with a Finding of No Significant Impact (Mountain Home AFB 2017a).

Sustainable Water Supply. The proposed project would consist of establishing a new sustainable water supply conveyed via predominantly linear underground infrastructure to a proposed Water Treatment Facility within the installation boundary. The project would install or develop a dedicated vertical turbine pump station and intake structure at the CJ Strike Reservoir and a pressurized conveyance feature (pipe) extending from the CJ Strike Reservoir to Mountain Home AFB. The pipe would predominantly extend through land administered by BLM, although some smaller parcels of private (non-federal land) may be crossed by the system. A Water Treatment Facility with ancillary elements, including: 1) a 30-acre ft raw water reservoir; 2) water treatment processing equipment; 3) sludge drying beds; and 4) disinfection processing equipment would be constructed. Two-track roadways requiring temporary and permanent easements would also be constructed. Lastly, a connection to the existing water storage and

distribution system within the installation would be required. An EA for this project was completed in May 2017 and concluded with a Finding of No Significant Impact (Amec 2017).

Adaptive Reuse of Building 291. This project would renovate and repurpose Building 291 and the accompanying 103-acre area that comprises the former Alert Complex to support training operations for the 366 Civil Engineering Squadron for Readiness and Emergency Management Flight and the 366 FW. Building 291 (including the acreage surrounding it on the installation) is a NRHP-eligible facility. Additionally, a portion of the Live Ordnance Loading Area is encompassed by the Alert Complex. The entire Alert Complex is also within quantity-distance arcs. The Draft EA, dated April 2016, noted that impacts from this project would be minor and that it would contribute negligibly to cumulative impacts on resources on the installation. A Draft EA for this project was completed in April 2016 (Mountain Home AFB 2016).

Gunfighter MOA. This project would establish SUA between 14,000 ft above MSL up to (but not including) 18,000 ft above MSL to be used by the 366 FW. The Gunfighter MOA would be activated by NOTAM and would have the same dimensions and altitudes as the Gunfighter ALTRV airspace described in **Section 3.3.2, Airspace Management**. This airspace would be operated under a new LOA with ZLC ARTCC. The airspace above the Gunfighter MOA will be supported with an ATCAA from 18,000 ft to either 28,000 ft or 50,000 ft above MSL, as approved by ZLC ARTCC, just as in the current ALTRV/ATCAA construct (Schmidt 2018). Preparation of an EA for this action is expected to begin in 2018 or 2019.

Advanced Weapons and Tactics Airspace Optimization. This project would lower the floors of the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOAs to 100 ft AGL. Lowering of the floor of all of the MOA airspace in the MHRC to the same continuous altitude would meet training requirement and improve overall readiness of USAF and sister service aircrew. There would be no lateral area increases to the MOAs under the Proposed Action Alternative. The timeline for this project has not been determined.

F-35A Operational Beddown. The National Guard Bureau (NGB) proposes to beddown F-35A aircraft at two of five alternative Air National Guard (ANG) locations in the U.S. This action would involve the beddown of one F-35A squadron at each of two locations. Each squadron would consist of 18 aircraft and two backup aircraft, establishing two F-35A operations. Gowen Field, an Idaho ANG installation, is one of the five locations being considered as a potential beddown location. In addition to the beddown of 20 F-35As, an Active Duty associate unit would be integrated with ANG personnel and equipment at the selected location and the NGB would implement construction projects associated with the aircraft beddown. Overall, there would be a change to the type of aircraft based at the selected installation; a change to the mix of aircraft using the associated special use airspace; changes to staffing and manpower at the selected location; changes to the number of airfield operations; as well as minor necessary construction, building renovation, and facility demolition at the selected location. Scoping for the EIS analyzing this action has been completed and the Description of the Proposed Action and Alternatives is currently being completed (USAF Undated).

4.1.2.2 OFF-INSTALLATION PROJECTS

Continued increases in population; general and commercial airspace use; developed areas; and infrastructure, energy (i.e., solar, wind, geothermal, and electrical), and roadway projects are

expected in the ROI over the next 5 years. Because of the inclusion of large, medium, and small urban centers in the Proposed Action Alternative and the presence of a variety of industries in the ROI (see **Table 2-3**), the number of ongoing and future projects varies throughout the ROI. While many ongoing and future projects are associated with the large and medium urban centers, growth is occurring throughout the ROI. The types of projects that are ongoing and expected to occur include airspace management, transportation, development, infrastructure, and energy projects. It is expected that many remote areas within the ROI with limited infrastructure (as described in **Section 4.1.1.2**) would remain undeveloped over the next 5 years. The resources listed in **Section 4.1.1.2** were used to characterize the ongoing and future projects and overall environment of the ROI.

Because of the size of the ROI and the expected degree of development and growth, multiple projects are expected to occur over the next 5 years. To refine the analysis, this section addresses the major ongoing and future projects within the ROI. The cumulative effects associated with these major projects is expected to provide a conservative baseline for analysis that encompasses the potential effects of smaller projects that would also occur.

Airspace Management. Although not linked to particular large-scale airspace projects, the Boise Airport is expecting a continued increase in enplaned passengers. The FAA-approved forecast for Boise Airport predicted a 3.64 percent increase in enplaned passengers between 2005 and 2030 (Boise Airport 2016). Increases in enplaned passengers are also expected at Magic Valley Airport, where enplaned passengers are forecasted to increase an average of 7.2 percent per year between 2019 and 2024. This increase would primarily result from the addition of a third weekly air carrier aircraft flight beginning in 2020 (Magic Valley Airport 2012). Additionally, a plan for the Mini-Cassia Airport has been proposed to replace the air travel accommodations provided at the Burley Municipal Airport. Construction of the airport would allow room for growth as needed. The location of the new airport has not yet been determined; however, construction is expected to begin within the next 5 years, if approved by voters in the district where the airport would be located. Whether or not a new airport is constructed, the Burley Municipal Airport will ultimately be closed (Welch 2017).

Transportation. In addition to various minor and routine maintenance projects, 25 major transportation projects within the ROI that are ongoing or planned within southern Idaho. These projects would improve state and U.S. highways, bridges, city roadways, traffic flow, and the regulation of commercial truck traffic through the reconstruction, repaving, widening, and addition of traffic lanes; replace or rehabilitate bridges and overpasses; improvement of interchanges near city crossings; and port of entry (POE) relocation. **Table 4-1** lists the transportation projects to be considered for cumulative impacts within the ROI.

Development. Several development projects are planned in the region to accommodate the existing and projected increases in demand for housing and commercial growth across the ROI. **Table 4-2** lists the large-scale development projects by location that are to be considered for cumulative impacts within the ROI. Status of these projects ranges between the early planning stages and currently under construction. Anticipated completion dates are provided, where available.

Table 4-1. Ongoing and Future Transportation Projects within the ROI

Roadway	Location(s)	Project Description
ID-16	Eagle-Emmett	Construction of an expressway for North/South travel that was partially constructed in 2014 will be resumed. The project completion date has not been determined (ID DOT 2018a).
ID-21	Boise-Idaho City	Bridge rehabilitation will occur on Mores Creek Bridge, Wildlife Underpass, Grimes Creek Bridge, Wildcat Gulch, Stierman Gulch, South Fork Payette Bridge, and Canyon Creek Bridge. This project is planned for 2018 (ID DOT 2018a).
ID-24	Minidoka-Burley	Pavement reconstruction as well as culvert and sign replacement would occur between the B-2 canal and Minidoka. This project is planned for fall 2018 (Jerke 2018a).
US-20/26	Boise, Eagle, Gooding	Several projects are planned or are under way that would rehabilitate, repave, or improve roadways and bridges between 2018 and 2040 (ID DOT 2018a, ID DOT 2018b). Projects would affect: the Boise River Bridge (at Broadway Avenue); bridges on Front Street, Myrtle Street, and Broadway Avenue (US-20) in Boise; bridges on the South Gooding Main Canal (Gooding); and 15 miles of highway between I-84 and Eagle Road to be improved along US-20/26.
US-30	Twin Falls, Buhl, Burley	Several improvement projects are planned that would reconstruct, repave, or upgrade roadways, intersections, and one bridge between 2018 and 2019 including: US-30 between Banbury and Buhl; E 4000 N Road and US-30 intersections; road sections between Parke Avenue in Burley west through the 400 West Road intersection; and the Coulee Canal Bridge (Jerke 2018a, ID DOT 2018b).
ID-46	Twin Falls, Burley	An overlay and sealcoat will be applied to ID-46 between US-30 and the Ken Curtis Bridge and a culvert will be replaced. This project is planned for summer 2018 (Jerke 2018a).
ID-51	Bruneau	The Snake River Bridge will be replaced. This project was planned to begin in 2017 and the completion date has not yet been determined (ID DOT 2018a).
ID-55	Southern Idaho, multiple locations	Various projects are planned from the Idaho-Oregon-Nevada Junction with U.S. 95 in Owyhee County to the Karcher Interchange at Interstate 84 in Canyon County between 2017 and 2025 including: intersection reconstruction and improvements, lane and turn bay construction, Snake River Bridge replacement, and traffic light installation. Several additional projects are planned, or are currently under way, that would construct lanes, turn bays, and culverts from the junction with Idaho 44 (State Street) in the City of Eagle north to the junction with Banks Lowman Road in Boise County, and would replace the Snake River Bridge. These projects are expected to complete by 2030 (ID DOT 2018a).
ID-69	Meridian, Kuna	Several roadway improvements such as resurfacing, adding traffic signals, median installation, and lane reconfiguration are planned to occur between Meridian and Kuna. This project is planned to occur between the summer and fall of 2018 (ID DOT 2018a).

Roadway	Location(s)	Project Description
I-84	Southern Idaho, multiple locations	Several improvement projects are planned or are currently under way that would rehabilitate, reconstruct, and/or repave roadways, bridges, overpasses, and irrigation crossings along I-84 between 2017 and 2019 (ID DOT 2018a, ID DOT 2018b, Jerke 2018a, Jerke 2018b). Projects would affect the Sand Hollow Overpass Bridge; ID-50 to Valley Road (east bound); J Canal bridge in Jerome; Northside Canal to Kasota Road (west bound); Salt Lake System Interchange for I-84 and I-86, Meridian Interchange Overpass, Cole Road Overpass, Broadway Overpass, Highland Railroad Underpass, Gowen Railroad Underpass, Gowen Underpass, and Emerald Overpass; ID-50 to the Bridgeway Interchange; Karcher Interchange and Franklin Boulevard Interchange in Nampa; I-84 Business Route in Nampa; South Jerome Interchange; Old Highway 30 Bridge; and construction of the Declo POE to relocate and replace functions provided at the Cotterrel POE for commercial truck traffic on I-84 and I-86. Additionally, a future traffic study is expected to recommend improvements from Caldwell to the Karcher Interchange to be determined by a future traffic study and environmental analysis will occur. Construction of additional lanes and improvements to existing interchanges would be expected. The timeline for this project is undetermined (ID DOT 2018a).
US-93	Hollister, Deep Creek, Jerome	Several rehabilitation, reconstruction, realignment, and or general improvements projects are expected to occur on US-93 or on associated roadways and structures between 2017 and 2028 (ID DOT 2018b, Jerke 2018a, Jerke 2018b). Affected roadways include: 7 miles between Deep Creek and Hollister; realignment of 1.3 miles of road and construction of two lanes in each direction, turn bays, and a frontage road will occur on 400 South Road (Jerome County); new road construction and signalization at the 500 South Road; and roadway improvements from I-84 to ID-25.

Table 4.2. Ongoing and Future Large Scale Development Projects within the ROI

Project	Location	Description
Residential Projects		
Cadence and Encore Residential Communities	Meridian	Projects would construct 196 homes, including: 98 two-story attached homes in Cadence and 98 single-story attached homes in Encore. Construction began in 2017 and the date of completion has not been determined (Boydston 2016).
Linder Village	Meridian	Project would construct 14 commercial building lots and medium-density housing on more than 80 acres. This project is in the early planning stages. (Beech 2017, Boydston 2018).
PINE43 Development	Meridian	Project would include 516 lots that would accommodate 80 multifamily housing units, 356 units for single-family housing, and 28 units for commercial use. The current site plan places the development on 120 acres south of Fairview Avenue between Locust Grove Road and Eagle Road. This project is in the planning and zoning stages and a construction timeline has not yet been determined (Beech 2017).
Harrison Street Apartments	Twin Falls	Project is to construct an 80-unit fourplex development between fall 2017 and summer 2018 (Kennison 2017a).
Valencia Park Townhouses	Twin Falls	Project is to construct 84 units west of South Hills Middle School. Construction is expected to occur in 2018 (Kennison 2017a).
Elizabeth Boulevard Apartments	Twin Falls	Two-phase project is to construct 14 fourplexes (for 56 units) at 1854 Elizabeth Boulevard beginning in spring 2018 (Kennison 2017a).

Project	Location	Description
Commercial Projects		
New Stadium	Boise	Project would to site and construct a new 5,000-seat stadium in downtown Boise between late 2018 and 2020 (Berg 2017a, Berg 2017b).
Chobani Innovation Center	Twin Falls	Project is to construct a 700,000 ft ² community center in Twin Falls just outside of the existing Chobani Plant. Construction began in 2017 and is anticipated to complete during summer 2018 (Kennison 2018).
Jayco, Inc. Expansion	Twin Falls	Project is to renovate and expand the existing Jayco Recreational Vehicle facility through construction of an additional 235,000 ft ² . Project completion is anticipated by mid-2018 (Vitu 2018)
McCain Foods Plant	Burley	Project is to expand the existing plant through construction of additional buildings behind its existing facilities. Construction began in 2017 and is anticipated to complete in 2018 (Kennison 2017b).

Energy and Infrastructure. Additional to routine maintenance and utility upgrade projects, **Table 4-3** lists the major energy and infrastructure projects and locations within the ROI that are under consideration for cumulative impacts.

Table 4.3. Ongoing and Future Large Scale Energy Projects within the ROI

Project	Location	Description
Large-Scale Renewable Energy Generation	Elmore County	Project would include a large dam and reservoir above the existing Anderson Ranch Dam Reservoir on the South Fork of the Boise River, a wind farm, and a solar farm. The dam would be 3.4-miles long and would impound a 50,000 acre reservoir, the wind farm would consist of 39 turbines, and the solar farm would consist of 171,000 solar panels. The timeline for this project has not been determined. As of 20 June 2016, the project was being evaluated by the Elmore County Planning and Zoning Division (Snake River Alliance 2016).
Gateway West Transmission Line	Mountain Home, Burley	Multi-phase project to build and operate approximately 1,000 miles of new high-voltage transmission lines between the Windstar Substation near Glenrock, Wyoming and the Hemingway Substation near Melba, Idaho between 2020 and 2024 (Gateway West Undated a, Gateway West Undated b). The project would cross through Mountain Home and Burley and would be located proximally to Boise, Twin Falls, Grandview, Glenns Ferry, Bruneau, Mountain Home AFB, and Hammett.
Sustainable Water Supply for City of Mountain Home and Elmore County	Mountain Home, Elmore County	The City of Mountain Home and Elmore County have approached the Idaho Water Resource Board about developing a sustainable water supply for the area. It is possible that a pump station and pipeline could be routed through alignments parallel to those proposed in support of the Sustainable Water Supply project that would provide an alternative potable water supply for the installation. The timeline for this project has not been determined (SPW Water Engineering 2017).

4.2 Cumulative Effects Analysis

The following analysis in **Sections 4.2.1** through **4.2.6** examines the cumulative effects on the environment that would result from the incremental impacts of the Proposed Action Alternative, in addition to other past, present, and reasonably foreseeable future actions. This analysis assesses the potential for an overlap of impacts with respect to project schedules or affected areas. This section presents a qualitative analysis of the cumulative effects.

4.2.1 Noise

Air operations associated with the Proposed Action Alternative that would occur concurrently with cumulative projects would result in long-term, minor, adverse, cumulative impacts on the ambient noise environments of the urban centers. The proposed Urban CAS pilot proficiency training, F-35A operations if Gowen Field is selected for the ANG F-35A beddown, and airspace management cumulative projects (e.g., expected increases in regional air traffic) would result in an incremental increase in aircraft noise in the urban center where operations are actually occurring. However, the anticipated contribution by the proposed Urban CAS aircrew proficiency training to increased noise levels across the ROI would be negligible in comparison with the existing and projected noise from commercial, recreational, military, and private aircraft flights in the region. If flights associated with the Proposed Action Alternative occur concurrently with planned development projects in an urban center, there could be intermittent, temporary increases in noise levels. Considered cumulatively, impacts from these actions would be minor. Although the proposed F-15E and F-15SG sortie operations could result in a perceptible increase in the presence and operation of military aircraft in the local airspaces, no noise-producing activity or project has been identified that, when combined with the Proposed Action Alternative, would have greater than minor, adverse impacts on sensitive noise receptors in the environment. Ground operations would result in negligible cumulative impacts on the noise environment. Vehicles would generate automobile noise during ground operations which would naturally blend with other existing noise sources in the urban centers and noises generated by cumulative projects.

4.2.2 Air Quality

The Proposed Action Alternative would result in negligible to minor, adverse, cumulative impacts on air quality if implemented concurrently with cumulative projects. Cumulative long-term impacts would be expected from emissions generated by the local increases in aircraft flight operations associated with the proposed Urban CAS aircrew proficiency training, cumulative projects that would result in increased air operations, and the expected increase in regional air traffic; the use of vehicles under the Proposed Action Alternative and cumulative projects; and the use of construction equipment under cumulative projects. However, by directly inventorying all emissions in nonattainment regions and monitoring concentrations of criteria pollutants in attainment regions, Idaho takes into account the effects of all past and present emissions in their states. This is done by putting a regulatory structure in place designed to prevent air quality deterioration for attainment areas. This structure of rules and regulations is contained in the State Implementation Plan (SIP). SIPs are the regulations and other materials for meeting clean air standards and associated CAA requirements. SIPs include the following:

- State regulations that USEPA has approved
- State-issued, USEPA-approved orders requiring pollution control at individual companies
- Planning documents such as area-specific compilations of emissions estimates and computer simulations (modeling analyses) demonstrating that regulatory limits ensure that the air will meet air quality standards.

The SIP process applies either specifically or indirectly to all activities in the region. No cumulative projects have been identified that, when combined with the Proposed Action Alternative, would threaten the region's attainment status; would have substantial GHG emissions; or would lead to a violation of any federal, state, or local air regulation. Therefore, cumulative impacts would be negligible to minor.

4.2.3 Airspace Management

Short-term, minor, adverse, cumulative impacts on airspace management within the ROI would be expected if pilot proficiency training is conducted in the urban center(s) where other identified cumulative airspace projects would also be occurring. Increased air travel in the U.S. is driving local airport plans to expand commercial and general aviation traffic in the region (Boise Airport 2016, Magic Valley Airport 2012). Military air operations would also be expected to increase from F-35A operations if Gowen Field is selected for the ANG F-35A beddown. This increase in air traffic would require additional effort for flight monitoring by ATC. When considered with the other identified cumulative airspace projects and projected growth of air travel, the long-term contribution to cumulative impacts on airspace management by the proposed Urban CAS aircrew proficiency training would be negligible because intermittent training operations involving flight of two or four F-15E or F-15SG aircraft over an urban center would not substantially add to airspace congestion across the region. Increased air traffic would not limit FAA and ATC capabilities or commercial and general aviation activities; therefore, there would be no expected decline in ATC's ability to maintain aviation safety or in airspace available for general use. The Proposed Action Alternative would not require the creation or reconfiguration of existing airspaces; therefore, no cumulative impacts on airspace configuration would be expected.

4.2.4 Land Use

Long-term, negligible, adverse cumulative effects on land use would be expected from the implementation of the Proposed Action Alternative and cumulative projects. Noise produced during sortie operations in conjunction with noise associated with cumulative projects and the expected increase in regional air traffic could have an impact on land uses; however, these impacts would be negligible because noise levels would not require changes to existing or future land uses. Additionally, the Proposed Action Alternative and cumulative projects would be implemented in accordance with each urban center's zoning laws and applicable planning documents. The proposed ground operations would occur entirely on publicly accessible paved roads and would have no cumulative impact on land uses.

4.2.5 Cultural Resources

The Proposed Action Alternative would not affect cultural or historical resources, and would, therefore, not contribute to cumulative impacts on those resources.

4.2.6 Health and Safety

Long-term, negligible, cumulative adverse impacts on health and safety could be expected as a result of training operations associated with the proposed Urban CAS aircrew proficiency training and other identified cumulative projects. Although increased air traffic is often associated with increased potential for aircraft mishaps, research does not support that the Proposed Action, cumulative projects that would result in increased air operations, or the expected increase in air traffic in the ROI would result in increased mishaps. Additionally, the potential for mishaps is extremely unlikely because all aircraft sortie operations would continue to be conducted in accordance with standard flight rules and local operating procedures and policies. The increase in local air operations would result in increased potential for bird and wildlife aircraft strikes; however, such events would be minimized by air operational adherence to existing BASH protocols. The proposed ground operations and traffic associated with cumulative projects could result in vehicle accidents and impede emergency services; however, all activities conducted under the Proposed Action Alternative and cumulative projects would adhere to local laws and would coordinate with emergency services where applicable. Additionally, employment of appropriate safety methods during training activities would be expected to minimize the potential for adverse impacts. Cumulative projects with construction and demolition activities would result in cumulative adverse impacts on health and safety due to construction-related hazards; however, the Proposed Action Alternative would not contribute to these cumulative impacts.

Cumulative long-term, minor, beneficial impacts on health and safety would be expected from cumulative projects through upgrades associated with construction of modern facilities to support the F-15SG programs and from improvements to the potable water supply associated with the Sustainable Water Supply projects for both the installation and the City of Mountain Home/Elmore County.

4.3 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the proposed Urban CAS aircrew proficiency training as implemented in the Proposed Action Alternative. Adverse impacts on the ambient noise environment would be unavoidable during flight training activities but would not be significant.

4.4 Compatibility of Proposed Action with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

The Proposed Action Alternative would involve ground operations that would be conducted on publicly accessible roads, sidewalks, and parking lots and flight proficiency training operations in airspace within which the USAF already operates. The nature of activities for the Proposed Action Alternative would not appreciably differ from current USAF use of these areas. USAF would continue to follow all requirements related to F-15E and F-15SG operation and maintenance and would therefore be consistent with current federal, regional, state, and local land use policies and controls.

4.5 Relationship between Short-Term Uses of the Human Environment and Maintenance and Enhancement of Long-Term Productivity

Short-term uses of the biophysical components of the human environment include direct, project-related disturbances and direct impacts associated with an increase of population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

The proposed Urban CAS aircrew proficiency training as implemented under the Proposed Action Alternative would not require short-term resource uses that would result in long-term compromises of productivity. Under the Proposed Action Alternative, long-term noise and air emissions from aircraft flight would be expected. Noise and air emissions generated during flight training activities would not be expected to result in long-term, adverse impacts on noise-sensitive receptors or wildlife. Because most of the cities encompass at least one airport or heliport, or underlie airspace that is commonly used by civilian, commercial, and military aircraft, the nature of activities for the Proposed Action Alternative would not be expected to differ from current uses of these areas.

Implementation of the proposed Urban CAS aircrew proficiency training would not result in significant impacts on sensitive resources. As a result, it is not anticipated that the Proposed Action Alternative would result in any environmental impacts that would 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.

4.6 Irreversible and Irretrievable Commitment of Resources

NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action Alternative should it be implemented" (40 CFR § 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources would 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 timeframe. Building construction material, such as gravel and fuel usage for construction equipment, would constitute the consumption of non-renewable resources. Irretrievable resource commitments also involve the loss in value of an affected resource that cannot be restored because of the action.

Most resource commitments associated with the Proposed Action Alternative would be neither irreversible nor irretrievable. Most impacts associated with the Proposed Action Alternative would be short-term and temporary (e.g., air emissions from flight activities), or longer lasting but negligible (e.g., increase in aircraft noise).

Training operations would continue to involve the consumption of nonrenewable resources such as gasoline used in vehicles and jet fuel used in the F-15E and F-15SG aircraft. None of these activities are expected to significantly decrease the availability of mineral or petroleum

resources; however, this use of fuel would be irreversible. No other irreversible or irretrievable commitment of resources would be expected.

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B.S. Mechanical Engineering
Years of Experience: 25

Nicolas Frederick

M.S. Biology
B.S. Psychology
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B.A. Geography
GIS Professional Certificate
Years of Experience: 14

Chris Holdridge

M.S. Environmental Assessment
B.S. Environmental Science/Chemistry
Years of Experience: 20

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M.S. Wildlife Management
B.S. Wildlife Biology
Years of Experience: 31

Christine Magers

M.S. Environmental Management
B.S. Wildlife and Fisheries Sciences
Years of Experience: 11

Christopher McJetters

B.S. English
Years of Experience: 11

Cheryl Myers

A.A.S. Nursing
Years of Experience: 24

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M.S. Environmental Science and Management
B.S. Zoology
B.S. Wildlife Science
Years of Experience: 17

Katherine Plimpton

M.S. Historic Preservation
B.A. Archaeology
Years of Experience: 18

Steve Pyle

J.D. Environmental Law
B.S. Natural Resources Management
Years of Experience: 17

Morgan Shelby

B.S. Environmental Science
Years of Experience: 3

Patrick Solomon

M.S. Geography
B.A. Geography
Years of Experience: 23

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6. References

- AC 2003 Airspace Coordination (AC). 2003. *Chapter 3 Airspace Basics*.
- ACSO
Undated a Ada County Sheriff's Office (ACSO). Undated. "City of Eagle Police." Available online: <<https://adasheriff.org/About-Us/Eagle-Police>>. Accessed 24 April 2018.
- ACSO
Undated b ACSO. Undated. "Kuna City Police." Available online: <<https://adasheriff.org/About-Us/Kuna-Police>>. Accessed 24 April 2018.
- Ada County
2016 Ada County. 2016. *Ada County 2025 Comprehensive Plan*. November 2016.
- AFCEC 2017 U.S. Air Force Civil Engineering Center (AFCEC). 2017. AFCEC Noise Program, Noise Model Operational Data Documentation (NMODD) Deliverable for the Mountain Home Air Force Base 2018 Air Installation Compatible Use Zone (AICUZ) Study. Prepared for Mountain Home AFB by Leidos. July 2017.
- AirNav 2017 AirNav.com (AirNav). "Airport Information." Available online: <<http://www.airnav.com/airports/>>. Accessed December 2017.
- AirNav 2018a AirNav.com (AirNav). 2018. "KBOI Boise Air Terminal/Gowen Field." Available online: <<https://www.airnav.com/airport/KBOI>>. Accessed 16 February 2018.
- AirNav 2018b AirNav. 2018. "KMAN Nampa Municipal Airport." Available online: <<https://www.airnav.com/airport/KMAN>>. Accessed 16 February 2018.
- AirNav 2018c AirNav. 2018. "KBYI Burley Municipal Airport." Available online: <<http://www.airnav.com/airport/KBYI>>. Accessed 16 February 2018.
- AirNav 2018d AirNav. 2018. "U76 Mountain Home Municipal Airport." Available online: <<http://www.airnav.com/airport/U76>>. Accessed 16 February 2018.
- AirNav 2018e AirNav. 2018. "KTWF Joslin Field – Magic Valley Regional Airport." Available online: <<https://www.airnav.com/airport/KTWF>>. Accessed 16 February 2018.
- AirNav 2018f AirNav. 2018. "KJER Jerome County Airport." Available online: <<http://www.airnav.com/airport/KJER>>. Accessed 16 February 2018.
- AirNav 2018g AirNav. 2018. "U03 Buhl Municipal Airport." Available online: <<https://www.airnav.com/airport/U03>>. Accessed 16 February 2018.
- AirNav 2018h AirNav. 2018. "U89 Glenns Ferry Municipal Airport." Available online: <<http://www.airnav.com/airport/U89>>. Accessed 19 February 2018.

- Amec 2017 Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec). 2017. *Draft Environmental Assessment Establishment of a Sustainable Water Supply for Mountain Home Air Force Base, Mountain Home, Idaho*. May 2017.
- ANSI 2013 American National Standard Institute. 2013. *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-term measurements with an observer present*. ANSI S12.9-1993 (R2013)/Part 3.
- ASN 2012 Aviation Safety Network (ASN). 2012. Class A Mishap Record for F-15E Mountain Home AFB on 21 October 1998. Available online: <<https://aviation-safety.net/wikibase/wiki.php?id=60309>>. Accessed 20 April 2018.
- ASN 2018a ASN. 2018. "ASN Accident Database Record for the McDonnell Douglas F-15E. Available online: <<http://aviation-safety.net/wikibase/dblist.php?AcType=F15&sorter=datekey&page=2>>. Accessed 23 February 2018.
- ASN 2018b ASN. 2018. ASN Aviation Safety Data for Aircraft Mishaps in Idaho from 1950 to 2017. Available online: <<https://aviation-safety.net/database/dblist.php?Country=N|IH>>. Accessed 27 February 2018.
- BCPDSD 2017 Boise City Planning and Development Services Department (BCPDSD). 2017. *Blueprint Boise: Boise's Comprehensive Plan*. March 22, 2017.
- Beech 2017 Beech, Holly. 2017. "A look at major commercial projects in Meridian." *Meridian Press*, 09 August 2017. Available online: <https://www.idahopress.com/meridian/news/a-look-at-major-commercial-projects-in-meridian/article_158a9094-ed41-5e2b-9986-20fc23d426e6.html>. Accessed 07 March 2018.
- Berg 2017a Berg, Sven. 2017. "Boise Hawks, soccer in Downtown Boise Stadium by spring 2020? It could happen." *Idaho Statesman*, 25 September 2017. Available online: <<http://www.idahostatesman.com/news/local/community/boise/article175383346.html>>. Accessed 08 March 2018.
- Berg 2017b Berg, Sven. 2017. "That proposed Boise sports stadium? It might go somewhere else. Here's why." *Idaho Statesman*, 05 December 2017. Available online: <<http://www.idahostatesman.com/news/local/community/boise/article188228719.html>>. Accessed 08 March 2018.
- BFD 2018 Boise Fire Department (BFD). 2018. *Operations*. Available online: <<https://fire.cityofboise.org/operations/>>. Accessed 04 January 2018.
- Boise 2017 City of Boise (Boise). 2017. *Blueprint Boise, Boise's Comprehensive Plan*. 22 March 2017. Available online: <<https://pds.cityofboise.org/planning/comp/blueprint-boise/>>. Accessed 28 February 2018.

Boise Airport 2010	Boise Airport. 2010. <i>Master Plan Update for Boise Airport</i> . April 2010.
Boise Airport 2016	Boise Airport. 2016. Master Plan Study Update. 16 November 2016. Available online: < https://www.iflyboise.com/media/1290/mps-presentation1.pdf >. Accessed 12 February 2018.
Boise District BLM 2016	Boise District, Bureau of Land Management (BLM). 2016. <i>Fire Operations</i> . Available online: < https://www.idahofireinfo.blm.gov/southwest/resources_boiseblm.htm >. Accessed 09 January 2018.
Boydston 2016	Boydston, Morgan. 2016. "Mixed opinions over more new homes in Meridian's largest subdivision." <i>KTVB.com</i> , 22 December 2016. Available online: < http://www.ktvb.com/article/news/local/mixed-opinions-over-more-new-homes-in-meridians-largest-subdivision/376893431 >. Accessed 08 March 2018.
Boydston 2018	Boydston, Morgan. 2018. "Meridian City Council sends Linder Village development plan back to P&Z." <i>KTVB.com</i> , 17 January 2018. Available online: < http://www.ktvb.com/article/news/local/meridian-city-council-sends-linder-village-development-plan-back-to-pz/277-508702597 >. Accessed 07 March 2018.
BPD 2018	Boise Police Department (BPD). 2018. "About BPD." Available online: < https://police.cityofboise.org/home/about-bpd/ >. Accessed 04 January 2018.
Burley 2013	City of Burley (Burley). 2013. <i>City of Burley Comprehensive Plan</i> . April 2013.
Burley Undated	Burley. Undated. <i>City of Burley Fire Department</i> . Available online: < http://burleyidaho.org/city-of-burley/fire-department/ >. Accessed 04 January 2018.
Cassia County 2018	Cassia County. 2018. "Cassia County Sheriff's Department - Some Information about our Department." Available online: < http://cassiacyountysheriff.org/ >. Accessed 04 January 2018.
City-Data.com 2017	City-Data.com. 2017. Statistical Search Engine for Urban Centers in the United States. Available online: < http://www.city-data.com/ >. Accessed October and November 2017.
Congressional Research Service 2003	Congressional Research Service. 2003. CRS Report for Congress: Military Aviation Safety, Order Code RL31571. Available online: < https://www.everycrsreport.com/files/20031125_RL31571_1e95b1b93a0fcde4874121b47fa34a65fcc4c04.pdf >. Accessed 11 April 2018.
DNWG 2009	Department of Defense Noise Working Group (DNWG). 2009. <i>Using Supplemental Noise Metrics and Analysis Tools</i> .

- DOD 2016 Department of Defense (DOD). 2016. *Strategic Sustainability Performance Plan FY 2016*. Available online: https://energy.gov/sites/prod/files/2017/04/f34/doe_2016_sspp_revision.pdf. Accessed September 2017.
- EFD Undated Eagle Fire Department (EFD). Undated. "Eagle Fire Department." Available online: <http://www.eaglefire.org/>. Accessed 23 April 2018.
- Elmore County 2014 Elmore County. 2014. *Draft Elmore County 2014 Comprehensive Plan*. 2014.
- Elmore County 2016 Elmore County. 2016. "Elmore County Sheriff's Office." Available online: <http://www.elmorecounty.org/Sheriff/default.html>. Accessed 09 January 2018.
- FAA 2016a Federal Aviation Administration (FAA). 2016. "Airport Categories." Available online: https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/. Accessed 01 March 2018.
- FAA 2016b FAA. 2016. "Pilot's Handbook of Aeronautical Knowledge, Chapter 15 Airspace." Available Online: https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/pilot_handbook.pdf. Accessed 05 January 2018.
- FAA 2017a FAA. 2017. *Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures*. 12 October 2017.
- FAA 2017b FAA. 2017. *Instrument Procedures Handbook*. 14 September 2017.
- FAA 2018 FAA. 2018. *Frequently Asked Questions and Answers*. Available online: https://www.faa.gov/airports/airport_safety/wildlife/faq/. Accessed 25 October 2018.
- FAA Undated FAA. Undated. "Chap 1 – Airspace and Airport." Available online: https://www.faasafety.gov/files/events/ea/ea03/2012/.../airspace_made_easy.pdf. Accessed 01 March 2018.
- Fidell 2003 Fidell, Sanford. 2003. *The Schultz Curve 25 Years Later: A Research Perspective*.
- FireCARES 2018a FireCARES. 2018. "Bruneau Fire Protection District." Available online: <https://firecares.org/departments/75977/bruneau-fire-protection-district>. Accessed 09 January 2018.
- FireCARES 2018b FireCARES. 2018. Glenns Ferry Fire Department. Available online: <https://firecares.org/departments/82610/glenns-ferry-fire-department>. Accessed 09 January 2018.

FireCARES 2018c	FireCARES. 2018. "Grand View Rural Fire Protection District." Available online: < https://firecares.org/departments/82886/grand-view-rural-fire-protection-district >. Accessed on 9 January 2018.
Garden City 2006	Garden City. 2006. <i>Garden City Comprehensive Plan</i> . July 2006. Available online: < http://www.gardencityidaho.org/vertical/sites/%7BA16794C5-94AE-4C54-B8E9-ADC537012C3F%7D/uploads/%7B027E60FD-E457-4267-9D28-A4325DF4FB91%7D.PDF >. Accessed 24 April 2018.
Gateway West Undated a	Gateway West Transmission Line Project (Gateway West). Undated. "About the Project." Available online: < http://www.gatewaywestproject.com/project_info.aspx >. Accessed 09 March 2018.
Gateway West Undated b	Gateway West. Undated. "Overview." Available online: < http://www.gatewaywestproject.com/maps.aspx >. Accessed 09 March 2018.
GlobalAir 2018	GlobalAir.com (GlobalAir). 2018. "Mountain Home AFB Airport (KMUO)." Last Updated 01 February 2018. Available online: < https://www.globalair.com/airport/apt.runway.aspx?aptcode=muo >. Accessed 16 February 2018.
GlobalSecurity 2017a	GlobalSecurity.org (GlobalSecurity). 2017. Hill Air Force Base. Available online: < https://www.globalsecurity.org/military/facility/hill.htm >. Accessed 19 December 2018.
GlobalSecurity 2017b	GlobalSecurity. 2017. Nellis Air Force Base. Available online: < https://www.globalsecurity.org/military/facility/nellis.htm >. Accessed 18 December 2017.
GlobalSecurity 2017c	GlobalSecurity. 2017. Yuma Training Range Complex. Available online: < https://www.globalsecurity.org/military/facility/yuma-trc.htm >. Accessed 18 December 2017.
GlobalSecurity 2017d	GlobalSecurity. 2017. Eglin Air Force Base, Florida. Available online: < https://www.globalsecurity.org/military/facility/eglin.htm >. Accessed 18 December 2017.
Hill AFB 2016	Hill Air Force Base (AFB). 2016. Hill Air Force Base Economic Impact Statement, 2016. Available online: < http://www.hill.af.mil/Portals/58/documents/HillAFB-Economic-Impact-2016.pdf?ver=2017-01-27-130553-313 >. Accessed 15 October 2017.
Idcide 2017	Idcide. 2017. "Weather and Climate for Mountain Home AFB." Available online: < http://www.idcide.com/weather/id/htm >. Accessed September 2017.
ITD 2018a	Idaho Transportation Department (ITD). 2018. "District 3 – Southwest Idaho." Available online: < http://itd.idaho.gov/d3/ >. Accessed 08 March 2018.

- ITD 2018b ITD. 2018. "District 4 – Southcentral Idaho." Available online: <http://itd.idaho.gov/d4/>. Accessed 08 March 2018.
- ID HTL 2018 Idaho HomeTownLocator (ID HTL). 2018. "Glenns Ferry Joint School District 192 ID School District." Available online: <https://idaho.hometownlocator.com/schools/sorted-by-districts,n,glenns%20ferry%20joint%20school%20district%20192,i,1601230.cfm>. Accessed 09 January 2018.
- JCS 2014 Office of the Joint Chiefs of Staff (JCS). 2014 Joint Publication 3-09.3: Close Air Support. 25 November 2014. Available online: https://fas.org/irp/doddir/dod/jp3_09_3.pdf. Accessed 18 August 2017.
- Jerke 2018a Jerke, Nathan. 2018. Email from Nathan Jerke (Idaho Transportation Department [ITD]) containing a list of new transportation projects within District 4. 12 March 2018.
- Jerke 2018b Jerke, Nathan. 2018. Email from Nathan Jerke (ITD) providing information on ongoing transportation projects in District 4. 07 March 2018.
- Jerome 2010a City of Jerome (Jerome). 2010. "Fire Department – About Us." Available online: <http://www.ci.jerome.id.us/city-government/fire-department/about-us.html>. Accessed 24 April 2018.
- Jerome 2010b Jerome. 2010. *City of Jerome Comprehensive Plan*. Updated via Resolution 18-10 on July 20, 2010. Available online: [http://www.ci.jerome.id.us/wwwroot/userfiles/files/planning_and_zoning/comp_plan_2010_revisions_\(bin der\).pdf](http://www.ci.jerome.id.us/wwwroot/userfiles/files/planning_and_zoning/comp_plan_2010_revisions_(bin der).pdf). Accessed 24 April 2018.
- Jerome County 2015 Jerome County. 2015. *Jerome County Comprehensive Plan*. Revised November 13, 2015.
- Kennison 2017a Kennison, Heather. 2017. "Multifamily resurgence? Fourplexes, townhosues coming soon to Twin Falls." *MagicValley.com*, 06 September 2017. Available online: http://magicvalley.com/news/local/multifamily-resurgence-fourplexes-townhouses-coming-soon-to-twin-falls/article_c8c2bc8a-20e5-50d6-bcff-a4ba7d342450.html. Accessed 07 March 2018.
- Kennison 2017b Kennison. Heather. 2017. "UPDATE: McCain Foods plans \$200 million, 180 job expansion of Burley plant." *MagicValley.com*, 03 May 2017. Available online: http://magicvalley.com/news/local/update-mccain-foods-plans-million-job-expansion-of-burley-plant/article_272e1688-0e9f-51ee-9345-1945b9c5706d.html. Accessed 08 March 2018.

- Kennison 2018 Kennison, Heather. 2017. "More commercial projects coming in 2018." MagicValley.com, 04 January 2018. Available online: <http://magicvalley.com/news/local/more-commercial-projects-coming-in/article_4559ea4a-3a51-53ef-a3e9-502531d550ff.html>. Accessed 05 January 2018.
- KRFD Undated Kuna Rural Fire District (KRFD). Undated. "About Us." Available online: <<https://kunafire.com/about-us/>>. Accessed 23 April 2018.
- Kyba et al. 2015 Kyba, C.C.M., S. Garz, H. Kuelchy, A. Sanchez de Miguel, J. Zamorano, J. Fischer, and F Holker. 2015. High-Resolution Imagery of Earth at Night: New Sources, Opportunities and Challenges. *Journal of Remote Sensing* 7: 1-23. Available online: <<http://www.mdpi.com/2072-4292/7/1/1/htm>>. Accessed 29 September 2017.
- Magic Valley Airport 2012 Magic Valley Airport. 2012. *Master Plan Update Joslin Field, Magic Valley Regional Airport. December 2012*. Available online: <<http://id-twinfalls2.civicplus.com/index.aspx?NID=398>>. Accessed 16 February 2018.
- Martin Prosperity Institute 2013 Martin Prosperity Institute. 2013. Night-Time Light Data: A Good Proxy Measure for Economic Activity? Available online: <<http://martinprosperity.org/papers/Night-time%20LightData-Formatted.pdf>>. Accessed 7 October 2017.
- Meridian 2018 City of Meridian (Meridian). 2018. "Police Department." Available online: <<http://meridiancity.org/police/index.html>>. Accessed 24 April 2018.
- MFD 2011 Meridian Fire Department (MFD). 2011. *Meridian Fire Department, Idaho 2011-2016 Strategic Plan*. June 2011. Available online: <<http://meridiancity.org/uploadedFiles/Strategic%20Plan%202011-2016.pdf>>. Accessed 23 April 2018.
- MFD 2017 MFD. 2017. 2016 Meridian Fire Annual Report. Available online: <<http://meridiancity.org/uploadedFiles/Departments/Fire/2016%20MFD%20Annual%20Report%20FINAL.pdf>>. Accessed 23 April 2018.
- MHPD 2014 Mountain Home Police Department (MHPD). 2014. "Mountain Home Police Patrol Bureau." Available online: <<http://www.mhpd.net/patrol.htm>>. Accessed 09 January 2018.
- Mountain Home 2018 City of Mountain Home (Mountain Home). 2018. "About Us - Fire Station & Vehicles." Available online: <<http://www.mhfd.us/about-us/>>. Accessed on 4 January 2018.
- Mountain Home AFB 2012 Mountain Home AFB. 2012. *Integrated Natural Resources Management Plan (INRMP) for Mountain Home Air Force Base, Small Arms Range, Saylor Creek Air Force Range, Juniper Butte Range, and other Mountain Home Range Complex Sites*. June 2012.

Mountain Home AFB 2015a	Mountain Home AFB. 2015. JTAC/TACP and CAS Training and Mountain Home AFB (MHAFB). Report Control Symbol: 2016010104. December 2015.
Mountain Home AFB 2015b	Mountain Home Air Force Base (Mountain Home AFB). 2015. <i>Economic Impact Statement for Mountain Home AFB</i> .
Mountain Home AFB 2016	Mountain Home AFB. 2016. <i>Draft Environmental Assessment for Adaptive Reuse Potential of Building 291 at Mountain Home Air Force Base</i> . April 2016.
Mountain Home AFB 2017a	Mountain Home AFB. 2017. <i>Final Environmental Assessment for Operational Changes and Range Improvements in the Mountain Home Range Complex</i> . May 2017.
Mountain Home AFB 2017b	Mountain Home AFB. 2017. <i>Public Draft Environmental Assessment for Beddown of Additional Republic of Singapore (RSAF) F-15SGs at Mountain Home Air Force Base, Idaho</i> . December 2017.
Mountain Home AFB 2018	Mountain Home AFB. 2018. Email communication from Capt. A. Richardson on use of eye-safe training lasers.
NACFRD Undated	North Ada County Fire and Rescue District (NACFRD). Undated. "North Ada County Fire & Rescue District." Available online: < http://www.nacfire.org/ >. Accessed 23 April 2018.
Nampa 2011	City of Nampa (Nampa). <i>Nampa 2035 Comprehensive Plan</i> . Fall 2011. Available online: < http://id-nampa.civicplus.com/DocumentCenter/View/415 >. Accessed 24 April 2018.
NPD Undated	Nampa Police Department (NPD). Undated. "Patrol." Available online: < http://id-nampa.civicplus.com/606/Patrol >. Accessed 24 April 2018.
Owyhee County 2010	Owyhee County. 2010. <i>Owyhee County Comprehensive Plan</i> . Amended August 9, 2010.
Owyhee County Undated	Owyhee County. Undated. "Owyhee County Sheriff." Available online: < http://owyheecounty.net/departments/sheriff/ >. Accessed 09 January 2018.
Renewable Northwest 2018	Renewable Northwest. 2018. "Renewable Energy Projects, Renewable Northwest." Available online: < http://www.rnp.org/project_map >. Accessed 5 January 2018.

- Richardson 2018 Richardson. 2018. Email from Capt. Aaron Richardson (USAF ACC 366 OSS/OSOR) to Deborah Peer (HDR) regarding information on the airspace to be used for proposed Urban CAS operations. 09 January 2018.
- Schmidt 2018 Schmidt. 2018. Airspace Information provided by Mr. Byron Schmidt (Mountain Home AFB Airspace Manager. February 2018.
- SEIA 2017 Solar Energy Industries Association (SEIA). 2017. "Solar Spotlight, Idaho." Available online: <<https://www.seia.org/state-solar-policy/idaho-solar>>. Accessed 28 February 2018.
- Shultz 1978 Shultz, Theodore. 1978. *Synthesis of Social Surveys on Noise Annoyance*.
- SKYbrary 2017 SKYbrary. 2017. "Altitude, Flight Level and Height." Available Online: <http://www.skybrary.aero/index.php/Altitude,_Flight_Level_and_Height>. Accessed 28 February 2018.
- Snake River Alliance 2016 Snake River Alliance. 2016. "About that Massive Elmore County Energy Generation Project." 20 June 2016. Available online: <<http://snakeriveralliance.org/about-that-massive-elmore-county-energy-generation-project/>>. Accessed 08 March 2018.
- SPW Water Engineering 2017 SPW Water Engineering. 2017. Elmore County Water Supply Alternatives. February 28, 2017. Available online: <<https://www.idwr.idaho.gov/files/iwr/2017/20170228-Elmore-County-Water-Supply-Report.pdf>>. Accessed October 16, 2017
- TFFD 2017 Twin Falls Fire Department (TFFD). 2017. *Twin Falls Fire Department 2017 Annual Report*. Available online: <<http://www.tfid.org/index.aspx?nid=511>>. Accessed 09 January 2018.
- TFPD 2017 Twin Falls Police Department (TFPD). 2017. *Twin Falls Police Department 2016 Annual Report to Our Citizens*. Available online: <<http://www.tfid.org/index.aspx?NID=517>>. Accessed 09 January 2018.
- Twin Falls County 2008 Twin Falls County. 2008. *Twin Falls County Comprehensive Plan*. April 28, 2008.
- Twin Falls 2012 City of Twin Falls (Twin Falls). 2012. City of Twin Falls Community Strategic Plan 2030. December 2012. Available online: <www.tfid.org/DocumentCenter/View/745>. Accessed 28 February 2018.
- Twin Falls Undated City of Twin Falls (Twin Falls). Undated. "Fire – Responsibilities". Available online: <<http://www.tfid.org/index.aspx?NID=164>>. Accessed 09 January 2018.

- USAF 1976 U.S. Air Force (USAF). 1976. *Environmental Assessment Saylor Creek Gunnery Range, 366 Tactical Fighter Wing, Mountain Home AFB, Idaho*. 13 December 1976.
- USAF 1992 USAF. 1992. *Final Environmental Impact Statement, Proposals for the Air Force in Idaho, Volume I*. January 1992.
- USAF 1996 USAF. 1996. *Environmental Assessment for the Proposed Relocation of the 34th Bomb Squadron to Mountain Home AFB, Idaho*.
- USAF 2002a USAF. 2002. *Environmental Assessment for the West Coast Combat Search and Rescue (CSAR) Beddown*. United States Headquarters Air Combat Command. FONSI signed 27 June 2002.
- USAF 2002b USAF. 2002. *Final Mountain Home AFB Force Structure Change Environmental Assessment*. May 2002.
- USAF 2003 United States Air Force (USAF). 2003. "Thunderbird Crashes at Air Show." Available online: <<http://www.af.mil/News/Article-Display/Article/138537/thunderbird-crashes-at-air-show/>>. Accessed 06 March 2018.
- USAF 2007a USAF. 2007. SELCalc2 Aircraft Noise Model, Version 1.0.3.
- USAF 2007b USAF. 2007. *Republic of Singapore Air Force F-15SG Beddown Final Environmental Assessment*. March 2007.
- USAF 2015 USAF. 2015. Air Conformity Applicability Model (ACAM). Version 5.0.7. May 29, 2015.
- USAF 2016 USAF. 2016. NOISEMAP Aircraft Noise Model, Version 7.3.
- USAF 2017 USAF. 2017. Approved Laser Systems Attachment 1: Safety information for USAF and Non-USAF Laser Systems, Nominal Ocular Hazard Distances (NOHDs) of Common Laser Systems. November 2017.
- USAF 2018 USAF. 2018. USAF Aviation Safety Division - BASH, Applicable USAF Instructions and Regulations. Available online: <<https://www.safety.af.mil/Divisions/Aviation-Safety-Division/BASH/>>. Retrieved 30 October 2018.
- USAF Undated USAF. Undated. "F-35A Operational Beddown – Air National Guard Environmental Impact Statement." Available online: <<http://angf35eis.com/Alternatives.aspx>>. Accessed 06 July 2018.

- USCB 2010a U.S. Census Bureau (USCB). 2010. Census 2010 Total Population for Nellis Air Force Base. Available online: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed 18 December 2017.
- USCB 2010b USCB. 2010. 2010. Eglin AFB CDP, Florida Population Statistics. Available online: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed 18 December 2018.
- USCB 2016a USCB. 2016. ACS Demographic and Housing Estimates 2012-2016 American Community Survey 5-Year Estimates. Available online: <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. Accessed 17 October 2018.
- USCB 2016b USCB. 2016. Selected Economic Characteristics 2012-2016 American Community Survey 5-Year Estimates. Available online: <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. Accessed 17 October 2018.
- USCB 2017a U.S. Census Bureau (USCB). 2017. Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016. Available online: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPANNRES&prodType=table. Accessed 1 October 2017.
- USCB 2017b U.S. Census Bureau (USCB). 2017. "Quick Facts Population Estimates for July 1, 2016, for Cities in Idaho." Available online: <https://www.census.gov/quickfacts/fact/table/US/PST045216>. Accessed October 2017.
- USCB 2018 USCB 2018. 2017 Population Estimate, Boise, Idaho. Available online: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES&src=pt. Retrieved 21 July 2018.
- USEPA 1971 U.S. Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Washington, DC: s.n., Publication NTID300.1.
- USEPA 2017a USEPA. 2017. "Attainment Status." Available online: http://www.epa.gov/airquality/greenbook/anay_nm.html. Accessed September 2017.
- USEPA 2017b USEPA. 2017. "AirData Web Site." Available online: <https://www.epa.gov/outdoor-air-quality-data/monitor-values-report>. Accessed September 2017.
- VFRmap 2018 VFRmap.com (VFRmap). 2018. Hybrid VFR Map. Available online: <http://vfrmap.com/>. Accessed 23 February 2018.

- Vitu 2018 Vitu, Teya. "Jayco RV will expand by 235,000 square feet in Twin Falls." *Idaho Business Review*, 15 February 2018. Available online: <https://idahobusinessreview.com/2018/02/15/jayco-rv-will-expand-by-235000-square-feet-in-twin-falls/>. Accessed 08 March 2018.
- Welch 2017 Welch, Laurie. 2017. "Public gets first glimpse of Burley airport plans." *MagicValley.com*, 01 December 2017. Available online: http://magicvalley.com/news/local/mini-cassia/public-gets-first-glimpse-of-burley-airport-plans/article_1415d720-86af-56c9-bf11-ce3298e96c89.html. Accessed 28 February 2018.
- Woolpert 2017 Woolpert. 2017. *Installation Development Plan Mountain Home Air Force Base, Idaho*. April 2017.