Final Environmental Assessment
Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

March 2022

Department of the Air Force
366th Fighter Wing



Privacy Advisory

This Environmental Assessment (EA) is provided for public comment in accordance with the National Environmental Policy Act of 1969 (NEPA), the President's Council on Environmental Quality NEPA Regulations (40 Code of Federal Regulations [CFR] Parts 1500 to 1508), and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*. For this EA, the updated September 2020 CEQ NEPA rules (85 Federal Register 43304 through 43376; pending congressional review) are being followed. The EIAP provides an opportunity for public input on Department of the Air Force (DAF) decision-making, allows the public to offer inputs on alternative ways for the DAF to accomplish what it is proposing, and solicits comments on the DAF's analysis of environmental effects.

Public commenting allows the DAF 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 Personal home addresses and phone numbers will not be published in the EA.

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COVER SHEET

ENVIRONMENTAL ASSESSMENT FOR QATAR EMIRI AIR FORCE F-15QA BEDDOWN MOUNTAIN HOME AIR FORCE BASE, IDAHO

a. *Responsible Agency*: Department of the Air Force (DAF)

b. *Cooperating Agency*: None

c. *Proposals and Actions:* The Environmental Assessment (EA) analyzes the Proposed Action to provide training support to the Qatar Emiri Air Force (QEAF) in response to their request for the DAF to provide continental United States (CONUS)-based international military training. The Proposed Action would include the beddown of 12 F-15QA permanently assigned QEAF aircraft and associated equipment, use of the Mountain Home Air Force Base airfield and special use airspace and military training routes for training, use of defensive countermeasures and ordnance, approximately 300 additional QEAF and United States Air Force personnel, and the construction and modification of facilities and infrastructure needed to support the beddown. Basing and operations would begin in early Fiscal Year 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

d. *For Additional Information:* 366 Fighter Wing Public Affairs, 366FW.PA.PublicAffairs@us.af.mil or 208-828-6800.

e. *Designation:* Final EA

f. *Abstract:* This EA has been prepared pursuant to provisions of the National Environmental Policy Act, Title 42 United States Code §§ 4321 to 4347, implemented by Council on Environmental Quality Regulations, Title 40, Code of Federal Regulations Parts 1500 to 1508, and 32 Code of Federal Regulations Part 989, *Environmental Impact Analysis Process (EIAP)*, and the updated September 2020 Council on Environmental Quality National Environmental Policy Act rules (85 Federal Register 43304 through 43376). Potentially affected environmental resources were identified in coordination with local, state, and federal agencies.

The purpose of the Proposed Action is to establish a United States Air Force–led QEAF F-15QA training squadron and maintenance training within the CONUS. The need for the Proposed Action is to strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E Wing at a CONUS Air Force Base, beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request.

The analysis indicates that by continuing the environmental protection measures and best management practices associated with the Proposed Action, there would be no significant impacts from the QEAF beddown at Mountain Home Air Force Base. The resource areas analyzed as part of this determination included noise; air quality; safety; land use; earth resources; biological resources; cultural resources; infrastructure; hazardous materials and wastes, Environmental Restoration Program sites, and toxic substances; socioeconomics; and environmental justice. In addition, no significant impacts associated with the Proposed Action when considered with reasonably foreseeable future projects would be anticipated.

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LIST OF ACRONYMS AND ABBREVIATIONS

366 FW	366th Fighter Wing
ac	acre(s)
ACM	asbestos-containing materials
AFB	Air Force Base
AFI	Air Force Instruction
AFMAN	Air Force Manual
AGL	above ground level
AMU	Aircraft Maintenance Unit
ANSI	American National Standard Institute
AP	accumulation point
AQCR	air quality control region
APE	Area of Potential Effect
APZ	accident potential zone
AST	aboveground storage tank
ATCAA	Air Traffic Control Assigned Airspace
BASH	bird/wildlife aircraft strike hazard
BBC	Balfour Beatty Communities
BLM	Bureau of Land Management
BMP	best management practice
CCF	Central Collection Facility
CDNL	C-weighted day-night sound level
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CONUS	continental United States
CZ	clear zone
DAF	Department of the Air Force
dB	decibel(s)
dBA	A-weighted decibel
dBC	C-weighted decibel
dBP	peak noise level
DESR	Defense Explosives Safety Regulation
DNL	day-night average sound level
DOD	Department of Defense
EA	Environmental Assessment
EO	Executive Order
FAA	Federal Aviation Administration
ft	foot(feet)
ft^2	square foot(feet)
FY	Fiscal Year
gal	gallon(s)
GHG	greenhouse gas
IDAPA	Idaho Administrative Procedures Act
IDARNG	Idaho Army National Guard
IDFG	Idaho Department of Fish and Game
IR	instrument route
JBR	Juniper Butte Range
LBP	lead-based paint
L_{dnmr}	onset rate-adjusted monthly day-night average sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
MHAFB	Mountain Home Air Force Base
MHRC	Mountain Home Range Complex
mi	mile(s)
mi^2	square mile(s)
MOA	Military Operations Area
MSL	mean sea level
MTR	Military Training Route
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NO_x	nitrogen oxides
NPS	National Park Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCB	polychlorinated biphenyl
pCi/L	picocurie(s)
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
psf	pound(s) per square foot
Q-D	quantity-distance
QEAF	Qatar Emiri Air Force
ROI	region of influence
RSAF	Republic of Singapore Air Force
SAC	Strategic Air Command
SCR	Saylor Creek Range
SEL	sound exposure level
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SUA	Special Use Airspace
TCP	Traditional Cultural Property
tpy	tons per year
U.S.C.	United States Code
US	United States
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compounds
VR	visual route
WWII	World War II
WWTP	wastewater treatment plant

CHAPTER 1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States (US) Department of the Air Force (DAF) proposes to provide training support to the Qatar Emiri Air Force (QEAF) in response to their request for the DAF to provide continental United States (CONUS)–based international military training. The proposal implements a policy established following World War II (WWII) to provide training to foreign military personnel of ally countries and would further strengthen the relationship between the United States and Qatar. The proposal includes 12 F-15QA permanently assigned QEAF aircraft and associated equipment to be operated at a selected training location for 10 years, with the option to extend. In considering this action the DAF is following the Strategic Basing Process in accordance with Air Force Instruction (AFI) 10-503. This proposal will require the DAF to consider the potential environmental consequences of the Proposed Action and all reasonable alternatives in the decision-making process under the National Environmental Policy Act of 1969 (NEPA; 42 US Code § 4321 et seq.) and the Council on Environmental Quality's (CEQ's) implementing regulations for NEPA (40 Code of Federal Regulations [CFR] Parts 1500 through 1508). For this EA, the updated September 2020 CEQ NEPA rules (85 Federal Register 43304 through 43376; pending congressional review) are being followed. The DAF is also required to consider the DAF NEPA-implementing regulation (32 CFR Part 989). This Environmental Assessment (EA) addresses the potential environmental consequences of the Proposed Action, alternative actions, and the No Action Alternative in accordance with NEPA and CEQ implementing regulations.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.2.1 Need for the Proposed Action

The need for the Proposed Action is to further strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E Wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request.

1.2.2 Purpose of the Proposed Action

The purpose of the Proposed Action is to establish a US Air Force-led QEAF F-15QA training squadron and maintenance training within the CONUS. The Secretary of the Air Force and the Chief of Staff of the Air Force would identify the installation that would meet the needs of the QEAF through the strategic basing process.

1.3 NATIONAL ENVIRONMENTAL POLICY ACT AND OTHER COMPLIANCE REQUIREMENTS

NEPA (Public Law 91-190, 42 US Code § 4321 et seq.) requires a systematic, interdisciplinary approach to evaluate all potential effects of a proposed federal action and alternatives. Under 32 CFR Part 989, the DAF provides environmental impact analysis procedures for compliance with NEPA regulations. This analysis is documented in an EA and, if supported, with a Finding of No Significant Impact. The EA is used in the DAF's decision-making process for implementing a proposed action. If a Finding of No Significant Impact cannot be supported, then the DAF would decide whether to conduct mitigation to reduce impacts below the level of significance, prepare an Environmental Impact Statement, or choose the No Action Alternative. The NEPA process includes a study of other relevant environmental laws, regulations, and Executive Orders (EOs) (summarized in **Appendix B.1**) and addresses these collectively in a concurrent analysis, which enables decision makers to have a comprehensive view of major environmental issues and requirements associated with a proposed action. Coordination with other environmental agencies may occur for the Proposed Action.

1.4 INTERGOVERNMENTAL AND STAKEHOLDER COORDINATION

The environmental analysis process, in compliance with NEPA guidance, includes public and agency review of information pertinent to the proposed and alternative actions. Further, compliance with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act (NHPA) requires consultation with the US Fish and Wildlife Service (USFWS) and State Historic Preservation Office (SHPO), respectively. Tribal consultation is also required under the NHPA. The Interagency and Intergovernmental Coordination for Environmental Planning memoranda and responses, recipient mailing list, agency and intergovernmental coordination letters and responses, agency consultation letters and responses, and tribal consultation letters and responses are included in **Appendix B**. Consultation is complete. Determinations of effect are included in each applicable resource section.

Four comment correspondences were received during the Draft EA 30-day comment period. Comments were received from Idaho Department of Fish and Game (IDFG), United States Environmental Protection Agency (USEPA), Idaho SHPO, and Wildlands Defense (**Appendix B**). All substantive comments received during the 30-day comment period were considered during the preparation of this Final EA.

Concurrence was requested on DAF's no effect determination from the Idaho SHPO on 19 October 2021. The SHPO responded to the concurrence request letter with comments on 4 November 2021 (2021-651). Subsequent concurrence was requested by DAF on 23 December 2021 based on the modifications and additions requested by the Idaho SHPO. The Idaho SHPO responded with a concurrence to DAF's no effect determination on 10 January 2022. As a result of the consultation (**Appendix B**), modifications and additions are included in this EA:

> **Flightline and Taxiways.** As the paved portions of the flightline, including the runway, taxiways and aprons, have not yet been evaluated for National Register of Historic Places (NRHP) eligibility, they are afforded the same consideration and protection as historic properties on MHAFB. There is no significant construction or modification proposed to the runway, taxiways, or aprons as part of the Proposed Action. While the undertaking does propose two additional rows of aircraft sunshades on the flightline, their installation is consistent with existing sunshades utilized by military aircraft and would not adversely affect any characteristics that may convey significance, thus qualifying it for listing in the NRHP.
>
> **Effects Determination.** In addition to the No Action Alternative, four additional alternatives were considered. DAF has determined the Proposed Action under Alternatives 1 and 3, at the "Sea of Rocks" would have no adverse effect on historic properties. The Idaho SHPO concurred with DAF's no adverse effects determination for Alternatives 1 or 3. Alternatives 2 or 4 would not be implemented without further consultation per 36 CFR 800.
>
> **Consulting Parties.** In accordance with NHPA and its implementing regulations at 54 U.S.C. 306108, DAF identified potentially interested parties to be added to the mailing list and letters were sent to Preservation Idaho, Elmore County Historical Society, Warhawk Air Museum, and Idaho Military History Museum on 23 November 2021. A request to participate was received from Preservation Idaho. The correspondence is included in **Appendix B**.

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a US Air Force-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the 366th Fighter Wing Commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and US Air Force personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft^2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a US Air Force fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

2.2 ALTERNATIVE SELECTION PROCESS

In accordance with 32 CFR § 989.8(c), selection standards were developed to establish a means for determining the reasonableness of an alternative and whether an alternative should be carried forward for further analysis in the EA. Consistent with 32 CFR § 989.8(c), the following selection standards meet the purpose of and need for the Proposed Action and were used to identify reasonable alternatives for analysis in the EA. Selection standards were developed to identify CONUS locations suitable to meet the QEAF request and subsequently to screen site-specific beddown alternatives at potential locations.

Base Location Selection Standards

1. QEAF must be collocated with an existing CONUS-based F-15E Wing to leverage existing compatible infrastructure and similar mission sets.
2. The installation, associated training facilities, and existing SUA must all have the capacity to support QEAF force-on-force training engagements.
3. The SUA must overlie variable topography (i.e., mountainous terrain) to support QEAF combat readiness training.

Site-Specific Selection Standards

1. QEAF must not permanently displace, interfere with, detract from, or degrade existing and future US Air Force missions and infrastructure.
2. The selected installation must be able to meet the immediate beddown and sustainment timelines for the requested start of QEAF training by FY 2024.
3. The immediate beddown must leverage available space within existing facilities to limit construction and associated costs of interim facilities.
4. The selected installation must have space for new, permanent mission-support facilities that are integrated with US Air Force infrastructure and consistent with security considerations.

2.2.1 Alternatives Considered

The NEPA and CEQ regulations mandate the consideration of reasonable alternatives to the Proposed Action. "Reasonable alternatives" are those that could also be used to meet the purpose of and need for the Proposed Action. The NEPA process is intended to support flexible, informed decision-making; the analysis provided in this EA, and feedback from stakeholders, will inform decisions made about whether, when, and how to execute the Proposed Action. Among the alternatives evaluated is the No Action Alternative, which evaluates the potential consequences of not undertaking the Proposed Action and serves to establish a comparative baseline for analysis. This section presents reasonable alternatives for evaluation and assesses them relative to selection standards.

2.2.1.1 Screening of Base Location Alternatives

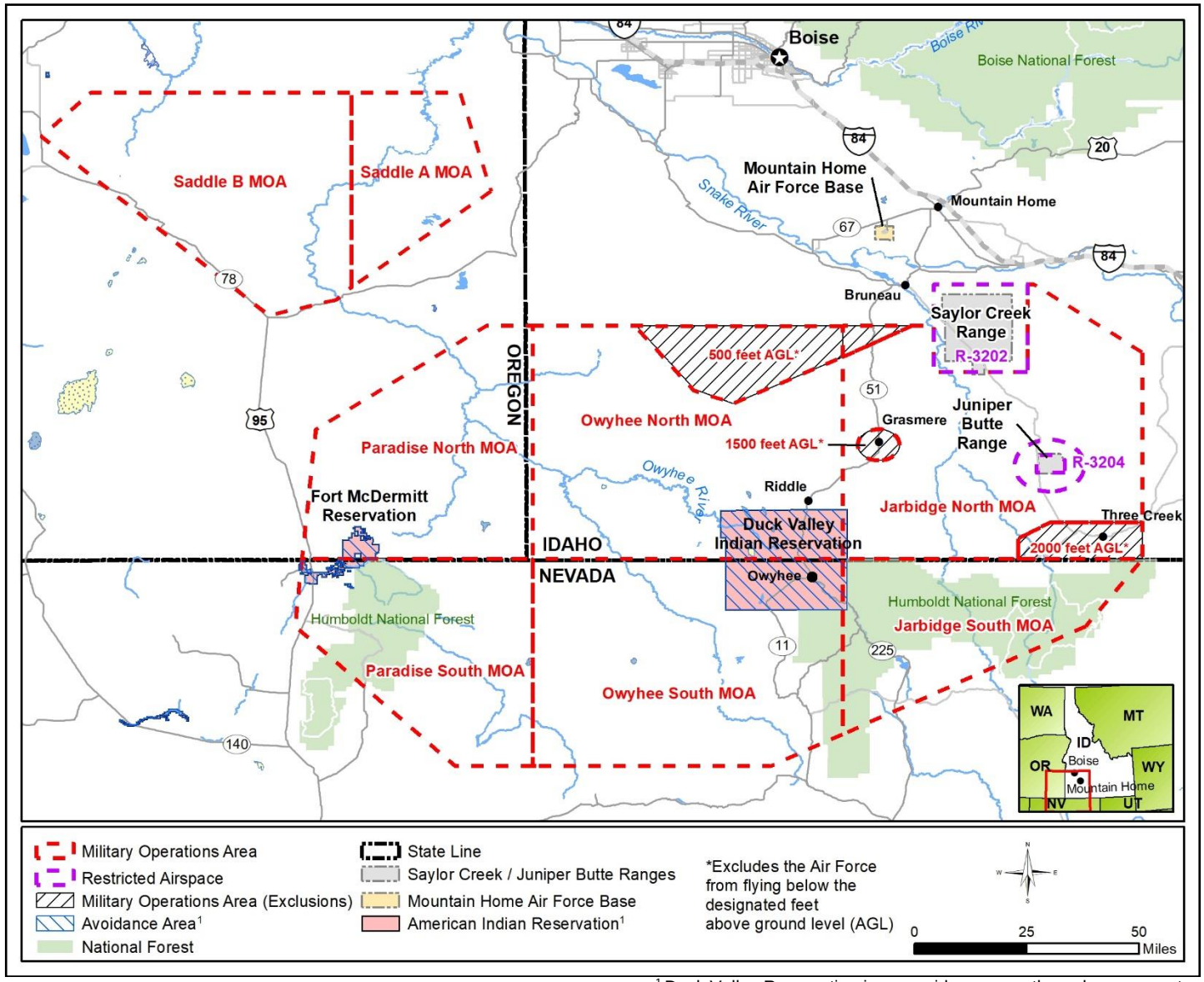
To evaluate proposed base locations to beddown the QEAF, the DAF followed the process identified in AFI 10-503, *Strategic Basing*[1]. The DAF Strategic Basing process provides an enterprise-wide repeatable process for decision making to ensure all basing actions involving DAF units and missions support mission requirements and comply with all applicable environmental guidance. Further, QEAF's requests to include collocation with an existing F-15E Wing at a CONUS US Air Force base, minimization of beddown costs, adequate airspace, and a location with variable topography to support QEAF combat readiness were considered. Seymour Johnson AFB, North Carolina, and Mountain Home AFB (MHAFB), Idaho, are the only two fighter wings in the CONUS with existing F-15E units that may be able to leverage existing compatible infrastructure and similar mission sets. There are no other CONUS bases that potentially meet the purpose of and need for the Proposed Action and base location selection standards.

Seymour Johnson AFB is in Wayne County in eastern North Carolina, approximately halfway between the northern and southern North Carolina state borders. Seymour Johnson AFB is the home of the 4th Fighter Wing consisting of the 333d, 334th, 335th, and 336th Fighter Squadrons; the Air Force Reserve's 916th Air Refueling Wing; and the Air Force Reserve's 307th Fighter Squadron. Seymour Johnson AFB is the only F-15E Formal Training Unit for the US Air Force and is responsible for training all Combat Air Force F-15E aircrews. The 4th Fighter Wing currently possesses 94 F-15E Strike Eagles in its inventory; however, Seymour Johnson AFB does not currently have the capacity required to beddown a tenant unit, and a tenant unit beddown at Seymour Johnson AFB would interfere with existing and future DAF missions. Further, Seymour Johnson AFB does not offer SUA with variable topography to allow for the training experience to support combat readiness requested by the QEAF. Therefore, Seymour Johnson AFB was dismissed from further consideration.

MHAFB is located in Elmore County, Idaho (**Figure 2-1**), approximately 55 miles (mi) southeast of Boise, and 12 mi southwest of the city of Mountain Home. MHAFB (Main Base) encompasses 6,844 acres (ac) and manages the Small Arms Range (4,622 ac), Rattlesnake Radar Station (1 ac), Middle Marker (21 ac), C.J. Strike Dam Recreation Annex (3 ac), and the Mountain Home Range Complex (MHRC). In addition, there are two air-to-ground weapons ranges (Saylor Creek Range [SCR] and Juniper Butte Range [JBR]), no-drop targets, and emitter sites. Approximately 9,000 square miles (mi^2) of SUA overlies the MHRC. This SUA (**Figure 2-1**) includes Military Operations Areas (MOAs), Restricted Areas, and Air Traffic Control Assigned Airspace (ATCAA) that along with Military Training Routes (MTRs) in the region can be used for military training operations. In addition to supporting 90 percent of MHAFB's flight training, the MHRC provides training assets and airspace for other US Air Force units, 124th Fighter Wing from Gowen Field Air National Guard Base in Boise, other Department of Defense (DOD) units, and international partner pilots.

The 366th Fighter Wing (366 FW) is located at MHAFB. The 366 FW's mission is to provide effective, high-quality training for rapid deployment and combat readiness for conflicts around the world as well as support for foreign military pilot training. Currently, MHAFB is home to two US Air Force F-15E Strike Eagle

[1] AFI 10-503, Section 1.5: The DAF defines a basing action as any action (e.g., activation, inactivation, adjustment) that results in the increase, decrease, and/or movement of DAF or non-DAF units, missions, manpower authorizations, and/or weapon systems to a location determined to be DAF or non-DAF real or leased property.



[1] Duck Valley Reservation is an avoidance area through agreements.

Figure 2-1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges.

squadrons (42 authorized aircraft) and one squadron of F-15SGs from the Republic of Singapore Air Force (RSAF) (20 authorized aircraft). MHAFB currently has the space required to beddown a tenant unit such as QEAF and offers variable topography beneath its controlled SUA to allow for the combat readiness training experience requested by the QEAF.

2.2.1.2 Screening of Site-Specific Alternatives

The site-specific alternatives considered in the preparation of this EA are based on a combination of elements including the type and location of permanent housing and the permanent location of the flightline facilities for the QEAF beddown at MHAFB. These alternatives provide various approaches to implementation of the Proposed Action. The evaluation of the permanent flightline alternatives was based on the proposed location of the QEAF Hangar (**Figure 2-2**) because the location decision for the QEAF Hangar would determine the location of other required flightline facility infrastructure (e.g., sunshades, squadron operations and simulator facility). Alternatives considered are summarized in **Table 2-1** through **Table 2-3**.

The site-specific selection standards were applied to interim and permanent flightline facility and housing alternatives at MHAFB to determine which could support the QEAF F-15QA mission and fulfill the purpose and need for the Proposed Action. Because of the extended time that would be required for the planning, design, and construction of permanent facilities to support the QEAF, interim (i.e., 0 to 5 years) housing and flightline facility solutions would be needed to meet the immediate beddown and sustainment timelines for the requested start of QEAF training by FY 2024. Therefore, all alternatives evaluated would include interim housing and interim flightline facility components.

Flightline Facility and Infrastructure Alternatives

MHAFB has limited available existing flightline facilities and accessible back shops to support the beddown of the QEAF without constructing new facilities; only one interim solution for flightline facility and infrastructure was identified. The interim solution would primarily utilize existing flightline facilities and infrastructure to support the immediate QEAF beddown requirements. This interim flightline facility solution was carried forward for further evaluation.

Five alternatives (Alternatives A through E) were evaluated for the permanent flightline facilities and infrastructure and are presented in **Table 2-1**. All five alternatives would be limited to locations along the airfield, as the permanent facilities and infrastructure required to support the QEAF would be proximate to the flightline. Of the five alternatives evaluated, only Flightline Alternatives C (“Sea of Rocks” Location) and D (“Integrated Campus” Location) meet the selection standards (**Table 2-4**).

Housing Alternatives

Housing alternatives considered would include on- and off-base locations, the use of existing housing, as well as new construction (**Table 2-2** and **Table 2-3**). A QEAF Community Center would also be constructed on base.

Based on the availability of on-base housing at the time of the phased beddown, interim housing for up to 20 accompanied and 20 unaccompanied personnel could be supported in existing on-base housing (i.e., existing dormitories and military family housing) as long as US Air Force personnel were not displaced by QEAF personnel. Interim on-base housing would not exceed a total housing accommodation of 20 units for accompanied and 20 units for unaccompanied personnel. Existing off-base housing in Elmore and Ada Counties would also be considered for the remaining accompanied and unaccompanied personnel, or all of the accompanied and unaccompanied personnel. The use of a combination of on-base (up to 40 total QEAF personnel) and off-base housing or all off-base housing to support the interim housing requirement would meet all the selection standards. The permanent unaccompanied and accompanied personnel housing alternatives would vary by location, housing type, and their relationship to the selection standards. The site-specific screening of housing alternatives is summarized in **Table 2-5** and **Table 2-6**.

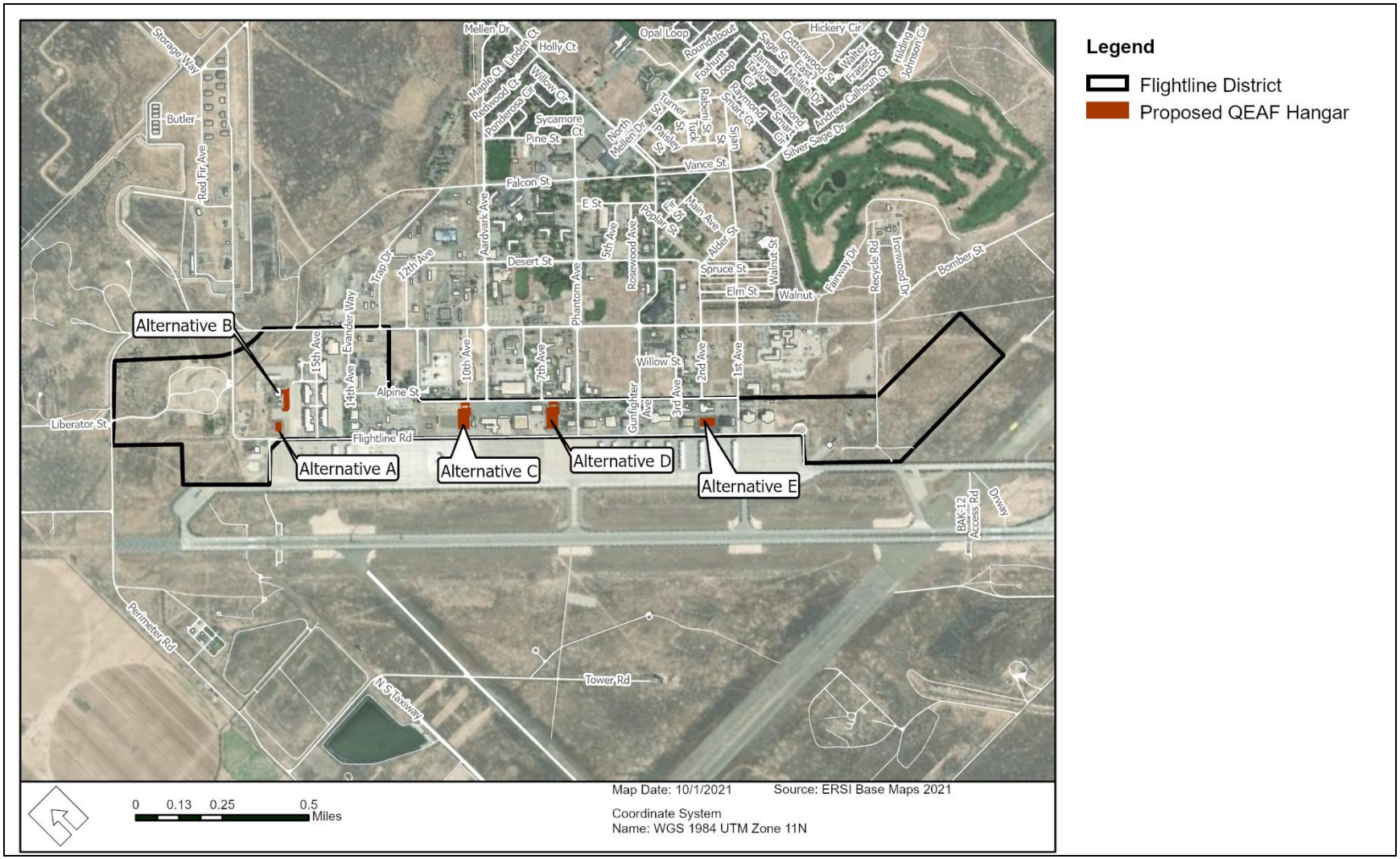


Figure 2-2. Permanent Flightline Qatar Emiri Air Force (QEAF) Hangar Location Alternatives.

Table 2-1. Permanent Flightline Facility Alternatives Considered in Screening

Permanent Housing or Facility Alternatives Considered	Brief Description	Screening Summary
Flightline Alternative A	This alternative would locate the QEAF hangar at the western end of the flightline between Buildings 1330 and 1342 east of Red Fir Avenue. The area includes space available for sunshades and future growth but limited parking.	This alternative fails to meet Site-Specific Selection Standards 1 and 3. • Proximity and integration of the squadron operations and simulator, AMU, and supply warehouse could interfere with existing US Air Force missions. • Not enough space to infill required beddown facilities, including parking.
Flightline Alternative B	This alternative would locate the QEAF hangar at the western end of the flightline between Buildings 1334 and 1339 south of Liberator Street. The area includes space available for sunshades and future growth but would require renovation.	This alternative fails to meet Site-Specific Selection Standards 1 and 3. • Proximity and integration of the squadron operations and simulator, AMU, and supply warehouse could interfere with existing US Air Force missions. • Not enough space to infill required beddown facilities including parking.
Flightline Alternative C	This alternative would locate the QEAF hangar near 12th and Aardvark Avenues and south of Alpine Street. The area has ample space except for sunshades and may cause apron crowding.	Meets all selection standards.
Flightline Alternative D	This alternative would locate the QEAF hangar east of Building 210 and south of Alpine Street. Trees would be removed, and parking would be demolished.	Meets all selection standards.
Flightline Alternative E	This alternative would locate the QEAF hangar on the eastern end of the flightline between Buildings 204 and 201 south of Alpine Street. The area is located between two historic hangars and a Squadron Operations Facility with limited space for growth.	This alternative fails to meet Site Specific Selection Standard 1. • Proximity and integration of the squadron operations and simulator, AMU, and supply warehouse could interfere with existing US Air Force missions.

AMU = Aircraft Maintenance Unit; QEAF = Qatar Emiri Air Force; US = United States

Table 2-2. Permanent Housing Alternatives for Unaccompanied Dormitories Considered in Screening

Permanent Housing or Facility Alternatives Considered	Brief Description	Screening Summary
Unaccompanied Housing Alternative A	This alternative would construct off-base dormitories near MHAFB under a leasing housing arrangement.	This alternative fails to meet Site-Specific Selection Standard 1. • Permanent unaccompanied housing at US Air Force-owned property located off Main Base would permanently interfere with and degrade existing and future US Air Force missions and infrastructure. US Air Force-owned property is proximate to a small arms range.
Unaccompanied Housing Alternative B	This alternative provides newly constructed dormitories that would be built as infill adjacent to the existing dormitories located between Falcon Street and Desert Street.	This alternative fails to meet Site-Specific Selection Standards 1, 2, and 4. • The location could interfere with existing US Air Force missions. • The land at this location could not be cleared and made available to construct new dormitories by Fiscal Year 2024. • This proposed location is not consistent with security considerations due to its proximity to sensitive US Air Force facilities.
Unaccompanied Housing Alternative C	This alternative provides for newly constructed dormitories that would be built on land adjacent to the existing dormitories. The land is located off Aardvark Avenue.	Meets all selection standards.
Unaccompanied Housing Alternative D	This alternative would provide newly constructed dormitories on MHAFB under a public/private or public/public partnership.	Meets all selection standards.
Unaccompanied Housing Alternative E	This alternative would provide unaccompanied housing off base in either Elmore County (Mountain Home), Ada County (Boise), or a combination of both counties. Housing units would be acquired through individual leases.	Meets all selection standards.

MHAFB = Mountain Home Air Force Base; US = United States

Table 2-3. Permanent Housing Alternatives for Accompanied Dormitories Considered in Screening

Permanent Housing or Facility Alternatives Considered	Brief Description	Screening Summary
Accompanied Housing Alternative A	This alternative would integrate a new housing development with current privatized housing on the existing privatized housing contractor's Balfour Beatty Communities–conveyed land on base.	This alternative fails to meet Site Specific Selection Standard 2. • Based on agreements with the existing privatized housing contractor, construction of a new housing development could not be completed by Fiscal Year 2024.
Accompanied Housing Alternative B	This alternative would construct off-base housing near MHAFB under a community leasing housing arrangement.	This alternative fails to meet Site Specific Selection Standard 1. • Permanent accompanied housing at US Air Force-owned property located off Main Base would permanently interfere with and degrade existing and future US Air Force missions and infrastructure. US Air Force-owned property is proximate to a small arms range.
Accompanied Housing Alternative C	This alternative would provide 40 to 50 newly constructed housing units on land outside of the existing privatized housing area. Two locations were identified; one outside of privatized housing and the other would be infill development along Gunfighter Road. This location would require roadway improvements and upgrades.	Meets all selection standards.
Accompanied Housing Alternative D	This alternative would develop a housing community on base under a public/private or public/public partnership.	Meets all selection standards.
Accompanied Housing Alternative E	This alternative would provide housing off base in either Elmore County (Mountain Home), Ada County (Boise), or a combination of both counties. Housing units would be acquired through individual leases or purchases.	Meets all selection standards.

MHAFB = Mountain Home Air Force Base; US = United States

Table 2-4. Site-Specific Screening of all Considered Permanent Flightline Alternatives

Permanent Alternatives Considered	Selection Standard				Meets Selection Standards
	Mission Compatibility	Fiscal Year 2024 Start	Leverage Available Space	Space for New Permanent Facilities	
Flightline Alternative A	No	Yes	No	Yes	**No**
Flightline Alternative B	No	Yes	No	Yes	**No**
Flightline Alternative C	Yes	Yes	Yes	Yes	**Yes**
Flightline Alternative D	Yes	Yes	Yes	Yes	**Yes**
Flightline Alternative E	No	Yes	Yes	Yes	**No**

Table 2-5. Site-Specific Screening of all Alternatives for Unaccompanied Housing

Permanent Alternatives Considered[1]	Selection Standard				Meets Selection Standards
	Mission Compatibility	Fiscal Year 2024 Start	Leverage Available Space	Space for New Permanent Housing	
Unaccompanied Housing Alternative A	No	Yes	Yes	Yes	**No**
Unaccompanied Housing Alternative B	No	No	Yes	No	**No**
Unaccompanied Housing Alternative C	Yes	Yes	Yes	Yes	**Yes**
Unaccompanied Housing Alternative D	Yes	Yes	Yes	Yes	**Yes**
Unaccompanied Housing Alternative E	Yes	Yes	Yes	Yes	**Yes**

1 All new off-base housing would be obtained by the Qatar Emiri Air Force.

Table 2-6. Site-Specific Screening of all Alternatives for Accompanied Housing

Permanent Alternatives Considered[1]	Selection Standard				Meets Selection Standards
	Mission Compatibility	Fiscal Year 2024 Start	Leverage Available Space	Space for New Permanent Housing	
Accompanied Housing Alternative A	Yes	No	Yes	Yes	**No**
Accompanied Housing Alternative B	No	Yes	Yes	Yes	**No**
Accompanied Housing Alternative C	Yes	Yes	Yes	Yes	**Yes**
Accompanied Housing Alternative D	Yes	Yes	Yes	Yes	**Yes**
Accompanied Housing Alternative E	Yes	Yes	Yes	Yes	**Yes**

1 All new off-base housing would be obtained by the Qatar Emiri Air Force.

For the permanent unaccompanied housing alternatives evaluated, Unaccompanied Housing Alternative A, off-base dormitories near MHAFB under a leasing housing arrangement, and Unaccompanied Housing Alternative B, infill to existing dormitory campus, did not meet the selection standards. For the permanent accompanied housing alternatives evaluated, Accompanied Housing Alternative A, integrate a new housing development with current privatized housing on the existing privatized housing and Accompanied Housing Alternative B, construct off-base housing near MHAFB under a community leasing housing arrangement, did not meet the selection standards.

Although Unaccompanied Housing Alternative C, Unaccompanied Housing Alternative D, Accompanied Housing Alternative C, and Accompanied Alternative D are distinct alternatives, the potential environmental impacts from each of these alternatives are expected to be almost the same. These four alternatives, which provide permanent all on-base housing for accompanied and unaccompanied QEAF personnel, would require new construction of dormitories and military family housing within portions of MHAFB with designated land uses that support housing. Because the environmental impacts are nearly identical, the four alternatives will be analyzed as a common element, all permanent on-base housing; however, any differing environmental impacts between the four alternatives will be noted in the analysis.

Further, although Unaccompanied Housing Alternative E and Accompanied Housing Alternative E are distinct alternatives, the environmental impacts from these two alternatives are almost the same. These two alternatives, which would provide permanent off-base housing for all QEAF personnel, would require the QEAF to either enter into long-term leases or purchase housing for all unaccompanied and accompanied personnel in Elmore and Ada Counties. Because the potential environmental impacts are anticipated to be nearly identical, the two alternatives will be analyzed as a common element, all permanent off-base housing; however, any differing environmental impacts between the four alternatives will be noted in the analysis.

Therefore, in summary, all the proposed interim and permanent housing alternatives are categorized as either on-base housing or off-base housing. Further, the purpose and need, as well as all selection standards, would be met by the on-base and off-base interim and permanent housing alternatives. As such, two alternatives for interim and permanent housing were carried forward that represent all possible housing solutions: 1) up to 20 accompanied and 20 unaccompanied on base with the remaining personnel off base in the interim and all on-base permanent housing and 2) all off-base interim and permanent housing. These two alternatives, which evaluate the two most extreme possible QEAF housing solutions, bookend various hybrid combinations of on-base and off-base interim and permanent housing solutions.

2.3 Description of Alternatives Considered for Detailed Analysis

2.3.1 Proposed Action Elements Common to All Alternatives

2.3.2 Airfield Operations

The inventory of based aircraft and the proposed QEAF aircraft at MHAFB are shown in **Table 2-7**.

Table 2-7. Mountain Home Air Force Base Based and Proposed Aircraft Inventory

Aircraft	Authorized Inventory[1]	Proposed Inventory
F-15E (Department of the Air Force)	42	42
F-15SG (Republic of Singapore Air Force)	20	20
F-15QA (Qatar Emiri Air Force)	0	12
Total	**62**	**74**

[1] Source: MHAFB, 2018

Under the Proposed Action, the 12 F-15QA aircraft would typically operate a sortie turn pattern of 6 turn 4. This schedule would typically repeat Monday through Friday. This would result in an estimated additional

2,400 sorties from the MHAFB airfield annually. Similar to current operations, the Proposed Action would include an approximate 14 percent of the 2,400 sorties during environmental night (10:00 pm to 7:00 am).

The F-15QAs would use the same departure and landing procedures as currently used by the F-15Es and F-15SGs at MHAFB. All F-15QA operations would adhere to existing restrictions, avoidance procedures, and the quiet-hours program at MHAFB. Under the Proposed Action, total airfield operations (operations include takeoffs, landings, and closed patterns) would increase by approximately 16 percent (**Table 2-8**).

Table 2-8. Mountain Home Air Force Base Current and Proposed Annual Aircraft Operations[1]

Aircraft	Existing Annual Operations[3]	Proposed Action Annual Increase	Total Annual Operations
F-15E (Department of the Air Force)	35,842	0	**35,842**
F-15SG (Republic of Singapore Air Force)	30,688	0	**30,688**
Transients[2]	3,694	0	**3,694**
F-15QA (Qatar Emiri Air Force)	0	11,504	**11,504**
Total	**70,224**	**11,504**	**81,728**

Notes:

[1] Includes takeoffs, landings, and closed patterns
[2] Includes F-35, F/A-18, F-15C, KC-135, C-21, A-10, and others
[3] Source: MHAFB, 2018

2.3.2.1 Airspace Operations

SUA proposed for use for QEAF F-15QA training is shown on **Figures 2-3** and **2-4**, respectively. ATCAA overlies all of the MOAs of the MHRC. Generally, sorties would depart from MHAFB runway, transit from MHAFB airfield to the airspace, conduct training, then transit back to MHAFB, and land at MHAFB. The F-15QAs would fly approximately 30- to 90-minute-long missions, including take-off, transit to the training airspace, training, transit back, and landing at MHAFB. Depending on the distance and type of training activity, the F-15QAs would spend between 20 to 60 minutes in the airspace conducting training operations.

The F-15QAs would fly, on average, 14 percent of the time during environmental night in the SUA, similar to current operations. No airspace modifications would be required for QEAF training as part of the Proposed Action. Training activity in the MOAs would increase approximately 15 percent from current activity (**Table 2-9**).

There would be an approximately 8 percent increase in operations in multiple MTRs with the addition of the QEAF F-15QAs (**Table 2-10** and **Figure 2-4**). MTRs provide opportunities for training at low altitudes within a previously established corridor. The multiple MTRs have minimum altitudes down to 100 ft above ground level (AGL) except where published altitudes are higher in accordance with flight restrictions such as specific noise abatement and obstacle avoidance requirements. The F-15QA pilots would operate in the SUA within the limits of their qualifications and in the same manner as the US Air Force F-15E pilots.

The F-15QAs would conduct supersonic flight as authorized at MHAFB and at altitudes and within authorized airspace to incorporate training to the extent of the aircraft's full capabilities. Currently, approximately 4 percent of all operations would include supersonic flight (MHAFB, 2018). Current operations also include 90 percent of supersonic flight that would be conducted above 30,000 ft mean sea level (MSL) in the MHRC, with the remaining 10 percent occurring between 10,000 ft AGL and 30,000 ft MSL in Owyhee North MOA/ATCAA and Jarbidge North MOA/ATCAA. Supersonic flight is currently authorized above 30,000 ft MSL in the ATCAA above the Paradise North and South, Jarbidge South, and Owyhee South MOAs. All restrictions of overflights and supersonic flight above the Duck Valley Indian Reservation would be respected by QEAF pilots in the same manner as US Air Force pilots. Additionally, the F-15QAs would obey US Air Force restrictions concerning chaff and flares, which are currently released in the MHRC airspace above 2,000 ft AGL (**Table 2-11**). Use of chaff and flares is authorized in all six MOAs that make up the MHRC.

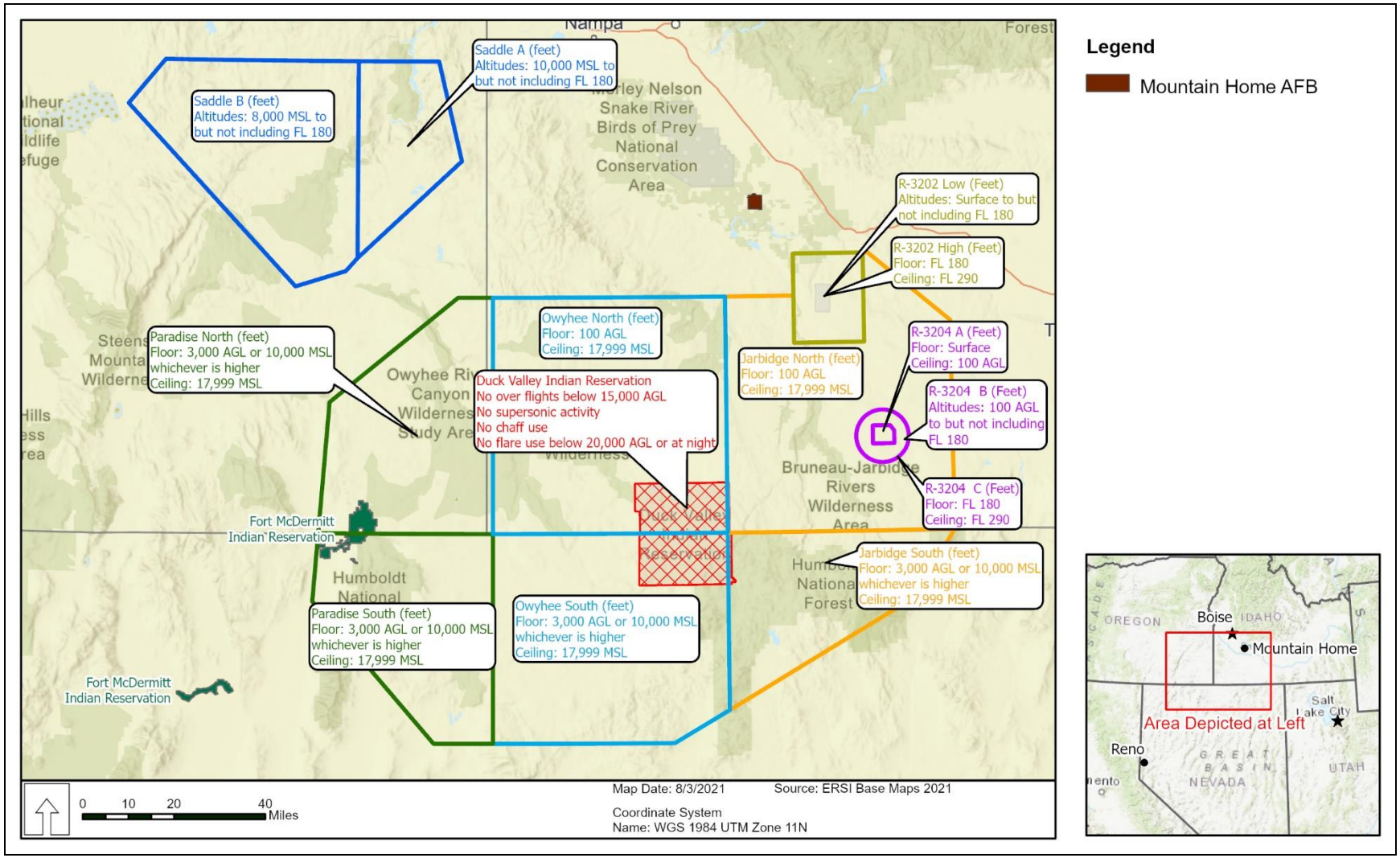


Figure 2-3. Mountain Home Air Force Base Military Operations Areas.

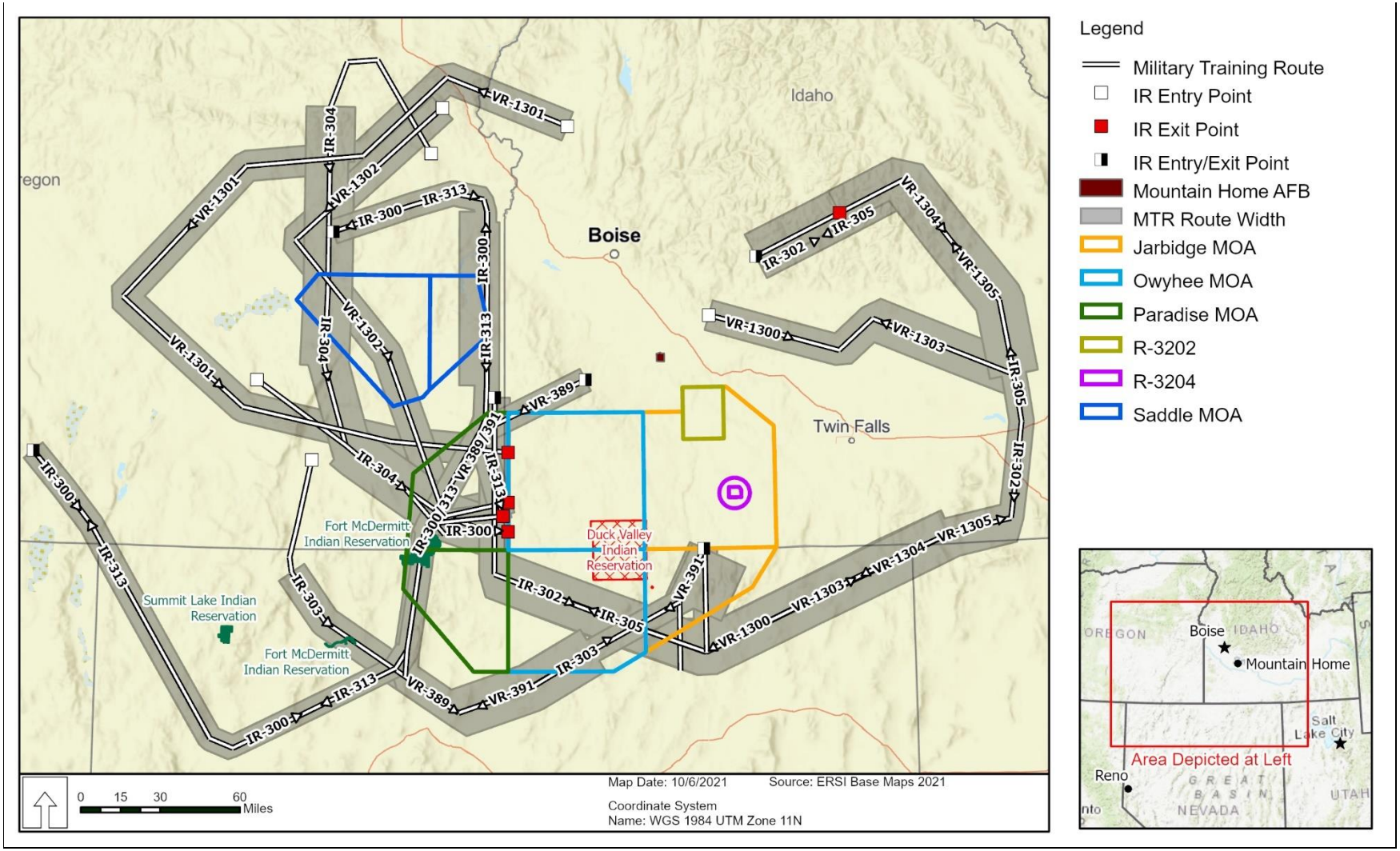


Figure 2-4. Mountain Home Air Force Base Military Training Routes.

Table 2-9. Current and Proposed Annual Sortie Operations in Special Use Airspace

Military Operations Area	Existing Operations[1]	Proposed Action	Total	Percent Change
Jarbidge North/South	14,695	2,254	**16,949**	**15**
Owyhee North/South	12,837	2,057	**14,894**	**16**
Paradise North/South	9,303	1,698	**11,001**	**18**
Saddle A/B	2,991	57	**3,048**	**2**
Total	**39,826**	**6,066**	**45,892**	**15**

Note:
[1] Includes F-35, F/A-18, F-15C, KC-135, C-21, A-10, and others

Table 2-10. Current and Proposed Annual Sortie Operations in Military Training Routes

Military Training Route	Existing Operations	Proposed Action	Proposed Total	Percent Change
IR-300	144	14	**158**	**10**
IR-302	960	19	**979**	**2**
IR-303	432	28	**460**	**6**
IR-304	408	3	**411**	**1**
IR-305	216	61	**277**	**28**
IR-313	10	2	**12**	**20**
VR-1300	2	1	**3**	**50**
VR-1301	1,032	144	**1,176**	**14**
VR-1302	12	3	**15**	**25**
VR-1303	60	6	**66**	**10**
VR-1304	288	40	**328**	**14**
VR-1305	15	2	**17**	**13**
VR-389	348	7	**355**	**2**
VR-391	144	7	**151**	**5**
Total	**4,071**	**337**	**4,408**	**8**

IR = instrument route; VR = visual route

Table 2-11. Proposed Ordnance and Defensive Countermeasure Use (Annual)

	Existing Use[2]	QEAF	Proposed Total	Percent Change
Inert Ordnance[1]	14,241	4,302	**18,543**	**30**
Chaff (RR188 or similar)	18,670	4,668	**23,338**	**25**
Flares (M206 or similar)	17,438	2,441	**19,879**	**14**

Notes:
[1] These types include but are not limited to BDU-33, BDU-50, BDU-56, GBU-12
[2] Chaff and flares are not used in the Saddle MOAs

QEAF = Qatar Emiri Air Force

Flares may be released above 2,000 ft AGL outside of the fire season and 5,000 ft AGL during the fire season for all MOAs (DAF, 2021c). Other seasonal and locational restrictions can apply to the use of chaff and flares in these MOAs as well. In accordance with commitments made in the Enhanced Training in Idaho Environmental Impact Statement Record of Decision, Supplemental Record of Decision, and Memorandum of Understanding and Settlement Agreement, when operating over the Duck Valley Indian Reservation, the MHRC users will not use flares at night at any altitude or during the day below 20,000 ft AGL. Chaff and flares are not expended in the Saddle MOA or in the MTRs.

In addition to the use of chaff and flares, the Proposed Action would use inert ordnance, including both guided and unguided munitions, during training to improve bombing proficiency and to simulate combat-loaded aircraft (see **Table 2-8**). Some inert ordnance contains signal devices to aid in visual scoring. This ordnance is generally characterized as either "hot" or "cold." Hot signals use red phosphorous that produces a small explosion/flame and are used during day and night operations. Cold signals use titanium tetrachloride and produce smoke. Unlike the "hot" signal, the "cold" signal does not produce a flame on impact; therefore, the "cold" signal cannot be used for night scoring in training (GlobalSecurity, 2018). Inert ordnance would be used at the SCR and JBR. SCR accommodates more diverse inert ordnance with hot spotting charges, whereas JBR allows for nonexplosive ordnance with cold spot charges.

2.3.2.2 Personnel

The Proposed Action would result in a total of 300 additional QEAF and US Air Force personnel at MHAFB (**Table 2-12**). US Air Force accompanied military personnel would reside either in military family housing at MHAFB or in off-base housing in Elmore and Ada Counties. All civilian personnel would reside in off-base housing.

Table 2-12. Proposed Additional Personnel

	Current Personnel	Proposed QEAF Personnel	Proposed US Air Force Personnel	Proposed Total Personnel	Percent Change
Military	4,131	169[a]	5[b]	**4,305**	**4**
Civilian	895	0	126[c]	**1,021**	**14**
Total	**5,026**	**169**	**131**	**5,326**	**6**

[a] 90 accompanied; 79 unaccompanied
[b] Five accompanied DAF
[c] Includes a mix of general schedule government positions and contractors.

QEAF = Qatar Emiri Air Force; US = United States

2.3.2.3 Flightline Facilities and Infrastructure

The proposed interim flightline facilities and infrastructure would primarily utilize Building 211 to house four hangar bays, squadron operations, Aircraft Maintenance Unit (AMU), and equipment storage (**Figure 2-5**). Building 211 would be vacated by the US Air Force and renovated for the interim use by the QEAF. To support the US Air Force vacating Building 211, other renovations would occur as summarized in **Table 2-13**. Two rows of sunshades would be constructed proximate to the proposed permanent QEAF hangar location to support the QEAF. All other QEAF backshop functions would be supported in existing facilities (**Figure 2-5**).

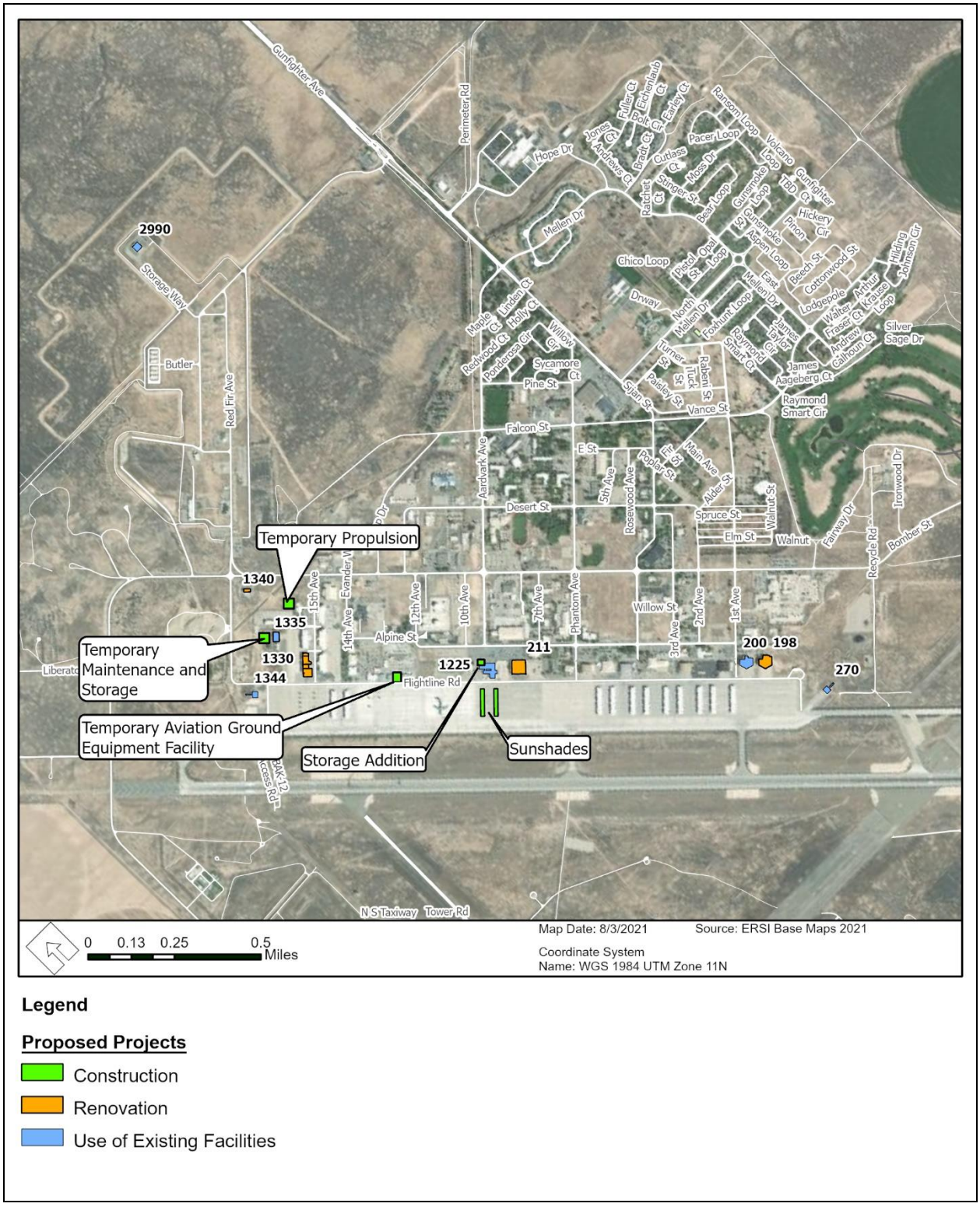


Figure 2-5. Location of Proposed Interim Flightline Facility Projects at Mountain Home Air Force Base.

Table 2-13. Proposed Interim Flightline Facilities

Project Description	Building or Location	Quantity
Renovation		
Renovate for four aircraft bays, QEAF Fighter Squadron Ops, Aircraft Maintenance Unit, tools and parts, armament maintenance equipment storage, and Simulator Training Center	Building 211	61,472 ft^2
Second paint booth	Building 1330	7,398 ft^2
Second wash rack	Building 198	7,398 ft^2
Construction		
Two rows of sunshades for 12 aircraft[1]	Flightline in front of Building 1225	12
Munitions support equipment parking expansion	Building 1340	17,818 ft^2
Temporary propulsion adjacent to US Air Force propulsion	Adjacent to Building 1334	6,458 ft^2
Temporary maintenance and storage	Behind Building 1335	1,351 ft^2
Storage addition	Addition to Building 1225	1,000 ft^2
Temporary aerospace ground equipment facility	Between Buildings 1359 and 1360	5,240 ft^2
Use of Existing Facilities		
Existing fuels	Building 200	Not applicable
Existing hush house	Buildings 270 and 1344	Not applicable
Existing egress	Building 1335	Not applicable

[1] Sunshades are proposed for construction in a permanent location for the immediate beddown and therefore listed in both Interim and Permanent Flightline Facilities tables.

DAF = Department of Air Force; ft^2 = square feet; QEAF = Qatari Emiri Air Force; US = United States

The proposed permanent flightline construction, renovation, and demolition projects are summarized in **Table 2-14**. In total, the construction, renovation, demolition, and infrastructure improvements under the Proposed Action would include more than 264,805 ft^2 of building space for flightline facilities, 22,384 ft (4.2 mi) of road improvements, and approximately 519 new parking spaces. The potential area of ground disturbance would include the actual construction footprints for the new construction or additions and the surrounding lands where construction related clearing and grading would occur (the construction buffer areas). A construction buffer area of 50 ft around all construction footprints was added to the area of potential ground disturbance, for a total of approximately 58 ac of construction area and buffer for all projects. All construction and renovation costs required to implement the QEAF F-15QA beddown would be funded by the Qatari government.

Table 2-14. Proposed Permanent Flightline Facilities

Project Description	Building or Location[1]	Quantity
Improvements		
Road improvements	Two blocks of Phantom Avenue	2,110 ft
	South Alpine Street	2,353 ft
	Three blocks of Gunfighter Avenue	2,353 ft
	Munitions Storage Area roads	15,568 ft
Trailer Maintenance: upgrade mezzanine space for QEAF administration and communications	Building 1340	844 ft^2
Upgrade inspection function and conversion of maintenance bay to administrative space	Building 3016	6,355 ft^2

Table 2-14. Proposed Permanent Flightline Facilities

Project Description	Building or Location[1]	Quantity
Construction		
Addition to Precision Guided Munition Facility	Building 3023	669 ft^2
Two rows of sunshades for 12 aircraft[2]	Flightline in front of Building 1225	12
Conventional maintenance building	Northern end of the munitions area	4,989 ft^2
Expand I-PAD and install lightning protection	Building 3018	34,753 ft^2
Administration expansion	Building 3023	600 ft^2
Storage building addition	Building 1340	1,850 ft^2
Maintenance bay expansion	Building 1340	2,000 ft^2
Munitions support equipment parking expansion	Building 1340	17,818 ft^2
Addition to Cowboy Control	Building 1795	10,170 ft^2
QEAF hangar and Aircraft Maintenance Unit with wheels and tire, egress, propulsion, tools and parts, and armament maintenance equipment storage	New building	79,185 ft^2
QEAF Fighter Squadron and simulator facility	New building	38,682 ft^2
T9 Hush House	New building adjacent to Building 1344	1 Unit
Fuels Maintenance Hangar (two-bay) and district carpark	New building adjacent to Building 1335	28,783 ft^2; 519 parking spaces
QEAF Consolidated Mission Facility	New building	19,294 ft^2
Joint-use Non-destructive Inspections Facility and Hangar	New building	24,396 ft^2
Hayman Igloo	Adjacent to Building 2996	3,900 ft^2
Temporary Propulsion facility	Adjacent to Building 1333/1339	6,458 ft^2
Demolition		
Partial demolition (walls and roof)	Building 3018	2,575 ft^2
Demolish building and parking spaces	Building 2618	15,257 ft^2

[1] Refer to figures for more detailed location of proposed new buildings.

[2] Sunshade construction is proposed under Interim Flightline facilities.

ft = feet; ft^2 = square feet; QEAF = Qatari Emiri Air Force

2.3.3 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

Alternative 1 would include the proposed airfield operations, SUA operations, personnel, and interim flightline facility and infrastructure improvements as described for the Proposed Action in **Section 2.3.1**.

Under Alternative 1, the permanent flightline facilities would be constructed in the "Sea of Rocks" location (**Figure 2-6**). The QEAF Hangar would be located near 12th and Aardvark Avenues and south of Alpine Street. The squadron operations and simulator, AMU, and supply warehouse would be located northeast of and adjacent to the QEAF Hangar.

A 10,000-ft^2 QEAF Community Center would be constructed adjacent to Building 2630 on Desert Street between Phantom and Gunfighter Avenues (**Figure 2-7**) under Alternative 1.

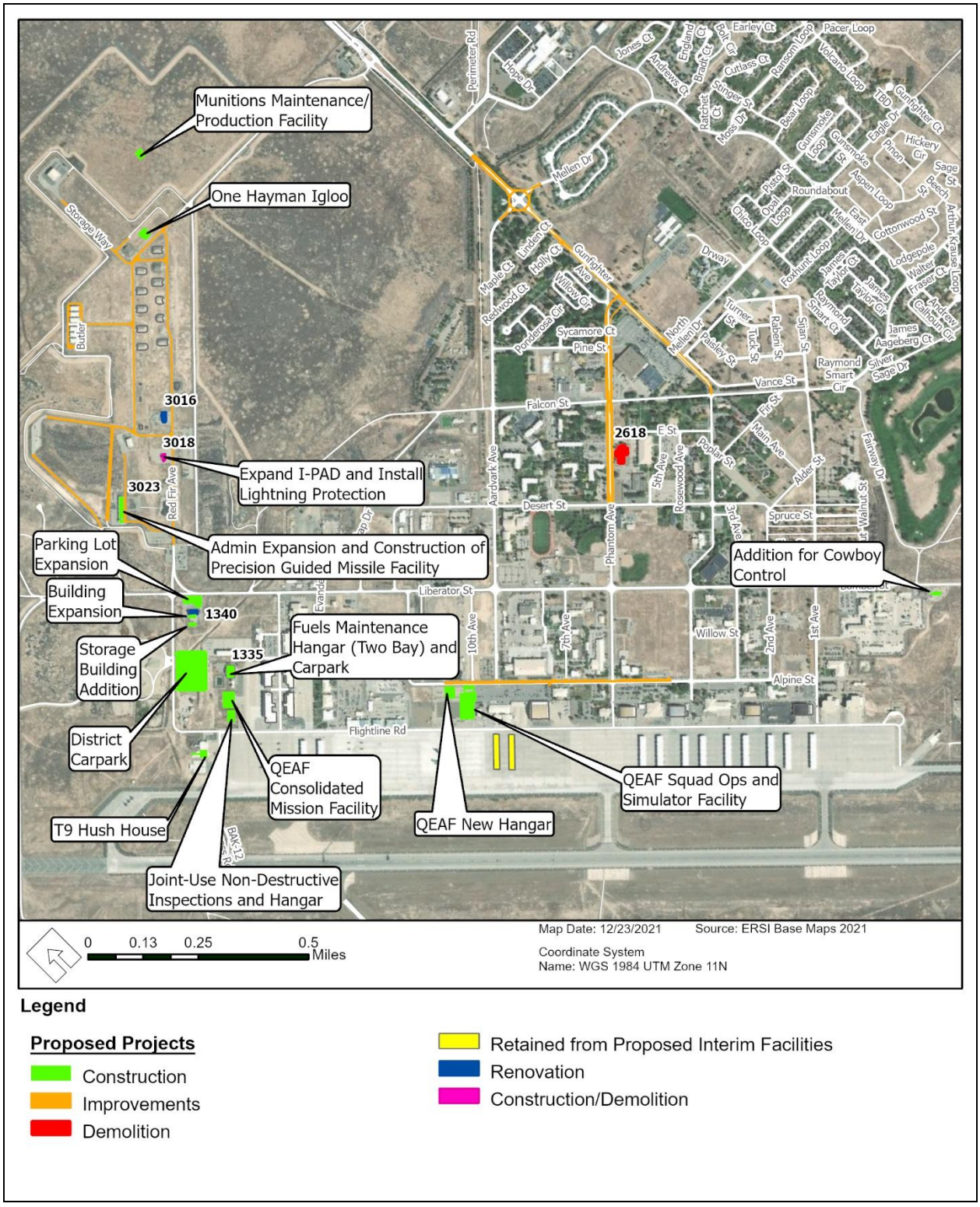


Figure 2-6. Location of Proposed Permanent Flightline Facility Projects at the "Sea of Rocks" Location at Mountain Home Air Force Base Under Flightline Alternative 1.

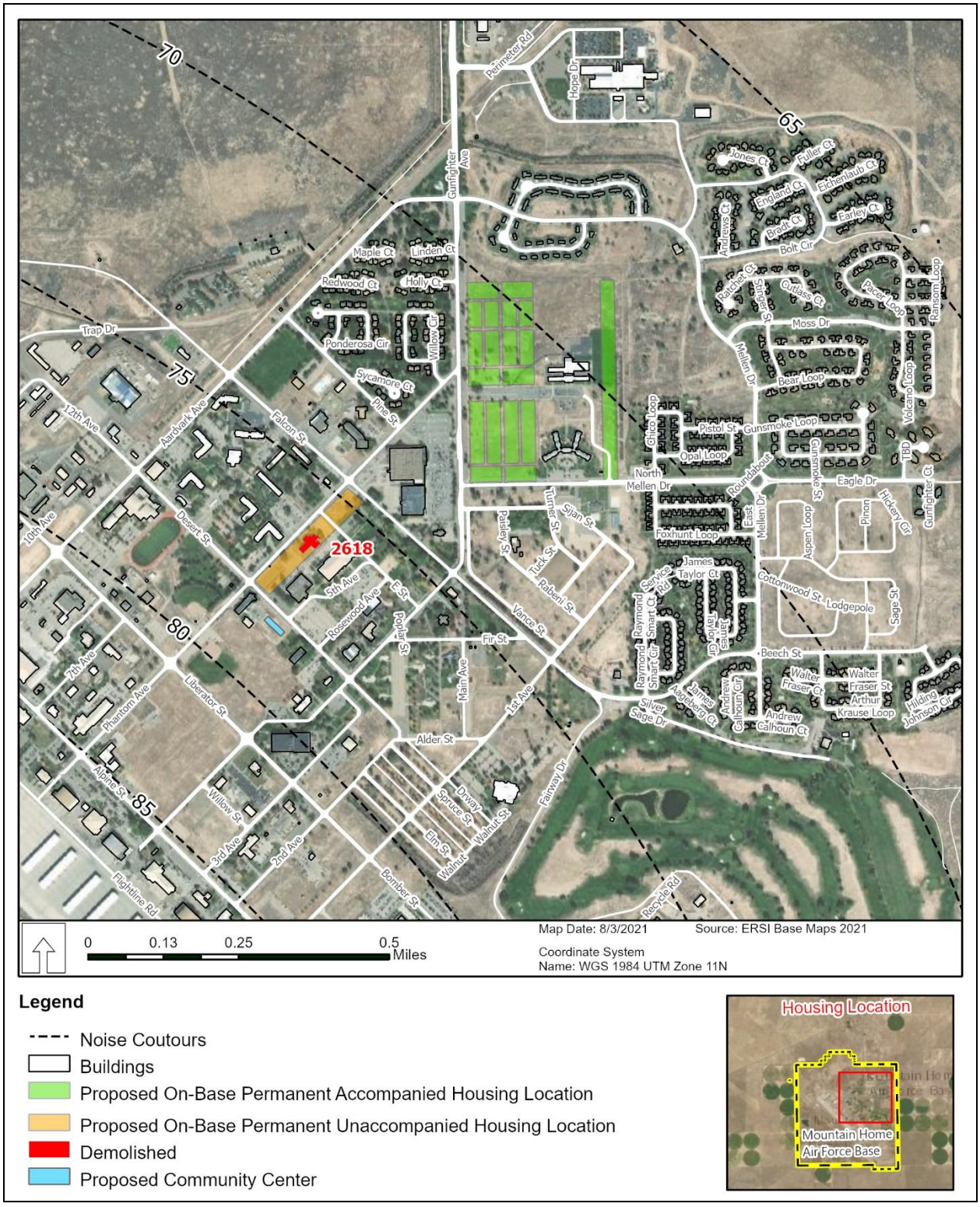


Figure 2-7. Proposed On-Base Permanent Housing Locations.

It is unlikely that enough existing vacant military housing on base would be available to support all the QEAF accompanied and unaccompanied personnel during the initial beddown. In the interim, it is anticipated that up to 20 accompanied and 20 unaccompanied QEAF personnel could be housed on base in existing housing. If vacancy allows, unaccompanied personnel would reside in existing dormitories on base and accompanied personnel would reside in existing military family housing units. This interim solution would support the housing requirements for the QEAF personnel for up to 5 years.

Under Alternative 1, for permanent housing, all 169 QEAF personnel, including unaccompanied and accompanied, would reside on MHAFB in newly constructed dormitories and housing units, respectively. A generalized location on base along Phantom Avenue for constructing the new dormitory units to house unaccompanied personnel was identified (**Figure 2-7**). Building 2618 would be demolished and approximately 5 ac would be fully developed within the larger identified area on base to construct the dormitory units and associated parking. On-base permanent housing consisting of up to 90 individual housing units for accompanied personnel would be constructed within the generalized locations shown on **Figure 2-7**. Approximately 18 ac within the housing areas would be required for the up to 90 individual housing units and associated infrastructure. The housing units would be constructed using a bungalow-style design. Improvements and upgrades to roadways and infrastructure would be required.

2.3.4 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Alternative 2 would include the proposed airfield operations, SUA operations, personnel, and interim flightline facility and infrastructure improvements as described for the Proposed Action in **Section 2.3.1**.

Under Alternative 2, the interim and permanent housing locations, community center, and interim flightline facilities would be the same as described in Alternative 1; however, under Alternative 2, the permanent flightline facilities would be constructed at the "Integrated Campus" Location (**Figure 2-8**). The QEAF Hangar would be located east of Building 210 and south of Alpine Street. The squadron operations and simulator would be constructed near the end of Phantom Avenue and the AMU and supply warehouse would be constructed near the end of 7th Avenue (**Figure 2-8**).

2.3.5 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Alternative 3 would include the proposed airfield operations, SUA operations, personnel, and interim flightline facility and infrastructure improvements as described for the Proposed Action in **Section 2.3.1**. Permanent flightline facilities would be constructed at the "Sea of Rocks" location (see **Figure 2-6**) as described in Alternative 1 (see **Section 2.3.3**). Under Alternative 3, the community center would be the same as described in Alternative 1.

Until permanent unaccompanied and accompanied housing could be secured by the QEAF off base, all QEAF personnel would reside in existing hotels, housing, and short-term rentals in Elmore and Ada Counties. It would be anticipated that unaccompanied personnel would reside in existing hotels off base and accompanied personnel would reside in existing housing units or short-term rental units off base. This interim solution would support the housing requirements for the QEAF personnel for up to 5 years.

Under Alternative 3, for permanent housing, all 169 QEAF personnel, unaccompanied and accompanied, would reside off base in existing housing units. Permanent off-base housing could be acquired by the QEAF in Elmore County (which includes the city of Mountain Home), in Ada County (which includes Boise), or the combination of Elmore and Ada Counties. Regardless of the location, off-base housing would require the leasing or purchase of existing housing units or apartments.

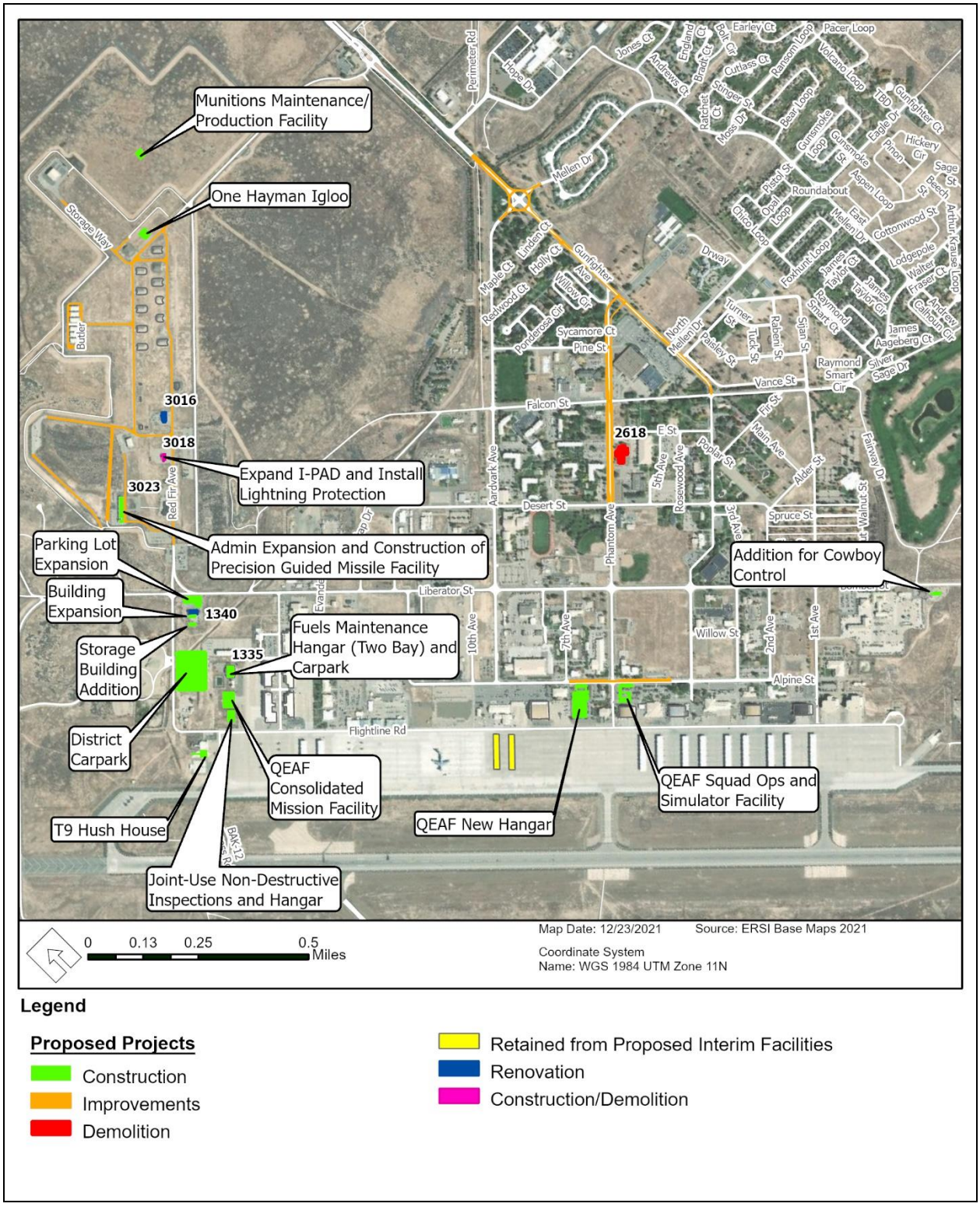


Figure 2-8. Location of Proposed Permanent Flightline Facility Projects at the "Integrated Campus" Alternative at Mountain Home Air Force Base Under Flightline Alternative 2.

2.3.6 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Alternative 4 would include the proposed airfield operations, SUA operations, personnel, and interim flightline facility and infrastructure improvements as described for the Proposed Action in **Section 2.3.1**.

Under Alternative 4, the community center and interim and permanent housing locations would be the same as described in Alternative 3. Under Alternative 4, the permanent flightline facilities would be constructed at the "Integrated Campus" Location (see **Figure 2-8**) as described in **Section 2.3.4**.

2.3.7 No Action Alternative

Under the No Action Alternative, the requests made by QEAF to DAF would not be implemented at MHAFB. The beddown of the QEAF F-15QA squadron would not occur at a CONUS location. Changes associated with the Proposed Action would not be implemented. New construction, modifications, and renovations would not take place and additional personnel would not be required. No on-base or off-base housing would be required for new QEAF and US Air Force personnel. The No Action Alternative is described for each resource in Chapter 3 as existing conditions.

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CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This EA analyzes potential impacts on existing environmental conditions associated with the basing and operation of QEAF F-15QA aircraft; use of the airfield, SUA, and MTR for training operations; increase of personnel; and construction and modification of facilities and infrastructure to support the beddown. The analysis considers the current (baseline) conditions of the affected environment and compares those to conditions that could occur should the DAF implement either of the Proposed Action or alternatives.

3.1 DEFINITIONS OF ANALYZED RESOURCES AND EVALUATION CRITERIA

The definition of resource areas analyzed and analysis methodologies are included in **Appendix C**. For each resource, the geographic scope is identified. The expected geographic scope of potential consequences is referred to as the region of influence (ROI). The ROI boundaries varies depending on the nature of each resource. The resource ROIs are also described in **Appendix C**. The specific criteria for evaluating impacts and assumptions for the analyses are presented under each resource area. Evaluation criteria for most potential impacts were obtained from standard criteria; federal, state, or local agency guidelines and requirements; and/or legislative criteria.

For the purposes of this EA, short-term impacts are generally considered those impacts that would have temporary effects. Long-term impacts are generally considered those impacts that would result in permanent effects.

Impacts are defined as

- negligible, the impact would be localized and not measurable or at the lowest level of detection;
- minor, the impact would be localized and slight but detectable;
- moderate, the impact would be readily apparent and appreciable; or
- major, the impact would be severely adverse or highly noticeable and considered to be significant.

Major impacts would be considered significant and would receive the greatest attention in the decision-making process. The significance of an impact would be assessed based on the degree of effect the Proposed Action has on the potentially affected environment. Major impacts would require application of a mitigation measure to achieve a less than significant impact. Moderate impacts may not meet the criteria to be classified as significant, but the degree of change would be noticeable and would have the potential to become significant if not effectively mitigated. Minor impacts would have little to no effect on the environment and would not easily detected; impacts defined as negligible would be the lowest level of detection and would not be measurable. Beneficial impacts would provide desirable situations or outcomes.

Impacts and their significance, as well as the means (e.g., best management practices [BMPs]) for reducing potential environmental impacts are also discussed for each resource.

Reasonably foreseeable future actions with a close causal relationship to the Proposed Action that could result in an increased affect to environmental resources in conjunction with the Proposed Action are discussed in **Appendix D**. Resources eliminated from detailed analysis are summarized in **Appendix C.12**.

3.2 NOISE

3.2.1 Existing Conditions

3.2.2 On-Base and Off-Base

Existing sources of noise on and adjacent to the base include military and civilian aircraft overflights, road traffic, and other noises such as lawn maintenance equipment, construction, and bird and animal vocalizations. The existing mission and aircraft operations at MHAFB are described in **Section 2.3.1**. F-15s conduct most operations at MHAFB and dominate the overall noise environment at and around the base. The DAF adopted the NOISEMAP computer program to describe noise impacts from aircraft operations.

NOISEMAP is a suite of computer programs and components developed by the DAF to predict noise exposure in the vicinity of an airfield due to aircraft flight, maintenance, and ground run-up operations. NOISEMAP Version 7.3 was used to calculate the existing day-night average sound level (DNL) noise contours at MHAFB. NOISEMAP accounts for all aircraft activities, including landings, take-offs, in-flight operations, maintenance activities, and engine run-ups.

Figure 3-1 shows the existing DNL noise contours plotted in 5-decibel (dB) increments, ranging from 65 to 85-A-weighted-decibel (dBA) DNL. For purposes of analysis, and to account for reasonably foreseeable activities, the noise contours depict both current and proposed operational conditions, such as the RSAF beddown. These contours have been carried forward as a comparative baseline to determine the level of potential impacts under NEPA. The 65-dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations. The 65-dBA DNL noise contour extends approximately 3 to 4 mi beyond the installation boundary.

It should be emphasized that these noise levels, which are often shown graphically as contours on maps, are not discrete lines that sharply divide louder areas from land largely unaffected by noise. Instead, they are part of a planning tool that depicts the general noise environment around the installation based on typical aviation activities. Areas beyond 65-dBA DNL can also experience levels of appreciable noise depending upon training intensity or weather conditions. In addition, DNL noise contours may vary from year to year due to fluctuations in operational tempo due to unit deployments, funding levels, and other factors.

Table 3-1 presents the existing land acreage exposed to the 65-dBA DNL or greater; the area where the level of aircraft noise is normally not recommended for noise sensitive land uses. There are 10,318 ac off base and 5,207 ac on base that are within the 65-dBA DNL contour under the existing conditions. There are no residences, schools, churches, hospitals, or other noise sensitive areas within the existing 65-dBA DNL contour off base.

3.2.2.1 Airspace

Aircraft operations at the MHRC produce a noise environment that is somewhat different from that around MHAFB. Rather than regularly occurring operations like at MHAFB, activity in the MHRC is highly sporadic. Military aircraft within the MOAs at MHRC generate two types of sound: (1) sound generated by the aircraft's engines and by air flowing over the airframe and (2) sonic booms, impulsive sounds generated during supersonic flight.

Subsonic Aircraft Noise

Noise from an aircraft's engines and airframe is a time-varying sound, increasing as the aircraft approaches and diminishing as it departs. The noise depends on the altitude, speed, and power setting of the aircraft. Noise from flight operations typically occurs beneath the main approach and departure corridors around the airfield, and under the SUA and MTRs with low-altitude air operations. Individual military overflight events also differ from typical community noise events at airfields in that noise from a low-altitude, high-airspeed flyover producing sudden onset rates of up to 150 dB per second. The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of airspace activity is L_{dnmr}. **Table 3-2** and **Figure 3-2** present the existing overall sound levels from subsonic aircraft operations beneath the MHRC. The assessment included the total annual average aircraft operations within the MOAs, including aircraft operating out of MHAFB, the Idaho Army National Guard (IDARNG), and other transient users. The existing sound levels are less than 65 dBA and compatible with all land uses.

Although operational noise levels would be too low to result in incompatibility with existing land uses, noise from individual overflights would generate distinct acoustical events. **Table 3-3** and **Figures 3-3** and **3-4** outline the maximum sound level (L_{max}) and sound exposure level (SEL) for individual overflights of the F-15E in its primary operating modes. Individual overflights conducted within the MHRC are clearly audible, sometimes loud, to individuals who are outdoors, and clearly perceptible inside buildings below their flight path. An assessment of speech interference, sleep interference, and damage to hearing is provided below.

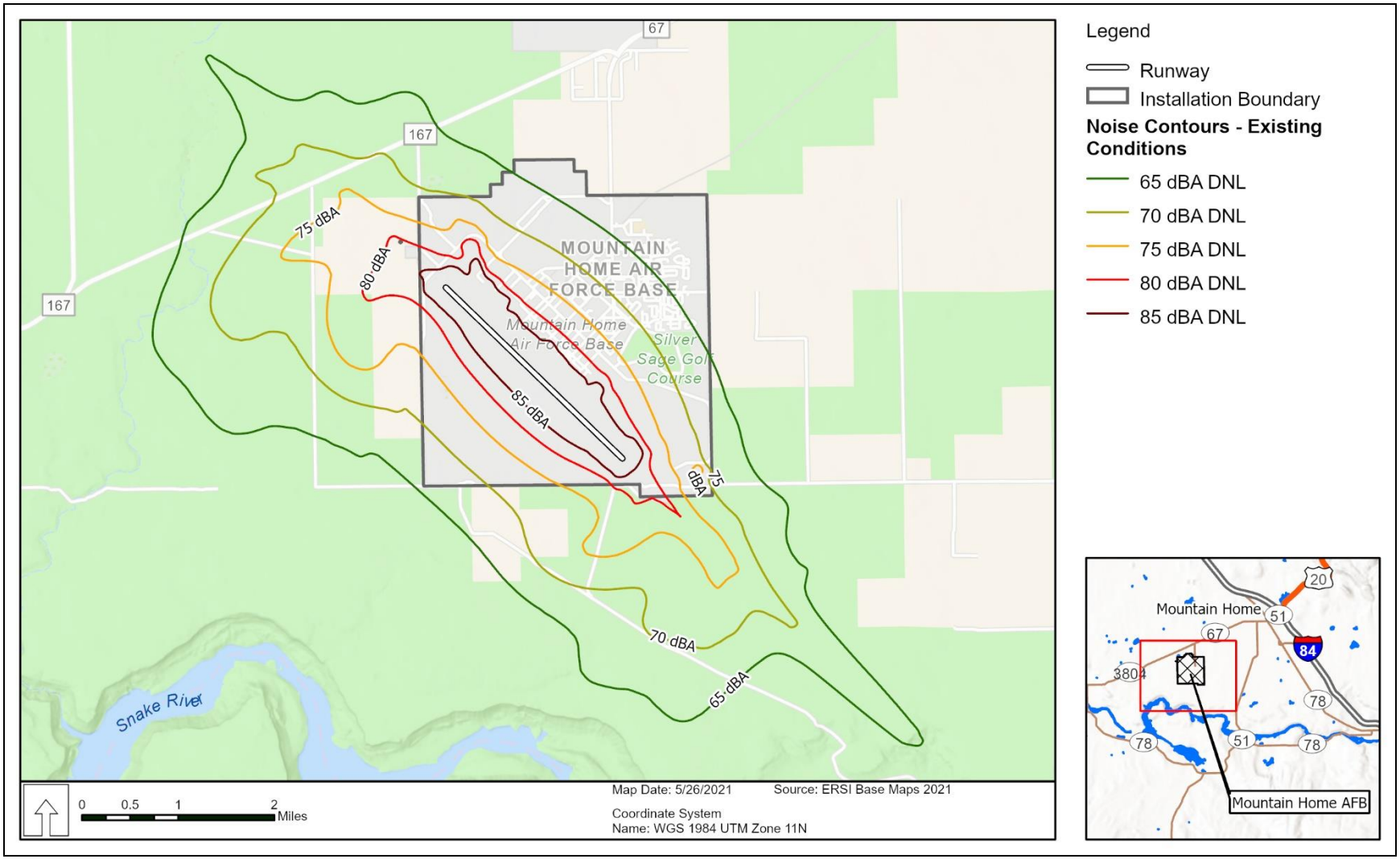


Figure 3-1. Noise Contours for Mountain Home Air Force Base – Existing Conditions.

Table 3-1. Area within Noise Contours at Mountain Home Air Force Base – Existing Conditions

Noise Contour (dBA DNL)	Area Under Contours (Acres)		
	Existing Conditions		
	On-Base	Off-Base	Total
65-70	1,133	5,634	6,767
70-75	1,333	3,109	4,442
75-80	1,053	1,361	2,414
80-85	674	214	888
>85	1,013	0	1,013
Total	5,207	10,318	15,525

Source: US Air Force, 2017

dBA = A-weighted decibels; DNL = day-night average sound level

Table 3-2. Overall Sound Levels from Aircraft Overflights within the Mountain Home Range Complex – Existing Conditions

Overall Sound Levels from Aircraft Overflights – L_{dnmr} (dBA)							
Jarbidge North	Jarbidge South	Owyhee North	Owyhee South	Paradise North	Paradise South	Saddle A	Saddle B
62.9	48.2	63.5	47.2	51.0	47.1	37.9	42.3

Source: US Air Force, 2007

dBA = A-weighted decibels; L_{dmnr} = onset rate adjusted day-night average sound level

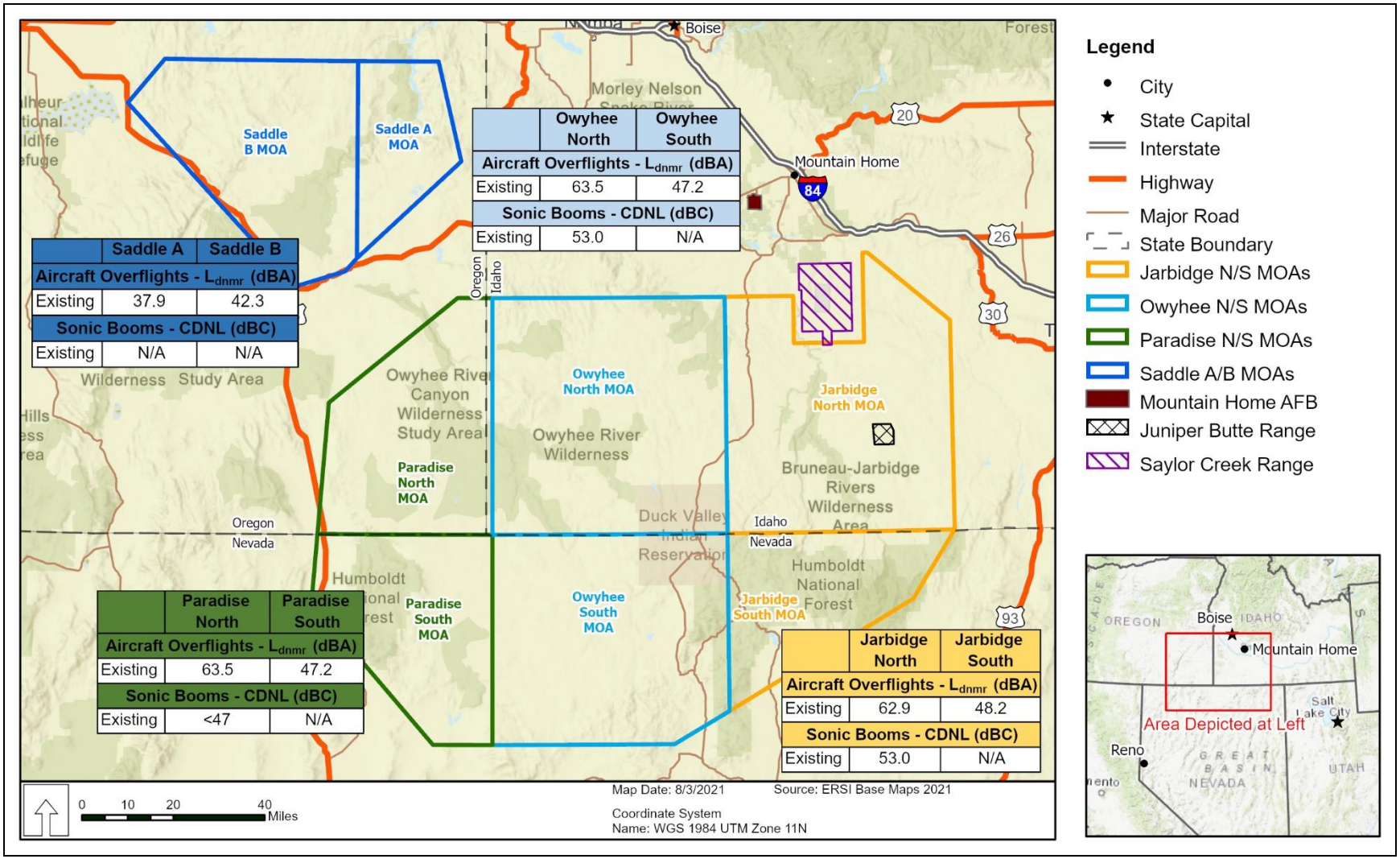
Table 3-3. Estimated Sound Levels for Individual F-15E Overflights

Maximum Sound Level (L_{max}) (dBA)				
Distance (ft)	Approach	Cruise	Takeoff	Afterburner
200	97	97	120	132
500	89	89	111	122
1,000	82	82	104	114
5,000	63	63	85	94
10,000	53	54	75	84
25,000	38	38	58	68
Sound Exposure Level (SEL) (dBA)				
Distance (ft)	Approach	Cruise	Takeoff	Afterburner
200	100	100	124	132
500	94	94	117	125
1,000	89	89	112	119
5,000	75	74	97	103
10,000	67	67	88	95
25,000	53	54	74	81

Source: US Air Force, 2018

Notes: L_{max} is the maximum sound level during an individual overflight and is used to assess speech interference. SEL is the sound level if the entire overflight was compressed into one second and does not represent the actual noise at any given time. SEL is used to assess sleep interference.

dBA = A-weighted decibels; ft = feet; L_{max} = maximum sound level; SEL = sound exposure level



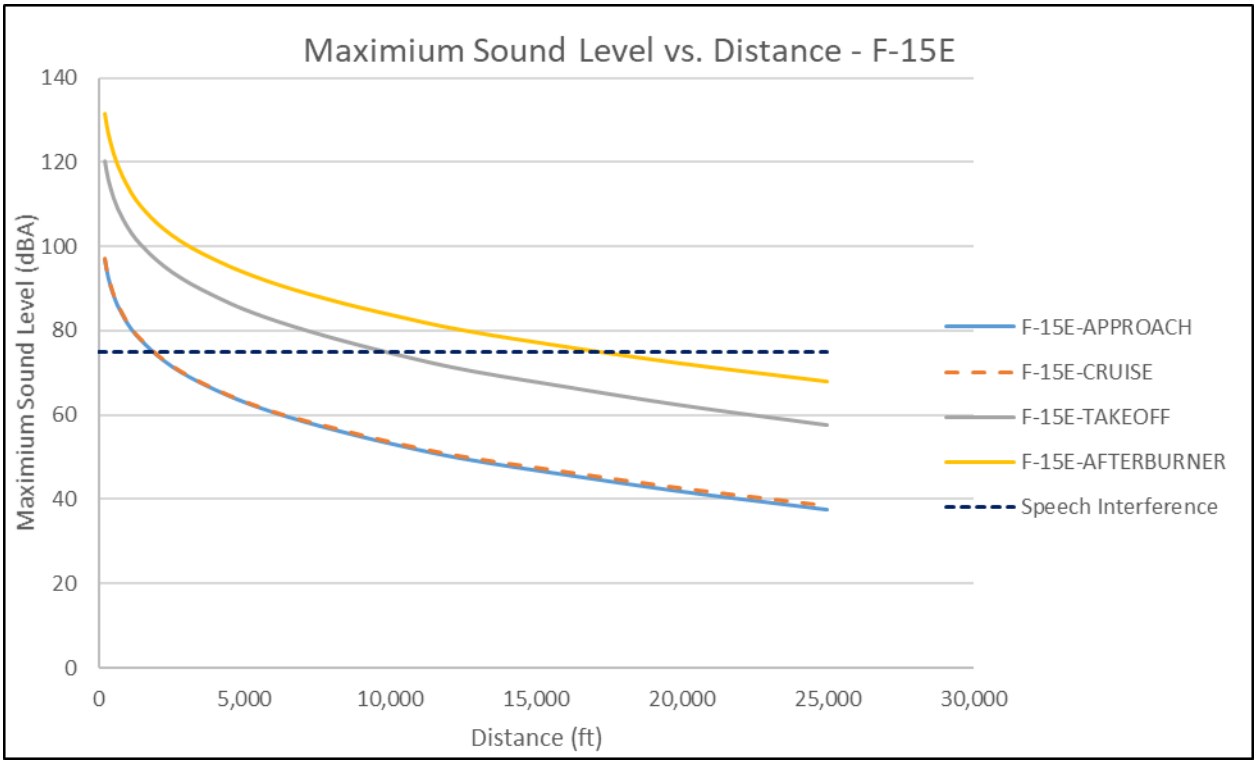
	Saddle A	Saddle B
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	37.9	42.3
Sonic Booms - CDNL (dBC)		
Existing	N/A	N/A

	Owyhee North	Owyhee South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	63.5	47.2
Sonic Booms - CDNL (dBC)		
Existing	53.0	N/A

	Paradise North	Paradise South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	63.5	47.2
Sonic Booms - CDNL (dBC)		
Existing	<47	N/A

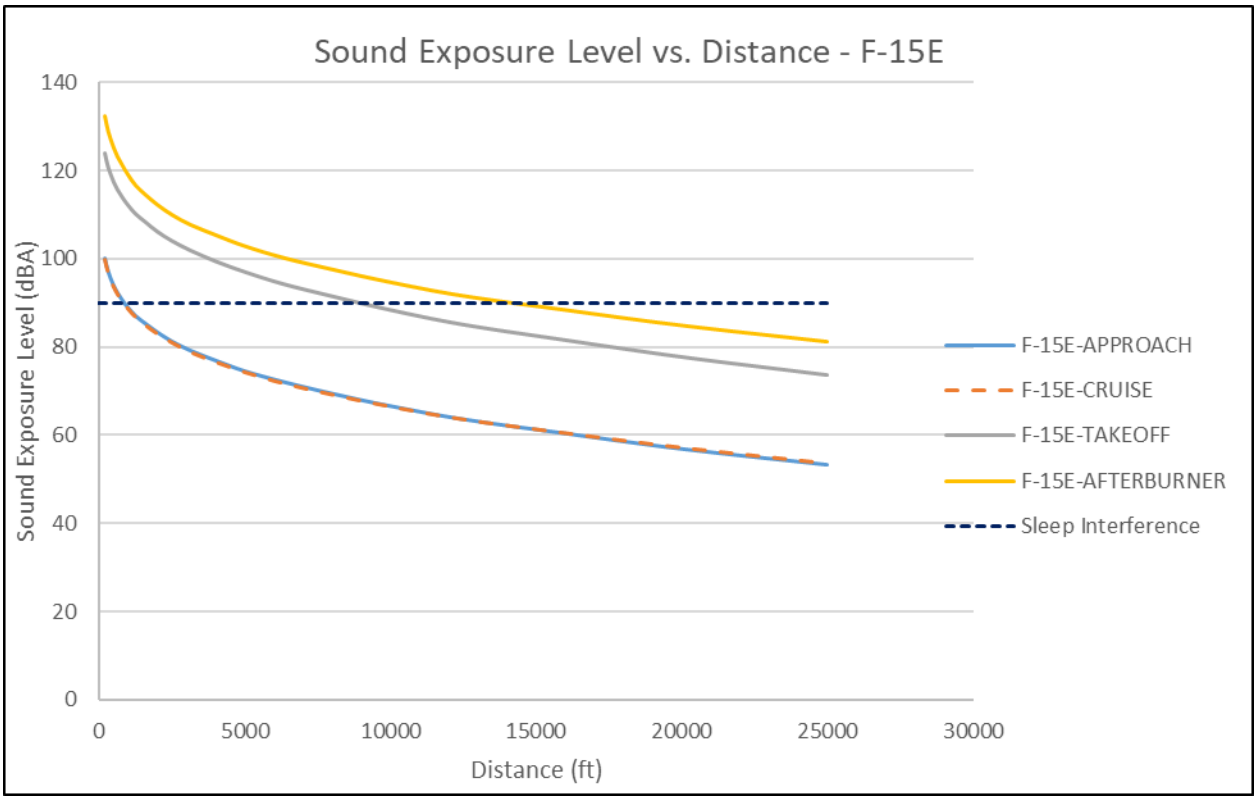
	Jarbidge North	Jarbidge South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	62.9	48.2
Sonic Booms - CDNL (dBC)		
Existing	53.0	N/A

Figure 3-2. Overall Sound Levels Beneath the Mountain Home Range Complex – Existing Conditions.



Source: US Air Force, 2018

Figure 3-3. Maximum Sound Level Versus Distance for the F-15E.



Source: US Air Force, 2018

Figure 3-4. Sound Exposure Level Versus Distance for the F-15E.

Speech Interference. In general, individual overflights can interfere with communication on the ground, and in homes, schools, or other buildings directly under their flight path. 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 (DOD Noise Working Group, 2009). This level is consistent with, and more conservative than, the thresholds outlined in the American National Standards Institute's (ANSI's) *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools* (2010). Sound from an individual F-15E in approach or cruise mode below 2,000 ft AGL, or in takeoff or afterburner mode below 10,000 ft AGL would interfere with communication for individuals under their flight path (**Table 3-3**). The majority of 39,826 sortie operations per year (109 per day) have flight components that meet these criteria. These existing effects are distributed throughout areas beneath MHRC, and some locations experience these events more often than others.

Sleep Interference. Sleep interference is another source of annoyance associated with louder low-altitude aircraft overflights. This is especially true due to 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 ANSI and the Acoustical Society of America S12.9-2008/Part 6 outlines procedures to predict awakenings associated with outdoor noise events heard in the home. Although this standard has been withdrawn, it is still the currently accepted approach for assessing the sleep interference from aircraft noise. The standard suggests methods for calculating the probability of awakening at least once to the sound from distributions of single noise events. **Table 3-4** outlines the number of events above 90-dBA SEL with the probability of a person awakening. Persons sleeping outdoors or in tents experience overflight noise without the benefit of structural sound attenuation and would have higher probabilities of sleep disturbance.

Table 3-4. Probability of Awakening at Least Once from Multiple Events at a 90-Decibel Sound Exposure Level

Number of Events Above a 90-dBA SEL	Probability of Awakening at Least Once	
	Windows Closed[1]	Windows Open[2]
1	1%	2%
3	4%	6%
5	7%	10%
9	12%	18%
18	22%	33%
27	32%	45%

Source: DOD Noise Working Group, 2009

[1] Windows closed assumes that there is a 25 dB-noise level reduction between the outdoors and indoors (e.g., 90-dB SEL outdoors is 65-dB SEL indoors).

[2] Windows open assumes that there is a 15-dB noise level reduction between the outdoors and indoors (e.g., 90-dB SEL outdoors is 75-dB SEL indoors).

dB = decibel(s); SEL = sound exposure level

Sound levels for F-15E operating in the MHRC are higher than 90-dBA SEL, and individuals directly under their flight paths likely experience some amount of sleep interference. Under existing conditions, approximately 14 percent of air operations (5,575 sortie operations per year or 15 sortie operations per night) take place between 10:00 p.m. and 7:00 a.m. F-15 overflights in approach or cruise mode would exceed 90-dBA SEL at ground level when operating below 1,000 ft in the Owyhee North and Jarbidge North MOAs. F-15 overflights in afterburner mode would exceed 90-dBA SEL at ground level in all MHRC MOAs when flying below approximately 10,000 ft. Depending on the training conducted on any given night, it is likely a small percentage of individuals beneath the MHRC are awakened. This is particularly true for individuals beneath very low overflights in the Owyhee North and Jarbidge North MOAs or directly under an aircraft accelerating or using afterburners in other areas of the MHRC.

Other Considerations. Several flight constraints are in effect in certain areas and times of year in the MHRC, limiting the loudest noise levels at these times and places:

- Federal Aviation Administration (FAA) 14 CFR § 91.119, *Minimum Safe Altitudes*, requires flights over towns and other congested areas to remain more than 1,000 ft above the highest obstacle within 2,000 ft horizontally of the aircraft and in uncongested areas aircraft should not fly within 500 ft of any person, vehicle, or structure.
- Aircrew are aware of FAA Advisory Circular 91-36, *Visual Flight Rules Flight Near Noise – Sensitive Areas*, and would not overfly Jarbidge Wilderness Area at less than 2,000 ft AGL unless doing so would be expedient to accomplishing their mission.
- Exclusions and avoidance areas with minimum overflight altitudes have been established in certain places beneath the MHRC.

Even at times and places within the MHRC where no special flight restrictions apply, experiencing noise from an aircraft that is both overhead and at the lowest possible altitude is relatively rare. In addition to 14 CFR § 91.119, the frequency of low-altitude overflights is limited by these factors:

- Flight at low altitudes requires an extreme level of vigilance on the part of the aircrew, and time spent at the lowest available altitudes would be very limited and only as needed to accomplish very specific training requirements.
- The SUA associated with the MHRC is very large, and any particular location on the ground is overflown at low altitudes relatively infrequently.
- For a person on the ground, the airspace that is "overhead" (i.e., within 45 degrees of the horizon) increases with altitude, such that only 0.03 mi^2 is "overhead" at 500 ft AGL, 0.11 mi^2 at 1,000 ft AGL, and 0.45 mi^2 at 2,000 ft AGL. This combined with the vast distribution of aircraft within the MHRC and the limited amount of time at these altitudes, the time an aircraft was "overhead" at any given point on the ground would be extremely limited (e.g., seconds to minutes per year).

Damage to Hearing and Structures. Noise from low-level aircraft overflights can cause buildings under their flight path to vibrate, which the occupants experience as shaking of the structure and rattling of the windows; however, based on experimental data and models, noise and vibrations from subsonic aircraft overflights do not cause structural damage to buildings. Noise-related hearing loss due to long-term exposure (many years) to continuous noise in the workplace has been studied extensively. Unlike workplace noise, community exposure to aircraft overflights is not continuous but consists of individual events where the sound level exceeds the background level for a limited time. An individual would need to be exposed to an average sound level of 75 dBA, 8 hours per day for 40 years to experience hearing loss (USEPA, 1974; Committee on Hearing, Bioacoustics and Biomechanics Assembly of Behavioral and Social Sciences National Research Council, 1977), as such Occupational Safety and Health Administration (OSHA) and the DAF have adopted a threshold of 80 dBA for 8 hours per day as the threshold for hearing protection (29 CFR 1910.95, *Occupational Noise Exposure*, and AFI 48-127, *Occupational Noise and Hearing Conservation Program*). As aircraft overflights are intermittent and not continuous, no individuals are exposed to sound levels exceeding 75 dBA for 8 hours per day in areas near the base or under the MHRC.

Sonic Booms

Aircraft in supersonic flight (i.e., exceeding the speed of sound) cause sonic booms. A sonic boom is characterized by a rapid increase in pressure, a decrease in pressure, and then a return to normal atmospheric levels. This change occurs very quickly, usually within a few tenths of a second, and is often perceived as a "bang-bang" sound. The amplitude of a sonic boom is measured by its peak overpressure, in pounds per square foot (psf). The sound levels depend on the aircraft's size, weight, geometry, speed, and altitude. Sonic booms can be annoying and cause startle reaction in humans and animals. On occasion, very loud sonic booms can cause physical damage to structures such as window breaking and plaster cracking. For impulsive noise such as sonic booms, C-weighted sound levels are used. "C-weighted" denotes an emphasis on the lower frequency content of a noise event to represent human response to louder noise levels. Compared to A-weighting, C-weighting enhances the lower frequency content. Cumulative sonic boom exposures are reported with the metric of C-weighted DNL (CDNL).

Supersonic operations are permitted in Owyhee North and Jarbidge North MOAs at altitudes above 10,000 ft AGL, except over the Duck Valley Indian Reservation where it is prohibited. Supersonic flight is also permitted above 30,000 ft MSL in the ATCAA above all the other MOAs; however, sonic booms generated at these high altitudes rarely reach the ground. BoomMap3 is a suite of computer modeling programs that predict noise exposure from sonic booms under the flight path of supersonic aircraft operations. **Table 3-5** outlines the overall sound levels from sonic booms in CDNL beneath the MHRC. The overall sound levels include noise from the total annual average aircraft operations within the MOAs, including aircraft operating out of MHAFB, the IDARNG, and other transient users.

Table 3-5. Overall Sound Levels from Sonic Booms Beneath the Mountain Home Range Complex – Existing Conditions

Overall Sound Levels from Sonic Booms – CDNL (dBC)							
Jarbidge North	**Jarbidge South**	**Owyhee North**	**Owyhee South**	**Paradise North**	**Paradise South**	**Saddle A**	**Saddle B**
53.0	N/A	53.0	N/A	<47.0	N/A	N/A	N/A

Source: US Air Force, 2007

CDNL = C-weighted day night sound level; dBC = C-weighted decibels; N/A = not applicable

Damage to Structures and Hearing. The amplitude of an individual sonic boom is measured by its peak overpressure, in psf. **Table 3-6** presents the peak overpressure at varying altitudes for a sonic boom generated by a F-15E under typical operating conditions. Supersonic F-15E operations above 10,000 ft AGL are not loud enough to damage hearing or structures.

In addition, there is a large degree of variability in damage to buildings and much of which depends on the pre-existing condition of a structure. At 1 psf, the probability of a window breaking ranges from one in a billion to one in a million (Sutherland, 1990; Hershey and Higgins, 1976). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand. Laboratory tests of glass have shown that properly installed window glass will not break at overpressures below 10 psf, even when subjected to repeated booms, but in the real world, glass is not in pristine condition (White, 1972). Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors.

Table 3-6. Individual F-15 Sonic Boom Overpressures

Flight Altitude (ft AGL)	Peak Overpressure (psf)	
	Directly Beneath Flight Path	Aircraft at 45° from Directly Overhead
10,000	4.4	3.2
15,000	3.1	2.1
20,000	2.3	1.5
25,000	1.9	does not reach ground

AGL = above ground level; ft = feet psf = pounds per square foot

Military Training Routes

Overall sound levels for each MTR (depicted, as identified in Figure 2-4), were estimated based on the existing number of operations and range of altitudes flown. The overall sound levels beneath the MTRs in areas beyond the MHRC would range from <35-dBA DNL on several routes to 44-dBA DNL on Instrument Route 302 (**Table 3-7**). Based upon the limited number of aircraft overflights, the existing overall sound levels do not exceed 65-dBA DNL on any MTR associated with the MHRC. These existing levels of noise are compatible with all land use categories.

Table 3-7. Overall Sound Levels Beneath Military Training Routes Beyond the Mountain Home Range Complex – Existing Conditions

Military Training Route	Existing Sound Level (dBA DNL)
IR-300	40
IR-302	44
IR-303	37
IR-304	40
IR-305	35
IR-313	<35
VR-1300	<35
VR-1301	43
VR-1302	<35
VR-1303	36
VR-1304	42
VR-1305	<35
VR-389	<35
VR-391	36

Source: US Air Force, 2017

dBA = A-weighted decibels; DNL = day-night average sound level

Munitions Noise

At JBR munitions usage is limited to bomb dummy units. These munitions contain a small spotting charge and their employment generates negligible noise. As with JBR, on SCR munitions usage is limited to bomb dummy units, however, small, medium, and large-caliber gun ammunition is also used on the range. The peak noise metric is often used to assess impacts from ammunition because noise from firing ammunition can be impulsive (i.e., loud and short), and a time averaging noise metric (e.g., DNL) does not capture the impact of the noise. Noise sensitive land uses are not normally recommended in areas where noise from small arms ranges exceeds 87 dB at peak noise level (dBP). Peak sound levels from the loudest weapon used under existing conditions, the .50-caliber machine gun, decreases to 115 dBP at approximately 2 miles inside the range boundary. Existing air-to-ground gun training is audible, but distant, at the range boundary, which is greater than 4 mi from the SCR firing points.

3.2.3 Environmental Consequences

All four action alternatives would include the same level of increase in aircraft operations, the differences between alternatives are the location of interim and permanent housing and whether or not housing construction would occur. The noise modeling performed applies to all action alternatives. Refer to **Appendix C.1.4** for noise model operational data and results.

The aircraft proposed for this action is the F-15QA fitted with F110-GE-129 engines. The Proposed Action for the F15QA is modeled using the F-15E with the F100-PW-229 engines because engine data for the F-15QA are unavailable. NOISEMAP does not include noise estimates from an F-15 variant with the F110-GE-129 engines, and obtaining such data was not reasonable during the preparation of this EA due to cost and time constraints. However, NOISEMAP includes noise estimates for the F-15E with the F100-PW-229 engines. Under 40 CFR 1502.21, existing credible scientific evidence is acceptable for analyses and therefore a surrogate engine was selected. Several technical experts have reviewed this and validated use of the surrogate data as being a method generally accepted in the scientific community. Once noise measurements are obtained on the F-15 airframe with the F110-GE-129 engine, this analysis will be revaluated, and if necessary this EA will be supplemented. The most appropriate surrogate available in NOISEMAP is the F-15E with the F100-PW-229 engines. Noise levels from the F-15E with the F100-PW-

229 engines are likely to be similar to that of the F-15QA; therefore, this is an appropriate engine surrogate for modeling based on engine type and maximum thrust.

Furthermore, there would be no difference in noise due to differences in airframes because both use the same airframe. The only potential for differences in noise between the aircraft are the engines and both have nearly identical thrust specifications. Therefore, the confidence level for using the F-15E as a surrogate is very high and there is no need at this time to make any adjustments. The F-15A with the F100-PW-100 engines was the last aircraft to have been measured and the F-15E with the F100-PW-229 engines is an estimate itself. This estimation was performed by experts at the Air Force Research Laboratory and was approved for use in NOISEMAP in the mid-1990s. With the greater thrust specification, the F-15E aircraft with the F100-PW-229 engines was estimated to be approximately 1.5 decibels louder than the F-15A version. This has been the DOD approved and industry standard for over 25 years.

3.2.3.1 Evaluation Criteria

Changes in noise that would substantially increase areas of incompatible land use outside the installation would be considered indicators of significance. Basing actions are at the discretion of DAF and do not require FAA approval; significance criteria outlined in FAA Order 1050.1f do not apply to this EA, but could be used as indicators. A review of regulations and land use planning criteria provided in **Appendix C.1**.

3.2.3.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

Alternative 1 would have short- and long-term, minor impacts on the noise environment. Short-term impacts would be due to noise generated by heavy equipment during construction. Long-term impacts would be due to incremental increases in aircraft noise in areas surrounding MHAFB, at the MHRC, and under the SUA and MTRs. The Proposed Action would not substantially increase areas of incompatible land use on and adjacent to MHAFB.

On-Base and Off-Base

This section discusses the impacts of construction and changes in aircraft operations at MHAFB on the noise environment.

Facility Construction and Modification. The construction activities would require use of heavy equipment that would generate short-term increases in noise near the project sites. **Table 3-8** presents typical noise levels (dBA at 50 ft) for the main phases of outdoor construction. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 ft. With multiple items of equipment operating concurrently, noise levels can be relatively high within 400 to 800 ft of active construction sites.

Table 3-8. Noise Levels Associated with Outdoor Construction

Construction Phase	L_{eq} (dBA)
Ground clearing	84
Excavation, grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA, 1971; Federal Highway Administration, 2006

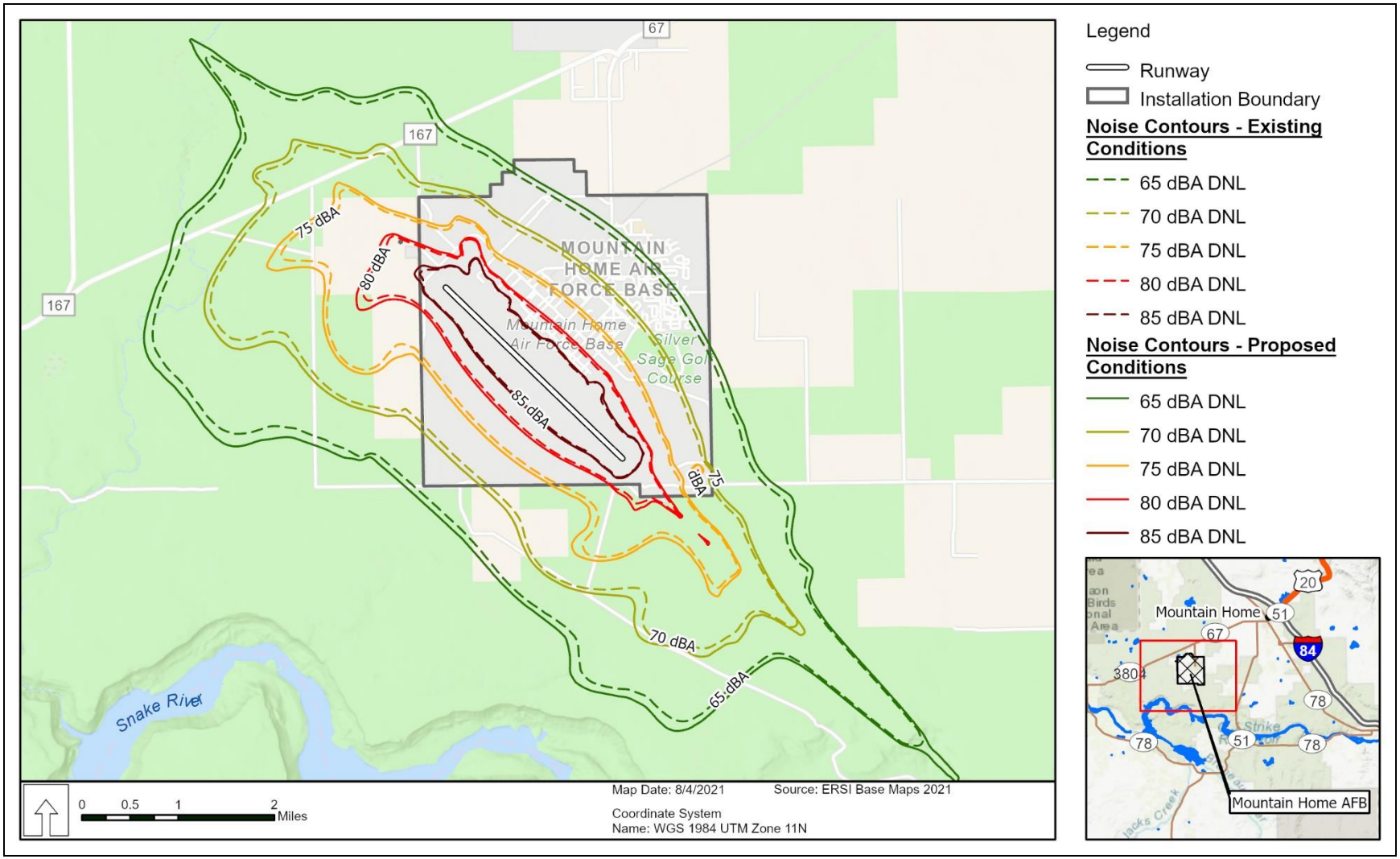
dBA = A-weighted decibels; L_{eq} = equivalent noise level

Under Alternative 1, all construction activities would be within the installation's property boundary and would be conducted in the context of an active AFB where aircraft and other types of noise is typical. There would be no off-base residents within 800 ft of the proposed construction. Given the temporary nature of proposed construction activities, distance to nearby noise sensitive areas, and the existing noise environment, these

impacts would be minor. Although construction-related noise impacts would be minor, the following BMPs would be performed to reduce further any realized noise impacts:

- Heavy equipment use would primarily occur during normal weekday business hours;
- Heavy equipment mufflers would be properly maintained and in good working order; and
- Personnel, particularly equipment operators, would use adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Aircraft Noise. Noise levels on and adjacent to MHAFB with implementation of Alternative 1 were calculated using NOISEMAP 7.3, which accounts for all aircraft activities, including landings, take-offs, in-flight operations, maintenance activities, and engine run-ups. **Figure 3-5** shows the base-wide DNL noise contours both with and without the proposed F-15QA operations. The addition of the 12 proposed F-15QAs and associated air operations would produce a small increase in noise levels surrounding MHAFB. Changes to the overall noise environment at and surrounding the base would be indistinguishable from existing conditions. **Table 3-9** presents the land area exposed to noise levels greater than 65-dBA DNL with and without Alternative 1. Areas exposed to noise levels greater than the 65-dBA DNL are predominately within the installation boundary. Under the Proposed Action and all action alternatives, there would be 11,196 ac off base and 5,319 ac on base that would be within the 65-dBA DNL contour. There would continue to be no off-base schools, churches, hospitals, or noise sensitive areas within the 65-dBA DNL contour. These impacts would be minor.



Source: US Air Force, 2017

Figure 3-5. Potential Noise Contours for Mountain Home Air Force Base – All Action Alternatives.

Table 3-9. Area within Potential Noise Contours at Mountain Home Air Force Base – All Action Alternatives

Noise Contour (dBA DNL)	Area Under Contours (Acres)					
	Existing Conditions			Proposed Action		
	On-Base	Off-Base	Total	On-Base	Off-Base	Total
65-70	1,133	5,634	6,767	1,103	6,027	7,130
70-75	1,333	3,109	4,442	1,329	3,323	4,651
75-80	1,053	1,361	2,414	1,102	1,560	2,662
80-85	674	214	888	715	283	998
>85	1,013	0	1,013	1,071	3	1,074
Total	5,206	10,318	15,524	5,320	11,196	16,516

Sources: US Air Force, 2017

dBA = A-weighted decibels; DNL = day-night average sound level

Airspace

This section discusses the impacts on the noise environment from changes in aircraft operations at MHRC and the SUA and MTRs used by F-15 aircraft based at MHAFB.

MHRC. Alternative 1 would have long-term, minor impacts on the noise environment at the MHRC. These impacts would be due to an increase in the overall operational tempo and subsequent increases in the overall noise environment and number of sonic booms under the MHRC MOAs. These changes in noise levels would be small and indistinguishable from existing conditions. There would be no change in the airspace, or the types of operations conducted at MHRC. The nature of and the levels of noise from individual subsonic and supersonic overflights would be identical to existing conditions.

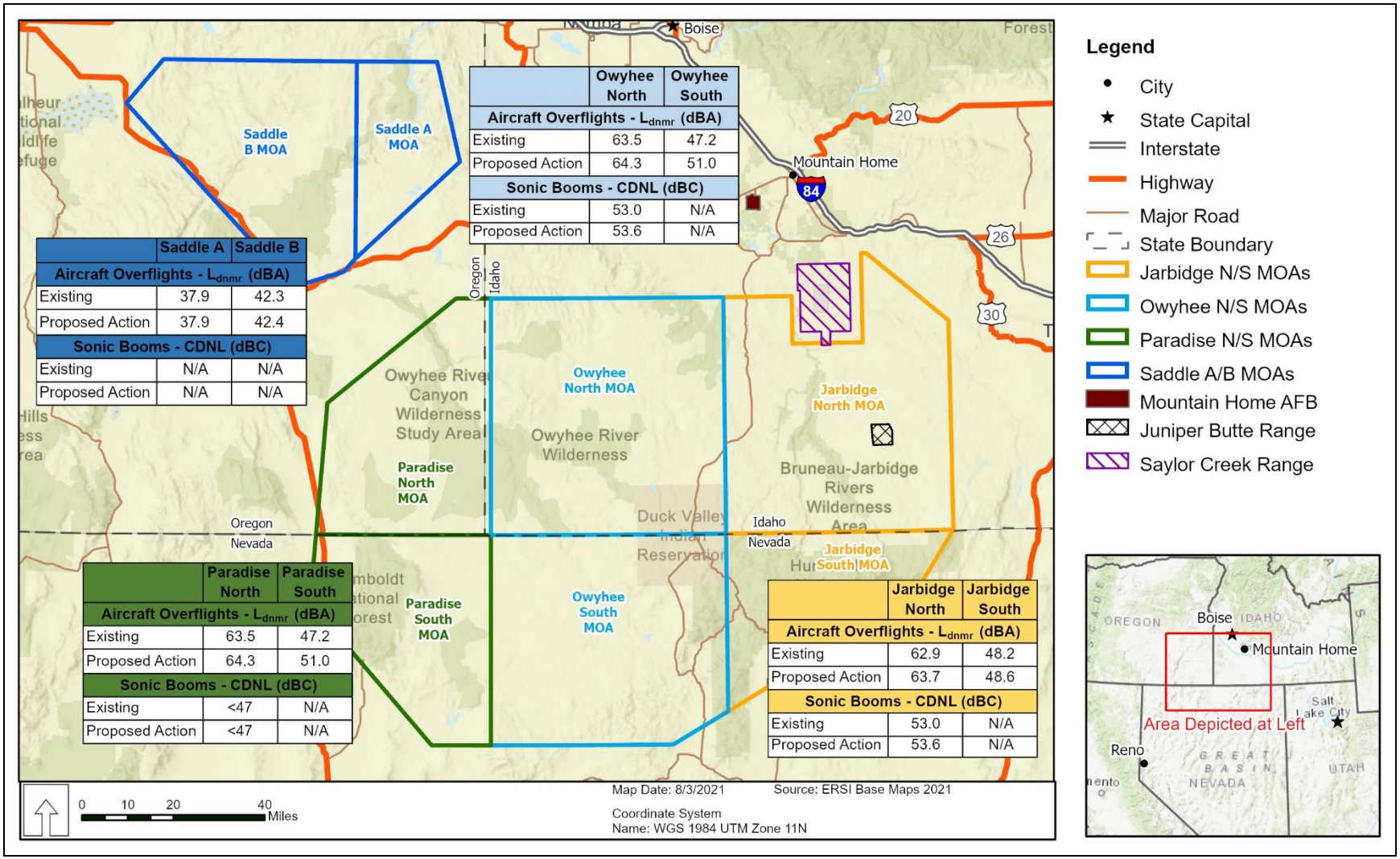
With the addition of 12 F-15QAs, there would be a 15 percent increase in air operations, or an additional 17 training operations per day distributed throughout the eight MOAs at MHRC. **Table 3-10** and **Figure 3-6** presents the overall sound levels from subsonic aircraft activities (L_{dnmr}) for each of the MHRC MOAs both with and without Alternative 1. The overall sound levels would continue to be less than 65 dBA and compatible with all land uses. Owyhee South MOA would have the largest change in overall sound levels of 3.8 dBA DNL; however, the noise from aircraft would remain well below 65 dBA DNL which is the level normally not recommended for noise sensitive land use. As with existing conditions and for similar reasons, individual overflights would continue to interfere with communication, disrupt sleep, and intermittently annoy individuals under the MOAs. These impacts would be minor.

Table 3-10. Overall Potential Sound Levels from Aircraft Overflights Beneath the Mountain Home Range Complex – All Action Alternatives

Overall Sound Levels from Aircraft Overflights – L_{dnmr} (dBA)								
	Jarbidge North	Jarbidge South	Owyhee North	Owyhee South	Paradise North	Paradise South	Saddle A	Saddle B
Existing	62.9	48.2	63.5	47.2	51.0	47.1	37.9	42.3
Proposed Action	63.7	48.6	64.3	51.0	51.4	47.5	37.9	42.4
Change	0.8	0.4	0.8	3.8	0.4	0.4	0.0	0.1

Source: US Air Force, 2017

dBA = A-weighted decibels; L_{dmnr} = onset rate adjusted day-night average sound level



	Saddle A	Saddle B
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	37.9	42.3
Proposed Action	37.9	42.4
Sonic Booms - CDNL (dBC)		
Existing	N/A	N/A
Proposed Action	N/A	N/A

	Owyhee North	Owyhee South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	63.5	47.2
Proposed Action	64.3	51.0
Sonic Booms - CDNL (dBC)		
Existing	53.0	N/A
Proposed Action	53.6	N/A

	Paradise North	Paradise South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	63.5	47.2
Proposed Action	64.3	51.0
Sonic Booms - CDNL (dBC)		
Existing	<47	N/A
Proposed Action	<47	N/A

	Jarbidge North	Jarbidge South
Aircraft Overflights - L_{dnmr} (dBA)		
Existing	62.9	48.2
Proposed Action	63.7	48.6
Sonic Booms - CDNL (dBC)		
Existing	53.0	N/A
Proposed Action	53.6	N/A

Figure 3-6. Overall Potential Sound Levels beneath the Mountain Home Range Complex – All Action Alternatives.

Table 3-11 and **Figure 3-6** present the overall sound levels from sonic booms (CDNL) beneath the MHRC both with and without Alternative 1. The overall sound levels would continue to be less than 62 dBC and compatible with all land uses. In addition, other than a 15 percent increase in the number of events, the peak overpressures and peak sound levels from sonic booms would remain unchanged when compared to existing conditions. As with existing conditions and for similar reasons, individual sonic booms would continue to have limited effects on structures and hearing. Other than an incremental increase in the number of sonic booms from the proposed aircraft, these effects would not change with the implementation of Alternative 1. These effects would be minor.

Table 3-11. Overall Potential Sound Levels from Sonic Booms Beneath the Mountain Home Range Complex – All Action Alternatives

Overall Sound Levels from Sonic Booms - CDNL (dBC)								
	Jarbidge North	**Jarbidge South**	**Owyhee North**	**Owyhee South**	**Paradise North**	**Paradise South**	**Saddle A**	**Saddle B**
Existing	53.0	N/A	53.0	N/A	<47.0	N/A	N/A	N/A
Proposed Action	53.6	N/A	53.6	N/A	<47.0	N/A	N/A	N/A
Change	0.6	N/A	0.6	N/A	0.0	N/A	N/A	N/A

Source: Plotkin, 1993

CDNL = C-weighted day night sound level; dBC = C-weighted decibels; N/A = not applicable

MTRs. Alternative 1 would have long-term, negligible impacts on the noise environment under the MTRs beyond the MHRC. These impacts would be due to an increase in the overall operational tempo and subsequent increase in the overall noise environment under the MTRs. Overall sound levels for each MTR were estimated based on the proposed number of operations and range of altitudes flown. The overall sound levels beneath the MTRs in areas beyond the MHRC would range from <35-dBA DNL on several routes to 44-dBA DNL on Instrument Route 302 (**Table 3-12**). Therefore, based upon the limited number of aircraft overflights within the MTRs, the overall sound levels would not exceed 65-dBA DNL. These levels of noise would continue to be compatible with all land use categories. These activities would be indistinguishable from existing conditions, and their impacts would be negligible. As with existing conditions and for similar reasons, noise from individual F-15 overflights would generate distinct acoustical events and would continue to have the potential to annoy individuals occasionally. In general, an F-15 overflight cruising at 500 ft AGL would highly annoy less than 2 percent of individuals directly under its flight path (see **Table 3-12**).

Munitions Use. Alternative 1 would have long-term, negligible impacts on the noise environment from an increase in the use of air-to-ground small arms at SCR. Only munitions that do not make noise would continue to be authorized on JBR. There would be no noise from munitions training at this range. As with JBR, only heavy munitions that do not make noise would continue to be authorized on SCR. Although the overall number of small arms used would increase, the types of weapons used at SCR would not change. The peak sound levels from the loudest weapon used, the .50-caliber machine gun, would continue to decrease to 115 dBP at a distance in approximately 1.5 mi from the range boundary. Small arms training under Alternative 1 would continue to be audible, but distant, at the range boundary 4 mi away and indistinguishable from existing conditions. These impacts would be negligible.

Table 3-12. Overall Potential Sound Levels Beneath Military Training Routes Beyond the Mountain Home Range Complex – All Action Alternatives

Military Training Route	Existing Sound Level (dBA DNL)	Proposed Action Sound Level (dBA DNL)
IR-300	40	41
IR-302	44	44
IR-303	37	37
IR-304	40	40
IR-305	35	36
IR-313	<35	<35
VR-1300	<35	<35
VR-1301	43	43
VR-1302	<35	<35
VR-1303	36	37
VR-1304	42	42
VR-1305	<35	<35
VR-389	<35	<35
VR-391	36	36

Source: US Air Force, 2017

dBA = A-weighted decibels; DNL = day-night average sound level; IR = instrument route; VR = visual route

3.2.3.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Alternative 2 would have short- and long-term, minor impacts on the noise environment and would be the same as described for Alternative 1.

3.2.3.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Alternative 3 would have short- and long-term, minor impacts on the noise environment. Short-term impacts would be due to noise generated by heavy equipment during construction. Although the infrastructure improvements would vary when compared to Alternative 1, the nature and overall level of noise from construction activities would be similar. These proposed activities would be conducted in the context of an active AFB where aircraft and other types of noise are typical. There are no off-base residents within 800 ft of the proposed construction. Long-term impacts would be the same as described for Alternative 1.

3.2.3.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Alternative 4 would have short- and long-term, minor impacts on the noise environment and would be the same as described for Alternative 3.

3.2.3.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no change to the noise environment at MHAFB, off base, or in the SUA and MTRs.

3.2.4 Reasonably Foreseeable Future Actions

Any of the action alternatives, in addition to reasonably foreseeable future actions at MHAFB or the MHRC, may result in additional impacts on the noise environment. With the addition of ongoing and proposed construction projects at MHAFB, local noise would potentially increase; however, these increases would be

short in duration, confined to on-base areas. The potential incremental impact on the noise environment would be negligible.

The total operations in the MHRC airspace could increase by up to 3,875 sorties (8 percent) with the reasonably foreseeable replacement of the Oregon Air National Guard's F-15C/Ds with the F-15EXs (**Appendix D**). Overall sound levels (i.e., DNL) increase 3 dBA for every doubling of similar operations (AFCEC 2020). With an 8 percent increase in F-15 operations there would be an approximate 0.3-dBA DNL increase for the airspaces in the MHRC when compared to the Proposed Action. These changes would not contribute appreciably to the noise throughout the MHRC and would not be perceptible when compares to either the existing conditions or those described under the Proposed Action. Based upon the limited number of F-15EX overflights, the overall sound levels would be comparable to existing conditions and never exceed the 65-dBA DNL. These effects would be negligible.

There is currently a proposal to optimize the MOAs throughout the MHRC which includes lowering of the altitude of the floors of several MOAs. There would be a small increase (approximately 5 percent) in the number of operations in the MOAs, which would be redistributed into the newly proposed areas. A NEPA process is currently being conducted that includes the proposed airspace optimization. In addition, the Forging Saber exercise, which has already completed the NEPA process, would not change the total air operations at MHAFB or MHRC nor change the assessment within this EA. No other activities have been identified that when combined with Alternative 1 would have greater than significant adverse effects on the noise environment.

3.3 AIR QUALITY

3.3.1 Existing Conditions

3.3.1.1 On-Base and Off-Base

The Clean Air Act (42 US Code [U.S.C.] §§ 7401-7671q), as amended, assigns USEPA responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter and particulate matter less than 2.5 microns in diameter), sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone, and lead. Areas than exceed the NAAQS are designated nonattainment areas. Attainment areas are regions that do not exceed the NAAQS, and in which the general conformity rules that govern federal actions do not apply. The definition of air quality as a resource, an additional overview of the NAAQS, and a regulatory review is in **Appendix C.2**.

Federal regulations designate areas in violation of the NAAQS as nonattainment areas. Federal regulations designate areas with levels below the NAAQS or not evaluated for compliance with the NAAQS as attainment areas. USEPA has designated all areas associated with all the alternatives as in attainment for all criteria pollutants (USEPA, 2021b). This includes but is not limited to Elmore County, Idaho. Therefore, the general conformity rule does not apply.

3.3.1.2 Airspace

USEPA has designated all areas associated with all the alternatives, including all areas under the MHRC as in attainment for all criteria pollutants (USEPA, 2021b). This includes Owyhee and Twin Falls Counties in Idaho, Humboldt County in Nevada, and Malheur County in Oregon. These areas are split between three air quality control regions (AQCRs), including the Idaho AQCR, Nevada Intrastate AQCR, and the Eastern Oregon Intrastate AQCR, all of which have been designated full attainment for all criteria pollutants.

3.3.1.3 Climate and Greenhouse Gases

Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth and, therefore, contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere but increases in their concentrations result from human activities such as burning fossil fuels. Global temperatures are expected to continue to rise as human activities continue to

add carbon dioxide (CO_2), methane, nitrous oxide, and other GHGs to the atmosphere. Whether the amount of rainfall would increase or decrease remains difficult to project for specific regions (Intergovernmental Panel on Climate Change, 2018). EO 14008, *Tackling the Climate Crisis at Home and Abroad*, outlines policies to reduce GHG emissions and to bolster resilience to the impacts of climate change. In addition, EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, requires federal agencies to capture the full costs of greenhouse gas emissions as accurately as possible, including taking global damages into account. Additional information on climate and the EOs pertaining to climate change and NEPA is provided in **Appendix C.2**.

3.3.2 Environmental Consequences

3.3.2.1 Evaluation Criteria

Because all areas associated with all activities for all alternatives are in attainment for the NAAQS, the General Conformity Rule does not apply. The DAF has defined insignificance indicators protective of human health and welfare in attainment areas. The DAF's Air Conformity Applicability Model utilizes insignificance indicators of 250 tons per year (tpy) for criteria pollutants to determine the level of impacts under NEPA (DAF, 2021a). For attainment area criteria pollutants, the insignificance indicators are used as an initial screening for potential impacts on air quality. If the total emissions would be below the DAF insignificance indicators, air quality impacts would be insignificant. If the total emissions would exceed the DAF insignificance indicators for major source thresholds, air quality impacts must be investigated further, as the indicators warrant further evaluation for the potential for significant impacts. There would be a significant effect on air quality for any alternative that would contribute to a violation of any federal, state, or local air regulation.

The Air Conformity Applicability Model does not include emissions estimates from an F-15 variant with the F110-GE-129 engines that is proposed for the F-15QA aircraft. Under 40 CFR 1502.21, existing credible scientific evidence is acceptable for analyses and therefore a surrogate engine was selected. The most appropriate surrogate available in the Air Conformity Applicability Model is the F-15E with the F100-PW-229 engines. As emissions from the F-15E with the F100-PW-229 engines are likely to be similar to that of the F-15QA, this is an appropriate engine surrogate for modeling based on engine type, max thrust, fuel flow rate, and emission factors.

3.3.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

There would potentially be short- and long-term, minor effects on air quality. Short-term effects would be from fugitive dust and the use of heavy equipment during construction and renovation. Long-term effects would be from an increase in boiler use for heating buildings; the addition of personnel; and additional aircraft operations at the base, at MHRC, and within the SUA. Emissions would exceed the DAF insignificance indicators for attainment areas; however, the Idaho ACQR is large in area and aircraft operations would not contribute to a violation of any federal, state, or local air regulation.

The DAF's Air Conformity Applicability Model was used to estimate the proposed total direct and indirect emissions from Alternative 1. **Table 3-13** lists total direct and indirect emissions resulting from Alternative 1. Construction and demolition emissions were estimated for fugitive dust, on- and off-road diesel equipment and vehicles, worker trips, architectural coatings, and paving off-gasses. Operational emissions were estimated for the three AQCRs associated with the Proposed Action. These estimates included net changes in emissions associated with action-related construction, personnel, boiler operations, and aircraft operations from the beddown, including those at MHAFB and the MHRC. Maximum annual net-change in nitrogen oxide emissions would be above the DAF’s insignificance indicator for attainment areas of 250 tpy in the Idaho AQCR; however, flight operations and associated emissions would be spread out over a large area and the net change in emissions in each MOA would be a fraction of the net change in the Idaho Air Quality Control Region. Oxides of nitrogen emissions from the proposed aircraft operations within the Idaho AQCR would be 261.3 tpy, and account for 2.1 percent of the annual county-wide emissions of 12,603 tpy in counties beneath the MOAs within the AQCR (USEPA, 2021a). As the total nitrogen oxides emissions

would be a small fraction of the regional emissions and the AQCR encompasses a large area, it is not expected that the Proposed Action would threaten the attainment status of the region and would have less than significant effects. Potential emissions would not contribute to a violation of any federal, state, or local air regulation.

Table 3-13. Maximum Annual Net Change in Emissions Compared to Insignificance Indicator

Maximum Annual Emissions (tpy)[1]						
Pollutant	Peak Construction Year	Peak Operational Year			Insignificance Indicator (tpy)[2]	Exceeds Insignificance Indicator? (Yes/No)
	Idaho AQCR	Idaho AQCR	Nevada Intrastate AQCR	Eastern Oregon Intrastate AQCR		
VOC	2.4	38.2	4.2	7.8	250	Yes for NO_x at Idaho AQCR only No for all other criteria pollutants
NO_x	3.9	261.3	25.9	50.1		
CO	4.8	128.8	16.3	30.0		
SO_2	0.0	19.2	1.7	3.4		
PM_{10}	15.4	30.1	2.7	5.4		
$PM_{2.5}$	0.2	27.2	2.5	4.8		
Pb	0.0	0.0	0.0	0.0	25	

Source: [1] DAF, 2021b; [2] DAF, 2021a

AQCR = Air Quality Control Region; CO = carbon monoxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; SO_2 = sulfur dioxide; tpy = ton(s) per year; VOC= volatile organic compound

Alternative 1 does not include any new major stationary sources of air emissions, and there would not be an appreciable net increase of air emissions from stationary sources such as building heaters, paint booths, engine test stands, and fuel storage and dispensing. Any new minor stationary sources of air emissions could be subject to federal and state air permitting regulations. They would be reviewed on a case-by-case basis and added to the installation's air operating permit, as necessary. Both a new source construction permit and a modification to the existing operating permit could be required. If any older boilers and back-up generators were removed during reconfiguring or demolition of existing buildings, each would be decommissioned and removed from the base's air operating permit.

In addition, the Idaho Administrative Procedures Act (IDAPA) outlines other nonpermitting requirements, such as controlling fugitive dust and open burning during construction. All persons responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust would take reasonable precautions to prevent such dust from becoming airborne. Reasonable precautions might include using water to control dust from road grading or land clearing. Alternative 1 would proceed in full compliance with current IDAPA requirements with compliant practices and/or products. These requirements include, but are not limited to, the following:

- Rules for control of fugitive dust (IDAPA 58.01.650);
- Rules for control of visible emissions (IDAPA 58.01.625);
- Rules for fuel burning equipment (IDAPA 58.01.675); and
- Rules for categories of allowable burning (IDAPA 58.01.606).

The DAF and any contractors would comply with all applicable air pollution control regulations. Notably, emissions from aircraft operations are not regulated or require permitting in any of the three states.

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 affected environment or elements of the action would be

affected by climate change. This EA does not attempt to measure the actual incremental impacts of GHG emissions from Alternative 1. There is a lack of consensus on how to measure such impacts. Existing models have substantial variation in output and do not have the ability to measure the actual incremental impacts of a project on the environment. Changes in GHG emissions from the operations at MHAFB and the MHRC, SUA, and MTRs would primarily come from the fuel used during aircraft operations but also includes emissions associated with the increase in personnel and boiler use at MHAFB. **Table 3-14** compares the estimated GHG emissions from Alternative 1 to the global, nationwide, and statewide GHG emissions.

Table 3-14. Potential Global, Countrywide, Statewide, and Greenhouse Gases Emissions from Alternative 1

Scale	Carbon Dioxide Equivalent Emissions (million metric tons)	Change from Alternative 1
Global	43,125	0.000237%
United States	5,249	0.001949%
Idaho	17.8	0. 574603%
Proposed Action	0.102	-

Sources: US Energy Information Administration, 2016; DAF, 2021b

Table 3-15 outlines potential climate stressors and their effects on elements of Alternative 1. The proposed beddown and associated training activities at MHAFB in and of themselves would only be indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). At this time, no future climate scenario or potential climate stressor would have appreciable effects on any element of Alternative 1.

Table 3-15. Proposed Effects of Potential Climate Stressors on the Elements of Alternative 1

Potential Climate Stressor	Effects on Elements of Alternative 1
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

3.3.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Integrated Campus” Location

Alternative 2 would have short- and long-term, minor effects on air quality. Short-term effects would be due to emissions generated by construction and demolition activities. Long-term effects would be due to increases in aircraft operations in areas surrounding MHAFB and throughout the MHRC. These effects would be the same as described for Alternative 1.

3.3.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline “Sea of Rocks” Location

Alternative 3 would have short- and long-term, minor effects on air quality. Short-term effects would be due to emissions generated by construction and demolition activities. As the infrastructure improvements would be less than Alternative 1, the nature and overall level of emissions from construction activities would be less than Alternative 1 (see **Table 3-14**). Long-term effects would be due to increases in aircraft operations in areas surrounding MHAFB and throughout the MHRC and would be the same as described for Alternative 1.

3.3.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Alternative 4 would have short- and long-term, minor effects on air quality. Short- and long-term effects would be the same as described for Alternative 3.

3.3.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no change to air quality at MHAFB, off base, or in the SUA and MTRs.

3.3.3 Reasonably Foreseeable Future Actions

Any of the action alternatives, in addition to reasonably foreseeable future actions at MHAFB or the MHRC, may result in additional potential impacts on air quality. With the addition of ongoing and proposed construction projects at MHAFB, emissions would potentially increase; however, these increases would be short in duration, and the potential incremental impact on air quality would be negligible. There is currently a proposal to optimize the MOAs throughout the MHRC; however, there would be only a small increase (approximately 5 percent) in the number of operations in the MOAs, including those below 3,000 ft AGL. A NEPA process is currently being conducted that includes the proposed airspace optimization. In addition, the Forging Saber exercise, which has already completed the NEPA process, would not change the total air operations at MHAFB or MHRC and would not change the assessment within this EA. No other activities have been identified that when combined would appreciably increase the impacts on air quality.

3.4 SAFETY

3.4.1 Existing Conditions

3.4.1.1 On-Base

MHAFB is a secure military installation with access limited to military personnel, civilian employees, and military families. Operations and maintenance activities conducted on MHAFB, MHRC, and other facilities are performed in accordance with the standards prescribed by Air Force Occupational Safety and Health requirements identified within AFI 91-202 (2019), *The US Air Force Mishap Prevention Program*, Air Force Manual (AFMAN) 91-203 (2018), *Air Force Occupational Safety, Fire, and Health Standards*, and published DAF Technical Orders. Adherence to industrial-type safety procedures and directives ensures safe working conditions. The handling, processing, storage, and disposal of potentially hazardous materials associated with these activities are accomplished in accordance with all federal and state requirements applicable to the substance generated. MHAFB provides emergency services (e.g., fire and law enforcement), which include emergency response and force protection, for the installation. The 366 FW/SEF (Flight Safety) maintains an aggressive program to minimize bird/wildlife aircraft strike hazard (BASH) potential. For additional discussion regarding BASH, see **Section 3.7**.

Construction Safety

All contractors performing construction activities are responsible for following federal OSHA regulations and are required to conduct these activities in a manner that does not increase risk to workers or the public. OSHA regulations address the health and safety of people at work and cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, use of personal protective equipment, and availability of safety data sheets.

Operations and Maintenance

DOD Directive 4715.01E, *Environment, Safety, and Occupational Health* and AFMAN 91-203 provide industrial and general occupational safety guidance for implementation of the OSHA standards in 29 CFR. AFMAN 91-203 implements 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 DAF resources and to protect personnel from occupational deaths, injuries, or illnesses by managing risks.

Fire Management

Contractors provide fire management and response for the ranges and associated facilities. The fire management and response staff and equipment meet the requirements of AFI 32-2001, *Fire and Emergency Services (FES) Program*.

Emergency Response

The MHAFB military fire department provides both fire and crash response. The two-station fire department meets DOD emergency response time criteria for aircraft and structural emergencies. To respond to a wide range of potential incidents, the base maintains detailed mishap response procedures as captured in the 366 FW Mishap Response Plan 9101-CY (MHAFB, 2017a). This plan fulfills the requirements of AFI 91-202 and DAFI 91-204, *Safety Investigations and Reports,* providing responsibilities and procedures for "preparing for, responding to and conducting" investigation of major aircraft, ground, or weapons mishaps. It also assigns agency responsibilities and prescribes functional activities necessary to react to major mishaps, whether on or off base. Initial response to a mishap considers such factors as rescue, evacuation, fire suppression, safety, elimination of explosive devices, ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. Subsequently, the investigation phase is accomplished. After all required actions on the site are complete, the Base Civil Engineer ensures cleanup of the site.

Munitions Storage and Handling

Personnel at MHAFB control, maintain, and store all munitions required for mission performance. This includes training and inert bombs and rockets, live bombs and rockets, chaff, flares, gun ammunition, small arms ammunition, and other explosive and pyrotechnic devices. Munitions are handled and stored in accordance with DAF explosive safety directives outlined in Defense Explosives Safety Regulation (DESR) 6055.09_AFMAN 91-201, *Explosives Safety Standards*, and all munitions maintenance is carried out by trained, qualified personnel using DAF -approved technical data. DESR 6055.09_AFMAN 91-201 outlines construction and quantity-distance (Q-D) separation standards required by the DOD and the DAF for facilities used for the storage, handling, and maintenance of munitions. The airfield area also has specific areas designated for the loading of live munitions, parking of aircraft loaded with live munitions, and arming and dearming of munitions and guns.

The live munitions loading areas lie at the southeastern end of the runway. Hot brake and hung ordnance pads lie on either end of the runway, adjacent to the arm/dearm pads. The Munitions Storage Area, located in the north-central portion of the base, provides sufficient storage capacity for current types and amounts of munitions. Q-D arcs surround each area of the base supporting munitions handling. Designed to ensure protection to facilities, equipment, and personnel, the Q-D standards consider the type, size, and quantity of munitions at a location, as well as the type and function of buildings and facilities. All Q-D areas at MHAFB comply with AFMAN 91-201.

Aircraft Mishaps

The potential for aircraft accidents is a primary public concern regarding flight safety. Such accidents may occur as mid-air collisions, collisions with manmade structures or terrain, mechanical failure, weather-related accidents, pilot error, BASH, or strikes from defensive countermeasures used during training.

Aircraft mishaps are classified as A, B, C, or D. See **Appendix C.3** for full definitions of the classes. Class A mishaps are the most severe and provide an indicator of aircraft safety. Based on historical data on mishaps at all installations and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory to provide the basis for evaluating risks among different aircraft and levels of operations. These mishap rates do not consider combat losses due to enemy action. The F-15 (all models) aircraft have flown more than 6,982,447 hours since the aircraft entered the Air Force inventory in 1972. Over that period, 160 Class A mishaps have occurred, and 127 aircraft have been destroyed. This results in a Class A mishap rate of 3.20 per 100,000 flight hours, and an aircraft destroyed rate of 1.82 per 100,000 flying hours (Air Force Safety Center 2021). In FY 2019, aircraft at MHAFB experienced 44 nonbird strike mishaps (6 Class C and 38 Class D). In FY 2020, 33 mishaps occurred (8 Class C and 25 Class D) (US Air Force, 2020a). Class D represent minor incidents. Class C mishaps involve costs of more than $50,000 but less than $500,000 or a loss of worker productivity of one or more days.

Aircraft flight operations at MHAFB are governed by standard flight rules. Under the 366 FW Commander, the 366th Operations Group is the designated operating agency for the range and responsible for operational monitoring, administration, and general safety of MHRC. Activities in the MHRC must comply with AFMAN 13-212 Volume 1, *Range Planning and Operations*.

MHAFB has also implemented specific guidance to minimize the potential for aircraft mishaps. For example, the 366 FW Plan 9601-16, *Mid-Air Collision Avoidance Program*, establishes procedures to reduce the potential for midair collisions between aircraft, educate the public about military air operations, achieve the safest possible flying program, and foster better public relations.

Bird/Wildlife Aircraft Strike Hazard (BASH)

BASH presents a safety concern for aircraft operations because of the potential for damage to aircraft or injury to aircrews or local populations if a crash should occur. Aircraft can encounter birds at nearly all altitudes up to 30,000 ft MSL; however, most birds fly close to the ground. Approximately 78 percent of bird strikes occur at altitudes under 1,000 ft AGL, and 90 percent occur at altitudes under 3,000 ft AGL (FAA, 2020). During the past 20 years, aircraft based at MHAFB have experienced an average of approximately 10 bird strikes per year. Most of these incidents resulted in little or no damage to the aircraft. In 2020, there were nine bird strikes; two of which involved minor reportable damage (US Air Force, 2020a). Between 2000 and 2019, 11 aircraft across the DAF have been destroyed and four fatalities have occurred from bird/wildlife-aircraft strikes (US Air Force, 2020b).

The DAF BASH Reduction Program focuses on reducing strike hazards through awareness, bird control, bird avoidance, and aircraft design. MHAFB maintains an aggressive program to minimize BASH potential, using pyrotechnic and noise-making devices to dissuade birds and wildlife from congregating, especially at the treated effluent storage lagoon (US Air Force, 2012). For the SUA, aircrews use a Bird Avoidance Model to define altitudes and locations to avoid when planning a mission.

3.4.1.2 Airspace

Fire Management

Under the July 2008 Support Agreement between 366 FW and the Bureau of Land Management (BLM) Lower Snake River District, the BLM provides firefighting support for all lands outside the SCR Exclusive Use Area, JBR, emitter sites, and No-Drop targets. For lands within the SCR Exclusive Use Area and JBR, BLM only supplies assistance when requested.

Fire prevention within the impact areas of the JBR and SCR include reduction of ignition sources, management of vegetation and fuels, and maintenance of firebreaks. Fire risk is higher in the impact areas because of munitions use and around the range facilities resulting from maintenance activities. Therefore, MHAFB employs a program of annually reducing fire fuels in the impact areas and implements aggressive fire suppression June through August. During dry years, the fire season can extend from May to November. Both JBR and SCR support fire suppression equipment and personnel, ensuring rapid response to any fires that may start. MHAFB also precludes the use of flares, "hot-spot" training munitions, and pyrotechnic devices during high, very high, and extreme fire risk conditions.

Implementation of the fire management and suppression programs has substantially reduced both the number and extent of fires occurring on the ranges (US Air Force, 2012).

Munitions Employment

Expenditure of ordnance (inert only) during training operations is restricted to JBR and SCR. Strafing with 20- and 30-millimeter training rounds during training operations occurs at SCR. Current authorizations allow the release of chaff and flare in all six MOAs that make up the MHRC, as well as on the ranges and their surrounding airspace. Chaff expenditure is not authorized in the Saddle MOA or over the Duck Valley Reservation.

3.4.2 Environmental Consequences

All four action alternatives would include the same level of increase in aircraft operations; the differences lie in the location of interim and permanent housing and need for construction.

3.4.2.1 Evaluation Criteria

Consequences to safety were assessed in terms of the potential impacts of the Proposed Action on the level of risks to health or safety. Any increase in the level of safety risks is considered an adverse impact. Significant impacts on safety would occur if the Proposed Action substantially increased risks associated with the safety of DAF or QEAF personnel or the general public or introduced a new safety risk for which DAF is not prepared or does not have adequate management and response plans in place.

3.4.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

On-Base

Construction Safety

Negligible impacts on contractor health and safety would be expected from Alternative 1. Contractors performing renovation and construction work would be exposed to an environment containing slightly greater health and safety risks than a nonconstruction environment. To minimize health and safety risks, construction contractors would be required to use appropriate personal protective equipment and establish and maintain site-specific health and safety programs for their employees. Contractor health and safety programs would follow all applicable federal OSHA regulations and would be reviewed by MHAFB personnel prior to work beginning to ensure that appropriate measures are taken to reduce the potential exposure of workers and installation personnel to health and safety risks. Safety data sheets for all hazardous materials and chemicals stored at the worksite would be kept on site and be available for immediate review. Therefore, significant impacts on contractor safety would not be expected.

Operations and Maintenance

Airfield and airspace operations would continue to follow all applicable safety guidelines and regulations. Negligible impacts would be anticipated from increasing annual flight operations at the airfield by approximately 15 percent.

The beddown of 12 F-15QA aircraft would not alter safety for operations and maintenance. The increased operations would not exceed the capabilities of MHAFB Approach Control or its control tower for handling air traffic within the local airspace. The F-15QA aircraft would not require any different safety procedures than those applied to the F-15E aircraft. All maintenance and operations would be under DAF control ensuring that all QEAF aircraft operations would follow all applicable safety guidelines and regulations.

The base has safely supported similar numbers and a greater diversity of aircraft in the past without safety issues. In the late 1990s, MHAFB supported 72 aircraft (US Air Force, 1998). The current inventory, including 14 RSAF F-15SGs, is 56. An additional 12 aircraft would bring the total to 68. The increase in operations would not affect safety associated with airspace management and use. No changes to the MHAFB terminal airspace or base arrival and departure procedures would be required to accommodate the F-15QA aircraft performance or operations.

Aircraft Mishaps

No impacts related to aircraft mishaps would be anticipated from Alternative 1. The slight increases in aircraft operations from the Proposed Action would not be expected to result in an increase in aircraft mishaps. Aircraft mishaps are rare, and the number would not be expected to increase under the Proposed Action. All aircraft flight operations would continue to be conducted in accordance with standard flight rules and local operating procedures and policies.

There is no generally recognized threshold of air safety, such as an acceptable percentage of accidents, above which the hazard to public safety is considered to be unacceptable and below which it is considered acceptable. Instead, the focus of airspace managers is to reduce risks through a number of measures. These include, but are not limited to, providing and disseminating information to airspace users, requiring appropriate levels of training for those using the airspace, setting appropriate standards for equipment performance and maintenance, defining rules governing the use of airspace, and assigning appropriate and well-defined responsibilities to the users and managers of the airspace. When these measures are implemented, risks are minimized, though they can never be eliminated.

Overall, aircraft safety conditions would not change measurably as a result of implementing the Proposed Action. No changes to the clear zones (CZs) or accident potential zones (APZs) would be necessary since the existing zones already account for the aircraft types proposed for the base. Therefore, no increased risks to flight safety would be anticipated under Alternative 1.

Bird/Wildlife Aircraft Strike Hazard

With about 10 BASH incidents annually at MHAFB, bird strikes are not a frequent occurrence and the majority of the strikes that have occurred have not posed a safety risk (US Air Force, 2020a). The small increase in operations under the Proposed Action would not be expected to significantly increase bird/wildlife aircraft strikes. Several factors support this conclusion. First, the BASH program would remain in force for the base. Second, the increases in airfield operations would not substantively change the opportunities for bird/wildlife aircraft strikes, as the flight patterns that are currently resulting in a low rate of incidents would continue. Lastly, no aspect of the Proposed Action would increase concentrations of birds on or near the base, or in the SUA and MTRs. Refer to **Section 3.7.2** for additional information on BASH.

Fire Management

No impacts related to fire safety and management would be anticipated from Alternative 1. The Proposed Action would not be expected to result in an increase in fire risks. Current procedures to minimize fire risks associated with flight training would continue. Operations and maintenance activities on the ranges and associated facilities would continue to be conducted using current DAF procedures and policies. All activities would be conducted by technically qualified personnel and in accordance with all applicable DAF requirements and fire management plans.

Munitions

A new Munitions Maintenance/Production Facility would be constructed to support the QEAF beddown. Munitions would continue to be handled and stored in accordance with DAF directives outlined in DESR 6055.09_AFMAN 91-201. All munitions maintenance would continue to be carried out by trained, qualified personnel using DAF-approved technical data; and therefore, significant impacts would not be expected. No requirements for new or additional safety waivers or changes to the Q-D arcs would be necessary; therefore, significant impacts would not be expected.

Airspace

Negligible impacts would be anticipated from the proposed 14 percent increase in use of flares and 25 percent increase in annual chaff expenditures. All munitions activities and chaff releases would be conducted in areas where these actions already occur, only inert munitions would be released, and all existing safety and fire restrictions would continue to be followed. Additionally, operational constraints pertaining to the use of specific delivery tactics, munitions type, or aircraft headings have been developed and would be followed to mitigate any potentially unsafe condition and to ensure that munitions remain within the applicable safety footprint. No significant impacts on airspace flight safety would be anticipated to occur provided that flight safety rules are followed.

3.4.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Integrated Campus” Location

Impacts on safety would be the same as described for Alternative 1. The change in location of the flightline facilities would not change the potential impacts on safety previously described for Alternative 1.

3.4.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline “Sea of Rocks” Location

The impacts on safety from Alternative 3 would be similar to those described under Alternative 1. Under Alternative 3, housing would not be constructed on base to support QEAF personnel; therefore, there would be no on-base housing construction-related safety risks.

Under Alternative 3, all 169 QEAF personnel would be housed off base, which would increase the risk of traffic accidents while commuting to and from MHAFB compared to Alternative 1 under which no commute would be necessary. As described in **Section 3.9**, **Infrastructure**, the expected increase in traffic in the vicinity of the installation would be minor; therefore, any increase in the risk of traffic accidents would also be expected to be minor.

Impacts on safety from aircraft operations in the SUA would be the same as described for Alternative 1.

3.4.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline “Integrated Campus” Location

Under Alternative 4, impacts on safety would be the same as described for Alternative 3. The change in location of the flightline facilities would not change the potential impacts on safety previously described in Alternative 3.

3.4.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no change to safety at MHAFB, off base, or in the SUA and MTRs.

3.4.3 Reasonably Foreseeable Future Actions

Under the Proposed Action, adverse impacts on safety (e.g., slips, falls, heat exposure, exposure to mechanical, electrical, vision, or chemical hazards) could result from the concurrent implementation of the Proposed Action and the other reasonably foreseeable construction/demolition projects on MHAFB, including the Forging Sabre Biennial Exercises (MHAFB, 2021c). These impacts would be short-term (during construction) and minor because use of appropriate safety methods during these activities would be expected to minimize the potential for such impacts. Because Alternatives 1 and 2 include construction of on-base housing in addition to flightline facilities, they would contribute a greater amount to potential impacts on safety from construction activities than Alternatives 3 and 4.

Because Alternatives 3 and 4 involve only off-base housing, they would cause a slight increase in the number of commuters traveling to and from MHAFB. This additional traffic would be additive to increases associated with other concurrent projects which could cause a negligible to minor increase in the risk of traffic accidents.

Long-term, minor, beneficial impacts on safety would be expected from upgrades associated with construction of modern facilities to support the F-15QA programs. The Proposed Action would increase air operations by 15 percent, resulting in a slightly increased potential for aircraft mishaps, including bird and wildlife aircraft strikes. The risk would be minimized by continued air operational adherence to existing operations safety and BASH protocols. There is currently a proposal to optimize the MOAs throughout the MHRC which includes lowering of the altitude of the floors of several MOAs. There would be a small increase (approximately 5 percent) in the number of operations in the MOAs, which would be redistributed into the newly proposed areas potentially improving flight safety. A NEPA process is currently being conducted that includes the proposed airspace optimization. In addition, the Forging Saber exercise, which has already completed the NEPA process, would not change the total air operations at MHAFB or MHRC nor change the assessment within this EA. No other activities have been identified that when combined with the Proposed Action would have significant adverse effects on safety.

3.5 LAND USE

3.5.1 Existing Conditions

3.5.1.1 On-Base

MHAFB is in southwest Idaho, approximately 12 mi southwest of Mountain Home in Elmore County and 55 mi southeast of the Boise Metropolitan Area. The base encompasses approximately 6,000 ac and is bounded to the north by State Highway 67 and east, south, and west by land primarily used for agriculture or managed by BLM. The installation supports about 7,600 active/reserve military personnel and their family members (MHAFB, 2017c).

There are 12 on-base land use categories identified at MHAFB comprising 5,852.5 ac (**Table 3-16**). The largest category is open space (2,108.8 ac). Airfield and airfield operations land use categories consist of 1,539.1 ac and 181.6 ac, respectively. Housing comprises 806.3 ac with developed accompanied and unaccompanied housing consisting of 40.4 and 21 ac, respectively. Administration, commercial, commercial/service, industrial, medical, and outdoor recreation comprise the remaining land uses. There are no encroachment concerns.

Table 3-16. Summary of Land Use on Mountain Home Air Force Base

Land Use Category	Acres
Administration	166.9
Airfield	1,539.1
Airfield Operations	181.6
Commercial	68.4
Commercial/Service	70.0

Table 3-16. Summary of Land Use on Mountain Home Air Force Base

Land Use Category	Acres
Housing	806.3
Housing Accompanied	21.0
Housing Unaccompanied	40.4
Industrial	515.0
Medical	31.4
Open Space (undeveloped)	2,108.8
Outdoor Recreation	303.6
Total	**5,852.5**

3.5.1.2 Off-Base

QEAF personnel would reside in housing off-base, which presumably would be in areas zoned as residential in Elmore and Ada Counties. Refer to **Section 3.11, Socioeconomics**, for information regarding housing availability in these counties. Off-base land use within the MHAFB noise contours account for approximately 10,375 ac. Most of this area is classified as Air Base Hazard Zone except for 34 ac designated as Agricultural. Much of the land adjacent to the base is undeveloped and managed by the BLM (MHAFB, 2017c).

Approximately 1,741 ac of off-base land is located within airfield safety zones. Of the 1,741 ac, approximately 116 ac are within the CZ. Land use within the CZ is classified as Air Base Hazard Zone. Approximately 660 ac of off-base land use are within Accident Potential Zone (APZ) I zone, and approximately 964 ac lay within the APZ II. Land use within the APZ I and APZ II zones is categorized as Air Base Hazard Zone. There are no incompatible land uses within the airfield safety zones (MHAFB, 2017c). Since most of the land surrounding the installation is undeveloped or agricultural, there are no encroachment concerns.

3.5.1.3 Airspace

Land use beneath the SUA and MTRs is primarily rural, range, agriculture, or federally managed land. Sensitive lands beneath the SUA include portions of Owyhee River Wilderness, Bruneau-Jarbidge Rivers Wilderness, Big Jacks Creek Wilderness, North Fork Owyhee Wilderness, Pole Creek Wilderness, Crater of the Moon National Wilderness Area, and Duck Valley Reservation in Idaho. Sensitive lands beneath the SUA in Nevada include Jarbidge Wilderness, Humboldt National Forest, and Santa Rosa-Paradise Peak Wilderness. Within Oregon, sensitive lands include the Steens Mountain Wilderness. No major metropolitan areas are located beneath the airspace. Population centers beneath the airspace are listed in **Appendix C.4, Table C-16** by county and identified as either incorporated or unincorporated.

3.5.2 Environmental Consequences

3.5.2.1 Evaluation Criteria

Potential impacts on land use are based on the level of land use sensitivity in areas potentially affected by the Proposed Action and alternatives as well as compatibility of those actions with existing conditions. In general, a land use impact would be adverse if it met one of the following criteria:

- inconsistency or noncompliance with existing land use plans or policies
- precluded the viability of existing land use
- precluded continued use of occupation of an area
- incompatibility with adjacent land use to the extent that public health or safety would be threatened
- conflict with planning criteria established to ensure the safety and protection of human life and property

3.5.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

On-Base

Under Alternative 1, permanent flightline facilities would be constructed in the "Sea of Rocks" location. All construction, improvements, demolition, and renovations associated with the flightline facilities would occur on land use categorized as Industrial, Airfield, and Airfield Operations, which would represent compatible land uses. The QEAF community center would be located on Desert Street between Phantom and Gunfighter Avenues on land designated as Administration land use. While the community center would not be constructed on lands designated as Community Service, no impacts would be expected as it would not conflict with surrounding land uses.

In the interim, military housing for 20 accompanied and 20 unaccompanied QEAF personnel could be provided on base in existing family units and dormitories. Permanent housing for accompanied and unaccompanied personnel would be provided on base in newly constructed housing units and a newly constructed dormitory, respectively. Under Alternative 1, housing units for accompanied personnel are proposed for construction along Gunfighter Road; a new dormitory and parking lot are proposed for construction along Phantom Avenue (see **Figure 2-7**). The newly constructed housing units would be located on compatible land use designated as accompanied housing and constructed to existing housing standards. The location of the newly constructed dormitory and parking lot would be on lands designated as Commercial Service land use. The Commercial Service land use includes the Base Exchange, Commissary, and Shoppette (MHAFB, 2017). These retail developments in this land use designation would not generate noise levels that are incompatible with multiunit residential development such as the proposed dormitory and associated surface parking. Therefore, no impacts would be expected and would not conflict with surrounding land uses.

The potential increase in noise greater than 65-dBA DNL would primarily be within the installation boundaries and the 65-dBA DNL contours would increase slightly; while considered a long-term impact, this increase would not be noticeable and would result in a small increase of the noise contours on all sides of the installation. The minor change in the noise setting would be compatible with land use which includes no sensitive noise receptors or residential areas. Further, safety zone designations (i.e., APZ, CZ) would not be expected to change. Therefore, impacts on land use from increased noise levels would not be expected.

Off-Base

In the interim, and depending on availability of existing housing on base, some QEAF personnel would be housed off base in hotels, short-term rentals, or other available rental housing. These existing housing or hotel units would be in approved residential or commercial land use zones. As such, there would be no impacts on land use from interim off base housing.

Airspace

There are no major metropolitan areas located beneath the SUA and MTRs, and land use in these areas is primarily rural, range, agriculture, or federally managed land. While sensitive areas such as wilderness areas, national forests, national monuments, and reservation lands were identified beneath the airspace, training activities currently take place over these areas. The Proposed Action would increase training sorties by 15 percent in the MOAs and 8 percent in the MTRs, this potential increase would not be expected to have a noticeable impact on underlying land use. Noise levels under the SUA and MTRs would not change appreciably above current levels for any airspace; therefore, no impacts on land use from noise are anticipated. In addition, through previous agreements, the Duck Valley Indian Reservation is an avoidance area; therefore, under the Proposed Action, training would not occur in the airspace above the reservation.

3.5.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Under Alternative 2, all elements under the Proposed Action would remain as described in Alternative 1 except that the permanent flightline facilities would be constructed at the "Integrated Campus" location rather than the "Sea of Rocks" location. All construction, improvements, demolition, and renovations associated with the "Integrated Campus" flightline facilities would occur on land use categorized as Industrial, Airfield, and Airfield Operations, except for the Munitions Maintenance/Production facility which would be located on land use designated as Air Base Hazard Zone. The Munitions Maintenance/Production facility location would not conflict or pose a public health or safety risk with adjacent These facility locations do not represent incompatible land use, and therefore, no impacts on land use would be anticipated. All other on-base, off-base, SUA, and MTR impacts on land use would be the same as described in Alternative 1.

3.5.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Land use impacts from the Proposed Action, the "Sea of Rocks" permanent flightline facilities, and the community center would be the same as described in Alternative 1.

Under Alternative 3, interim and permanent housing for QEAF accompanied and unaccompanied personnel would reside off base in existing hotels, housing, and short-term rentals in Elmore and Ada Counties. These existing housing and hotel units would be in areas already zoned as residential and commercial land uses. Therefore, no impacts on land use would occur from off-base interim and permanent housing.

Impacts on land use from aircraft operations in the SUA and MTRs would be the same as described for Alternative 1.

3.5.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Land use impacts from the Proposed Action, "Integrated Campus" permanent flightline facilities, and the community center would be the same as described in Alternative 2. Under Alternative 4, impacts on land use from interim and permanent housing for QEAF personnel would be the same as Alternative 3. Impacts on land use from aircraft operations in the SUA and MTRs would be the same as described for Alternative 1.

3.5.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. Therefore, there would be no change to land use at MHAFB, off base, or beneath the SUA and MTRs.

3.5.3 Reasonably Foreseeable Future Actions

The Proposed Action and Alternatives, in addition to reasonably foreseeable future actions on and off MHAFB would be consistent with existing land uses; therefore, no adverse impacts on land use would be anticipated. If implemented, the Establishment of a Sustainable Water Supply for MHAFB project would be a beneficial impact on land use as a sustainable water supply would support continued development and mission objectives. Likewise, the Idaho Joint Land Use Study would result in a beneficial impact on land use as its objective to prevent encroachment to the installation would maintain the appropriate land use within safety zones.

3.6 EARTH RESOURCES

3.6.1 Existing Conditions

MHAFB is situated in the Columbia Plateau Physiographic Province in the western Snake River Plain. This province is defined by a northwest-trending basin surrounded by high-angle faults with over 105,000 cubic miles of basaltic lava flows and flat to gently rolling hills and plateaus (US Air Force, 2011; National Parks Service [NPS], 2017). Southern Idaho has a low potential for seismic activity, but that potential increases towards central Idaho. MHAFB could be subjected to minor seismic wave damage depending on the magnitude. The average elevation on base is approximately 3,000 ft MSL (USGS, 2021). MHAFB lies above geologic formations consisting of Quaternary basalt and silt. These sediments are reported to be Pleistocene and Pliocene basaltic lava flows, ash, cinders, and sand interlayered with lacustrine silt beds of the Snake River Plain. This bedrock is covered with unconsolidated sand, gravel, and loess (USGS, 1994, 2006).

According to the USDA's SSURGO data (2021b), the dominant soil type beneath the on-base Proposed Action projects is Bahem silt loam with a 0 to 4 percent slope gradient, which has a surface layer consisting of silt loam and subsurface layers consisting of silt loam and fine sandy loam. It has high water capacity that is well-drained with a medium runoff capacity. The Minidoka-Minveno silt loams, 0 to 4 percent slopes, are secondary to Bahem. This soil group has a low water capacity that is well-drained with a medium runoff capacity. Depth to bedrock is greater than 200 centimeters for both soil groups. Soil limitations to construction were determined based on data available in the Natural Resources Conservation Service web soil survey (USDA, 2021a).

The Natural Resources Conservation Service has identified Bahem silt loam, 0 to 4 percent slopes, as prime farmland if irrigated; however, this land is not available for agriculture because it is within an urban development, or "urbanized area," as identified by the US Census Bureau (USCB, 2010). Therefore, the Bahem silt loam is not considered prime farmland.

Soil limitations were rated for facility construction and roads. The Bahem silt loam and Minidoka-Minveno silt loams are not limited for facility construction with a low risk of concrete corrosion; however, they both are somewhat limited for paved roads due to their low soil strength and for shallow excavation due to unstable excavation walls and dusty natures.

3.6.2 Environmental Consequences

3.6.2.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on earth resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Adverse impacts would result if

- regional geology would be affected;
- soils classified as prime and unique farmland would be affected;
- soils affected would be considered unsuitable for development; and
- building construction would be incompatible with the seismic risk status of the project area.

3.6.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

Under Alternative 1, interim and permanent flightline and housing renovation, construction, and demolition projects (see **Tables 2-13** and **2-14**, **Figures 2-5** through **2-8**) have the potential to cause soil erosion and compaction. When soils are disturbed or already bare, wind and water exposure can accelerate erosion. Such erosion, even during short-term construction, can be a major source of sedimentation in drainage

systems, ground surfaces, or water bodies. While intentional soil compaction is necessary to decrease the likelihood of building and pavement settlement, lack of pore space reduces water intake and movement which can inhibit root growth and flora diversity, decrease infiltration rates, and increase erosion, runoff, and flooding (USDA, 2005). Topography and regional geology would not be affected.

Construction activities at the locations proposed for new/improved facilities or demolition may result in a short-term, minor increase in erosion if any soils are exposed. This can produce indirect impacts by causing more surface runoff affecting downgradient areas. Construction and demolition activities would include BMPs to minimize the potential for exposed soils or contaminants from construction activities to reach surface waters. To minimize potential impacts, BMPs would be implemented during the construction and demolition periods and would include practices such as the installation of soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, sediment basins, and/or other appropriate standard construction practices. Filtration would control stormwater runoff and soil erosion from the sites. Establishing vegetation post-construction to cover exposed soil would be essential to reduce erosion, but it might be necessary to amend the soil with organic matter and tillage to provide optimal growth conditions. Adherence to DOD and DAF requirements and implementation of construction BMPs would minimize impacts on earth resources. With the implementation of these construction BMPs, no significant impacts on earth resources would be expected to occur from the implementation under Alternative 1.

3.6.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Integrated Campus” Location

Under Alternative 2, interim and permanent flightline and housing renovation, construction, and demolition projects have the potential to cause soil erosion and compaction; however, impacts on earth resources on base under Alternative 2 would be the same as described for Alternative 1.

3.6.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline “Sea of Rocks” Location

Under Alternative 3, the construction of the community center and interim and permanent flightline renovation, construction, and demolition projects have the potential to cause soil erosion and compaction; however, impacts on earth resources on base under Alternative 3 would be the same as described for Alternative 1.

3.6.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline “Integrated Campus” Location

Under Alternative 4, the construction of the community center and interim and permanent flightline renovation, construction, and demolition projects have the potential to cause soil erosion and compaction; however, impacts on earth resources on base under Alternative 4 would be the same as described for Alternative 1.

3.6.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. Therefore, there would be no change on earth resources at MHAFB.

3.6.3 Reasonably Foreseeable Future Actions

The Proposed Action, in addition to reasonably foreseeable future actions on MHAFB, would result in a more temporarily disturbed ground surfaces and adverse, short-term, minor impacts on soils. Although soils would be disturbed by earth-moving and other construction activities, any impacts would not be expected to exceed individual project boundaries and would not result in significant impacts on soil resources because BMPs, erosion and sediment controls, and other management actions would be implemented.

Proposed changed in airspace operations and optimization of the MHAFB airspace would have no effect on earth resources.

3.7 BIOLOGICAL RESOURCES

3.7.1 Existing Conditions

3.7.1.1 On-Base and Airspace

Vegetation and Habitat. MHAFB and much of the MHRC is within the landform and vegetation classification known as the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem, which is widespread throughout southern Idaho, eastern Oregon, eastern Washington, and portions of northern Nevada, California, and Utah. This ecosystem contains a large diversity of landforms and vegetation types from vast expanses of flat sagebrush-covered plateaus to mountain areas covered with juniper woodlands and grasslands. Open space on MHAFB is covered by a mixture of annual grasses and invasive species. There are several Idaho state-listed noxious weed species that occur on MHAFB (see **Appendix C.6**).

Significant declines in the amount and quality of sagebrush habitat on MHAFB, MHRC, and regionally have occurred over the last 15 years. A few remnant patches of sagebrush still exist, and most have a weedy understory. These remnant patches have been greatly degraded by off highway vehicle activity, use during military exercises, and weed invasion (MHAFB, 2019d).

Wildlife habitat on MHAFB is maintained or removed through vegetation manipulation and ground disturbance and is largely managed through post-fire rehabilitation and grazing practices. There are four dominant wildlife habitat types as defined by topography and vegetation: (1) landscaped areas around residential and installation facilities; (2) isolated sagebrush flats, (3) flat areas dominated by exotic annual weed species, and (4) rubble piles dominated by exotic annual weed species (MHAFB, 2019d). Other notable areas that provide habitat on MHAFB are the rapid infiltration basins and the treated effluent storage lagoon that attract waterfowl (MHAFB, 2019d).

Aquatic and Wetland Habitats. Aquatic and wetland habitats are considered sensitive and subject to federal regulatory authority under Section 404 of the Clean Water Act and EO 11990, *Protection of Wetlands*. Jurisdictional wetlands are defined by the US Army Corps of Engineers (USACE) as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE, 1987). Areas meeting the federal wetland definition are under the jurisdiction of the USACE. There are few wetlands on lands managed by MHAFB (MHAFB, 2019d). Aquatic and wetland habitat would not be affected by the Proposed Action, which involves training activities in the SUA and construction and modification of facilities at MHAFB but would not have any ground-disturbing activities within wetlands on MHAFB. Therefore, aquatic and wetland habitats will be discussed only in context of wildlife habitat.

Wildlife. MHAFB actively manages wildlife on the installation and cooperates with the (IDFG), USFWS, and BLM. To date, 60 different species of wildlife have been identified on MHAFB (MHAFB, 2019d). During recent vegetation surveys of the installation, only small, isolated lands of native habitat have been located. Most lands on and surrounding the installation have been converted to nonnative vegetation species by fires, agriculture, and development. The limited habitat and small patch size on and surrounding MHAFB cannot support wide-ranging species, such as mule deer (*Odocoileus hemionus)*, pronghorn antelope (*Antilocapra americana*), or sage-grouse (*Centrocercus urophasianus*).

Much smaller mammal, reptile, and bird species have adapted to urban areas and human disturbance (MHAFB, 2019d). These wildlife species primarily include raptors, eagles, and owls. Various raptors have been observed on the installation, where limited suitable nesting habitat occurs but foraging potential exists. Several waterfowl species use the MHAFB storage lagoons and rapid infiltration systems; however, MHAFB has an active program to discourage waterfowl use of these lagoons for BASH prevention. Most waterfowl migrate through the area during the spring and fall, but some birds are year-round residents (MHAFB, 2019d). Western burrowing owls (*Athene cunicularia*) are known to occur on the installation with burrows

located in several areas near operational activities (MHAFB, 2019d). Bats have been observed in the evenings and may roost in buildings and trees and forage around lights on MHAFB. In general, bats on MHAFB are associated with buildings, the urban forest (i.e., landscape trees), and the golf course (see **Appendix C.6**). Ground squirrels are periodically controlled on the golf course to reduce damage to the facility. Burrows are carefully assessed to eliminate the target species and avoid unintentional impacts on burrowing owl (MHAFB, 2019d).

Aquatic and sagebrush habitat would support herpetofauna but is very limited on MHAFB. As such, no amphibians are known to occur, and only a few species of reptiles have been observed on the installation (MHAFB, 2019d).

Federally Protected Species. According to the USFWS Information for Planning and Consultation reports for the project area, several federally listed species have the potential to occur on MHAFB or on lands that underlie the SUA and MTRs (USFWS, 2021; **Appendix C.6**); however, slickspot peppergrass (*Lepidium papilliferum*) is the only federally listed threatened species that has been documented, occurring only on the JBR; no suitable habitat for slickspot peppergrass exists on the main base (MHAFB, 2019d). Proposed critical habitat for slickspot peppergrass occurs beneath the SUA at MHAFB (USFWS, 2021). No other federally listed threatened or endangered species have been found on MHAFB, and no potential habitat is available. **Table C-17** lists all federally protected species known to occur or with the potential to occur on MHAFB and in the SUA and MTRs (**Appendix C.6**). Bald and golden eagles have been observed within the SUA as year-round residents.

Species of Concern. Species of concern include those designated as threatened, endangered, proposed, or candidate by the IDFG, the Idaho Governor's Office of Species Conservation, and species of greatest conservation need (IDFG, 2018, 2021; **Appendix C.6**). All state-protected wildlife species and species of greatest conservation need are identified in the Idaho State Wildlife Action Plan, which is the state's guiding document for managing and conserving at-risk species (IDFG, 2017). Also included are BLM designated sensitive species (**Appendix C.6**). BLM sensitive species designations are used for species that occur on BLM public land and for which BLM has the capacity to significantly affect the conservation status of the species through management (BLM, 2014, 2018). These designations are particularly important on BLM-leased lands and are assigned to animal and plant species. **Table C-17** lists all species of concern known to occur or with the potential to occur on MHAFB (**Appendix C.6**).

3.7.2 Environmental Consequences

3.7.2.1 Evaluation Criteria

Potential impacts on biological resources were assessed in terms of (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. The level of impacts associated with the proposed QEAF beddown is assessed in terms of direct impacts on biological resources and related impacts on the resources (e.g., habitat fragmentation, reduced foraging opportunity). The magnitude of potential impacts can vary greatly, depending on the location of an action. For example, if an action would diminish habitat for a plant or animal species that is regionally prolific then the effect may go unnoticed; however, if habitat would be diminished for a species known only to occur at MHAFB, then the action might have significant impacts. In addition, if potential changes to vegetation or habitat at or near MHAFB would be substantially diminish a regionally or locally important plant or animal species, interfere with wildlife movement or reproductive behavior, and/or result in an infusion of exotic plant or animal species, they may be considered significant.

3.7.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

Vegetation. Alternative 1 would be expected to result in short- and long-term, minor effects on vegetation on MHAFB. Under Alternative 1, renovation and construction activities and potential impacts on vegetation would occur on base on approximately 58 ac of improved and semi-improved land at the flightline "Sea of

Rocks" location and proposed on-base permanent housing locations; all of these areas lack sensitive vegetation. During construction of roads and interim and permanent flightline facilities, soil surfaces, to include any existing vegetation, would be cleared, graded, trenched, and leveled before the placement of road materials, interim, and permanent structures would occur. Impacts on vegetation would be expected from construction of roads and interim and permanent flightline facilities and from a temporary increase in personnel at MHAFB; however, all facilities are proposed in areas where other facilities currently exist. Incidental crushing and trampling of vegetation would occur from equipment use and increased foot traffic. To minimize the temporary impact on vegetation during construction, crews should restrict pedestrian and vehicle movement to designated paths and roadways within the project construction area whenever possible. To avoid or minimize impacts on vegetation from spreading noxious weeds, crews should avoid infested areas and clean equipment prior to entering the site to ensure it is weed- and weed seed-free. Any fill should be taken from an onsite location that is weed free to prevent the introduction of new weed species. Once construction is complete, revegetation with native species should occur where possible to prevent soil erosion and overall site deterioration. Ground disturbance from construction of the interim and permanent flightline facilities would have only minor long-term effects because the proposed construction and modification would primarily occur on previously disturbed locations.

Wildlife and Species of Concern. Alternative 1 would have short-term, minor effects on wildlife on base, including species of concern that may be present on MHAFB, due to construction of roads and interim and permanent flightline facilities and from a temporary increase in personnel at MHAFB. In particular, there are four species of special concern listed by IDFG, burrowing owl, long-billed curlew, long-eared myotis, and Yuma myotis, which are known to occur on the installation and may be affected. Burrowing owls occupy abandoned mammal burrows in disturbed areas with short vegetation and are found on the installation around the golf course, near rubble piles, and in annual grasslands with suitable abandoned badger holes. Long-billed curlews inhabit prairies, open shrub-steppe, and grassy wet meadows with short vegetation for nesting. Long-eared myotis may roost in buildings and trees on base and is likely to forage around lights; however, no long-eared myotis are known to occur within the buildings that would be altered as part of the Proposed Action. Similarly, Yuma myotis are known to roost in old buildings; however, no occurrence of this bat species has been documented at the buildings that would be altered as part of the Proposed Action. The roads and interim and permanent flightline facilities would primarily be located on improved and semi-improved land in areas of previous development that lack suitable habitat for all other species of concern.

BMPs for ground disturbance and vegetation clearing associated with construction would include conducting construction activities outside the primary nesting season for migratory birds, generally 1 April through 31 August for Idaho. When construction and ground-disturbing activities cannot occur outside the bird nesting season, a survey would be conducted by a qualified biologist, prior to scheduled activity, to determine if active breeding burrows for burrowing owls, bird nests, or breeding behaviors are detected within the area of potential impact. If active burrows or nesting birds are detected, ground disturbance and vegetation removal activities would be delayed until nestlings have fledged, or the nest fails, or breeding behaviors are no longer observed. If the activity must occur, active burrows and nests would be properly buffered to avoid take of adults, eggs, and nestling migratory birds.

Noise events associated with construction and renovation could cause wildlife to engage in escape or avoidance behaviors; however, the area of disturbance would be limited to the developed areas at MHAFB where disturbances such as noise and movement (e.g., mowing, landscaping, foot and vehicle traffic, and flight line activities) already occur. Since wildlife are currently exposed to these various activities on the installation, habitat displacement or avoidance impacts from potential noise during the temporary increase associated with construction and renovation would result in short-term, minor effects. To minimize noise impacts on wildlife potentially occurring in the vicinity, heavy construction activities would be limited to daytime hours. Prior to renovation or demolition of facilities, inspections would be made to relocate any wildlife, including birds and bats, potentially using the facilities as temporary escape cover, resting locations, or nesting habitat.

In addition to renovation and construction impacts at the base under Alternative 1, the additional aircraft operations in the SUA and MTRs from the QEAF beddown would be anticipated to have short- and long-term, minor impacts on wildlife, including birds, from aircraft movement, sound impacts, BASH, aircraft

noise, and the use of chaff, flares, and inert ordnance during training. Impacts on songbirds, raptors, and wading birds from aircraft movement would be long term and minor under Alternative 1, with a slight increased risk of bird/wildlife aircraft strikes. Low-altitude flight operations have a greater potential of encountering avian and other animals increasing the risk of strike hazards. Studies have shown that 95 percent of migratory birds fly at altitudes less than 10,000 ft, with the majority of them occurring below 3,000 ft, with most aircraft collisions occurring during low-altitude flight, especially proximate to airfields. Because the additional QEAF F-15QA aircraft would use the same departure and landing procedures currently used at MHAFB and operations would adhere to existing restrictions, avoidance procedures, and the quiet-hours program at MHAFB and since the majority (90 percent) of supersonic flights would occur above 30,000 ft MSL, with the other 10 percent occurring between 10,000 and 30,000 ft MSL, consistent with current operations, operations would only slightly increase the risk of strikes, including aircraft interactions with bald and golden eagles, under Alternative 1. Further, where there is an unavoidable high-risk bird strike situation, MHAFB would abide by the installation's USFWS-issued depredation permit.

Changes in sound levels of sufficient magnitude can result in the direct loss of individuals, render habitat unsuitable, or reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. Increased noise levels limit the distance in which animals can perceive acoustic signals (Barber et al., 2009); however, intermittent noise exposures are less likely to interfere with animal behavior than from continuous sound sources. Military aircraft training in the SUA and MTRs typically produce intermittent sound exposures and not continuous sound exposures. Changes to the overall noise environment at and surrounding the base would be indistinguishable from existing conditions.

Wildlife can experience modifications of behavior including reproduction strategies and the inability to forage for food, find cover, or obtain water in response to noise. Most studies indicate that wildlife differ in their response to various types, durations, and sources of sound (Manci et al., 1988; Radle, 2007; NPS, 2011). Wildlife responses to aircraft overflight under most circumstances has minimal biological significance. Further, many birds and wildlife have the ability to habituate to noise emissions and movement from military aircraft (Grubb et al., 2010). Air operations training has been ongoing in the MHRC for decades.

Many studies addressing the effects of aircraft overflight noise on wildlife have focused on wildlife startle responses due to sound. Animal responses to aircraft are influenced by many variables, including size, speed, proximity (both height above the ground and lateral distance), engine sound, color, flight profile, and radiated sound. The type of aircraft (e.g., fixed-wing [jets] versus rotary-wing [helicopters]) and type of flight mission may also produce different levels of disturbance, with varying animal responses (Smith et al., 1988). Many studies have been focused on domestic animals. Therefore, the variability in the type of aircraft and missions studied as well as the animals evaluated make it difficult to generalize animal responses to noise disturbances across species. Pepper et al. (2003) suggest that many past studies were inconclusive and based on relatively small sample sizes. Research into the effects of noise on wildlife often presents conflicting results because of the variety of factors and variables that can affect or interfere with the determination of the actual effects that human-produced sound is having on any given animal (Radle, 2007).

Noise produced by aircraft plays a minor role in disturbance of animals when the animal cannot see the aircraft. Aircraft noise can cause a startle response, but the severity of response depends upon the animal's previous exposure to the sound source and does not result in severe consequences. Effects of aircraft noise on individuals and populations of wildlife are not proven except for rare panic responses when animals can see and hear the aircraft (Kempf and Hüppop, 1997).

A startle response in wildlife is natural and helps animals avoid predators. Many prey species have adaptations to rapidly respond to startle or surprise events that trigger the possibility of a predator attack. The DAF has conducted studies which determine a startle response to be a sequence of events surprising an animal such as behavioral responses (muscular flinching, alerting, and running) and physiological changes (e.g., elevated heart rate). If the behavioral component of the startle is uncontrolled, particularly if the animal runs or jumps without concern for its safety, it is often called a panic. Completely uncontrolled panics are rare in mammals (DAF, 1994).

Federally Protected Species. Alternative 1 would have no effect on federally listed species because no known federally listed species that could be affected by facility construction, renovation, or demolition at MHAFB or by aircraft movement and noise from training operations in the SUA and MTRs occur within the project area.

A *No Effect* determination for federally listed species was made for the Proposed Action under this alternative. A *No Effect* determination means listed species would not be exposed to the Proposed Action and its environmental consequences, and as such there would be no impacts, beneficial or adverse, on listed or proposed species or critical habitat. Coordination with the USFWS concerning the DAF's *No Effect* determination was completed.

3.7.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Impacts on biological resources associated with Alternative 2 would be the same as described under Alternative 1, but the location of the impacts would differ. The interim and permanent housing locations, community center, and interim flightline facility locations would be the same as described for Alternative 1, but under Alternative 2, the permanent flightline facilities (QEAF Hangar, squadron operations and simulator, and AMU, and supply warehouse) would be constructed at the "Integrated Campus" location; however, the change in locations for the proposed facilities would not change the overall magnitude of disturbance and anticipated effects on vegetation, wildlife, protected species, and federally protected species.

3.7.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Impacts on biological resources associated with Alternative 3 would be similar to those described under Alternative 1; however, under Alternative 3, no new permanent housing would be constructed on the installation. Therefore, the anticipated effects on vegetation, wildlife, and protected species would be the slightly less than those described for Alternative 1 since no new permanent housing would be constructed.

3.7.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Impacts on biological resources associated with Alternative 4 would be the same as described under Alternative 2; however, under Alternative 4, no new permanent housing would be constructed on the installation. Therefore, the anticipated effects on vegetation, wildlife, and protected species would be the slightly less than those described for Alternative 2 since no new permanent housing would be constructed.

3.7.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. Therefore, there would be no change to biological resources at MHAFB or in the SUA and MTRs.

3.7.3 Reasonably Foreseeable Future Actions

The Proposed Action in combination with other reasonably foreseeable actions would have short- and long-term, minor impacts from increased construction-related noise, aircraft movement at lower altitudes, increased aircraft noise, potential additional habitat removal, vegetation removal, and soil compaction. Changes to the overall noise environment at and surrounding the base would be indistinguishable from existing conditions; however, in combination with the other proposed infrastructure and development projects including those to support the Forging Sabre Biennial Exercises, and low-altitude training operations in optimized SUA, an overall increase in noise levels could occur in the area. The increased noise could affect wildlife behavior such as breeding and foraging; however, because wildlife at MHAFB and in the MHRC are accustomed to noise from aircraft operations, it would be expected that any impacts

on biological resources from the Proposed Action and other reasonably foreseeable actions would be minor when considered in a regional context.

3.8 CULTURAL RESOURCES

3.8.1 Existing Conditions

Area of Potential Effect (APE)

In accordance with 36 CFR § 800.4(a), the scope of identification efforts must be determined, and the Area of Potential Effect (APE) documented, in consultation with the SHPO. The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. 366 CES/CEIE received SHPO concurrence on the APE defined for this EA on 8 June 2021 (see **Appendix B-5**). The APE for cultural resources is defined using limitations of the proposed interim and permanent flightline facilities at the "Sea of Rocks" and "Integrated Campus" Alternative locations and proposed on-base permanent housing projects. The APE includes all locations of proposed ground disturbance, existing facilities modifications, and new construction (**Figures 3-7** and **3-8**) as well as the SUA (see **Figure 2-1**). 366 CES/CEIE received SHPO concurrence on the APE defined for this EA on 8 June 2021 (see **Appendix C.7**).

Archaeological and Traditional Cultural Properties

Archaeological resources in southwestern Idaho provide evidence of Native American occupation of the area reaching back more than 12,000 years. The culture of these early peoples is generally recognized as a variant of the Clovis/Folsom culture in which large fluted projectile points were manufactured to hunt big game; however, a separate but contemporary cultural tradition may be more representative of this period in southern Idaho.

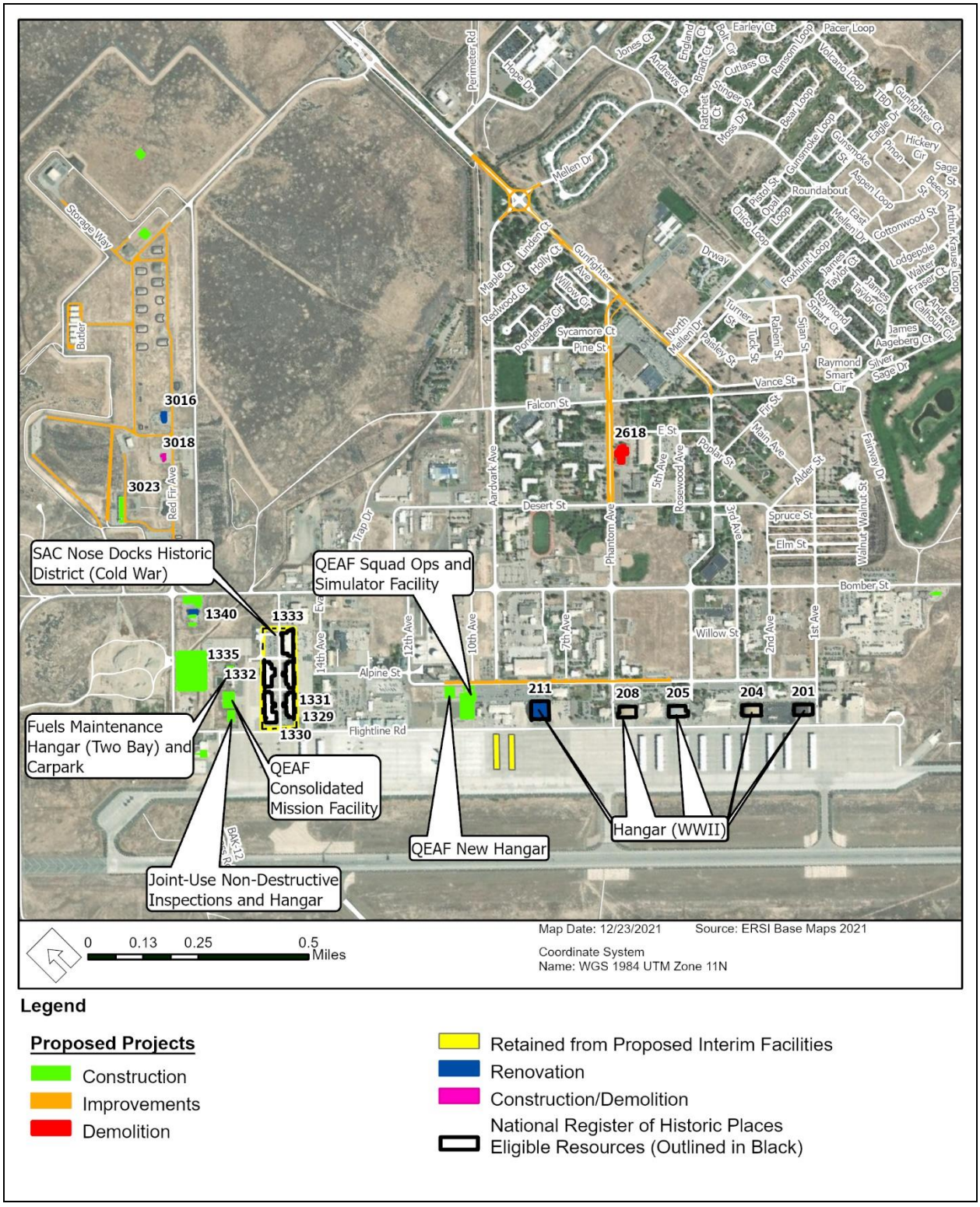


Figure 3-7. Area of Potential Effect Illustrating National Register of Historic Places Eligible Resources in Relation to Proposed Permanent Flightline Facility Projects at the "Sea of Rocks" Location at Mountain Home Air Force Base Under Flightline Alternative 1.

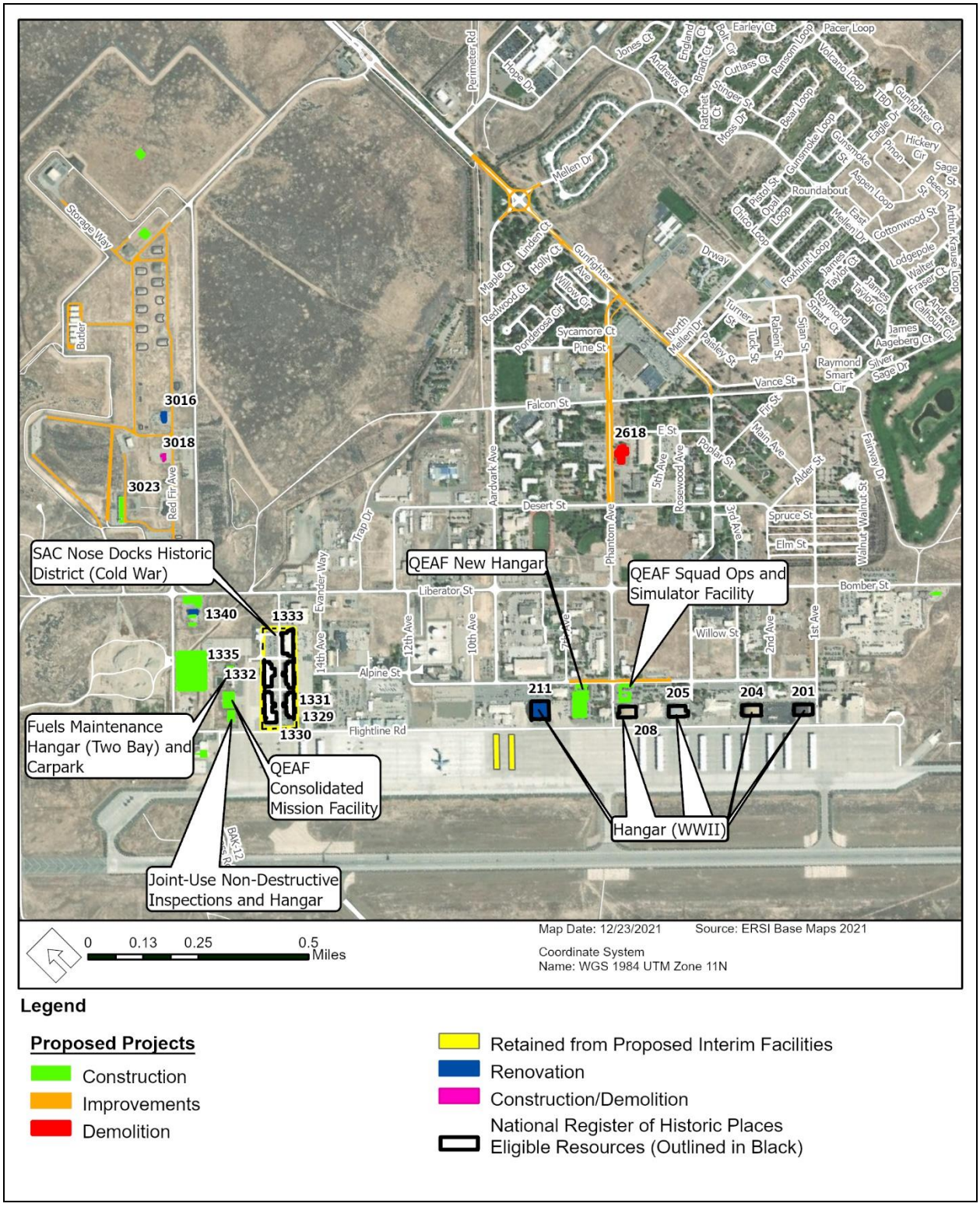


Figure 3-8. Area of Potential Effect Illustrating National Register of Historic Places Eligible Resources in Relation to Proposed Permanent Flightline Facility Projects at the "Integrated Campus" Alternative at Mountain Home Air Force Base Under Flightline Alternative 2.

Southern Idaho partially lies in the northern Great Basin area and the cultural sequences follow the general trends of the Great Basin chronologies. Several regionally specific cultural sequences have been developed, each from a different theoretical perspective. All agree that the cultural history of the region comprises a slow progression from small, highly mobile groups to larger, more complex villages. Historical site types at MHAFB are fairly limited – representing historical trash scatters, sheep and cattle ranching camps, and twentieth-century military use of the area (i.e., WWII and Cold War).

MHAFB has been inventoried for archaeological resources with 100 percent survey coverage. An archaeological survey of the base, with the exception of 200 ac north of the perimeter fence, was conducted in 1990. The remaining 200 ac was surveyed in 1998. In total, 5 archaeological sites and 12 isolated artifacts have been recorded. The five archaeological sites are all historical and include four sheep herder camps and one trash scatter. Ten historical isolates were recorded on the base dating between 1880 and 1945. Two prehistoric isolated resources, a flake and a Desert Side-notched projectile point, were also recorded on MHAFB. None of the sites or isolates were recommended eligible for the NRHP. The Idaho SHPO concurred with this recommendation.

Archaeological site 10-EL-983, a historical sheep herding camp, is located within the 1,415-ac APE boundary defined for proposed interim and permanent flightline projects at the “Sea of Rocks” and “Integrated Campus” Alternative locations. As noted above, it is recommended not eligible for inclusion in the NRHP and is located more than 0.5 mi from any potential new construction.

MHAFB completed extensive consultation with the Idaho SHPO and multiple ethnographers to identify federally recognized Native American Tribes with historical ties to southern Idaho. These include the Burns Paiute of the Burns Paiute Indian Colony of Oregon, the Northwestern Band of the Shoshone Nation, the Shoshone-Bannock Tribes of the Fort Hall Indian Reservation, the Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, and the Shoshone-Paiute Tribes of the Duck Valley. These tribes are known to have used the land comprising SCR and JBR; however, no Traditional Cultural Properties (TCPs) or sacred sites have been identified at MHAFB or any of the properties managed by the base as part of ongoing consultation or consultation pursued specifically for this EA.

Architectural Properties

Mountain Home Army Airfield was constructed in 1942 to 1943 to provide US Army Air Corps bombardment training during WWII. Principal training was conducted at the Saylor Creek Gunnery Range, which opened in 1944 and four associated Precision Bombing Ranges scattered throughout southwestern Idaho. Between 1943 and 1992, MHAFB changed missions and commands several times, including two deactivations, from 1945 to 1948 (until MHAFB was reactivated as a Strategic Air Command [SAC] base in 1949 in response to the mounting Cold War) and from 1950 to 1951. SAC became the base host at MHAFB during 1953, leaving many WWII temporary buildings at their original locations, upgrading interiors, and adding permanent rooms and wings where needed. The pace of new construction increased as well, including five nose docks (Buildings 1329–1333). During the late 1950s into the middle 1960s, SAC continued to augment its missions at MHAFB. In 1966, Tactical Air Command became the host at Mountain Home AFB. Since 1992, MHAFB has been under the control of the Air Combat Command (MHAFB, 2020d).

At present, 25 built environment resources at MHAFB have been determined eligible for listing in the NRHP as individual buildings/structures, contributing elements of proposed historic districts, or both. These include five WWII Bowstring Wood Truss Hangars (Buildings 201, 204, 205, 208, and 211), a SAC Cold War Bomber Alert Facility (Building 291) with its surrounding 103-ac Christmas Tree Alert Apron and guard station (Building 289), the SAC Nose Dock Historic District (Buildings 1329, 1330, 1331, 1332, and 1333), the WWII Special Weapons Storage Area Historic District (Buildings 3000, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3015), and the Mountain Home railroad spur dating to 1943 (MHAFB, 2020d). Ten of these resources are located within the APE (**Table 3-17**, see **Figures 3-7** and **3-8**). Building FAC 3018 (constructed 1955) located within the APE is situated within the Special Weapons Storage Area Historic District; however, it has been determined not eligible for inclusion in the NRHP as a contributing or individual resource. The Idaho SHPO concurred with this determination (**Appendix B).** To date, the paved portions of the flightline, including the runway, taxiways, and aprons have not been evaluated for NRHP eligibility. They remain largely unchanged and represent a visible legacy of the original WW II-era airfield.

Table 3-17. National Register of Historic Places Eligible Architectural Resources in the Area of Potential Effects

Facility Number	Resource Type	Build Date	Period of Significance	NRHP Eligibility	Historic District
201	Hangar	1943	WWII	NRHP Eligible	N/A
204	Hangar	1943	WWII	NRHP Eligible	N/A
205	Hangar	1943	WWII	NRHP Eligible	N/A
208	Hangar	1943	WWII	NRHP Eligible	N/A
211	Hangar	1943	WWII	NRHP Eligible	N/A
1329	Aircraft Maintenance Dock	1953	Cold War	NRHP Eligible	SAC Nose Dock Historic District
1330	Aircraft Maintenance Dock	1953	Cold War	NRHP Eligible	SAC Nose Dock Historic District
1331	Aircraft Maintenance Dock	1953	Cold War	NRHP Eligible	SAC Nose Dock Historic District
1332	Aircraft Maintenance Dock	1953	Cold War	NRHP Eligible	SAC Nose Dock Historic District
1333	Aircraft Maintenance Dock	1953	Cold War	NRHP Eligible	SAC Nose Dock Historic District

N/A = not applicable; NRHP = National Register of Historic Places; SAC = Strategic Air Command; WWII = World War II

The SAC Nose Dock Historic District is eligible for inclusion in the NRHP under Criteria A generally for its association with SAC alert during 1957–1965 and C for its association with the military buildings design career of Danish engineer Peter A. Strobel and as representative of the work of Luria Engineering during the early Cold War (Weitze et al., 2006). The Idaho SHPO concurred with these determinations.

3.8.2 Environmental Consequences

3.8.2.1 Evaluation Criteria

Adverse impacts to cultural resources might include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the resource that make it eligible for listing in the NRHP. Those effects can include introducing visual or audible elements that are out of character with the property or its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate enforceable restrictions or conditions to ensure preservation of the property's historic significance. For the purposes of this EA, an effect is considered adverse if it alters the integrity of a NRHP-listed or eligible resource or if it has the potential to adversely affect TCPs and the practices associated with the property.

3.8.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location

Under Alternative 1, proposed interim flightline facilities and infrastructure would primarily utilize Building 211, a WWII era, NRHP-eligible hangar, to house four hangar bays, squadron operations, AMU, and equipment storage. Building 211 would be vacated by the US Air Force and renovated for the interim use by the QEAF. Proposed renovations do not meet the requirements to be considered eligible for streamlined review as outlined in Section 1(c) of the 2015 MHAFB Programmatic Agreement for alternative regulatory compliance. Proposed renovations included as part of the interim flightline facilities would have the potential to result in an adverse effect on Building 211 if the proposed renovations would alter the character-defining traits of the hangar – specifically the WWII-era concrete foundation and floor, concrete and wood walls, and birchwood type bowstring truss roof support systems that characterize the construction design of the period. Building 211 was expanded in 1955 with a 43-ft 6-inch by 200-ft, 2-story addition to provide office space. This addition is located on the northwest side of the hangar, opposite of the flightline. The office space addition has been repeatedly modified since its construction to adjust to changing mission priorities over time. The proposed renovations for Building 211 analyzed for this EA would be limited to the office space addition, consistent with current use, and would not alter the hangar's character-defining features.

Therefore, DAF has determined the Proposed Action under Alternative 1 would have no adverse effect on Building 211.

As the paved portions of the flightline, including the runway, taxiways, and aprons, have not yet been evaluated for NRHP eligibility, they are afforded the same consideration and protection as historic properties located on base. There is no significant construction or modification proposed to the runway, taxiways, or aprons as part of the Proposed Action. While the undertaking does propose two additional rows of aircraft sunshades on the flightline, their installation is consistent with existing sunshades utilized by military aircraft and would not adversely affect any characteristics that may convey significance thus qualifying it for listing in the NRHP.

Proposed interim flightline facilities and infrastructure would also include the addition of a second paint booth to Building 1330, a NRHP-eligible Cold War–era Aircraft Maintenance Dock and contributing resource to the SAC Nose Dock Historic District. Building 1330 is one of five nose docks, or wing hangars initially designed to be identical. While Building 1330 is reported to maintain a high degree of historic integrity, it is eligible for the NRHP under Criterion A for its association with SAC alert from 1957-1965 and Criterion C for its association with the military buildings design career of Danish engineer Peter A.Strobel and as representative of the work of Luria Engineering during the early Cold War . The work of Luria Engineering at MHAFB is associated with early design iterations of the standard “multipurpose wing hangar.” These hangars could be demobilized for shipment to, and reuse at, other installations across the nation (Weitze et al., 2006).

From its inception, Building 1330 was designed to maximize functionality and reuse potential. The addition of a second paint booth is consistent with the building’s current use as Corrosion Control (including one extant paint booth), as well as its original multipurpose role. A second paint booth insert would not permanently alter the structure or the physical features that contribute to its historic significance – conveyed primarily through integrity of the exterior facades and its spatial relationship to the other four nose docks in the district. While inserting a second paint booth may temporarily obscure certain internal architectural features, as a working hangar on an active military base with no public access, the insert would not fundamentally alter the hangar, rather providing reuse potential in a manner consistent with its original design. For the reasons outlined above, and because this renovation involves an internal insert, as opposed to permanent alterations to the exterior or interior of the original structure of the hangar or modifications to the spatial setting of the district, the DAF has determined the proposed second paint booth would not result in an adverse effect on Building 1330.

Under Alternative 1, 15 permanent buildings and facilities would be constructed at the “Sea of Rocks” location (see **Figures 2-6** and **3-7**). Three of these, specifically the QEAF Consolidated Mission Facility, Fuels Maintenance Hangar and Carpark, and Joint-Use Non-Destructive Inspections Hangar would be constructed west of and “behind” the SAC Nose Dock Historic District. The QEAF New Hangar, QEAF Squadron Ops, and Simulator Facility, and two additional rows of sunshades would be constructed west of WWII hangar Building 211. The National Park Service identifies seven aspects that define integrity: location, design, setting, materials, workmanship, feeling, and association (NPS, 2002). Alternative 1 would have the potential to impact the visual setting of the SAC Nose Dock Historic District and Building 211.

Setting is not simply the location of a resource, it encompasses the character of the place in which the property played its historical role (NPS, 2002). While proposed new construction would be visible from the Nose Dock Historic District it would not intrude upon them (i.e., altering or upsetting the spatial relationship between contemporary resources, particularly within the district). Further, setting is not the critical aspect of the district’s integrity. The SAC Nose Dock Historic District is currently located on the western fringes of the MHAFB flightline; however, the general area encompassed by Red Fir Avenue and B Street has been developed during the second half of the twentieth century. The significance of the district is primarily conveyed through design and association.

Similarly, proposed new construction would be visible from Building 211; however, a robust program of construction (and demolition) has taken place on MHAFB since WWII when Building 211 was constructed. The significance of the hangar is primarily conveyed through design, materials, and association. As part of

a dynamic, mission-focused DOD installation, new military construction would not introduce visual impacts inconsistent with the character of MHAFB.

There are no historic districts or individual historic structures eligible for inclusion in the NRHP documented in the location of the proposed on-base permanent housing associated with Alternative 1. Therefore, the DAF has determined that permanent flightline facilities projects under Alternative 1 would have no adverse effect on architectural resources. The Idaho SHPO has concurred with this determination.

Under Alternative 1, no significant archaeological resources would be disturbed or otherwise affected. No traditional cultural resources or sacred sites have been identified at MHAFB or within the APE. Therefore, the Proposed Action under Alternative 1 would have no adverse on effect on archaeological resources or TCPs.

3.8.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Under Alternative 2, no significant archaeological resources would be disturbed or otherwise affected. No traditional cultural resources or sacred sites have been identified at MHAFB or within the APE. Therefore, the Proposed Action under Alternative 2 would have no adverse effect on archaeological resources or TCPs.

Proposed interim flightline facilities and infrastructure would be the same as Alternative 1. Fourteen permanent buildings and facilities would be constructed (see **Figures 2-8** and **3-8**). Permanent housing and new construction west of the SAC Nose Dock Historic District would be the same as described in Alternative 1 as would construction of two additional rows of aircraft sunshades on the flightline.

The QEAF Squadron Ops and Simulator Facility would be constructed north of WWII hangar Building 208, between Oak and Alpine Streets. This area is currently an asphalt parking lot. While proposed new construction would be visible from Building 208, it would not intrude upon the grouping (i.e., altering the spatial relationship or visual sightline between these contemporary resources). Construction of the QEAF Squadron Ops and Simulator Facility would not introduce visual impacts inconsistent with the character of MHAFB. The QEAF New Hangar would be constructed east of WWII hangar Building 211. Currently, the lot east of Building 211, between Alpine Avenue and the flightline, includes asphalt parking with some landscaped open space, and the MHAFB Airfield Management Building (which will remain). The height and footprint of the latter is smaller than the proposed QEAF New Hangar. As a result, the new hangar would obstruct visual continuity between Building 211 and the remaining WWII-era hangars (Buildings 201, 204, 205, 208) situated in a linear fashion moving farther east between Oak Avenue and the flightline. These hangars, however, are not part of a larger district as outlined above. The significance of each hangar is primarily conveyed through design, materials, and association – not setting. A robust program of construction (and demolition) has taken place on MHAFB since WWII when these hangars were built. Construction of the QEAF New Hangar would not introduce visual impacts inconsistent with the character of MHAFB. However, in the absence of design plans, per 36 CFR 800, implementation of Alternative 2 would require additional consultation with the Idaho SHPO.

3.8.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Impacts on cultural resources under Alternative 3 would be the same as described under Alternative 1. No new permanent housing would be constructed on the installation and all interim and permanent housing for QEAF personnel would be provided off base in existing hotels, housing, or short-term rental units.

3.8.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Impacts on cultural resources under Alternative 4 would be the same as described under Alternative 2. No new permanent housing would be constructed on the installation and all interim and permanent housing for QEAF personnel would be provided off base in existing hotels, housing, or short-term rental units.

3.8.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no change to cultural resources at MHAFB.

3.8.3 Reasonably Foreseeable Future Actions

The Proposed Action and reasonably foreseeable future actions in and/or adjacent to the APE would not result in incremental impacts to cultural resources, including archaeological resources, architectural resources, or Native American TCPs.

3.9 INFRASTRUCTURE

3.9.1 Existing Conditions

Transportation. MHAFB is approximately 10 mi southwest of Interstate 84. Airbase Road (Idaho State Highway 67) provides the primary transportation access to MHAFB. The MHAFB transportation network is primarily organized on two grid patterns, with Gunfighter Avenue providing diagonal access from the main gate to the central portion of the Base (**Figure 3-9**). The two grid patterns intersect at Gunfighter Avenue, which runs north-to-south, with the operational portion of MHAFB on a northeast-to-southwest grid that aligns with the flightline. The housing areas are on an east-to-west grid with curvilinear streets in the neighborhoods. Most of the traffic enters and exits through the Main Gate and travels along Gunfighter Avenue, which is the only four-lane road on MHAFB. Traffic volume peaks when entering the installation from 0500 to 0800 hours and exiting from 1500 to 1700 hours. Another peak occurs from 1100 to 1200 hours (MHAFB, 2017c).

The on-base streets are classified as major collectors and minor collectors. Gunfighter Avenue, Aardvark Avenue, and Bomber Street are the major collectors, while Phantom Avenue, Desert Street, Falcon Street, Hope Drive, Liberator Street, Alpine Street, and Eagle Drive are the minor collectors. The remaining roads are classified as local roads that connect to the major and minor collectors, completing the transportation network.

There are currently two primary access control points at MHAFB that are manned (**Figure 3-9**). The Main Gate is located on the northern boundary of MHAFB, while the Grand View Gate is located at the northwestern corner of the Base. Two auxiliary gates (31 Victor and 36 Victor) are on the southern boundary of MHAFB and are unmanned and locked (except when needed).

The Main Gate was reconfigured in 2009, allowing for convenient ingress and egress for privately owned vehicles. The Main Gate is accessed via Airbase Road, which ends at MHAFB and turns into Gunfighter Avenue once inside the gate. This gate is manned and operated at all times. There are no capacity issues at the Main Gate or the Visitor Center, which is co-located with the gate. Commercial traffic enters MHAFB through the Grand View Gate, which is accessed off Idaho State Highway 167 and Liberator Street. This gate provides all commercial vehicle inspections and is operated from 0600 to 1800 hours Monday through Saturday. The gate can process commercial vehicles appropriately, but there can be moderate congestion during peak times (MHAFB, 2017c).

Public Transit. The City of Mountain Home is supported by the Treasure Valley Transit system, which is a private, nonprofit company that operates within the rural southern region of Idaho. Treasure Valley Transit has multiple bus route systems including the Mountain Home Community Transit. The Mountain Home Community Transit has two separate routes within the area, one of which is a route that connects MHAFB to the city of Mountain Home with multiple stops throughout the base (MHAFB, 2017c).

Parking. Vehicular parking is available at each major building on the installation. Some parking lots can fill up during peak times, but overall, there is ample parking on base (MHAFB, 2017c). Some parking lots do not meet antiterrorism/force protection standoffs. The base is working to address this deficiency through the reconfiguration of existing parking lots to achieve the appropriate standoff distances (MHAFB, 2017c).

Pedestrian Infrastructure. At MHAFB, functions may be located in more than one facility; however, there are also many functions that need to be proximate to one another because of functional relationships, such as housing with community center functions, or aircraft parking with flightline operations and maintenance facilities. Most facilities have sidewalks that connect to the adjacent parking lots with additional sidewalk connections to nearby buildings (MHAFB, 2017). Most roadways also have sidewalks, and the base is in the process of connecting all existing sidewalks (MHAFB, 2017c).

In the community support, mission support, and housing districts, pedestrian connectivity is very important. The base is in the process of implementing a connected pedestrian sidewalk system with off-street jogging and will connect the dormitories and lodging facilities with the other centrally located community support functions (MHAFB, 2017c).

Housing. Military family housing is privatized and owned by Balfour Beatty Communities (BBC), which is responsible for maintaining, repairing, constructing, and managing the community. On-base housing includes 844 units, made up of 275 two-bedroom unit homes, 235 three-bedroom homes and 152 four-bedroom homes, and 182 additional units (MHAFB, 2017c). Privatized housing has a current occupancy rate that exceeds the DAF goal of 95 percent (MHAFB, 2017c). Arrival of any new mission requirements and associated personnel could potentially increase the number of required housing units. If additional homes are required, BBC has ample land for future neighborhoods and could construct the units and infrastructure accordingly (MHAFB, 2017c). In addition to family housing, dormitories house unaccompanied personnel on base. The most recent inventory shows a total of 599 beds within the dormitories (MHAFB, 2017c).

Water Supply/Distribution System. During peak and average demand requirements, MHAFB has adequate water supply. MHAFB draws all water directly from the Bruneau Formation Aquifer via seven active wells that can provide approximately 9.3 million gallons per day. The base has five water storage tanks that hold 1.8 million gallons, including one elevated water tank that is used to equalize the pressure in the water distribution system. Current water demand uses approximately 28 percent of the water supply during peak demand. Of this demand, approximately 70 percent is used for irrigation purposes, which the base is actively trying to reduce by using treated effluent from the wastewater treatment plant (WWTP), xeriscape projects, and other conservation efforts.

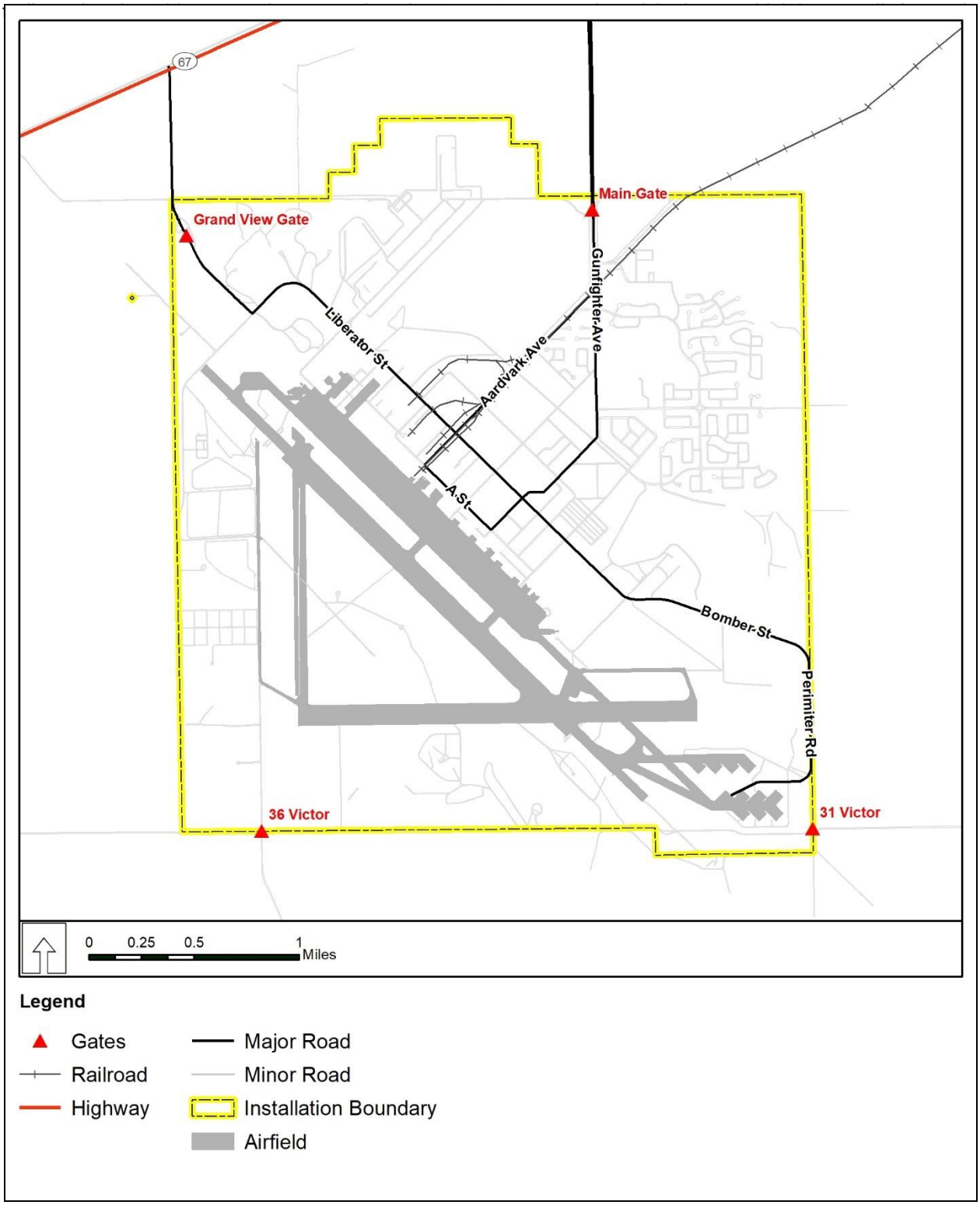


Figure 3-9. Gates and Major Roads at Mountain Home Air Force Base, Idaho.

Despite meeting current water demands with additional headroom, the aquifer is being overpumped and is depleting by approximately 2 ft per year. Although the aquifer is projected to be a viable source of water for the next 30 years, the nitrate levels are increasing in the groundwater. These two issues have resulted in MHAFB working with the state of Idaho to secure additional water rights and determine a long-term solution for water. The current plan is to obtain water rights from the Snake River and construct a water treatment plant with private funds. This water treatment plant should be built adjacent to MHAFB so that it can supply water to the base and to the city of Mountain Home. Once this plan is implemented, MHAFB would be charged for water by the private water provider. The current wells would be maintained by MHAFB as a redundant water source. Overall, MHAFB currently has adequate water supply to support the mission. In the long-term (30 to 50 years), the most significant limiting factor for growth of the installation is the water supply (MHAFB, 2017c).

The water distribution system at MHAFB was originally built in 1943, but most of the system has been upgraded and replaced over time. The system is in adequate condition with most of the distribution lines being polyvinyl chloride pipe. MHAFB has approximately 108.7 mi of water distribution lines, which are all rated in good to excellent condition. Building 1403 is the water plant and central pumping facility. It was constructed in 1943 and is located adjacent to the water tower. The equipment in this facility is adequate, while the building itself is not upgradeable (MHAFB, 2017c).

Wastewater Discharge Capacity/Sewer Collection System. The wastewater discharge system at MHAFB discharges into the Kent County Regional Treatment Facility. The wastewater collection and treatment system at MHAFB consists of a WWTP (Buildings 3491, 3492, 3493, 3494, 3495, and 3496), 16 lift stations, the pipeline collection system, 11 septic tank systems, and a lagoon. The WWTP has a capacity of 850,000 gal per day with an average peak demand of 503,000 gal per day and is operated by a contractor. A tertiary treatment facility was recently constructed to improve effluent from Class C to Class A. Class C effluent cannot be used for irrigation purposes and must be pumped to the lagoon. Once the effluent is Class A, it can be used for irrigation purposes at the Golf Course to reduce the amount of well water that is used for irrigation. Additional options for Class A effluent include storage, rapid infiltration, and discharge.

Most of the wastewater system at MHAFB is in good condition and meets the current mission with expansion potential. The collection system includes 29 mi of sewer mains and laterals that range in size from 6 to 24 inches in diameter. The lines are a combination of asbestos cement, vitrified clay, concrete, iron, and polyvinyl chloride piping. The sanitary sewer system has undergone a six-phase replacement project, with the final phase left to complete. The WWTP was constructed in 1998 (MHAFB, 2017c).

Natural Gas Supply/Distribution System. The natural gas system provides adequate supply and distribution to meet the gas energy needs of existing and future facilities. MHAFB purchases natural gas from Intermountain Gas Company which can supply up to 1 million cubic feet per year. The base is currently using two percent of the natural gas that can be supplied and has abundant capacity. The natural gas distribution system consists of 65.3 mi of gas mains throughout MHAFB. Most of the distribution system has been improved, with 80 percent being constructed with polyethylene valves and piping and 20 percent being constructed with coated steel. MHAFB is working on replacing all steel valves and lines with polyethylene (MHAFB, 2017c).

Liquid Fuel. MHAFB receives, stores, and issues Jet-A, diesel (DS1/DS2), and unleaded gasoline (F-57) fuels. The liquid fuels system is primarily used to store and distribute fuel from the bulk fuel storage area to the refueling hydrants located on the aircraft parking ramps. The aboveground storage tanks (ASTs) were recently constructed, while piping systems were constructed in the 1950s. Overall, there is adequate capacity for the current mission, with some limitations if the flying mission is expanded. MHAFB receives jet fuel via an undersized 4-inch pipeline that delivers 1 million gallons of jet fuel over 96 hours from Holly Corps. The pipeline is not adequate in size to provide jet fuel to the flightline to meet training requirements. To account for this deficiency, supplemental fuel is delivered by truck.

MHAFB's bulk fuel storage of Jet-A consists of four ASTs with associated pump and filter houses. Tanks AT101 and AT201 each have a 44,000-barrel capacity, while Tanks AT301 and AT401 each have a

10,000-barrel capacity. These bulk fuel storage tanks provide enough capacity for the current mission and are sized to accommodate moderate mission growth.

The hydrant systems are Phase I and Phase II with a 500,000-gal capacity each and include two Jet-A fueling ASTs (Tanks AT301 and AT401). Both systems are in generally good condition despite the piping being more than 50 years old. MHAFB is exploring options to install a Type III hydrant system that would provide a pressurized loop system with constant flow.

Government-operated vehicle service stations provide DS-1/DS-2 and F-57 via four fillstands and ASTs (Tanks 1310.1, 1310.2 and 1310.3). Tanks 1310.1 and 1310.2 have a total capacity of 12,032 gal and are used to store F-57. Tank 1310.3 has a 6,016-gal capacity and is used to store DS-1/DS-2 (MHAFB, 2017c).

Solid Waste Management. MHAFB generates solid waste in the form of office trash, nonhazardous industrial wastes, normal municipal wastes, and construction debris. These nonhazardous solid wastes are collected in dumpsters located throughout the installation, picked up by a contractor, and delivered to Simco Road Regional Landfill. The landfill currently has a permitted capacity of 210 million tons. In FY 2009, MHAFB generated 2,251.25 tons of municipal solid waste (MHAFB, 2012).

A contractor collects curbside recyclables in the military family housing areas. MHAFB recycles cardboard, wood, paper (white bond, newsprint, computer paper, packing paper, phonebooks, and magazines), plastics, aluminum cans, steel cans, and scrap metal. MHAFB collects more than 1 million pounds of recyclable products per year (MHAFB, 2012).

Heating/Cooling Systems. There are no centralized heating or cooling systems on base; each facility is serviced by individual heating and cooling systems. The centralized heating plant was phased out in 2001, and the base does not have any centralized chiller water plants. Heating and cooling are performed within each facility and is meeting the facility and tenant demands.

Communications System. The communications squadron at MHAFB is responsible for AFNet nonsecure and secure networks, telephone, giant voice, and Land Mobile Radio. Currently, the communications system has the capacity required to meet the mission, with redundancy. There is room for a moderate mission increase, but if a large mission arrived, then the communications infrastructure would have to be improved for increased capacity and additional redundancy. The existing communications infrastructure is in adequate condition; however, communications facilities that house the communication squadron personnel are spread across MHAFB in seven facilities (MHAFB, 2017c).

3.9.2 Environmental Consequences

3.9.2.1 Evaluation Criteria

Potential impacts on infrastructure are evaluated for their potential to disrupt or improve existing levels of service in the ROI as well as generate additional requirements for energy or water consumption and impacts on resources such as sanitary sewer systems. The Proposed Action would result in an adverse impact on utilities or services if the project required more than the existing infrastructure could provide or required services in conflict with adopted plans and policies for the area. The Proposed Action would result in transportation impacts if it resulted in a substantial increase in traffic generation, a substantial increase in the use of the connecting street systems or mass transit, or if on-site parking demand would not be met by projected supply.

3.9.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

The “Sea of Rocks” location, existing on-base housing areas, and proposed location for new dormitories and housing units are adequately serviced by utilities such as gas, electric, and water/wastewater and are directly tied into the MHAFB internal transportation network. During proposed housing and flightline facilities construction activities, construction equipment using roadways would have a minor, short-term impact on traffic flow at MHAFB; however, equipment and material transportation would not occur during peak times

and the installation's roadways and gates have adequate capacity to support the ingress and egress of construction equipment, construction personnel, and materials for the temporary, interim, and permanent facilities (MHAFB, 2017c). Therefore, short-term, minor, transportation impacts would occur from construction activities under Alternative 1.

It would be anticipated that a water truck would be used during construction for dust suppression and soils compaction. A water truck would hold up to 1,500 gal of water and could be used up to 10 times per month during construction activities for an estimated net usage of 120,000 gal of water during the interim and permanent facilities construction activities. There would be adequate water resources available at MHAFB to support water use during construction activities, and no long-term impacts on water or wastewater infrastructure would occur.

No substantial debris would be generated by the clearing and grubbing associated with Alternative 1; therefore, there would be no impacts on local landfill capacity due to construction activities.

The additional 300 QEAF and US Air Force personnel would also utilize the installation's on-base transportation network and various MHAFB gates to travel to and from the military family housing area, flightline facilities, and off-base housing. With the additional personnel, additional privately owned vehicles would enter through MHAFB gates during both peak and off-peak hours; however, there would be adequate capacity at MHAFB gates to handle the additional privately owned vehicles, even during peak hours (MHAFB, 2017c). Further, some of the personnel would live in on-base housing and not utilize the MHAFB gates for daily ingress and egress. As such, the long-term impacts on the MHAFB transportation network from the additional personnel associated with Alternative 1 would be minor.

All new facilities constructed to accommodate the QEAF beddown would connect to MHAFB's electric, natural gas, water/wastewater, and communications distributions systems. All these systems would have adequate capacity to support the QEAF and US Air Force personnel and the appropriate upgraded connections would be made during construction to ensure adequate long-term operations and necessary redundancies. Although MHFB would support an additional 300 personnel, these personnel would initially utilize existing on-base housing or take advantage of available off-base housing before new, permanent housing units would be constructed. As such, the long-term impacts on infrastructure from the increased use of utilities, including electric, gas, and potable water, to support the additional personnel associated with Alternative 1 would be negligible.

3.9.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Impacts on water or wastewater infrastructure, landfill capacity, transportation, and utilities would be the same as described under Alternative 1. The "Integrated Campus" location for flightline facilities is also adequately serviced by utilities such as gas, electric, and water/wastewater and are directly tied into the MHAFB internal transportation network.

3.9.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Under Alternative 3, impacts on infrastructure would be similar to those described for Alternative 1; however, no new permanent housing would be constructed on the installation, and all interim and permanent housing for QEAF personnel would be provided off base in existing hotels, housing, or short-term rental units. This would increase the number of vehicles accessing MHAFB daily as the 300 QEAF and US Air Force personnel would commute to MHAFB from off-base housing. As previously described for Alternative 1, there is adequate capacity at MHAFB gates to handle the additional privately owned vehicles, even during peak hours (MHAFB, 2017c). Except for the lack of on-base housing which would reduce the need for water and wastewater capacity on MHAFB, impacts on water or wastewater infrastructure, landfill capacity, and utilities would be the same as described under Alternative 1.

3.9.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Under Alternative 4, impacts on infrastructure would be similar to those described for Alternative 2; however, no new permanent housing would be constructed on the installation, and all interim and permanent housing for QEAF personnel would be provided off base in existing hotels, housing, or short-term rental units. As described for Alternative 3, this would increase the number of vehicles accessing MHAFB daily; however, there would be adequate capacity at MHAFB gates to handle the additional privately owned vehicles, even during peak hours (MHAFB, 2017c). Except for the lack of on-base housing which would reduce the need for water and wastewater capacity on MHAFB, impacts on water or wastewater infrastructure, landfill capacity, and utilities would be the same as described under Alternative 2.

3.9.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. Therefore, under the No Action Alternative, there would be no change to infrastructure at MHAFB or change in traffic patterns at the MHAFB gates from off-base commuters.

3.9.3 Reasonably Foreseeable Future Actions

The Proposed Action in combination with other reasonably foreseeable actions would have short-term, negligible to minor impacts on utility usage, sanitary and storm sewer systems, off-base housing, and communications. Further, in combination with other proposed infrastructure and development projects, including the Forging Sabre Biennial Exercises, an overall increase in utility demand could occur in the area. Solid wastes generated in association with the proposed QEAF beddown and additional QEAF and US Air Force personnel and the other projects proposed in the region would likely affect solid waste management; therefore, short-term, negligible-to-minor impacts would be expected; however, the construction debris associated with these projects would not exceed the capacity of regional landfills. Solid wastes would consist largely of materials associated with new construction by-products, such as concrete, blocks, bricks, wooden framing, and metals. Contractors would recycle construction materials to the greatest extent possible and would dispose of nonrecyclable construction debris at the permitted local landfill. Other reasonably foreseeable construction activities and the additional of 300 QEAF and US Air Force personnel could be expected to lead to short-term increases in traffic congestion but would not be expected to have a significant impact on transportation in and around the base. There would be no impacts on infrastructure from the proposed SUA optimization.

3.10 Hazardous Materials and Wastes, Environmental Restoration Program Sites, and Toxic Substances

3.10.1 Existing Conditions

The information below was summarized from several documents, including management plans, material surveys, the Idaho Department of Environmental Quality, and other State of Idaho records, and related documentation.

Hazardous Materials and Waste

Hazardous and toxic material procurements at MHAFB are tracked by the HAZMART. The HAZMART ensures that only the smallest quantities of hazardous material necessary to accomplish the mission are purchased and used. HAZMART is also responsible for maintaining Safety Data Sheets for hazardous materials. Hazardous materials used at flightline facilities include diesel, gasoline, and liquefied natural gas (propane) fuel for generators; oil; paint, solvents, and cleaners; and lead acid batteries (MHAFB, 2017e). All materials are stored in approved containers and have Safety Data Sheets.

Hazardous wastes generated at MHAFB include waste flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, mixed-solid waste, and other miscellaneous wastes. All hazardous materials and wastes are handled according to the requirements of the 366 FW Hazardous Waste Management Plan (MHAFB, 2017e) and 366 FW Hazardous Material Emergency Response Planning and Response Plan (MHAFB, 2017d). Further, the Integrated Contingency Plan for Oil Spill Prevention and Response (MHAFB, 2019c) was developed to serve as the MHAFB Spill Prevention Control and Countermeasures Plan required by 40 CFR Part 112 to address the issues of spill prevention, discharge containment and cleanup, and emergency response actions. The MHAFB Fire Department responds to any hazardous materials spill considered an emergency with potential life, health, fire, or other safety hazard.

Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are chemicals commonly found in the fire suppressant foam also known as Aqueous Film-Forming Foam. Flightline facilities include a runway, store and use of fire suppressant foam. Aqueous Film-Forming Foam may also use or store on flightline facilities. Well Number 9 provides drinking water only to the Air Traffic Control Tower of MHAFB's water system and has levels of PFOS and PFOA above the USEPA Health Advisory Level of 70 parts per trillion (MHAFB, 2020b, 2020c). The MHAFB Consumer Confidence Report indicates that Well Number 9 has detected levels of PFOS/PFOA of 132 parts per thousand (MHAFB, 2019a).

MHAFB is classified as a large-quantity hazardous waste generator as defined by the USEPA (40 CFR § 260.10), generating more than 2,200 pounds of nonacute hazardous waste per month (Permit Number ID3572124557). MHAFB operates numerous accumulation points (APs), where up to 55 gal of "total regulated hazardous wastes" or up to 1 quart of "acutely hazardous wastes" are accumulated. AP managers are responsible for properly segregating, storing, characterizing, labeling, marking, packaging, and transferring all hazardous wastes for disposal from the AP to an established 90-day storage area according to federal, state, local, and DAF regulations. The Hazardous Waste Program Manager is responsible for characterizing and profiling each waste stream. The installation also operates several 90-day accumulation sites, where hazardous waste accumulates before transfer to the Defense Logistics Agency Disposition Services for transportation off-installation for ultimate disposal (MHAFB, 2017e). Wastes generated on base are managed under regulations set forth in MHAFB's Resource Conversation and Recovery Act Part B permit. MHAFB also holds a Resource Conversation and Recovery Act permit for handling the disposal and treatment of waste munitions.

MHAFB does not own a permitted Treatment, Storage, and Disposal Facility. When the AP storage limits have been reached, the generating activity arranges for their hazardous waste to be picked up from their AP and turned into the Central Collection Facility (CCF) within 3 days. The CCF transport wastes from the AP to the CCF at the request of the generating activity. The CCF is a centralized location where wastes from several generating activities (APs) are collected for periods of up to 90 days pending disposal or further transfer to the Treatment, Storage, and Disposal Facility via a Defense Logistics Agency contractor (MHAFB, 2017e).

Environmental Restoration Program

In August 1990, MHAFB was listed on the USEPA National Priorities List. A Federal Facility Agreement was signed on 16 January 1992 between DAF, USEPA Region 10, and the Idaho Department of Environmental Quality. MHAFB was divided into six Operable Units (OU) for site management purposes to address known and suspected contaminants. Regional groundwater is present at a depth of about 375 ft below the ground surface and used as the sole source of potable water. Hazardous materials have been used by MHAFB for such activities as aircraft maintenance and industrial operations. Hazardous wastes were historically disposed of by several methods, including landfilling of solid wastes, discharge of liquid wastes to sanitary sewers, and the use of waste oil in fire training exercises and road oiling. Approximately 30 areas were investigated at MHAFB, including two abandoned landfills, several abandoned fire training areas, several industrial operation areas, and an entomology shop, where pesticides had been rinsed from application equipment. Wastes disposed of or spilled at these locations included petroleum, waste oils, solvents, and pesticides (MHAFB, 2017b, 2020c; USEPA, 2021c).

Site activities have included the use of hazardous materials for aircraft maintenance and industrial operations; on-site disposal of wastes in landfills and sanitary sewers; and the use of waste oil for fire training exercises and dust suppression. These activities contaminated soil and groundwater with hazardous chemicals. Remedy construction is complete at all OUs except OU-3 and OU-4, where remedial actions are underway (MHAFB, 2017d, 2020c; USEPA, 2021c).

OU-4 is related to a former Fire Training facility (Site FT-08) and is specific to soil contaminants. Fractured basalt vadose zone bedrock and regional groundwater are not part of OU-4 and are addressed separately on an installation-wide basis as part of OU-3, the basewide groundwater OU. Site FT-08 is located in the southeastern portion of MHAFB, near the main northwest-southeast runway, southwest of the current fire training area. Site FT-08 was the Base Fire training area from 1962 to 1986. Aviation gasoline was used from 1962 through 1975, and jet fuel (with lesser quantities of waste oil and solvents) from MHAFB shops were used from 1976 through 1986. These materials were reportedly poured onto a mock aircraft and ignited for fire training exercises. A typical training exercise involved 300 to 500 gal of combustible material (MHAFB, 2017d, 2020c).

Asbestos-Containing Materials and Lead-Based Paint

The Air Force developed the Asbestos Operations and Management Plan, 3206-19, for MHAFB, which includes program administration, organizational roles and responsibilities, standard work practices, and documentation (MHAFB, 2019b). The 366 FW Asbestos Program Officer from within 366 CES/CEIE maintains the current MHAFB asbestos register. The asbestos register consists of two components: a digital facilities database and asbestos-related documents, correspondence, and other reference materials (MHAFB, 2019b). Buildings constructed prior to 2005 are assumed to contain asbestos-containing materials (ACM), unless proven by sampling that materials are not ACM. No ACM and lead-based paint (LBP) surveys have been conducted at Buildings 198, 1795, or 3023. **Table 3-18** contains the results of ACM and LBP surveys at facilities where renovation or modification is proposed to occur. The presence of ACM and LBP should be assumed for all of the facilities proposed for renovation in the interim and permanent flightline facility alternatives.

Radon

The USEPA radon zone for Elmore County, Idaho, is Zone 1 (Highest Potential), with a predicted average indoor radon screening levels >4 picocuries (pCi/L) (USEPA, 2018). The Idaho Department of Health and Welfare indicates greater than 50 percent of radon tests in Elmore County, Idaho, exceed 3.9 pCi/L (Idaho Department of Health and Welfare, 2021).

Table 3-18. Survey Status for Asbestos Containing Materials and Lead-Based Paint at Facilities Associated with the Proposed Interim and Permanent Flightline Alternatives

Building	ACM Presence Detected	LBP Presence Detected	Date of ACM/LBP Survey
198	Assumed	Assumed	No Surveys
211	Yes	Assumed	ACM – 2020
1330	Yes	Assumed	ACM – 1993
1340	Yes	Assumed	ACM – 2008
1795	Assumed	Assumed	No Surveys
2618	Yes	Yes	ACM and LBP – 2013
3016	Yes	Assumed	ACM – 2005
3018	Yes	Assumed	ACM – 2009
3023	Assumed	Assumed	No Surveys

Source: Mr. Eddie Jackson, Air Quality Program Manager, 366 CES/CEIE, MHAFB, June 2021.

ACM = asbestos-containing materials; LBP = lead-based paint

Polychlorinated Biphenyls

Specific polychlorinated biphenyl (PCB) materials at the installation have not been identified. Ballasts and starters from light fixtures could contain PCB-containing material. The disposal of these materials is regulated. If ballasts are not plainly marked as “Non-PCB”, the material must be treated as PCB-containing (or be tested and proven to be non-PCB containing). As facility repairs and demolition occur, the suspected ballasts should be removed and properly disposed. Discarded oil products may be screened for PCBs prior to disposal. Building 1296 is a PCB storage area (MHAFB, 2017b).

3.10.2 Environmental Consequences

3.10.2.1 Evaluation Criteria

Impacts on HAZMAT management would be considered adverse if the federal action resulted in noncompliance with applicable federal, state, and local regulations or increased the amounts generated or procured beyond a selected airport’s waste management procedures and capacities.

3.10.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

Hazardous Materials and Waste

Short-term, minor impacts on hazardous materials, petroleum products, and hazardous wastes could occur from renovation and additions to Buildings 211, 1330, and 198. Hazardous materials are not likely to be used during temporary facility modifications; however, renovation of Buildings 211, 1330, and 198 could employ paints, solvents, liquid descalers, hydrochloric acid, glycol, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment for renovation activities. Hazardous materials could be used for minor equipment servicing and repair activities. Hazardous materials and petroleum products would be contained, stored, and managed appropriately in accordance with AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*, and MHAFB Oil Spill Prevention and Emergency Response procedures to minimize the potential for release. Hazardous materials and petroleum products within Buildings 211, 1330, and 198 would be temporarily relocated to an appropriate facility to accommodate the proposed building renovation. Significant impacts on hazardous materials and petroleum products would not be expected.

Short-term, minor impacts would occur from generating hazardous and petroleum wastes during renovation activities. Petroleum products and hydraulic fluids would be used in construction equipment to support renovation operations, which would produce waste products. Handling of waste products is covered under the MHAFB Hazardous Waste Management Plan as well as federal, state, and local regulations. The implementation of BMPs would reduce the potential for an accidental release of hazardous and petroleum wastes.

Ground-disturbing activities would occur from flightline facility construction and on-base housing construction. Should unknown contamination be discovered or unearthed, the construction contractor would immediately stop work, contact appropriate installation personnel, and implement appropriate safety measures. Sampling and analysis would be conducted, as necessary, and commencement of construction would not continue until the concern is investigated and resolved. Any soils determined to be contaminated or hazardous would be managed or disposed of in accordance with applicable federal, state, and local laws and regulations.

Environmental Restoration Program

Neither OU-3 or OU-4 would be anticipated to impact or be impacted by proposed facilities construction, renovation, or demolition under Alternative 1.

Asbestos-Containing Materials and Lead-Based Paint

Short-term, minor impacts from ACMs and LBP might occur from the proposed renovation of Buildings 211, 1330, and 198 because the facilities could contain ACMs and LBP, which could be disturbed during renovation activities. Surveys for ACMs and LBP would be completed, as necessary, by a certified contractor prior to work activities to ensure appropriate measures, including adherence to all federal, state, and local regulations and the installation's management plans, would be taken to reduce potential exposure to, and release of ACMs and LBP.

Radon

Short-term, negligible impacts on radon levels could occur from the Proposed Action. Because MHAFB is in Elmore County, which has a rating of radon zone 1, any new facilities at the installation could have indoor radon screening levels exceeding 4 pCi/L (USEPA, 2018). Although basements and poorly ventilated areas would be most affected by radon, any indoor space in contact with the ground would be at risk. Radon would be managed at Buildings 211, 1330, and 198, and the proposed permanent housing by including passive radon-reducing features such as installing foundation ventilation systems, using tight seals around pipes and wires, and placing aggregate material and a vapor barrier between structures and the ground to encourage lateral flow of soil gas, where applicable.

Polychlorinated Biphenyls

Short-term, minor impacts from PCBs might occur from the proposed renovation of Buildings 211, 1330, and 198 because the facility might contain PCBs, which could be disturbed during the proposed renovation activities. Surveys for PCBs would be completed, as necessary, by a certified contractor prior to work activities to ensure appropriate measures, including adherence to all federal, state, and local regulations and the installation's management plans, would be taken to reduce potential exposure to and release of PCBs.

3.10.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Impacts on hazardous materials and waste, Environmental Restoration Program sites, ACM and LBP, radon, and PCBs would be the same as described for Alternative 1.

3.10.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

Although there would be less ground-disturbing activities on MHAFB because no on-base housing would be constructed, impacts on hazardous materials and waste, Environmental Restoration Program sites, ACM and LBP, radon, and PCBs would be the same as described for Alternative 1.

3.10.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Although there would be less ground-disturbing activities on MHAFB because no on-base housing would be constructed, impacts on hazardous materials and waste, Environmental Restoration Program sites, ACM and LBP, radon, and PCBs would be the same as described for Alternative 1.

3.10.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no impact on hazardous materials and wastes, the Environmental Restoration Program sites, or toxic substances at MHAFB.

3.10.3 Reasonably Foreseeable Future Actions

Short-term, negligible to minor impacts would result from the Proposed Action when combined with construction activities associated with other reasonably foreseeable proposed infrastructure projects. Construction, renovation, and demolition activities could contribute to an increase in handling and storage of hazardous materials and hazardous wastes accumulation. Impacts would be temporary and would be conducted in accordance with appropriate DOD, local, state, and federal regulations. Therefore, impacts would not be significant.

3.11 SOCIOECONOMICS

3.11.1 Existing Conditions

3.11.1.1 On-Base

MHAFB is located in Elmore County, Idaho. In 2019, the population of Elmore County was estimated to be 27,511, which was a 1.7 percent increase from the 2010 US census population estimate (**Table 3-19**; USCB, 2021). The state of Idaho's population was estimated to be 1,787,065 in 2019, which was a 14.0 percent increase over the 2010 US census population of the state. The rate of population growth for the state of Idaho is over twice the rate of growth in the population of the United States (**Table 3-19**).

In FY 2016, the population of MHAFB was 9,193 people, including 3,612 active/reserve military personnel and 1,074 civilian personnel. Approximately 4,507 people on MHAFB were dependents (MHAFB, 2016). MHAFB currently estimates the total Wing population to be nearly 10,000, which includes approximately 4,800 military and civilian personnel, and 5,200 family members (MHAFB, 2021a).

In 2019, the unemployment rate was 3.9 percent for Elmore County (Bureau of Labor Statistics, 2021a), which was higher than the unemployment rate for Idaho (2.8 percent) but similar to the US unemployment rate (3.7 percent).

There were 12,577 housing units in Elmore County; 60 percent of housing units in Elmore County were owner-occupied, which is an owner-occupied housing rate similar to that of the United States (64 percent) but lower than that of Idaho at 74 percent (USCB, 2021). The median value of owner-occupied housing was $153,800 in Elmore County, which was lower than the median value of owner-occupied housing in the state of Idaho and the United States (**Table 3-20**). The median gross monthly rent for housing in Elmore County was $833, which was also lower than monthly rent in Idaho, and the United States (**Table 3-20**).

MHAFB provides military family housing, dormitories, and visiting officer quarters on the installation. Military family housing is privatized and owned by BBC. BBC provides 844 units, made up of 275 two-bedroom unit homes, 235 three-bedroom homes and 152 four-bedroom homes, and 182 additional units. The occupancy rate in 2017 was 96 percent, resulting in 33 vacant homes. Privatized housing is performing as planned, with a current occupancy rate that exceeds the DAF goal of 95 percent. If additional homes are required, BBC has ample land for future neighborhoods and would construct the units and infrastructure accordingly (MHAFB, 2017c). The 2012 inventory of dormitories in the Dormitory Master Plan included a total of 599 beds in five separate facilities. The 2012 requirements were for 580 beds, resulting in an excess of 19 beds for unaccompanied personnel on base. The Dormitory Master Plan included the conversion of Dormitories 2312 and 2314 to the D4A standards, and these actions would result in a total of 547 beds and a requirement of 551 beds resulting in a deficit of four beds. Despite the deficit, the overall capacity was determined to be adequate by the 2012 Dormitory Master Plan and the 2017 Installation Development Plan (MHAFB, 2017c); however, the 2021 District Development Plan indicates that there are insufficient dorms and family housing available for QEAF personnel (MHAFB, 2021b).

3.11.1.2 Off-Base

The city of Boise, located approximately 55 mi from MHAFB, is located in Ada County, Idaho. The population of Ada County in 2019 was estimated to be 481,587, which is a 22.7 percent increase from the

2010 US census population estimate (**Table 3-19**; USCB, 2021). The state of Idaho's population was estimated to be 1,787,065 in 2019, which was a 14.0 percent increase over the 2010 US census population estimate. The population growth rate for both Ada County and the state of Idaho are substantially higher than the rate of growth in the population of the United States (**Table 3-19**). For a definition of the ROI for socioeconomics, please see **Appendix C-10**.

The unemployment rate for Ada County in 2019 was 2.4 percent (Bureau of Labor Statistics, 2021a), which was lower than the unemployment rate for the state of Idaho (2.8 percent) and the US unemployment rate (3.7 percent) (Bureau of Labor Statistics, 2021b).

Table 3-19. Population in the Qatar Emiri Air Force Beddown Region of Influence as Compared to California, Idaho, Nevada, Oregon, Utah, and the United States (2010–2019)

Location	2010	2019	Percent Change
United States	308,758,105	328,239,523	6.1
California	37,254,519	39,512,223	6.1
Idaho	1,567,650	1,787,065	14.0
Nevada	2,700,677	3,080,156	14.1
Oregon	3,831,079	4,217,737	10.1
Utah	2,763,891	3,205,958	16.0
California Counties			
Modoc County	9,682	8,841	-8.7
Idaho Counties			
Ada County	392,372	481,587	22.7
Blaine County	21,377	23,021	7.7
Butte County	2,893	2,597	-10.2
Camas County	1,106	1,117	-1.0
Cassia County	22,964	24,030	4.6
Custer County	4,366	4,315	-1.2
Elmore County	27,040	27,511	1.7
Gooding County	15,472	15,129	-1.9
Lincoln County	5,206	5,366	3.1
Minidoka County	20,055	21,039	4.9
Owyhee County	11,526	11,823	2.6
Power County	7,819	7,681	-1.8
Twin Falls County	77,230	86,878	12.5
Washington County	10,198	10,194	0.0
Nevada Counties			
Elko County	48,942	52,778	7.8
Humboldt County	16,521	16,831	1.9
Pershing County	6,752	6,725	-0.4
Washoe County	421,429	471,519	11.9
Oregon Counties			
Baker County	16,131	16,124	0.0
Grant County	7,444	7,199	-3.3

Table 3-19. Population in the Qatar Emiri Air Force Beddown Region of Influence as Compared to California, Idaho, Nevada, Oregon, Utah, and the United States (2010–2019)

Location	2010	2019	Percent Change
Harney County	7,422	7,393	-0.4
Lake County	7,885	7,869	-0.2
Malheur County	31,316	30,571	-2.4
Utah Counties			
Box Elder County	49,983	56,046	12.1

Source: USCB, 2021

Table 3-20. Housing in the Qatar Emiri Air Force Beddown Region of Influence as Compared to California, Idaho, Nevada, Oregon, Utah, and the United States (2019 and 2020)

Location	Housing Units (2019)	Median Value of Owner Occupied (2015 – 2019)	Median Gross Rent (2015 – 2019)	Building Permits (2020)
United States	138,684,284	$217,500	$1,062	1,471,141
California	14,366,336	$505,000	$1,503	106,075
Idaho	751,105	$212,300	$853	19,130
Nevada	1,285,684	$267,900	$1,107	19,716
Oregon	1,808,465	$312,200	$1,110	18,665
Utah	1,133,521	$279,100	$1,037	31,775
California Counties				
Modoc County	5,276	$140,600	$717	7
Idaho Counties				
Ada County	192,630	$270,800	$995	6,060
Blaine County	15,600	$428,900	$993	221
Butte County	1,381	$128,900	$656	2
Camas County	875	$183,300	$853	7
Cassia County	8,925	$162,100	$647	112
Custer County	3,161	$191,600	$608	11
Elmore County	12,577	$153,800	$833	86
Gooding County	6,290	$157,800	$704	32
Lincoln County	2,017	$145,600	$639	15
Minidoka County	8,504	$149,600	$701	173
Owyhee County	4,994	$147,800	$668	37
Power County	3,043	$151,300	$636	9
Twin Falls County	34,119	$166,800	$800	959
Washington County	4,689	$148,900	$683	42
Nevada Counties				

Table 3-20. Housing in the Qatar Emiri Air Force Beddown Region of Influence as Compared to California, Idaho, Nevada, Oregon, Utah, and the United States (2019 and 2020)

Location	Housing Units (2019)	Median Value of Owner Occupied (2015 – 2019)	Median Gross Rent (2015 – 2019)	Building Permits (2020)
Elko County	21,966	$212,500	$952	180
Humboldt County	7,617	$180,600	$841	15
Pershing County	2,508	$113,000	$678	0
Washoe County	205,417	$334,100	$1,074	4,489
Oregon Counties				
Baker County	9,096	$173,100	$674	27
Grant County	4,451	$144,800	$704	7
Harney County	3,928	$121,300	$648	14
Lake County	4,553	$146,800	$709	8
Malheur County	11,957	$135,900	$688	25
Utah Counties				
Box Elder County	19,357	$203,600	$747	533

Source: USCB, 2021

There were 192,630 housing units in Ada County in 2019. A total of 69 percent of housing units in Ada County were owner-occupied, which is an owner-occupied housing rate similar to that of the United States (64 percent) but lower than that of Idaho at 74 percent (USCB, 2021). The median value of owner-occupied housing was $270,800 in Ada County, which was higher than the median value of owner-occupied housing in the state of Idaho and the United States (see **Table 3-20**). The median gross monthly rent for housing in Ada County was $995 which was higher than the median gross monthly rent in Idaho but lower than the median rent in the United States (see **Table 3-20**).

3.11.1.3 Airspace

Population, unemployment, and housing were described for Elmore and Ada Counties in **Sections 3.11.1.1** and **3.11.1.2**, respectively.

Except for Twin Falls County, Idaho, and Washoe County, Nevada, all counties beneath the SUA and MTRs are rural, with populations of less than 50,000 people (see **Table 3-19**). Except for Box Elder County, Utah, none of these rural counties experienced a population change between 2010 and 2019 that is greater than the population change of the state they are located in. For many of the counties beneath the SUA and MTRs, there has been either little to no population growth between 2010 and 2019 or population losses. These rural counties are not experiencing the same rapid population growth that the states of California, Idaho, Nevada, Oregon, and Utah have experienced since 2010. All of these western states have experienced growth rates equal to or greater than that of the United States (see **Table 3-19**).

In 2019, the unemployment rate for Modoc County was substantially higher than the unemployment rate in California or the United States (**Table 3-20**). The unemployment rate of the Idaho counties beneath the SUA and MTRs was similar or only slightly higher than the Idaho state unemployment rate and the US unemployment rate (**Table 3-21**). The 2019 unemployment rate in Nevada was similar or higher than the four Nevada counties beneath the SUA and MTRs and all five counties in Oregon beneath the SUA and MTRs had higher unemployment rates than the state of Oregon and the United States (**Table 3-21**). Box

Elder County, Utah, located beneath the MTRs, had a nearly identical to the unemployment rate as the state of Utah (**Table 3-21**) (US Bureau of Labor Statistics, 2021a, 2021b).

Table 3-21. Unemployment Rates in the Region of Influence as Compared to California, Idaho, Nevada, Oregon, Utah, and the United States (2019)

Location	Unemployment Rate (Percent)
United States	3.7%
California	4.2%
Idaho	2.8%
Nevada	3.9%
Oregon	3.7%
Utah	2.5%
California Counties	
Modoc County	7.2%
Idaho Counties	
Blaine County	2.5%
Butte County	2.5%
Camas County	2.6%
Cassia County	2.3%
Custer County	4.0%
Elmore County	3.1%
Gooding County	2.5%
Lincoln County	3.4%
Minidoka County	2.4%
Owyhee County	3.2%
Power County	2.9%
Twin Falls County	2.7%
Washington County	3.9%
Nevada Counties	
Elko County	3.0%
Humboldt County	2.9%
Pershing County	4.0%
Washoe County	3.2%
Oregon Counties	
Baker County	4.5%
Grant County	6.7%
Harney County	5.2%
Lake County	5.3%
Malheur County	4.0%
Utah Counties	
Box Elder County	2.6%

Source: US Bureau of Labor Statistics, 2021a, 2021b

Except for Twin Falls Counties, Idaho, and Washoe County, Idaho, each of the counties beneath the SUA and MTRs have less than 25,000 owner-occupied housing units (see **Table 3-20**). Nearly all of the counties beneath the SUA and MTRs had lower median value of owner-occupied housing and lower median value of gross monthly rents then the states in which the counties are located, except for Blaine County, Idaho, and Washoe County, Nevada (see **Table 3-20**) (USCB, 2021).

3.11.2 Environmental Consequences

3.11.2.1 Evaluation Criteria

Consequences to socioeconomic resources were assessed in terms of the potential impacts on the local economy from proposed beddown of 12 QEAF F-15QA aircraft, use of the MHAFB airfield, SUA, and MTRs for training, and an additional 300 QEAF and US Air Force personnel at MHAFB. The level of impacts associated with the proposed QEAF beddown expenditure is assessed in terms of direct impacts on the local economy and related impacts on other socioeconomic resources (e.g., employment). The magnitude of potential impacts can vary greatly, depending on the location of an action. For example, implementation of an action that creates 10 employment positions might be unnoticed in an urban area but might have significant impacts in a rural region. In addition, if potential socioeconomic changes resulting from other factors were to result in substantial shifts in population trends or in reductions in regional spending and earning patterns, they may be considered adverse.

3.11.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

On-Base

There would be no socioeconomic impacts on base under Alternative 1. Under Alternative 1, QEAF personnel would live both on base and off base for the first 5 years after beddown and would transition to all on-base permanent housing constructed to support QEAF personnel. QEAF personnel would only live on base in existing available housing during the proposed interim beddown period until transitioning to permanent on-base housing constructed specifically to support QEAF personnel. This would ensure that there would be no housing shortage for US Air Force personnel as a result of interim QEAF housing. The construction of flightline facilities, housing, and support for the QEAF aircraft and personnel would not impact the socioeconomics of MHAFB.

Off-Base

There would be minor, short- and long-term, beneficial impacts on socioeconomics off base under Alternative 1. The interim off-base housing requirement, the construction of housing to support the on-base housing requirement, as well as flightline development would cause expenditures in the local community for housing and construction material, supplies, and labor. These expenditures would benefit the economies of Ada and Elmore Counties, Idaho, during construction, as these expenditures would primarily be in the City of Mountain Home and the Boise metropolitan area. In the long term, the QEAF personnel residing and working on base would continue to purchase goods and supplies in the local community, having a long-term socioeconomic benefit.

Airspace

The additional aircraft operations in the SUA and MTRs from the QEAF beddown would have no impacts on socioeconomics in the region under Alternative 1. Training operations in the SUA and MTRs would not substantially change the noise environment and therefore would not impact the population, employment, or housing in communities beneath the SUA.

3.11.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

Impacts on socioeconomics on base, off base, and from aircraft operations in the SUA and MTRs under Alternative 2 would be the same as described for Alternative 1.

3.11.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

On-Base

There would be no socioeconomic impacts on base under Alternative 3. QEAF personnel residing off base, the construction of flightline facilities, and the long-term maintenance of QEAF aircraft would have no impacts on the housing, employment, or income of personnel at MHAFB.

Off-Base

There would be minor, short- and long-term, beneficial impacts on socioeconomics off base under Alternative 3. The interim and permanent off-base housing requirement and flightline development would require expenditures in the local community for housing and construction material, supplies, and labor. It would be anticipated that QEAF personnel would reside in owner-occupied or leased residential housing in the long term. Although the rate of population growth in Ada County is substantially higher than in Idaho and the United States (see **Table 3-19**), the number of new construction permits for housing in Ada County, which is 3 percent of the current housing stock (see **Table 3-20**), are being issued at a higher rate than in the state of Idaho (2 percent), and three times higher than in the United States (1 percent). Therefore, housing construction in Ada County has increased in response to the growing population. There were 205,207 housing units in Ada and Elmore Counties in 2019 with an additional 6,146 building permits in 2020. The QEAF and US Air Force personnel would utilize only about 0.1 percent of the currently available housing in the region. Therefore, there would be adequate housing in the region for the 300 QEAF and US Air Force personnel residing off base in Ada and Elmore Counties.

These expenditures on housing by QEAF personnel as well as materials and labor for construction of facilities and maintenance and operation of the additional QEAF aircraft on MHAFB would benefit the economies of Ada and Elmore Counties, Idaho, as these expenditures would primarily be in the City of Mountain Home and the Boise metropolitan area. In the long term, the QEAF personnel residing and working off base would continue to purchase goods and supplies in the local community, having a long-term socioeconomic benefit.

Airspace

Impacts on socioeconomics from aircraft operations in the SUA and MTRs under Alternative 3 would be the same as described for Alternative 1.

3.11.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

Impacts on socioeconomics on base, off base, and from aircraft operations in the SUA under Alternative 4 would be the same as described for Alternative 3.

3.11.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance and operations would occur. There would be no change to socioeconomics at MHAFB or in Ada and Elmore Counties, Idaho, or in the communities beneath the training airspace.

3.11.3 Reasonably Foreseeable Future Actions

The Proposed Action in combination with other reasonably foreseeable actions would have short-term, minor, beneficial impacts on the local economy from increased construction and personal spending. The IDARNG infrastructure and development projects, Forging Sabre Biennial Exercises, and low-altitude training operations in optimized SUA would all have local and regional economic benefits through increased economic activity. Further, it would be expected the sufficient temporary housing is available to accommodate these other actions as required, so no adverse effects on housing availability are expected.

3.12 ENVIRONMENTAL JUSTICE

3.12.1 Existing Conditions

3.12.1.1 On-Base

An evaluation of minority and low-income populations in Elmore County, Idaho, forms a baseline for the potential for disproportionate impacts on these populations from the Proposed Action. **Table 3-22** provides the 2019 minority, poverty, and youth populations for the ROI. In 2019, Elmore County had a higher percentage of minorities (27.6 percent) in the population compared to Idaho (18.4 percent), but both had lower percentages of the population that identified as minorities than in the United States (39.9 percent) (USCB, 2021). A total of 17.8 percent of the Elmore County population identified as Hispanic or Latino, which is slightly higher than the population of that minority group in Idaho, but nearly the same as in the United States (18.5 percent).

The number of persons in poverty in 2019 was 14.1 percent for Elmore County, which was slightly higher than in Idaho (11.2 percent), and substantially higher than the rate of persons in poverty in the United States (10.5 percent) (USCB, 2021).

There is no substantial difference between the percent of the population that are children in Elmore County (25.3 percent) and Idaho (25.1 percent), but both have slightly higher percentages of youth population than in the United States (22.3 percent).

3.12.1.2 Off-Base

An evaluation of minority and low-income populations in Ada and Elmore Counties forms a baseline for the potential for disproportionate impacts on these populations from the Proposed Action. Population demographics for Elmore County were described in **Section 3.11.1.1**. **Table 3-22** provides the 2019 minority, poverty, and youth populations for the ROI. In 2019, Ada County had a lower percentage of minorities (15.7 percent) in the population compared to Idaho (18.4 percent) and the United States (39.9 percent) (USCB, 2021). A total of 8.5 percent of the Ada County population identified as Hispanic or Latino, which was also less than Hispanic or Latino population for Idaho.

Table 3-22. Minority, Poverty, and Youth Populations in the Qatar Emiri Air Force Beddown Region of Influence as Compared to Idaho, Nevada, Oregon, and the United States (2019)

Location	Population	Percent Minority	Percent Hispanic or Latino	Percent in Poverty	Percent Youth
United States	328,239,523	39.9	18.5	10.5	22.3
California	39,512,223	63.5	39.4	11.8	22.5
Idaho	1,787,065	18.4	12.8	11.2	25.1
Nevada	3,080,156	51.8	29.2	12.5	22.5
Oregon	4,217,737	24.9	13.4	11.4	20.5
Utah	3,205,958	22.2	14.4	8.9	29.0
California Counties					

Table 3-22. Minority, Poverty, and Youth Populations in the Qatar Emiri Air Force Beddown Region of Influence as Compared to Idaho, Nevada, Oregon, and the United States (2019)

Location	Population	Percent Minority	Percent Hispanic or Latino	Percent in Poverty	Percent Youth
Modoc County	8,841	22.8	14.6	20.5	19.4
Idaho Counties					
Ada County	481,587	15.7	8.5	9.4	23.2
Blaine County	23,021	26.3	23.5	7.2	21.1
Butte County	2,597	9.1	5.4	14.6	24.3
Camas County	1,117	11.3	6.3	9.0	22.1
Cassia County	24,030	30.3	27.2	12.0	31.6
Custer County	4,315	9.2	4.6	13.0	17.2
Elmore County	27,511	27.6	17.8	14.1	25.3
Gooding County	15,129	32.4	29.2	15.1	26.9
Lincoln County	5,366	35.1	31.4	11.2	27.4
Minidoka County	21,039	38.7	36.0	11.3	28.6
Owyhee County	11,823	31.1	25.8	14.9	25.4
Power County	7,681	39.3	34.6	13.1	30.6
Twin Falls County	86,878	21.8	17.1	11.0	27.4
Washington County	10,194	20.8	16.8	13.4	22.6
Nevada Counties					
Elko County	52,778	33.5	24.7	11.0	27.2
Humboldt County	16,831	35.3	27.5	11.0	29.6
Pershing County	6,725	35.8	24.8	17.6	16.2
Washoe County	471,519	37.7	25.0	10.7	21.3
Oregon Counties					
Baker County	16,124	10.3	4.7	13.6	19.8
Grant County	7,199	8.7	3.9	15.3	17.6
Harney County	7,393	13.6	5.1	14.2	20.1
Lake County	7,869	16.0	8.6	17.0	19.1
Malheur County	30,571	39.9	34.6	21.2	25.9
Utah Counties					
Box Elder County	56,046	13.3	9.7	7.5	31.2

Source: USCB, 2021

The rate of persons in poverty in 2019 was 9.4 percent for Ada County, which was slightly lower than the rate of persons in poverty in Idaho (11.2 percent) and in the United States (10.5 percent) (USCB, 2021).

The percent of the population that are children in Ada County was 23.2 percent, which was slightly less than the percent of the youth population in Idaho (25.1 percent) but slightly higher than in the United States (22.3 percent) (USCB, 2021).

3.12.1.3 Airspace

An evaluation of minority and low-income populations in the 25 counties beneath the SUA and MTRs forms a baseline for the potential for disproportionate impacts on these populations from the Proposed Action. In Idaho in 2019, Blaine, Cassia, Elmore, Gooding, Lincoln, Minidoka, Owyhee, Power, Twin Falls, and Washington Counties in Idaho had a higher percentage of minorities than in the state of Idaho (**Table 3-22**). These Idaho counties also had a higher percentage of the population that identified as Hispanic or Latino than in the state of Idaho. In Oregon, only Malheur County had a higher percentage of minorities than in the state of Oregon (**Table 3-22**). None of the counties in California, Nevada, or Utah beneath the SUA and MTRs had a higher percentage of minorities than the state percentage of minorities (**Table 3-22**). None of the counties beneath the SUA and MTRs had a higher percentage of the population that identified as minority than in the United States (USCB, 2021).

The only counties beneath the SUA and MTRs that had a lower rate of poverty than the rate of poverty in the corresponding state in 2019 were Blaine, and Camas Counties, Idaho; Elko, Humboldt, and Washoe Counties, Nevada; and Box Elder County, Utah (see **Table 3-22**). Further, only Blaine, and Camas Counties, Idaho, and Box Elder County, Utah, had a lower rate of poverty than in the United States (USCB, 2021).

The following counties beneath the SUA and MTRs had a substantially higher (i.e., 2 percentage points) youth population than in their corresponding state and the United States (see **Table 3-22**): Cassia, Lincoln, Minidoka, Power, and Twin Falls Counties, Idaho; Elko and Humboldt Counties, Nevada; Malheur County, Oregon; and Box Elder County, Utah (USCB, 2021).

3.12.2 Environmental Consequences

3.12.2.1 Evaluation Criteria

Environmental justice analysis applies to potential disproportionate effects on minority, low-income, and youth populations. Environmental justice issues could occur if an adverse environmental or socioeconomic consequence to the human population fell disproportionately upon minority, low-income, or youth populations. Ethnicity and poverty status were examined and compared to state and national data to determine if these populations could be disproportionately affected by the alternatives.

3.12.2.2 Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline “Sea of Rocks” Location

On-Base

Under Alternative 1, the increase in 300 additional personnel on base would not result in a disproportionate impact on minorities, low-income populations, or children because there would be adequate housing constructed on MHAFB to accommodate the beddown, a new community center would also be constructed on base, and there are adequate community resources and community services on MHAFB and in nearby Elmore and Ada Counties to support the increase in personnel. The proposed 300 additional personnel and their families supporting the QEAF beddown as well as the proposed construction of flightline facilities and increased aircraft operations would not disproportionately affect the availability of these resources to minorities, low-income populations, or children.

Off-Base

Under Alternative 1, the proposed interim increase in the QEAF and US Air Force personnel living off base in Elmore and Ada Counties, which have a combined population of over 500,000 people, would not result in a disproportionate impact on minorities, low-income populations, or children because there would be adequate housing, community resources, and community services in these two counites to support the temporary increase in personnel residing off base. The proposed 300 additional personnel and their families supporting the QEAF beddown and living off base for up to 5 years as well as the proposed construction of

flightline facilities and increased aircraft operations would not disproportionately affect the availability of these resources to minorities, low-income populations, or children.

Airspace

Under the Proposed Action, the increased training sorties in the SUA and MTRs would not result in a disproportionate impact on minorities, low-income populations, or children because there would not be a change in the availability of housing, community resources, or community services as a result of QEAF training operations. Further, the noise environment would not substantially change in the SUA and MTRs, and noise from training would not disproportionately impact minority, low-income, or youth populations. Therefore, the QEAF beddown would not disproportionately affect the availability of housing and community resources and services to minorities, low-income populations, or children beneath the SUA.

3.12.2.3 Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location

The potential for disproportionate impacts on base, off base, and beneath the SUA and MTRs on minority, low-income, and youth populations under Alternative 2 would be the same as described for Alternative 1.

3.12.2.4 Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location

On-Base

There would be no potential for disproportionate impacts on minority, low-income, and youth populations on base under Alternative 3 because no QEAF personnel would reside on base in the interim and long-term.

Off-Base

Under the Proposed Action, the interim and permanent increase in the QEAF and US Air Force personnel living off base in Elmore and Ada Counties, which have a combined population of over 500,000 people, would not result in a disproportionate impact on minorities, low-income populations, and protection of children because there is adequate housing, community resources, and community services in these two counites to support the temporary proposed increase in personnel residing off base. The proposed 300 additional personnel and their families supporting the QEAF beddown and living off base permanently would be an approximately 0.1 percent increase in the regional population, which would be insignificant and would not disproportionately affect the availability of these resources to minorities, low-income populations, or children for Alternative 1. Further, the proposed construction of flightline facilities and increased aircraft operations at MHAFB would not affect housing or community resources or services off base.

Airspace

The potential for disproportionate impacts beneath the SUA and MTRs on minority, low-income, and youth populations under Alternative 3 would be the same as described for Alternative 1.

3.12.2.5 Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location

The potential for disproportionate impacts on base, off base, and beneath the SUA and MTRs on minority, low-income, and youth populations under Alternative 4 would be the same as described for Alternative 3.

3.12.2.6 No Action Alternative

Under the No Action Alternative, the QEAF beddown would not occur at MHAFB, and no additional aircraft or personnel; construction, renovation, or demolition of housing or flightline facilities; or aircraft maintenance

and operations would occur. There would be no disproportionate impacts on minority or low-income communities or children at MHAFB and off base as there would be no increase in personnel or regional expenditures nor would there be disproportionate impacts beneath the SUA and MTRs.

3.12.3 Reasonably Foreseeable Future Actions

There are no reasonably foreseeable projects that in combination with the Proposed Action would have a disproportionate impact on minority and low-income populations or children. The IDARNG infrastructure and development projects, Forging Sabre Biennial Exercises, and low-altitude training operations in optimized SUA would not occur in locations where there are at risk populations and would not substantially alter the noise environment in SUA. Further, it would be expected the sufficient temporary housing is available to accommodate these other actions as required, so no adverse effects would occur on housing availability for at risk populations.

CHAPTER 4 REFERENCES

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APPENDIX A
GLOSSARY OF TERMS

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Term	Definition
Aerospace ground equipment (AGE)	Support equipment required for aircraft maintenance and sortie generation and is composed of equipment such as generators, air compressors, portable light sources, tow bars, and mobile liquid oxygen and nitrogen sources.
Above Ground Level (AGL)	Altitude expressed in feet (ft) measured above the surface of the ground. Both AGL and mean sea level (MSL) are used to delineate airspace structure and referenced at varying times by aircraft in-flight.
Air-to-Air Training	Air-to-air training prepares aircrews to achieve and maintain air superiority over the battlefield and defeat enemy aircraft. Air-to-air training often includes some aircraft playing the role of adversaries, or enemy forces. Air-to-air training activities include advanced handling characteristics, air combat training, low altitude air-to-air training, and air intercept training. This training also requires the use of defensive countermeasures.
Air-to-Ground Training	Air-to-ground training employs all the techniques and maneuvers associated with weapons use and includes low-and high-altitude tactics, navigation, formation flying, target acquisition, and defensive reaction. Training activities include surface attack tactics, different modes of weapons delivery, electronic combat training, and the use of defensive countermeasures.
Air Traffic Control Assigned Airspace (ATCAA)	Assigned to Air Traffic Control to segregate air traffic between specified activities being conducted within the assigned airspace and other IFR traffic. ATCAA is the equivalent of a MOA at 18,000 ft MSL and above. This airspace is not depicted on any chart but is often an extension of a MOA to higher altitudes and usually referred to by the same name. This airspace remains in control of the Federal Aviation Administration (FAA) to support business, commercial, and military aviation activities.
Chaff	An electronic countermeasure designed to reflect radar waves and obscure aircraft, ships, and other equipment from radar tracking source. Chaff bundles consist of millions of nonhazardous fibers, primarily aluminum and silica. When ejected from the aircraft, millions of fibers disperse widely in the air, forming an electromagnetic screen that temporarily hides the aircraft from radar and forms a radar decoy, allowing the aircraft to defensively maneuver or leave the area.
Continental United State (CONUS)	United States territory, including the adjacent territorial waters, located within North America between Canada and Mexico.
Cowboy Control	A division of the 266 RANS that exercises Positive Control of Mountain Home Range Complex and also provides Ground Control Intercept (GCI) training support.
Environmental Night	From 2200 hours to 0700 hours and used in modeling noise impacts to account for our increased sensitivity to noise at night.
Flare	Magnesium pellets ejected from military aircraft providing high-temperature heat sources that act as decoys for heat-seeking weapons targeting the aircraft. These defensive countermeasures are utilized to keep aircraft from being successfully targeted by or escape from weapons such as surface-to-air missiles and air-to-air missiles.
Flightline	The area of an airfield, specifically the parking area and the maintenance hangars, where aircraft are onloaded, offloaded, and serviced.

Term	Definition
Instrument Route (IR)	Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both instrument flight rule and visual flight rule weather conditions below 10,000 ft MSL at airspeeds in excess of 250 knots indicated airspeed.
Mean Sea Level (MSL)	Altitude expressed in feet measured above average (mean) sea level. Both MSL and AGL are used to delineate airspace structure and referenced at varying times by aircraft in-flight.
Military Operations Area (MOA)	Designated airspace outside of Class A airspace to separate or segregate certain nonhazardous military activities from Instrument Flight Rules (IFR) traffic. Activities in MOAs include, but are not limited to, air combat maneuvers, air intercepts, and low altitude tactics. The defined vertical and lateral limits vary for each MOA. While MOAs generally extend from 1,200 ft AGL to 18,000 ft MSL, the floor may extend below 1,200 ft AGL if there is a mission requirement and there is minimal adverse aeronautical effect.
Military Training Route (MTR)	A corridor of airspace with defined vertical and lateral dimensions established for conducting military flight training at airspeeds in excess of 250 nautical miles per hour.
No-drop (ND) target	No-drop targets allow aircrews to practice locating and aiming at a target without dropping any ordnance. Targets simulate a typical combat environment and provide varying levels of difficulty. No-drop targets are critical to combat training and provide tactical practice in a realistic setting.
Operation	One action (e.g., a landing or take-off). Pilots making multiple practice approaches (i.e., touch and go's) conduct a landing followed immediately by a takeoff; this entire closed pattern circuit is counted as two airfield operations.
Ordnance	Military materiel such as combat weapons of all kinds with ammunition and equipment required for their use. Ordnance includes all the things that make up an aircraft's armament including guns, ammunition, and all equipment and ordnance related software needed to control, operate, and support the weapons.
Primary Aerospace Vehicle Authorized	The number of aircraft authorized to a unit for performance of its operational mission. The primary authorization forms the basis for the allocation of operating resources to include manpower, support equipment, and flying-hour funds.
Region of Influence (ROI)	The geographic area of interest or influence that is being evaluated for a particular resource. Note: Generally, the ROI includes areas on base, off base, the special use airspace (SUA), and the MTRs; however, for some resources, such as cultural and biological, no off-base impacts are expected to occur and therefore the ROI is limited to on base, the SUA, and the MTRs.
Sortie	A single military aircraft flight from initial takeoff through final landing.
Sortie Turn Pattern	Aircraft flight operation consisting of aircraft flying, landing, completing appropriate post flight inspections, refueling, and flying again. For example, a turn pattern of six turn four means that six aircraft would take off and land and four aircraft would fly a second sortie for a total of 10 sorties per day.

Term	Definition
Special Use Airspace (SUA)	SUA consists of that airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both. SUA areas are depicted on aeronautical charts, except for controlled firing areas, temporary MOAs, and temporary restricted areas.
Visual Route (VR)	Routes used for the purpose of conducting low-altitude navigation and tactical training in visual flight rule weather conditions below 10,000 ft MSL at speeds in excess of 250 knots indicated airspeed.

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APPENDIX B
INTERGOVERNMENTAL AND STAKEHOLDER COORDINATION

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B.1 INTRODUCTION

Scoping is an early and open process for developing the breadth of issues to be addressed in an Environmental Assessment (EA) and for identifying significant concerns related to a proposed action. Per the requirements of the Intergovernmental Cooperation Act of 1968 (42 United States Code § 4231[a]) and Executive Order 12372, *Intergovernmental Review of Federal Programs*, federal, state, and local agencies with jurisdiction that could potentially be affected by the proposed and alternative actions were notified during the development of this EA.

The Intergovernmental Coordination Act and Executive Order 12372 require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. Through the coordination process, the 366th Fighter Wing sent letters to potentially interested and affected government agencies, government representatives, elected officials, and interested parties potentially affected by the Proposed Action. The recipient mailing list and agency and intergovernmental coordination letters and responses are included in within this Appendix.

B.1.1 Agency Consultations

Compliance with Section 7 of the Endangered Species Act (ESA), and implementing regulations (50 Code of Federal Regulations [CFR] Part 402), requires consultation with the United States Fish and Wildlife Service (USFWS) in cases where a federal action could affect listed threatened or endangered species and a conference where a federal action could affect species proposed or candidates for listing. The primary focus of this consultation is to request a determination of whether any of these species occur in the proposal area. If any of these species is present, a determination is made of any potential adverse effects on the species. If it is determined that ESA listed species are not likely to be adversely affected by proposed or alternative actions, no consultation is required. Letters were sent to the Idaho, Nevada, and Oregon USFWS offices as well as relevant state agencies informing them of the proposal and requesting data regarding applicable protected species. A No Effect determination for federally listed species was made for the Proposed Action and coordination with the USFWS concerning the DAF's determination was completed.

The Proposed Action qualifies as an undertaking for review in accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800) and coordination was accomplished through the Idaho State Historic Preservation Office. DAF has determined the Proposed Action under Alternatives 1 and 3 would have no adverse effect on historic properties. The Idaho SHPO concurred with DAF's no adverse effects determination for Alternatives 1 or 3. Alternatives 2 or 4 would not be implemented without further consultation per 36 CFR 800. All agency correspondence is included within this Appendix.

B.1.2 Government-to-Government Consultation

The NHPA and its implementing regulations (36 CFR Part 800) require federal agencies to consult with tribal governments as part of the Section 106 process. This includes providing Tribes with a reasonable opportunity to identify concerns about historic properties; advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; articulate views on the undertaking's effects on such properties; and participate in the resolution of potential adverse effects. Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and Department of the Air Force (DAF) Instruction 90-2002, *Interactions with Federally Recognized Tribes*, further outline that federally recognized Tribes with cultural or historic affiliation to lands in the vicinity of proposed and alternative actions must be afforded the opportunity to identify any properties of cultural, historical, or religious significance to the Tribes and that consultation be made in good faith, meaning early in the planning process, to allow the tribal government to provide meaningful comments that may affect the decision making process.

The Tribal consultation process is distinct from the National Environmental Policy Act interagency coordination process and requires separate notification. The Mountain Home Air Force Base (MHAFB)

point-of-contact for Native American Tribes is the Wing Commander. The Tribal governments to be consulted with regarding the Proposed Action are listed, along with correspondence, within this Appendix. Tribes were asked for input on any concerns or information of traditional resources within the project area that would be potentially impacted by the Proposed Action. Tribal consultation is complete.

The environmental analysis process, in compliance with National Environmental Policy Act guidance, includes public and agency review of information pertinent to the proposed and alternative actions. Further, compliance with Section 7 of the ESA and Section 106 of the NHPA requires consultation with the USFWS and State Historic Preservation Office, respectively. Tribal consultation is also required under the NHPA. The Interagency and Intergovernmental Coordination for Environmental Planning memoranda and responses, recipient mailing list, agency and intergovernmental coordination letters and responses, agency consultation letters and responses, and Tribal consultation letters and responses are included within this Appendix.

B.2 PUBLIC AND AGENCY REVIEW OF ENVIRONMENTAL ASSESSMENT

A Notice of Availability was published in the newspapers of record, *The Idaho Statesman*, *The Mountain Home News*, and *The Twin Falls Times-News*, inviting the public to review and comment on the Draft EA during the 30-day review period.

Copies of the Draft EA and proposed Finding of No Significant Impact were made available for review on the MHAFB website at https://www.mountainhome.af.mil/Home/Environmental-News/ and at the following locations:

- Boise Main Library, 715 S. Capitol Boulevard, Boise, Idaho 83702
- Albertsons Library – Boise State University, 1865 W Cesar Chavez Lane, Boise, Idaho 83725
- Bruneau Valley District Library, PO Box 253, Bruneau, Idaho 83604
- Glenns Ferry Public Library, 298 S Lincoln Street, Glenns Ferry, Idaho 83623
- MHAFB Library, 480 5th Avenue, Building 2610, MHAFB, Idaho 83648
- Mountain Home Public Library, 790 North 10th East, Mountain Home, Idaho 83647
- Nampa Public Library, 215 12th Avenue S, Nampa, Idaho 83651
- Twin Falls Public Library, 201 Fourth Avenue East, Twin Falls, Idaho 83301
- Elko County Library, 720 Court Street, Elko, Nevada 89801
- Humboldt County Library, 85 E 5th Street, Winnemucca, Nevada 89445
- McDermitt Library, PO Box 444, McDermitt, Nevada 89421

Those who were unable to access these documents online were asked to call Public Affairs at 208-828-6800 or email 366FW.PA.PublicAffairs@us.af.mil to arrange alternate access.

B.3 INTERAGENCY/INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING MAILING LIST

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B.4 INTERAGENCY/INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING LETTER EXAMPLES

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

27 April 2021

MEMORANDUM FOR ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, AND ORGANIZATIONS

FROM: 366 FW/A7IE

SUBJECT: Environmental Assessment for Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the United States (US) Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment to evaluate potential environmental impacts associated with the proposal by the USAF and 366th Fighter Wing to provide training support to the Qatar Emiri Air Force (QEAF). USAF training support would be in response to the QEAF request for the USAF to provide continental United States (CONUS)–based international military training. The proposal implements a US government policy established following World War II to provide training to foreign military personnel of US ally countries and would further strengthen the relationship between the United States and Qatar.

The purpose of the Proposed Action is to establish an USAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS at a location that would maximize training as well as minimize cost and potential impacts on the environment. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action would establish an USAF-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the USAF wing commander. The Proposed Action includes the basing and operation of up to 12 QEAF F-15QA aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and USAF personnel, and construction and modification of facilities and infrastructure on Mountain Home AFB to support the beddown. Basing and operations are proposed to begin in early Fiscal Year 2024 and would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

To evaluate proposed basing locations, the USAF followed the process identified in Air Force Instruction 10-503, *Strategic Basing*. Further, QEAF's requests to include collocation with an existing F-15E wing at a CONUS AFB, minimization of beddown costs, adequate airspace, and a location with similar variable topography to Qatar's operational region were considered. Seymour Johnson AFB, North Carolina, and Mountain Home AFB, Idaho, are the only two fighter wings in the CONUS with existing F-15E unit; however, Seymour Johnson AFB does not currently have the capacity required to beddown a tenant unit, and a tenant unit beddown at Seymour Johnson AFB would interfere with existing and future USAF missions. Further,

Seymour Johnson AFB does not offer airspace with variable topography to allow for the training experience to support combat readiness requested by the QEAF. Therefore, Seymour Johnson AFB was dismissed from further consideration.

Mountain Home AFB is located in Elmore County, Idaho (**Figure 1**). Mountain Home AFB (Main Base) encompasses 6,844 acres and manages the Small Arms Range, Rattlesnake Radar Station, Middle Marker, C.J. Strike Dam Recreation Annex, and the Mountain Home Range Complex (MHRC). In addition, there are two air-to-ground weapons ranges (Saylor Creek Range and Juniper Butte Range), no-drop targets, and emitter sites. Approximately 9,000 square miles of special use airspace, including that overlying the MHRC, is available for training (**Figure 1**).

Interim solutions for housing and flightline facilities would be implemented to meet the immediate basing need. Interim solutions would support the flightline facility and housing requirements for QEAF personnel for up to 5 years. Interim flightline facilty solutions would primarily utilize existing infrastructure. Interim housing solutions would either partially house QEAF personnel in existing on base military housing with the remaining personnel being housed off base or house all QEAF personnel off base in existing housing in Elmore and Ada counties, Idaho. Permanent flightline solutions would construct new facilities along the Mountain Home AFB flightline. Permanent housing solutions would either construct military housing on Mountain Home AFB to house all QEAF personnel, house all QEAF personnel off base in Elmore and Ada counties, or some combination of on-base and off-base permanent housing solutions.

If you have additional information regarding potential impacts of the Proposed Action on the environmental aspects of the project area of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. To ensure the USAF has sufficient time to consider your input in the preparation of the Draft Environmental Assessment, please forward issues or concerns within 30 days of receipt of the memorandum to Ms. Noelle Shaver via email at [redacted]

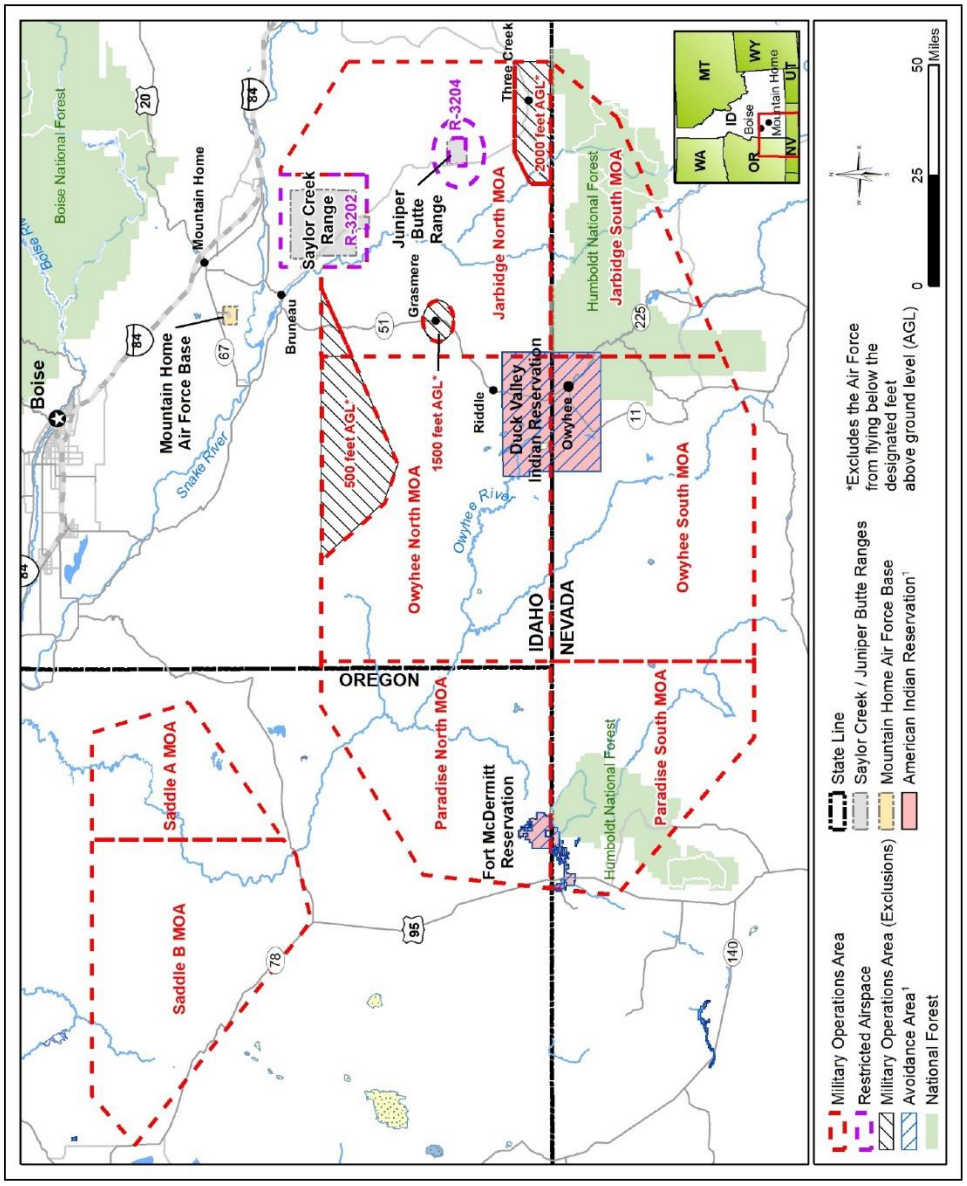
4/27/2021

X

SHERI L. ROBERTSON
Chief, Environmental Management Branch
Signed by: ROBERTSON.SHERI.L.1152447350

Attachment:

1. Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges



[1] Duck Valley Reservation is an avoidance area through agreements.

Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges

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

28 April 2021

Sheri L Robertson
366 FW/A7IE
1030 Liberator Street
Mountain Home AFB ID 83648

Ms. Ashley Brown
Historic Preservation Review Officer
Idaho State Historic Preservation Office
210 Main Street
Boise ID 83702

SUBJECT: Environmental Assessment for Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

Dear Ms. Brown:

The United States (US) Air Force (USAF) is initiating consultation under Section 106 of the National Historic Preservation Act and requesting concurrence on the Area of Potential Effects (APE) for a proposed action to beddown Qatar Emiri Air Force (QEAF) F-15QA aircraft at Mountain Home Air Force Base (AFB), Idaho, for an international training program. The proposed undertaking does not meet the requirements to be considered eligible for streamlined review as outlined in Section I (c) of the 2015 Mountain Home AFB Programmatic Agreement for alternative regulatory compliance. The USAF is soliciting input early in the Environmental Impact Analysis Process as requested by the State Historic Preservation Office for proposed undertakings that may be large in scale or have the potential to adversely affect historic properties.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the USAF NEPA regulations, the USAF is preparing an Environmental Assessment to evaluate potential environmental impacts associated with the proposal by the USAF and 366th Fighter Wing to provide training support to the QEAF. USAF training support would be in response to the QEAF request for the USAF to provide continental United States (CONUS)–based international military training. The proposal implements a US government policy established following World War II to provide training to foreign military personnel of US ally countries and would further strengthen the relationship between the United States and Qatar.

The purpose of the Proposed Action is to establish an USAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS at a location that would maximize training as well as minimize cost and potential impacts on the environment. The

Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS AFB, beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action would establish an USAF-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the USAF wing commander. The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and USAF personnel, and construction and modification of facilities and infrastructure on Mountain Home AFB to support the beddown. Basing and operations would begin in early Fiscal Year 2024 and would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

To evaluate proposed basing locations, the USAF followed the process identified in Air Force Instruction 10-503, *Strategic Basing*. Further, QEAF's requests to include collocation with an existing F-15E wing at a CONUS AFB, minimization of beddown costs, adequate airspace, and a location with similar variable topography to Qatar's operational region were considered. Seymour Johnson AFB, North Carolina, and Mountain Home AFB, Idaho, are the only two fighter wings in the CONUS with existing F-15E unit; however, Seymour Johnson AFB does not currently have the capacity required to beddown a tenant unit, and a tenant unit beddown at Seymour Johnson AFB would interfere with existing and future USAF missions. Further, Seymour Johnson AFB does not offer airspace with variable topography to allow for the training experience to support combat readiness requested by the QEAF. Therefore, Seymour Johnson AFB was dismissed from further consideration.

Mountain Home AFB is located in Elmore County, Idaho (**Figure 1**). Mountain Home AFB (Main Base) encompasses 6,844 acres and manages the Small Arms Range, Rattlesnake Radar Station, Middle Marker, C.J. Strike Dam Recreation Annex, and the Mountain Home Range Complex (MHRC). In addition, there are two air-to-ground weapons ranges (Saylor Creek Range and Juniper Butte Range), no-drop targets, and emitter sites. Approximately 9,000 square miles of special use airspace, including that overlying the MHRC, are available for training (**Figure 1**).

Area of Potential Effects (APE)

The USAF has defined the APE in accordance with 36 Code of Federal Regulations (CFR) § 800.16 (d) to include the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. Because the undertaking does not include modifications to the existing airspace or airframes and because any proposed off-base housing development would be determined separately by the QEAF outside of this undertaking and independent of the USAF, the USAF has defined the undertaking APE in three parts: (1) proposed interim flightline facility projects, (2) proposed permanent flightline facility projects, and (3) proposed permanent housing projects. The APE includes all locations of proposed ground disturbance, existing facilities modifications, and new construction (**Figures 2** through **4**). Archaeological sites and historic properties located within the APE are also identified (**Figure 5**). It is of note that 10-EL-983, a historical sheep

camp, is recommended not eligible for inclusion in the National Register of Historic Places (NRHP).

Proposed Temporary Facilities

The proposed interim flightline facilities and infrastructure would primarily utilize NRHP-eligible Hangar 211 to house four two-hangar bays, squadron operations, Aircraft Maintenance Unit, and equipment storage. Two rows of sunshades would be constructed proximate to Hangar 211 to support the QEAF. All other QEAF backshop functions would be supported in existing facilities (**Figure 2**). A complete list of existing buildings identified for renovation as part of the proposed interim flightline facilities improvements, and their NRHP status, is provided below (**Table 1**).

Table 1. Proposed Interim Flightline Facilities Identified for Renovation

Project Description	Building	Quantity	NRHP Eligibility
Renovation			
Weapons load trainer	Building 1332	29,611 ft^2	Eligible
QEAF Fighter Squadron and Operations Support Squadron	Building 2215	61,472 ft^2	Not eligible
Paint booth (additional)	Building 1330	7,398 ft^2	Eligible
Wash rack (additional)	Building 198	7,398 ft^2	Unevaluated (1999)
Squadron Operations and Simulator Training Center, Aircraft Maintenance Unit, supply warehouse, equipment storage	Building 211	61,472 ft^2	Eligible

Proposed Permanent Flightline Facilities

Two permanent flightline facility alternatives will be evaluated. However, the two flightline facility alternatives would not differ substantially in that the size of proposed permanent facilities and their proposed locations along the flightline would be nearly the same. In total, the construction, renovation, demolition, and infrastructure improvements would include more than 261,912 square feet (ft) of building space for flightline facilities, 6,816 ft (1.3 miles) of road improvements, and approximately 1,038 new parking spaces. A construction buffer area of 50 ft around all construction footprints was added to the area of potential ground disturbance potential, for a total of approximately 58 acres of construction area and buffer for all projects (**Figure 3**). Existing buildings identified for construction and demolition as part of the proposed permanent flightline facilities improvements, and their NRHP status, are provided below (**Table 2**).

Table 2. Proposed Permanent Flightline Facilities Identified for Construction and Demolition

Project Description	Building	Quantity	NRHP Eligibility
Construction			
Addition to Cowboy Control	Building 1795	10,170 ft^2	Unevaluated (1987)
Demolition			
Temporary propulsion facility	Adjacent to Building 1334	TBD	Unevaluated (1992)
Consolidate into non-destructive inspections hangar	Building 1222	3,990 ft^2	Not eligible

Proposed Permanent Housing at Mountain Home AFB

It is unlikely that enough existing vacant military housing on base would be available to support all the QEAF accompanied and unaccompanied personnel during the initial beddown. In the interim, it is anticipated that up to 20 accompanied and 20 unaccompanied QEAF personnel could be housed on base in existing housing. This interim solution would support the housing requirements for the QEAF personnel for up to 5 years. In the long term, all 169 QEAF personnel could reside in off-base housing in Elmore County, in Ada County, or the combination of Elmore and Ada counties or reside in permanent housing on Mountain Home AFB in newly constructed dormitories and housing units. Two locations for constructing the new dormitory units to house unaccompanied personnel have been identified on base. Approximately 18 acres would be required for the housing units and associated infrastructure (**Figure 4**).

Pursuant to 36 CFR Part 800, implementing Section 106 of the National Historic Preservation Act, the USAF hereby initiates consultation and requests your concurrence on the APE outlined in **Figures 2** through **4**. Additionally, the Air Force would appreciate your assistance in providing information regarding the potential presence of significant cultural resources associated with the Proposed Action. Please forward initial issues or concerns within 30 days of receipt of the memorandum to Ms. Noelle Shaver via email at [redacted]

Sincerely

SHERI L ROBERTSON
Chief, Environmental Management Branch

Attachments:

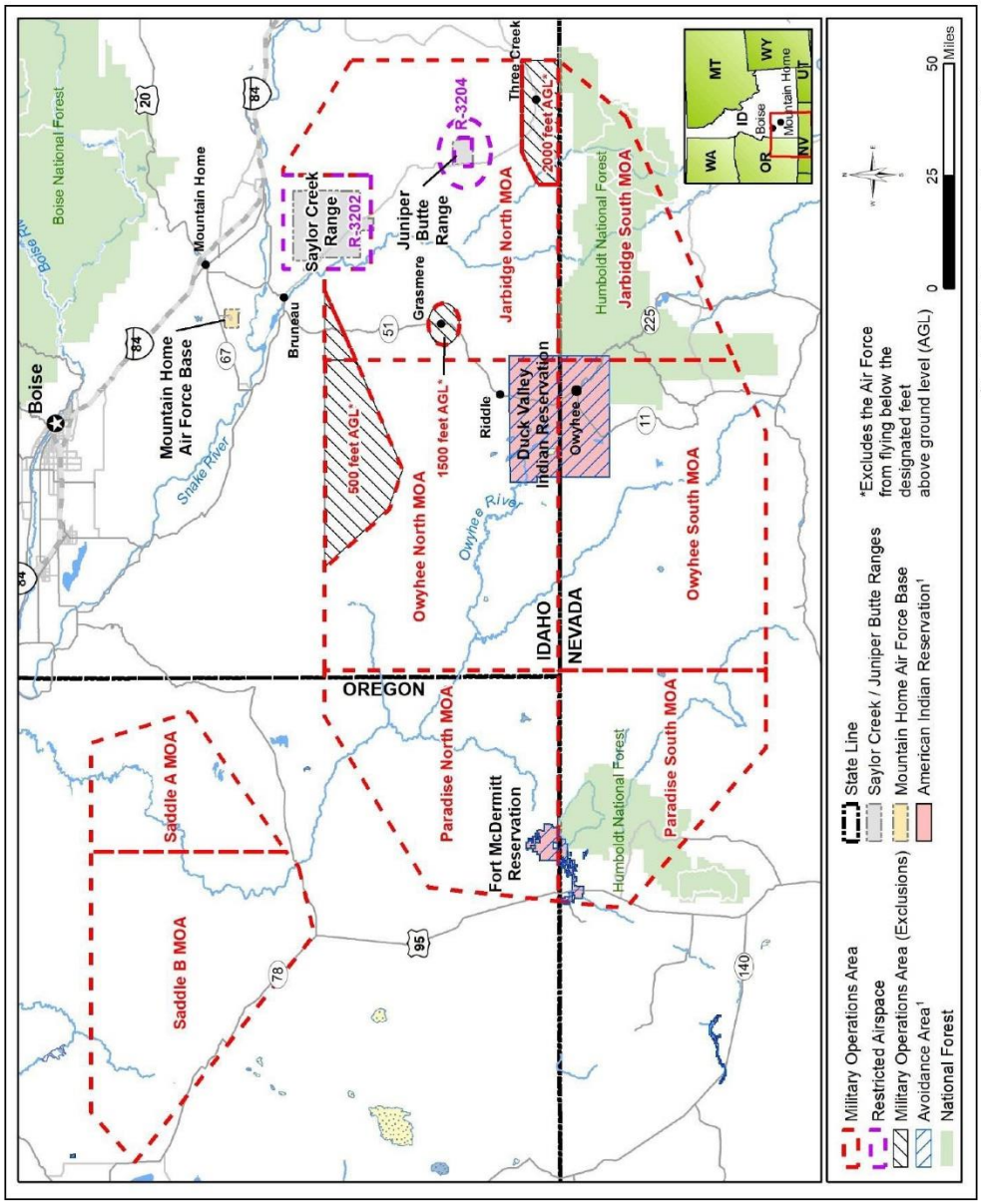
Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges

Figure 2. Area of Potential Effects with Location of Interim Flightline Facility Projects at Mountain Home Air Force Base

Figure 3. Area of Potential Effects with Location of Proposed Permanent Flightline Projects at Mountain Home Air Force Base

Figure 4. Area of Potential Effects with Location of Proposed On-Base Permanent Housing at Mountain Home Air Force Base

Figure 5. Area of Potential Effects with Archaeological Sites and Historic Properties at Mountain Home Air Force Base



[1]Duck Valley Reservation is an avoidance area through agreements.

Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges

7

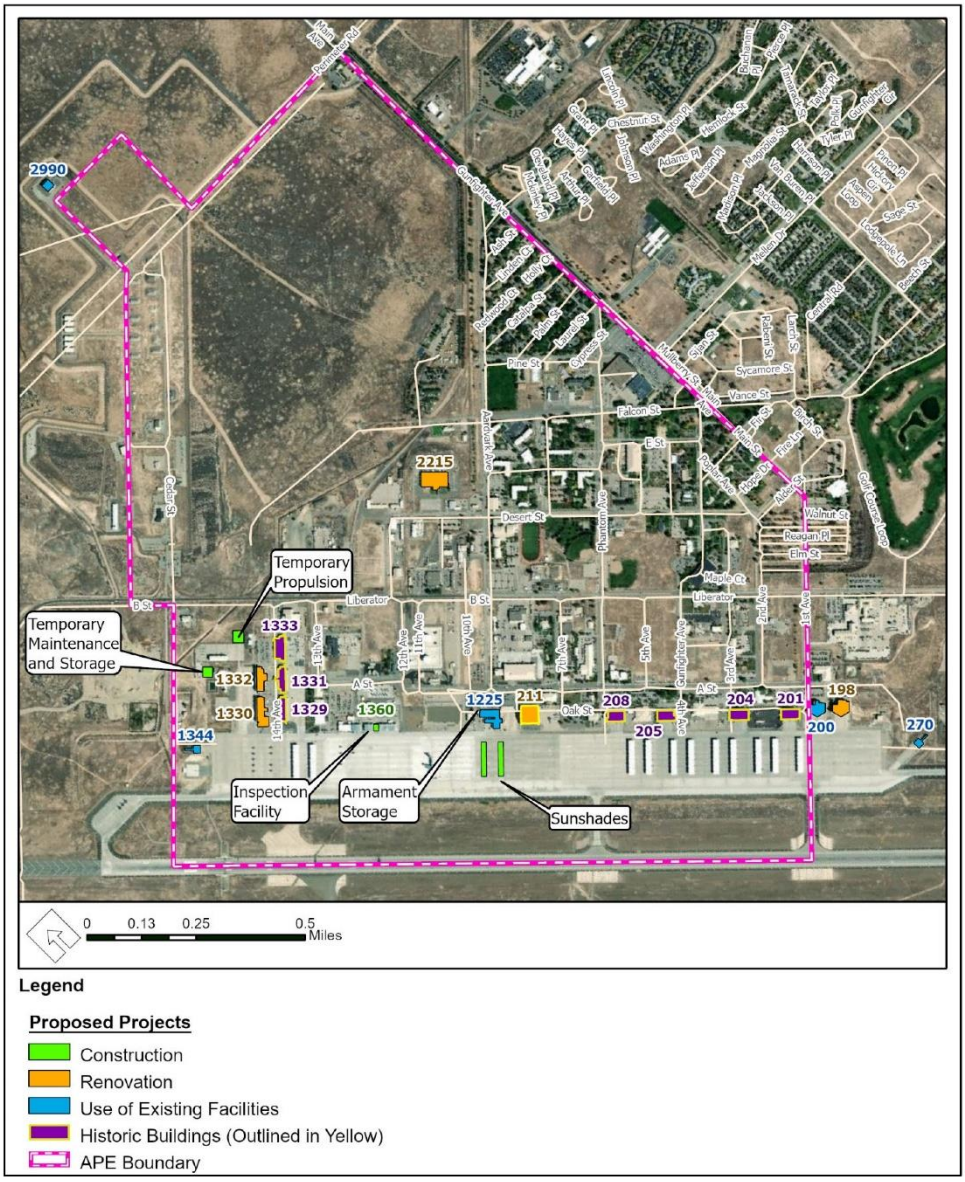


Figure 2. Area of Potential Effects with Location of Interim Flightline Facility Projects at Mountain Home Air Force Base

8

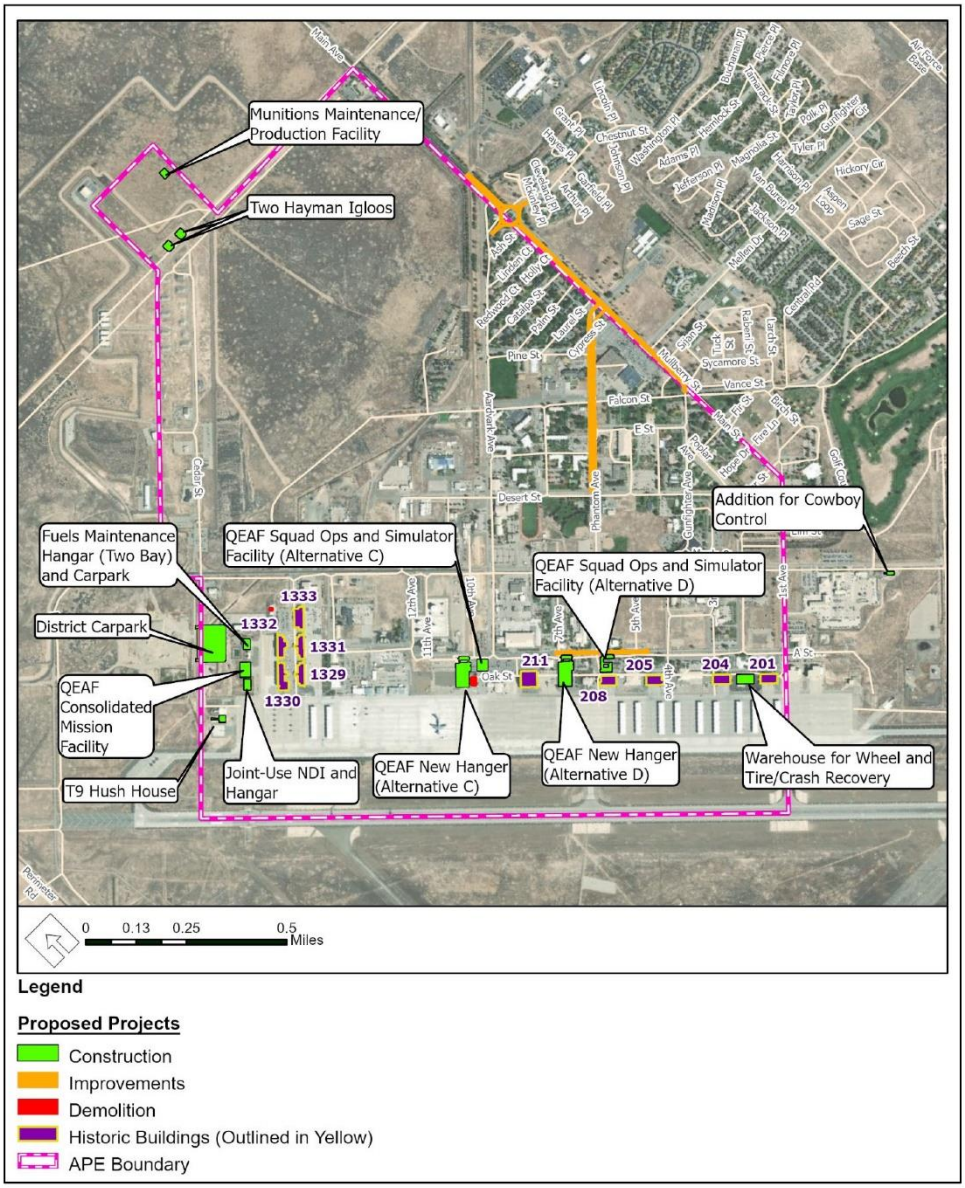


Figure 3. Area of Potential Effects with Location of Proposed Permanent Flightline Projects at Mountain Home Air Force Base

9

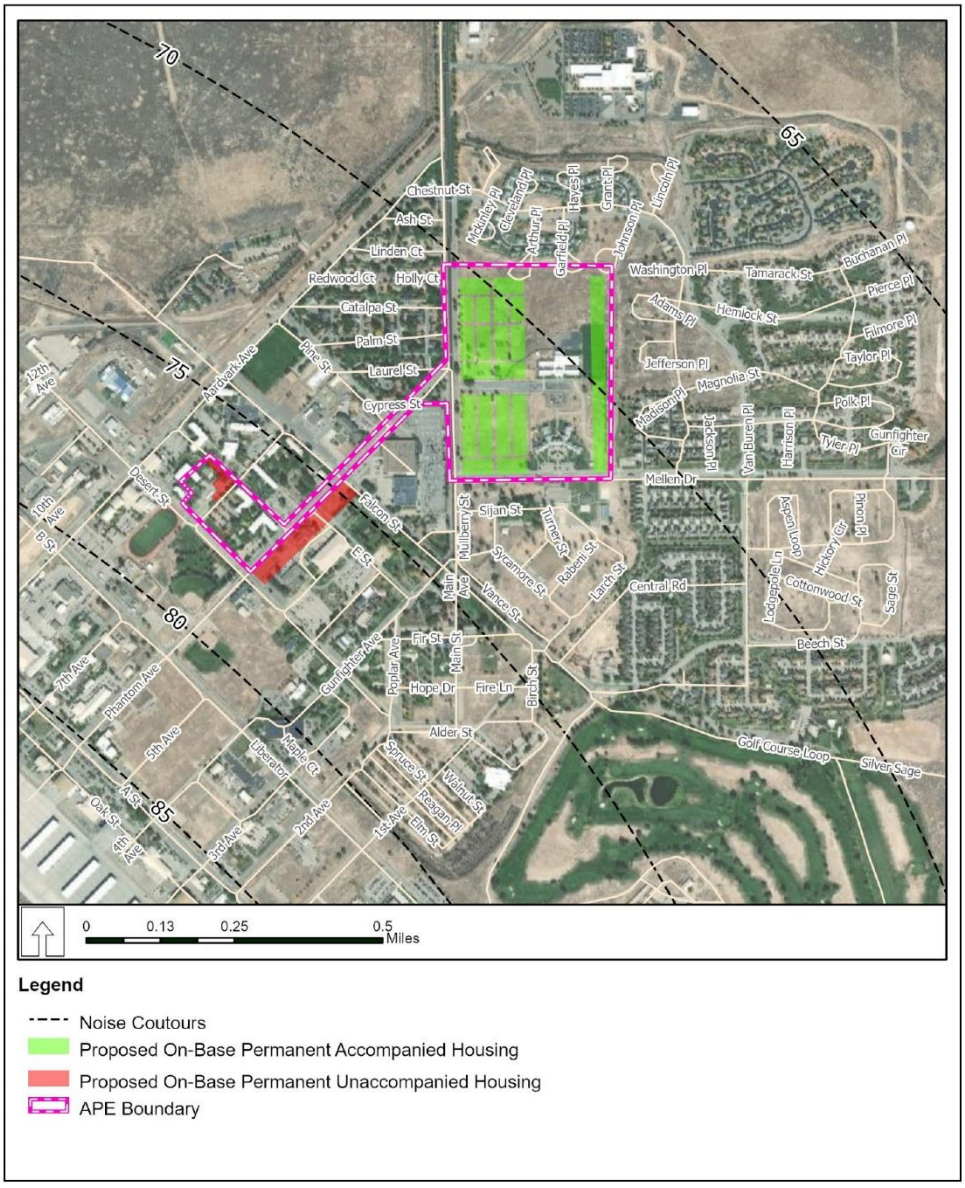


Figure 4. Area of Potential Effects with Location of Proposed On-Base Permanent Housing at Mountain Home Air Force Base

10

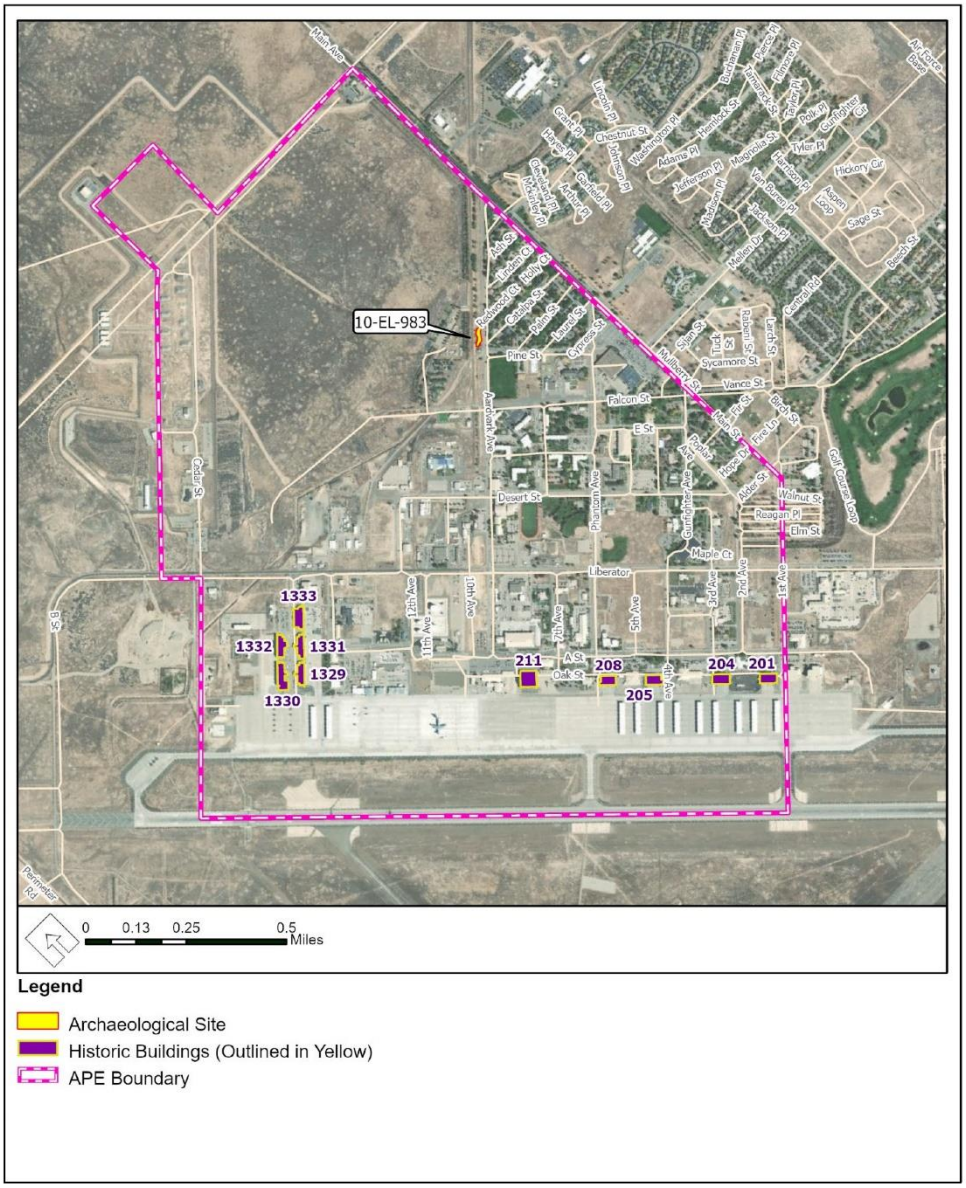


Figure 5. Area of Potential Effects with Archaeological Sites and Historic Properties at Mountain Home Air Force Base

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

28 April 2021

Colonel Richard A. Goodman
Commander
366 Gunfighter Avenue Ste 331
Mountain Home AFB ID 83648

Ms. Jody Richards
Chairwoman
Burns Paiute Tribe
100 Pasigo Street
Burns OR 97720

SUBJECT: Environmental Assessment for Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

Dear Ms. Richards:

The purpose of this letter is twofold: to give you an opportunity to review and comment on a proposed action in which the Burns Paiute Tribe may have an interest and to invite the Burns Paiute Tribe to participate in government-to-government consultation with with Mountain Home Air Force Base (AFB), Idaho, pursuant to Section 106 of the National Historic Preservation Act.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality regulations, and the United States (US) Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment to evaluate potential environmental impacts associated with the proposal by the USAF and 366th Fighter Wing to provide training support to the Qatar Emiri Air Force (QEAF). USAF training support would be in response to the QEAF request for the USAF to provide continental United States (CONUS)–based international military training. The proposal implements a US government policy established following World War II to provide training to foreign military personnel of US ally countries and would further strengthen the relationship between the United States and Qatar.

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ordnance during training, approximately 300 additional QEAF and USAF personnel, and construction and modification of facilities and infrastructure on Mountain Home AFB to support the beddown. Basing and operations would begin in early Fiscal Year 2024 and would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

To evaluate proposed basing locations, the USAF followed the process identified in Air Force Instruction 10-503, *Strategic Basing*. Further, QEAF's requests to include collocation with an existing F-15E wing at a CONUS AFB, minimization of beddown costs, adequate airspace, and a location with similar variable topography to Qatar's operational region were considered. Seymour Johnson AFB, North Carolina, and Mountain Home AFB, Idaho, are the only two fighter wings in the CONUS with existing F-15E units; however, Seymour Johnson AFB does not currently have the capacity required to beddown a tenant unit, and a tenant unit beddown at Seymour Johnson AFB would interfere with existing and future USAF missions. Further, Seymour Johnson AFB does not offer airspace with variable topography to allow for the training experience to support combat readiness requested by the QEAF. Therefore, Seymour Johnson AFB was dismissed from further consideration.

Mountain Home AFB is located in Elmore County, Idaho (**Figure 1**). Mountain Home AFB (Main Base) encompasses 6,844 acres and manages the Small Arms Range, Rattlesnake Radar Station, Middle Marker, C.J. Strike Dam Recreation Annex, and the Mountain Home Range Complex (MHRC). In addition, there are two air-to-ground weapons ranges (Saylor Creek Range and Juniper Butte Range), no-drop targets, and emitter sites. Approximately 9,000 square miles of special use airspace, including that overlying the MHRC, is available for training (**Figure 1**).

Interim solutions for housing and flightline facilities would be implemented to meet the immediate basing need. Interim solutions would support the flightline facility and housing requirements for QEAF personnel for up to 5 years. Interim flightline facilty solutions would primarily utilize existing infrastructure. Interim housing solutions would either partially house QEAF personnel on base in existing military housing with the remaining personnel being housed off base or house all QEAF personnel off base in existing housing in Elmore and Ada counties, Idaho. Permanent flightline solutions would construct new facilities along the Mountain Home AFB flightline. Permanent housing solutions would either construct military housing on Mountain Home AFB to house all QEAF personnel, house all QEAF personnel off base in Elmore and Ada counties, or some combination of on-base and off-base permanent housing solutions.

In compliance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations Part 800, Mountain Home AFB is asking for your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects for this proposed undertaking. Regardless of whether the you choose to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

We look forward to hearing from you and would appreciate receiving initial questions and/or comments at your earliest convenience. This will ensure the USAF has sufficient time to

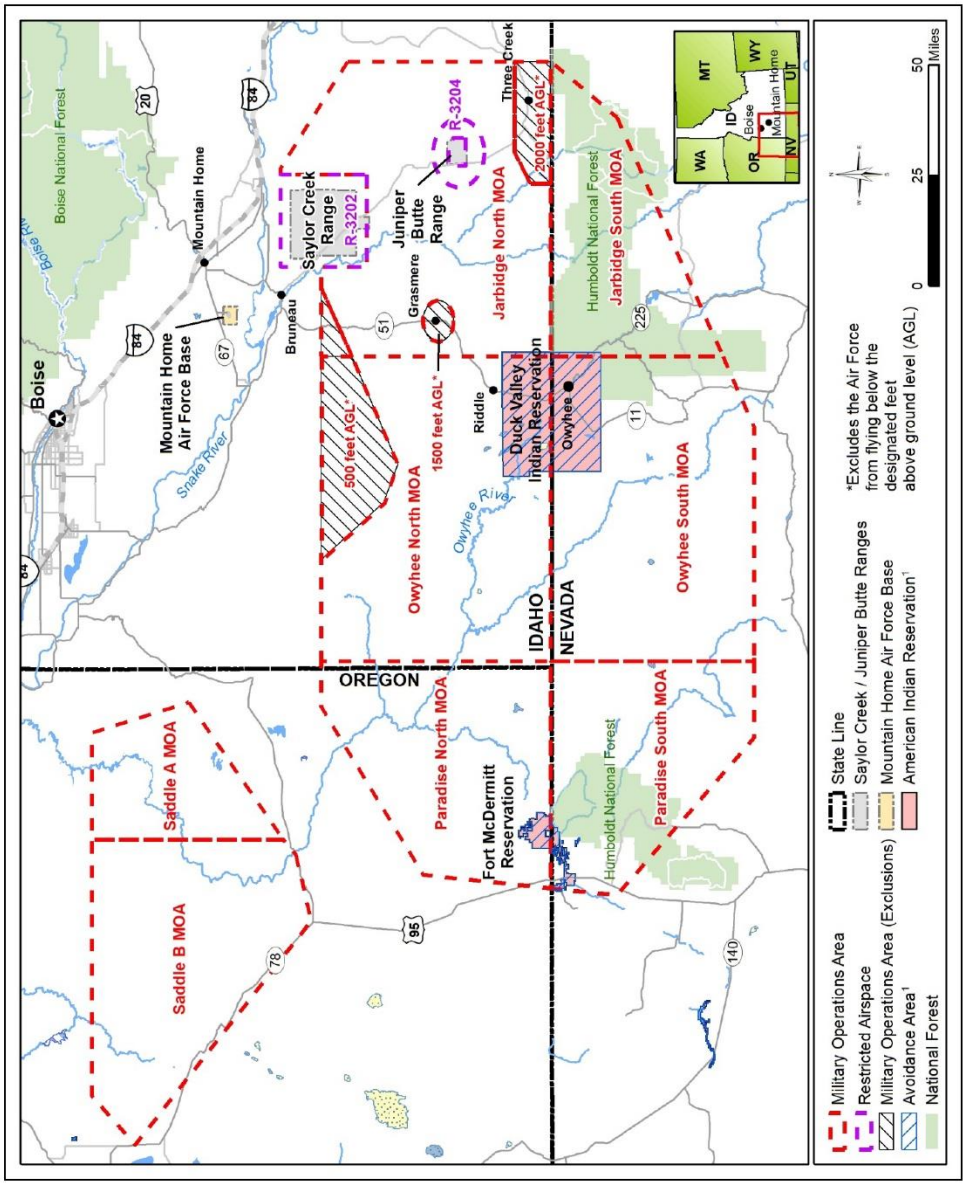
fully consider them when preparing the Draft Environmental Assessment. If you have any questions or comments, please contact the Installation Tribal Liaison Officer, Ms. Barbara Hurt, via email at [redacted] by phone at [redacted] or by postal mail at 366 Gunfighter Avenue, Suite 331, Mountain Home, ID 83648.

Sincerely

RICHARD A. GOODMAN
Colonel, USAF

Attachments:

Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges
Figure 2. Area of Potential Effects with Location of Interim Flightline Facility Projects at Mountain Home Air Force Base
Figure 3. Area of Potential Effects with Location of Proposed Permanent Flightline Projects at Mountain Home Air Force Base
Figure 4. Area of Potential Effects with Location of Proposed On-Base Permanent Housing at Mountain Home Air Force Base
Figure 5. Area of Potential Effects with Archaeological Sites and Historic Properties at Mountain Home Air Force Base



[1]Duck Valley Reservation is an avoidance area through agreements.

Figure 1. Special Use Airspace and Mountain Home Air Force Base and Associated Training Ranges

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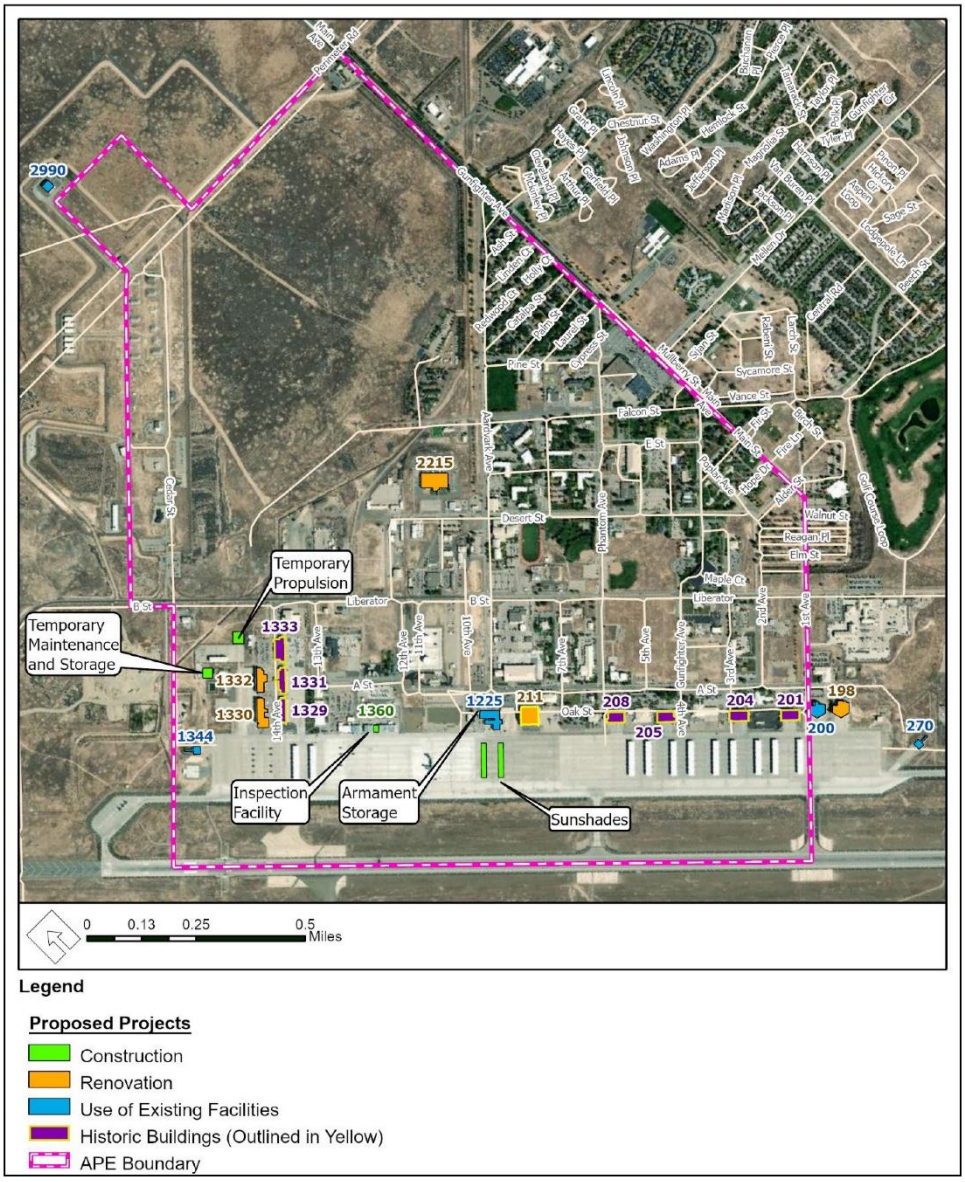

Figure 2. Area of Potential Effects with Location of Interim Flightline Facility Projects at Mountain Home Air Force Base

6

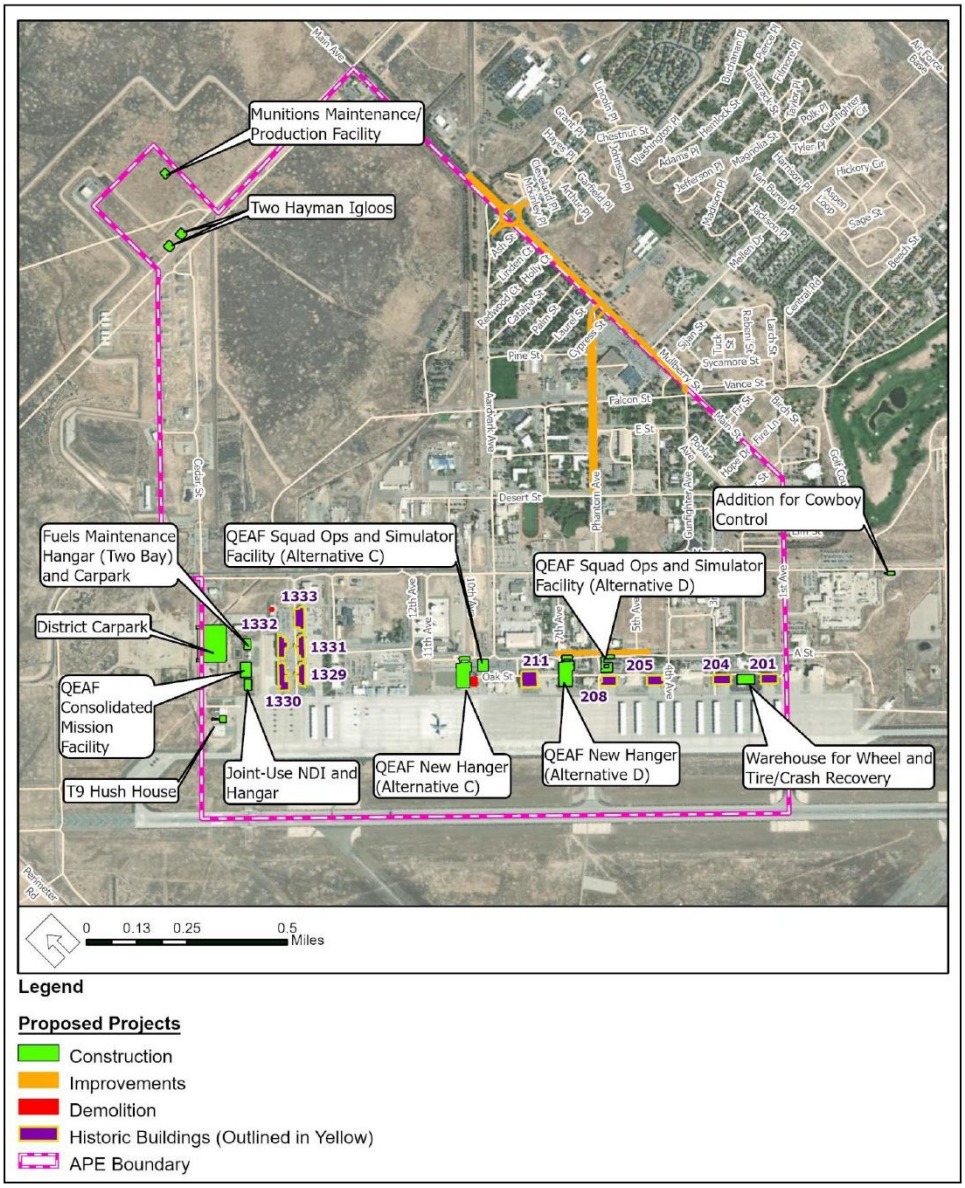

Figure 3. Area of Potential Effects with Location of Proposed Permanent Flightline |Projects at Mountain Home Air Force Base

7

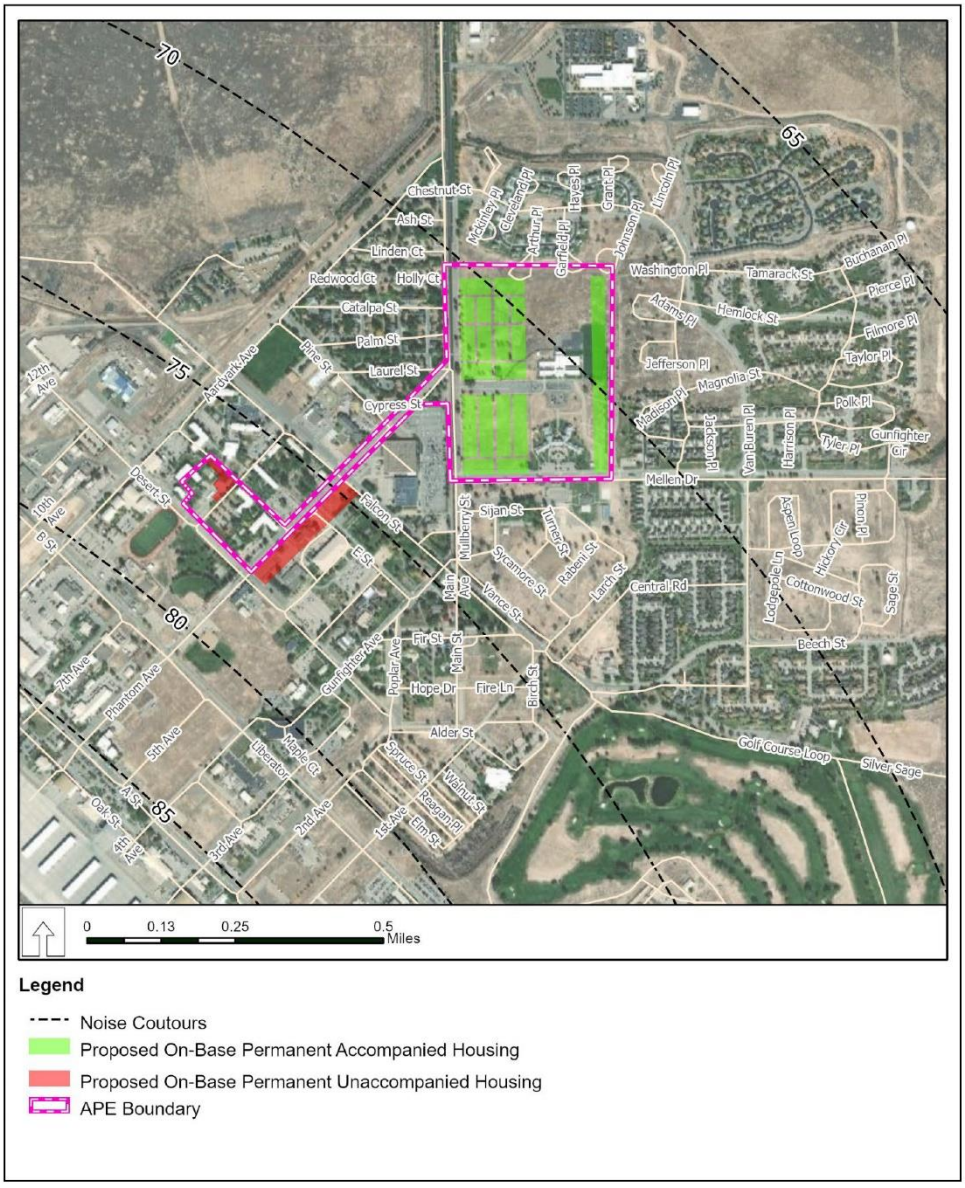

Figure 4. Area of Potential Effects with Location of Proposed On-Base Permanent Housing at Mountain Home Air Force Base

8

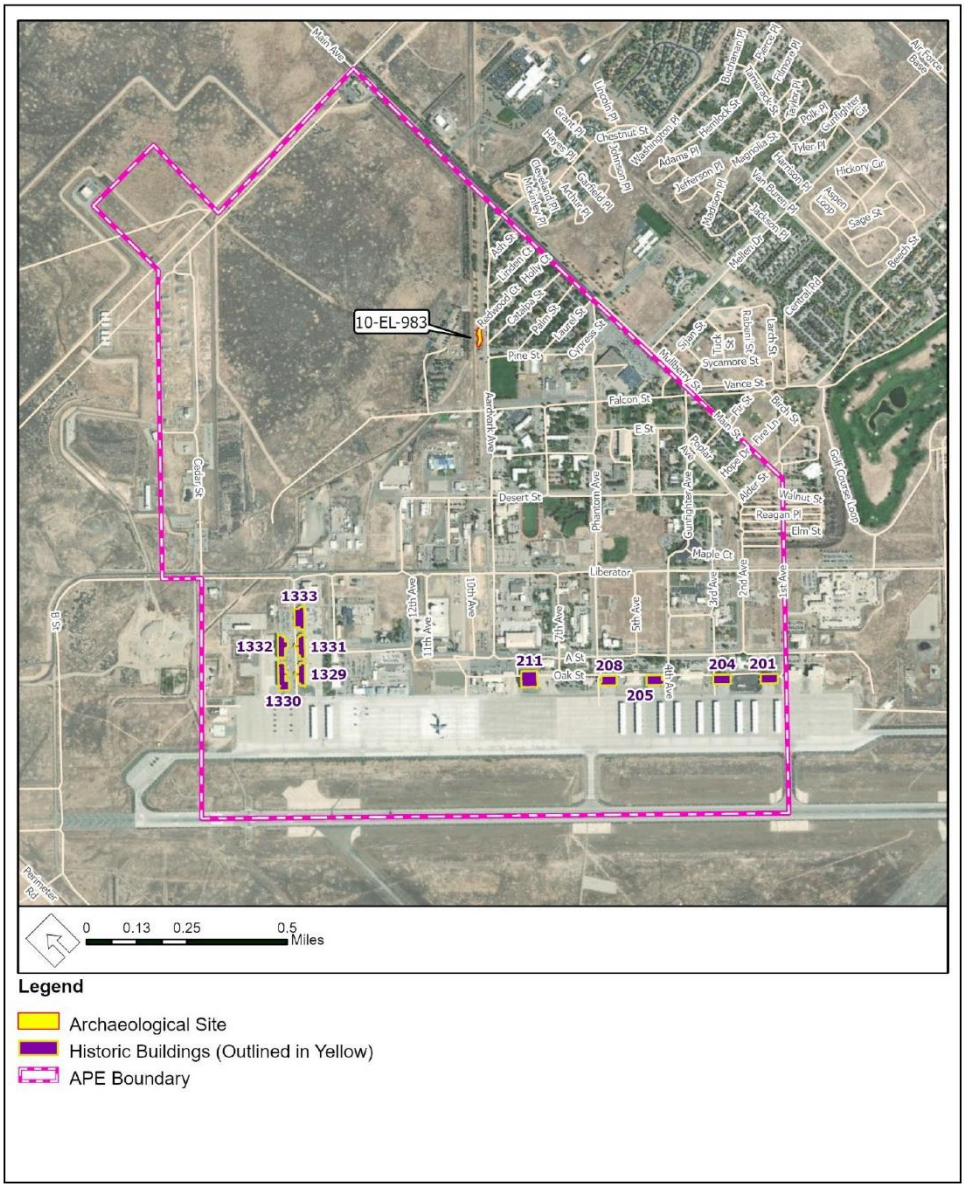

Figure 5. Area of Potential Effects with Archaeological Sites and Historic Properties at |Mountain Home Air Force Base

B.5 INTERAGENCY/INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING RESPONSES

From: katie fite [redacted]>
Sent: Saturday, May 22, 2021 11:26 AM
To: SHAVER, NOELLE C GS-12 USAF ACC 366 A6 7/A7IE [redacted]>
Cc: Katie Fite [redacted]>; Ralston, Brent E [redacted]; Clifford, Thomas (TJ) J [redacted]>; Ryan, Thomas (Pat) P [redacted]>; Dixon, Gerald [redacted]>; [redacted] Clarke, Douglas R -FS [redacted]>; Elliot J Traher [redacted]
Subject: [Non-DoD Source] EA for Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air force Base, ID

Hello,

Here are initial comments of WildLands Defense comments on the proposed EA for Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, ID. An EIS must be prepared for this significant expansion of military activity and Beddown of Qatar military F-15QA War Planes at Mountain Home.

I am also copying Brent Ralston of BLM and ask that Mr. Ralston include this information about another serious increase in military War Game expansion at MHAFB in the project record and NEPA analysis for the ID Guard Simco Road ROW/War Range expansion. I am also copying various are BLM managers for public lands underlain by this proposal, and the USFS as the Humboldt-Toiyabe Mountain City and Santa Rosa RDs are also under this airspace.

WildLands Defense is concerned that this is connected to the Idaho Guard SIMCO War Range public Land Grab that includes parts of the Birds of Prey Area, as well as the USAF scoped proposal for increasing the number of MHAFB supersonic overflights over this tri-state region (ID, OR, NV) and also for lowering the flight level for sonic booms in this tri-state region. That proposal wold impact both BLM and USFS lands.

Earlier this year Idaho Gov. Little remarked that Idaho has space for military expansion. Thus, we fear even more public Land Grabs (like the Simco scheme where the state would profit from military use of state land) or deafening increases in War Game activity over Idaho, Oregon and Nevada skies will take place (just like this Qatar proposal!), as well as increased on the ground military disturbance activity. We are also concerned that the block of land the states acquiring in Owyhee County with the OPLMA exchange may be used for war game activity and further military disturbance expansion in the region.

Alarmingly, the Air Force is still pursuing its deeply sinister proposal to conduct Urban War Games (the MHAFB Urban CAS EA) over, within and surrounding 9 Idaho cities. The federal court in Idaho had ruled that the EA violated NEPA, but the USAF has appealed the ruling to the 9th Circuit. If the District Court ruling is struck down, then F-15 US and Singapore War Planes based at Mountain Home can use our towns and open spaces for War Games. If that takes place, it is quite foreseeable that MHAFB would tweak the Urban War EA to add in Qatar.

This proposed Qatar MHAFB War Plane beddown and linked INCREASE in War Game overflights/chaff use/flare use/pollution and overall Disturbance across the tri-state region is the very LAST thing the public wild lands, noise-sensitive wildlife, the recreational public and the residents of this region need.

It is long past time for the military at MHAFB to consider reducing and ROLLING BACK the already horrific noise from the existing "training" that takes place in Owyhee County and elsewhere, and decrease the number of military War Game overflights that are impacting noise-sensitive wildlife and the public over a tri-state region. Please fully consider alternatives to significantly REDUCE both air and ground activity from military war training associated with MHAFB.

Just a few weeks ago, the USGS released a report on Sage-Grouse and other sagebrush wildlife species seriously declining with Sage-grouse populations having declined by 80%. https://www.usgs.gov/news/new-research-highlights-decline-greater-sage-grouse-american-west-provides-roadmap-aid?qt-news_science_products=1#qt-news_science_products

1

The full USGS report is found here: https://pubs.er.usgs.gov/publication/ofr20201154

The current War plane overflight horrific disturbance especially in the Idaho lower flight level areas must be studied for its detrimental impacts on noise-sensitive Sage-grouse. The rampant use of chaff and flares must be examined. The grind litter from military plastic parts released in this just continues to show up in ever larger amounts across this landscape. the US military is conducting a giant littering program with its plastic debris releases. Moreover, military flares start range fires. There have been recent documented Oregon military flare-caused wild land fires in crucial Sage-Grouse habitat from military overflights taking place at Hart Mountain NWR in a different Military airspace. The full adverse footprint (existing and foreseeable and increased under the Qatar proposal) in on-the-ground disturbance associated with MHAFBs ever-expanding land-based activities must also be assessed.

There must be a hard integrated EIS look at the highly significant existing detrimental military activity disturbance footprint on this entire region, and on the regions' wildlife, public recreational use and enjoyment, and the region's residents.

Please apply EACH AND EVERY CONCERN raised in WLD's Scoping comments for the MHAFB Supersonic Overflight proposal (Attached) to this current Qatar proposal which appears to be strongly linked to the Qatar war game activity expansion EA.

The Air Force must prepare a full integrated EIS for all of these schemes, and fully assess the current military activity direct, indirect and cumulative footprint in Idaho, eastern Oregon, and northern Nevada.

The USAF's current very harmful adverse impacts to the region's wildlife like Sage-Grouse and Bighorn Sheep, and to migratory birds, native raptors and recreational uses — as well as the health of the underlying growing human population that is increasingly exposed to incessant disease-inducing overflight noise, to air pollution from military activities, to skies dimmed with contrails, to increased wild land fire risk, and to exposure to harmful activities/technology/substances used by the military in its activities. Such substances range from PFAS and the PFAS plume at MHAFB, to other toxic chemicals used by MHAFB in its activities to laser use to radar use.

The full array of climate harms being caused by all the military activity associated with MFAFB must also be fully assessed - greenhouse gas releases, contrails, ground disturbance reducing carbon sequestration of vegetation, endless consturction, etc.

New full and complete baseline wildlife and noise studies must be conducted across this landscape. They must reflect the actual, immediate noise effects on people and wildlife - and not noise averaged over long periods of time. They must accurately reflect the terrifying "starlet effect" of sonic booms and War planes suddenly appearing in agh field of view, Full and detailed review of the ever-increasing scientific information on the highly detrimental noise effects on wildlife habitats and on human health must also be provided. The adverse effects of the total noise footprint affecting humans and wildlife must be provided.,

The BLM must require that MHAFB conduct a full and integrated EIS

This Qatar activity will impact areas of existing BLM ROWs on public lands - including the access routes to emitter and no drop sites, to the Grasmere radar facility and other military ground-based activity overseen by BLM.It will affect the GPS rambling in the Bruneau-Grasmere region the USAF authorized under one if its endless segmented piecemeal EAs - none of which ever took a hard full look at the complete adverse footprint of military activity.

We hope to submit additional comments - but we urge you to abandon this proposal. It's long past time to reduce rather than increase the military disturbance to this sensitive region and its wildlife and people.

Why is there no public meeting schedule provided? We request public meetings.

i note that the Certified letter I received about this was dated as mailed on 5/14/21. Yet the scoping notice letter is dated 4/27/21.

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Sincerely,

Katie Fite
Public Lands Director
WildLands Defense
PO Box 125
Boise, ID 83701
[redacted]

WILDLANDS DEFENSE

Katie Fite
PO Box 125
Boise, ID 83701
[redacted]

11/24/19

RE: Comments on the Idaho, Oregon Nevada Supersonic EIS – Mountain Home AFB Airspace Optimization EIS

http://www.mountainhomeafbairspaceeis.com

Mountain Home AFB Airspace Optimization EIS,
1740 East Fairview Ave,
PMB 20,
Meridian, Idaho 83642

Dear Decisionmakers,

Here are comments from WildLands Defense on the vague scoping Notice and information-deficient public meetings for the Supersonic EIS. WLD attended the Boise Scoping meeting and provided written comments there, as well as comments to Air Force personnel who provided no specific information despite repeated inquiries by myself and others in attendance. It is a matter of significant concern that the public has not been provided with any specific levels/flight floors for Oregon-Nevada overflights and specific proposals. The same concerns apply to supersonic overflights across the region that the Air Force seeks to be trying to impose, "terrain masking" and other activity that has potential for tremendous disturbance to wildlife and wild places. The Meeting was nearly devoid of any information to allow for informed comment, There was NO information provided on the current status of Sage-grouse, Bighorn Sheep populations across the region, and how much they have declined since the Air Force gained low level flights and other training activity in the affected Ranges, MOAs and region. There was no baseline information or data provided on the current impacts of incessant low level overflights on wildlife now targeted by the Air Force for even worse aerial assaults on habitat.

The people of southern Idaho are tired of the increasing military footprint in the region. We have already largely been deprived of enjoyable use in several areas of the Canyonlands due to the prolonged noxiously loud military overflights - for example, portions of the Bruneau-Jarbidge River, Jacks Creek, Battle Creek-Big Springs. Now the military wants to inflict this same level of Sonic Hell – or worse - with low level supersonic activity and "terrain masking" which sounds like flying down in the canyons and between mountain peaks – across two more states and add even worse supersonic flight levels in Idaho.

The Federal Register Notice contains an incorrect Link to the military EIS site with information and where the public is to provide comments. http://www.mountainhomeafbairspaceeis.com is the correct web address. Instead, the Fed Register Notice contains http://www.mountainhomeafbairspaceeis. com

Further, the address, once corrected leads to a dot com Website, and not a governmental Website. Why? How will this affect the public's ability to FOIA information.

Once one gets to a Web address that works, one has to "register" to submit a comment – another hurdle for the public.

Further, the mailing address is not to a government address – but to a PO Box at Postal site in Meridian. What is going on here, and why are there so many aberrations?

Rigorous NEPA Review Is Essential

NEPA is the "basic national charter for protection of the environment." 40 C.F.R. § 150 0.1. "NEPA requires that a federal agency consider every significant aspect of the environmental impact of a proposed action and

inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Pit River Tribe v. U.S. Forest Serv.*,13 469 F.3d 768, 781 (9th Cir. 2006) (quoting *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1153–54 (9th Cir. 2006)). "The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(c). The Council on Environmental Quality ("CEQ") promulgated rules implementing NEPA, which apply to all federal agencies, including the Air Force. *See* 40 C.F.R. pt. 1500.

For "major Federal actions significantly affecting the quality of the human environment," federal agencies must prepare an environmental impact statement. 42 U.S.C. § 4332(C). CEQ regulations define "major federal actions" to include "new and continuing activities" with "effects that may be major and which are potentially subject to federal control and responsibility." 40 C.F.R. § 1508.18. For purposes of NEPA, the "human environment" includes "the natural and physical environment" as well as "the relationship of people with that environment." *Id.* § 1508.14.

An EIS must contain a detailed discussion of direct, indirect, and cumulative environmental impacts, *Id.* § § 1508.7, 1508.8; 1502.16, and appropriate measures to mitigate adverse environmental impacts, *Id.* § § 1502.14, 1502.16. *City of Sausalito v. O'Neill*, 386 F.3d 1186, 1206 (9th Cir. 2004). Impacts or effects of a proposed action include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." *Id.* § 1508.8. An agency must ensure the "professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements" and "shall identify any methodologies used and shall make explicit reference by

footnote to the scientific and other resources relied upon for conclusions in the statement." *Id.* § 1502.24. NEPA's implementing regulations also require that an agency address "appropriate mitigation measures not already included in the proposed action or alternatives." *Id.* § 1502.14(f); *see also id.* § 1502.16(h).

In addition, a final EIS should respond to comments received on the draft EIS among other options, supplementing, improving, or modifying the analysis or explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position. *Id.* § 1503.4(a).

As we describe in our comments here, and the information that we incorporate by reference, there is already a huge military disturbance burden across this region. We are submitting on cd and include by reference information on MHAFB's highly controversial and unprecedented imposition of an Urban War Game range over the people of southern Idaho – using our cities and our bodies and as 'chaos" in sinister War activities; information on MHAFB's 2016 Convoy Training EA that allows closure of Highway 51/GPS scrambling/and use of unknown illumination and other devices and materials as well as upgraded and expanded Saylor Creek Urban War sites; the Singapore AF Bed down and expansion EAs (the "crowding" in the two MOAs appears to be due to foreign aircraft, transients and others from outside Idaho); earlier airspace expansion over a significant area of the Jarbidge Wilderness, an EA for use of White Phosphorus (used in War Crimes) at Saylor Creek, and a whole series of other segmented, piecemeal actions.

We stress that MHAFB military training activity has changed dramatically since the initial EIS decades ago, which authorized the current activities in these airspaces. It is time for comprehensive analysis of ALL this activity, and this must be undertaken in the supersonic EIS process.

A Settlement with the Shoshone-Paiute Tribe and a Settlement with GOLD also altered and shifted activities from that analyzed in the old EIS. The Sho-Pai Settlement is informative because it lays out what the Tribal people who had been subjected to MHAFB War Plane noise found acceptable to live with.

Under this SS EIS, please consider the "Humanly Tolerable Alternative" as the flight levels and the activity the Air Force agreed to for Duck Valley Reservation in the Sho-Pai settlement. Public land users deserve an environment where they can visit, enjoy nature, view wildlife, experience thriving wildlife populations not greatly depressed/decreased numbers, and otherwise enjoy the natural environment where they are not subjected to harmful and stressful levels of noise and other noxious Air Force activity. From the F-35 DEIS. Thus such an alternative is highly reasonable. The recent F-35 DEIS describes:

Flight restrictions are in place over the Duck Valley Reservation. Overflights are not authorized within a 5-nautical mile (NM) radius around the town of Owyhee, Nevada and are restricted to 15,000 feet above ground level (AGL) and above over the remaining portions of the reservation. Supersonic operations and the use of chaff or flares are not authorized over any part of the Duck Valley Reservation or within the Saddle A and B MOAs/ATCAAs.

Further, at the time of the GOLD settlement, Sage-grouse were not even a BLM sensitive species. Their populations (and those of many other sagebrush-dependent wildlife) have plummeted since the old MHAFB EIS and since the GOLD Settlement. While restricting overflights by canyons for a small period in spring, (canyons are not inhabited by Sage-grouse), the Settlement resulted in shifting low level and supersonic War Plane activity over top of Sage-grouse spring lek, nesting period and early brood rearing habitats. There has been considerable sage-gorse research on recent years, including the very harmful effects of intermittent loud noise on sage-gorse

(associated with road truck noise in Wyoming energy development areas). The War Plane noise is much louder. Birds were displaced from leks due to noise. Stress hormone levels were found to be elevated. See Blickley research papers on cd. There have also been a series of studies showing how noise interferes with songbird activity during nesting season, and many other studies that show adverse impacts of noise to people and animals, and the cumulative effects of noise exposure.

The implications of the Sho-Pai Settlement are that t reveals what was perhaps tolerable to people (note than many wildlife species have much keener senses of hearing, and may also be very startled by the sudden visual appearance of War Planes, too and so may suffer much greater impacts from War P{lane noise and activities than humans). Thus, it is likely that considerably MORE protective flight and noise levels must be considered – examples – overflights at 20,000 plus ft., no sonic booms, etc. This must also be viewed as a reasonable alternative and simulator activity combined with use occasionally at other ranges must be considered a reasonable alternative as well.

Military Regional Expansion Impacts

This Supersonic proposal is one of several alarming Military Airspace and/or land Grab efforts meeting strong public resistance in the West. The Military already is authorized for all manner of highly destructive and harmful activities across much of the West – with giant airspaces, very large land areas, etc. Please see info on cd on Navy Fallon proposed expansion over large areas of BLM lands, and Nellis proposed expansion in the Desert National Wildlife Refuge, the horrific noise of the Navy Growlers on Whidbey Island, and efforts to expand in the area of the Olympic peninsula and National Park and USFS Cascades lands. Plus there was a recent airspace

expansion in the vicinity of Hart Mountain (and a recent wildfire that consumed Sage-grouse habitat caused by a military flare there).

The EIS must comply with NEPA in several fundamental ways along with honestly considering a reasonable range of alternatives. These include assembling and taking a hard look at:

*Full and adequate and comprehensive scientific and baseline information environmental conditions across the affected landscape and region. This applies to the A-10s and all the current uses of the MHAFB Range Complex, including the Urban War Range MHAFB has recently established in and surrounding nine Idaho cities.

*Full and detailed analysis at significant environmental impacts on including human health and quality of life, and short and long-term impacts on habitats and populations of wildlife species and other native biota, including species recognized as "sensitive" and/or rare because their populations are already declining. This includes adequately considering and assessing indirect and cumulative impacts of the plethora of threats to native ecosystems, sensitive wildlife species migratory birds, and human populations that will suffer these horrendously loud plane activities. It includes the battery of military War Plane and other overflight noise/disturbance and on the ground military activity the human population in southern Idaho currently endures. This must include full analysis of foreseeable actions – including potential F-35 bed down and/or use of the range in southern Idaho.

*Consider a reasonable range of alternatives that include changing to a quieter airplanes; increasing activity in areas with few sensitive species and conflicts – UNLIKE the Owyhee Canyonlands region; consideration of the Humanly Tolerable Overflight/Activity alternative (i.e. the flight levels and supersonic activity and other military activity restrictions that the Duck Valley

Tribes got in their Settlement with the Air Force); Combining more Simulator training with higher flight levels and less supersonic activity; prioritizing use of MHAFB ranges by US AF planes stationed at MHAFB and NOT promoting and hyping the ranges as the AF and IDANG have frequently done to try to build their empires and get more use here - thus making ranges more "crowded". Or did the AF want this as an excuse to expand harmful activities even more, and conduct lower level military training that will terrorize the Sage-grouse, Antelope, Bighorn sheep and people recreating on and/or living near the proposed altered MOAs in eastern Oregon and northern Nevada?

NEPA requires agencies to analyze "reasonable alternatives to the proposed action and the 'no action' alternative in all EAs and EISs, as fully as the proposed action alternative." 32 C.F.R. § 989.8. Reasonable alternatives are defined as those that "meet the underlying purpose and need for the proposed action and that would cause a reasonable person to inquire further before choosing a particular course of action." These specifically include alternatives outside of the jurisdiction of the preparing entity and reasonable alternatives raised during the scoping process, and combinations of the various alternatives.

Civilians including vulnerable children may suffer lifelong hearing loss and cognitive impairment, serious health problems, and lowered quality of life, from exposure to these extreme levels of noise. Thus, the alternatives we suggest as "Humanly Tolerable" based on the Duck Valley Settlement are highly reasonable.

MORE Specific Comments Based on F-35 EIS Comments

We are modifying portions of our very recent F-35 EIS comments for this SS EIS process. Since MHAFB provided virtually no Scoping information on its proposal, we believe all of this may be relevant. Plus the F-35s, if based in Boise, will have a very larger adverse footprint, as will MHAFB Ranges F-35 use from planes based anywhere.

The western U.S. is already crowded with War planes and MOAS, MTRS, Bombing Ranges, Emitter, No Drop and other sites. Westerners are increasingly alarmed at the impacts of military Land and Airspace activities on wild lands and wildlife valued by westerners.

Westerners have already shouldered a great burden of military "training", and harms to public lands including large military withdrawals and incessant damaging overflights and other military activity across vast areas of the landscape. Recent Nellis expansion efforts

into the Desert National Wildlife Refuge have been met with strong Nevada opposition. We note that F-35s based in Boise would certainly use the MHAFB Range, and may also use Nellis, Fallon and other Ranges (air and land space) and add to the awful noise and disturbance footprint of other bases activities. The same wildlife species (like Sage-grouse) and even the same individuals (species like Brewer's Sparrow or Sage Sparrow in migration/wintering) maybe exposed to noise in northern NV may suffer serious noise disturbance, flare-caused wildfires consuming habitats that then become converted to cheatgrass and flammable weeds, and other adverse effects of military flight activity near Fallon or Nellis. The full regional and range-wide adverse impacts of military War Training activity on public lands and Withdrawn lands across the region have never been assessed (noise, flare and range fires, chaff, ground disturbance, species impacted, habitat loss and fragmentation, cumulative effects, etc).

Recent proposals for a large withdrawal of land by Navy Fallon have also been met with strong public concern and opposition. https://www.nevadawilderness.org/fallonexpansion

In May, 2019 the Nevada Legislature passed Assembly Joint Resolution 7 - "Expresses the opposition of the Nevada Legislature to the proposed expansion of the Fallon Range Training Complex." The resolution was introduced by the Committee on Natural Resources, Agriculture, and Mining but a special thanks goes to Assemblywoman Peters for her work championing this resolution. A huge thanks to all of you who called, wrote and attended meetings at the legislature!

Also: https://www.airforcetimes.com/news/your-air-force/2019/04/21/nevada-assembly-against-expanding-nellis-military-training-range-into-refuge/

The Nevada Assembly has gone on record as opposing proposed expansion of the Nellis Air Force Base testing and training range into the Desert National Wildlife Refuge.

See also:
https://www.nevadawilderness.org/nevada_legislature_sends_strong_bipartisan_message_to_congress_opposing_military_expansion_in_wildlife_refuge

The military already controls half of the 1.6 million-acre Desert Refuge and has closed much of it to the public. The proposed expansion would give the Air Force control of another 300,000 acres, including the Sheep Range mountains, which the Nevada Department of Wildlife describes as "irreplaceable" habitat in the "heart" of the refuge. In addition to one of the largest and most important bighorn sheep herds in the American Southwest, the Desert Refuge is home to the imperiled desert tortoise and hundreds of other mammals, birds, reptiles and native plants.

https://www.mcclatchydc.com/latest-news/article210352449.html

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The Mountain Home AFB's very recent imposition of deeply disturbing War Games across and among nearly half of the population of Idaho has also been met with serious concerns, and litigation (see Complaint excerpts below). The new highly controversial MHAFB Range overlaps considerable airspace the F-35 War Planes based in Boise would also use, and is nearly touching the MHAFB MOAs. So in reality there is now one huge recently expanded MHAFB War Range encompassing areas from meridian to Burley. The description of the 90 minute bouts of F-35 activity described at times in the DEIS sound suspiciously like Urban War training activity. Yet the EIS is silent on the air and ground activity associated with Urban War F-35 activity, and where specifically it would take place, including any foreseeable future changes once the EIS ROD is issued.

https://taskandpurpose.com/idahoans-to-the-air-force-please-to-stop-secretly-using-our-cities-for-target-practice

A cadre of Idaho residents are suing the Air Force over the "extraordinary and unprecedented" urban training exercises planned to take place in nine cities across the state.

See https://www.counterpunch.org/2018/04/18/chaos-in-urban-canyons-air-force-efforts-to-carve-a-civilian-population-war-game-range-across-southern-idaho/

This describes the use of Boiseans homes, public spaces, our bodies, our pets, our wildlife and open spaces as part of a War Range, where the AF uses us as "chaos", incessantly flying overhead for prolonged noise and pollution bouts.

From the Urban War litigation Complaint:

The Urban CAS Training Project endangers the health, safety, and quality of life of Idahoans, as well as birds and wildlife. Hundreds of thousands of residents in Boise and other cities and towns in southern Idaho would be exposed in their homes, work places, and popular recreation areas to disruptive jet noise with the potential to interrupt sleep cycles, interfere with work and school, and otherwise harm their quality of life.

Despite the extraordinary and unprecedented reach of the training activities, the Air Force approved the project without preparing a full Environmental Impact Statement (EIS) as required by the National Environmental Policy Act (NEPA). Instead, the Air Force relied on a November 2018 Final

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Environmental Assessment (Final EA) and Finding of No Significant Impact (FONSI) to assert there would be no significant impacts.

... The Urban CAS Training Project will involve repeated overflights by F-15 jets and coordinated operations by military personnel on the ground. The training operations will use existing American F-15E and Singaporean F-15SG aircraft and flight teams operating out of Mountain Home Air Force Base, located in southwestern Idaho.

The selected action will involve up to 160 "Training Events" each year for an indefinite number of years. Each "Training Event" would entail a collection of "Training Operations"—up to 400 in a given year—that would take place within a single urban area on a given day.

Before each of the "Training Operations" begins, and during any operational hand-offs between pairs of jets, two or four jets will begin flying in a circular holding pattern maintaining a fifteen-nautical-mile distance from an urban center. They will circle the urban center an estimated three times an hour for an unknown period of time.

The Final EA describes this holding pattern as occurring on the outskirts of town, but in Boise, for instance, the holding pattern would be directly over major population centers including Meridian, Eagle and Nampa; the Snake River Birds of Prey National Conservation Area; and would impact numerous popular recreation areas including the Boise Foothills.

The holding patterns around other urban areas identified in the CAS Project, including Twin Falls, Mountain Home, Glenns Ferry, Grandview, and Bruneau, will also occur over sensitive wildlife habitats and public lands, including the Bruneau-Jarbidge Rivers Wilderness, Big Jacks Creek Wilderness, Little Jacks

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Creek Wilderness, the King Hill Creek Wilderness Study Area, and the Owyhee Canyonlands region.

Once the military jets are in their holding patterns, a convoy of up to five vehicles and twenty soldiers will enter the urban center and act as the "Opposing Forces," while a convoy of up to five vehicles and twenty soldiers would act as the "Friendly Forces." These convoys will be comprised of both American and Singaporean forces and they will drive unmarked cars, travel through public spaces, and be disguised as plainclothes civilians.

⋯ The Air Force stated that the threshold for human sleep interference is an SEL of 90 dBA, which presumes a 25 dB noise reduction attributable to a building envelope. Because the Air Force predicted that the SEL of Urban CAS Project training would not exceed 72.3 dBA, the Final EA concluded that the Urban CAS Training Project will have negligible impacts on sleep. But there are several key flaws with this analysis of sleep impacts.

First, the chosen sleep interference threshold of 90 dBA presumes a 25 dB noise reduction attributable to a building envelope, and therefore measures only the probability of awakening individuals who are sleeping indoors. Anyone sleeping outside or in a tent would experience sleep interference at an SEL of just 65 dBA, well below the projected SEL for the Urban CAS Training Project. The Air Force failed to acknowledge or consider the Project's likely impacts on the homeless population and those recreating and camping outside.

Second, the Air Force failed to analyze how a full night of flyovers—as opposed to a single flyover—would impact sleep. The Air Force's selected SEL metric only indicates the threshold at which a single noise event is likely to awaken individuals from sleep.

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Repeated noise events, such as those proposed, are known to substantially increase the likelihood of awakening at any given decibel level. See, e.g., Department of Defense Noise Working Group, Using Supplemental Noise Metrics and Analysis Tools 17 (2009). Nonetheless, the Air Force failed to provide any data on the number of times aircraft would fly over a given location during any given night of trainings, or to analyze the impacts of repeated flyovers.

The Final EA only addressed the potential negative impact of overflights fully waking civilians, and it failed to consider other well-documented impacts of nighttime noise, such as impaired or delayed sleep, which can have serious health and economic impacts.

Speech Interference from Aircraft Noise The Air Force used an analysis of the Maximum Sound Level ("L_{max}")—the max dBA at a single point in time—to determine the impact of individual flyovers on speech and communication. The Final EA estimated that the L_{max} of individual flyovers will not exceed 59.3 dBA and asserted that aircraft noise will not interfere with communication unless the L_{max} is over 75 dBA.

Similar to the Air Force's analysis of sleep, there are several key flaws with its analysis of the impact of overflights on conversations.

Many of the flaws are identical to the problems noted above in regard to sleep disturbance, because the 75 dBA standard for speech interference assumes 25 dBA of protection from being indoors. Outdoor speech interference can occur at just 50 dBA, a level well below the stated 59.3 dBA L_{max} for the Urban CAS Training Project.

Thus, the Urban CAS Training Project has the potential to interfere with the communications of anyone spending time outside in Boise or other parts of southern Idaho— outdoor workers, hikers and runners, students on field trips,

audiences at outdoor amphitheaters, and customers dining on patios. Outdoor conversations are incredibly common, and interference with them can cause as much or more annoyance and stress as noise indoors. Nevertheless, the Air Force failed to discuss interference with outdoor conversations at all in the Final EA's analysis of speech interference. [NOTE THESE SAME IMPACTS AND CUMULATIVE IMPACTS WILL RESULT FROM MHAFB "TRAINNG"].

Noise Pollution and Community Annoyance: The Air Force further failed to consider potential impacts to the quality or characteristics of the soundscapes within and around the selected urban centers, and the annoyance such impacts will cause.

To assess potential soundscape impacts, the Air Force estimated the cumulative impacts of aircraft noise on each urban center using the Day-Night Sound Level (DNL)—the average dBA level in a 24-hour period with a 10 dBA penalty added to noise between 10:00 p.m. and 7:00 a.m. This DNL was then compared to the background noise levels in the impacted areas. For this analysis, the Final EA grouped the targeted urban centers into three categories by size and estimated the background noise level, calculated as DNL, within each as follows: large, 57 dBA; medium, 52 dBA; and small, 40 dBA.

Against this backdrop, the Final EA stated that a modeling program showed the DNL for the Urban CAS Training Project will never exceed a 37 dBA DNL and will thus have no impact on the soundscape of the urban center at all. The Final EA cited studies from 1974, 1978, *and 2003 to claim less than one in ten million people will be annoyed by this sound level, also asserting that the sound will "blend naturally with the existing soundscapes in these areas.".*

However, merely stating that a model predicted there would only be minor noise impacts from the training is insufficient to meet the "hard look" requirement of NEPA. The Air Force failed to disclose any of the variables in height, speed, or flight pattern used to produce this model and did not disclose if the calculation considered changes in elevation, weather, ground impedance, or other pertinent variables which affect the noise caused by overflights. It also failed to disclose whether the projected DNL was based only on operational days or was based on a calendar year, such that non-operational days might artificially depress its noise predictions.

Nearly all of these very same flaws and issues described above in excerpts from the legal complaint filed over MHAFB's Urban CAS/War Games plague the F-35 DEIS, as well – and are highly foreseeable in the MHAFB Supersonic EIS proposal (and impacting public use of public lands and a broad diversity of wildlife species that will suffer incessant horrific noise and startling disrupting military activity) – especially if the Air Force uses standard military EIS consultants who twist fact and reality to justify warped analysis (such as all kinds of averaging of noise, omission of key data, etc.) to give the military the answers it wants. Boise and other SW Idaho area cities that will also suffer F-35 overflights are already crammed full of military uses disturbance and noise, and the F-35 will make matters significantly worse with INCREASED flight numbers, a much louder War Plane, overflights of 90 minutes (which sound a lot like F-35s being used in Urban War) and other significant disturbances. We incorporate the complaint in its entirety into our comments on often flawed noise modeling, the use of 'averaged" sound when it is the immediate effect of the sound on people and animals that is so harmful and disturbing. We are very concerned about noise modeling, arbitrary self-serving statements, glib generalizations that serve to make environmental harms. Boiseans and residents of other Idaho cities in southern Idaho now facing increased overflight noise in town and being used

without our permission as "Chaos" in Urban War Games - will also face even worse noise when they venture out to public lands. This will result in cumulative adverse impacts – physiological and psychological both.

The Air Force has already begun Urban War activity over/in Boise. The results have been very loud and distressing, interfering with citizen's ability to concentrate on work, and producing dull aching sensations in the ear for hours following such bouts. See e-mails from USAF Rep. to WLD Fite confirming noise experienced by Fite and others in Boise was indeed Urban CAS War Plane noise.

The F-35 DEIS on p. 2-5 states: Total proposed airfield operations **numbers**, as noted above, would account for 6,122 F-35A arrivals and departures, regardless of the alternative. So the F-35 EIS plans for MORE War Plane flights. Is THIS part of the reason MHAFB claims the existing Idaho MOAs are getting crowded? Is this Supersonic EIS being prepared in part to make more area for the F-35 or other horrifically loud War Planes to terrorize animals? Boise would experience over 7000 F-35 flights – an 18% INCREASE in War Plane flights from the current A-10 number.

DEIS ID-3. The F-35 DEIS states:

Under this alternative, the National Guard Bureau (NGB) anticipates that by 2024 all 18 F-35A aircraft would be flying up to 7,274 operations per year at the airfield, compared to 6,152 annual operations currently with the A-10 (Table ID2.1-1). In total, Boise Airport currently supports about 143,665 operations annually (including the military operations), with 82 percent consisting of commercial and civilian flights occurring 365 days per year. Based on proposed requirements and deployment patterns under CAF, the F-35A operational aircraft would fly some operations during deployments at other locations for exercises, or in preparation for deployments. During such

periods, home station flying operations would be reduced accordingly. Some of the home station missions could involve inert ordnance delivery training (within the scope of existing National Environmental Policy Act [NEPA] documentation) at approved ranges.

ID-4. The DEIS states: *124 FW A-10s currently do not use afterburner at the airfield, as the A-10 is not equipped with an afterburner. NGB anticipates that the F-35A may use afterburner for take-offs no more than 5 percent of the time. F-35A operations would adhere to existing restrictions, avoidance procedures, and the quiet-hours program at Boise Airport, known as course rules. The A-10s at Boise Airport currently fly about 2 percent of the time between the hours of 10 p.m. and 7 a.m. (environmental night). At this percentage, the A-10s annually fly about 50 operations during environmental nighttime hours, with the majority of the operations after 10 p.m. being associated with arrivals back to the installation.*

There has now been extensive reporting on information from sites where F-35s are already based that **the F-35 uses afterburners as much as 50% of the time!** That is a dramatic INCREASE in afterburner use from the 5% use claimed in the military EIS. This appears to be purposeful deception on the part of the military. Any increase in afterburner use above the 5% in the EIS will significantly INCREASE the number of homes, people, pets, wild animals, open spaces/public space/parks, health care facilities, etc. exposed to high and harmful noise levels.

This also highlights what appears to be a significant lack of candor in military EISs.

Originally, the Vermont Air National Guard and the Pentagon estimated that the F-35s coming to Vermont starting this fall would rarely use afterburners. In their detailed 2013 Environmental Impact Statement (EIS), the military estimated that the planes would use afterburners for roughly 5% of flight operations. This estimate not only influenced the

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contours of the resulting noise maps, but also the overall decision of whether Vermont was a good fit for the planes.

Across the country, as other communities have been considered to base the planes, the military has plugged in similar afterburner predictions. Yet according to an internal Pentagon document obtained by VTDigger, real afterburner use on the F-35 may be much higher than publicly predicted.

As the Air Force moves forward with environmental impact reviews at other bases, it appears to be counseling officials to calculate afterburner use for at least 50% of all flight operations. The Air Force has already delayed at least one base review by at least four months "due to some discrepancies and concerns over F-35 flight elevation and afterburner usage."

"It's all just a big Charlie Foxtrot," one o"cial involved in this review wrote to colleague in an email, using military slang for a messy situation. This o"cial added that the chaotic situation "could have been addressed over a year ago when we all questioned the validity of only using 5% [afterburner]." He added that this new need to calculate higher afterburner use for the F-35 will "delay or at least complicate" environmental reviews for the plane going forward".

https://vtdigger.org/2019/08/29/docs-show-f-35-afterburners-use-may-be-higher-than-publicly-predicted/ Article by J. Craven 4/29/19. ***Docs show F-35 afterburners use may be higher than publicly predicted***

Once F-35s are bedded down, night-time flights may become much more frequent and disruptive including for several days at a time. https://kutv.com/news/local/hill-afb-wings-scheduling-nighttime-flight-activity Night time activity over remote ranges may have serious adverse impacts to many species of sensitive wildlife, as well as be deeply disruptive to recreational users.

The Air Force SS EIS must provide full details of the current number of night-time flights taking place – at all locations and elevations in the airspace in each MOA, and the number of night-time sonic booms and elevations across the MOAs and use areas. The change in this under the actions in EIS alternatives must be clearly laid out and detailed, and this must take into consideration noises in all weather conditions, and noise from all types of war Planes and other military activities that may use these airspaces and ranges. Night-time loud noises may displace animals from roosts, cause them to

panic, make them more susceptible to predations, etc. Birds including sage-gorse and migratory birds, select roost areas very carefully in sites where they may maximize detection of predators and/or sites that may in other ways offer some protection from predators, Starling loud noises (or bright lights) can cause birds to flush. In public lands in this area, this may prove very lethal due to collisions with barbed wire fences --- even if bids that are displaced don't get preyed upon. There is extensive literature on sage-grouse mortality collisions with fences. BLM in some limited instances has marked fences with bright reflective material that falls off, loses reflective character and still does not stop a significant number of birds from colliding with fences, only a few fences are marked. While birds disturbed at night by sudden Boom noises or planes suddenly appearing roaring loud on the horizon, birds may also be displaced during the day and collide with fences. Imagine what the impacts may be if grouse in wintering habitat are roosting and are startled and collide with fences.

Two weeks ago, a friend and I were camped in eastern Oregon in the Paradise North MOA (West Little Owyhee) where there are often loud and disruptive night-time overflights at the existing flight levels. There was a sonic boom. The sonic boom (at whatever the existing level is) caused my one dog to yelp and jump in the car, and my other dog to bark. HOW much lower and much more disruptive will the changes proposed in the Supersonic EIS be? And how much MORE might such noise impact wild animals subjected to it routinely as the area is turned into even more of a military playground under this Supersonic EIS?

The SS EIS must honestly reveal and assess the actual amount of time when afterburners, and all other possible overflight scenarios, would be used in any flight activity by all types of planes that may use ranges/sites in the region. This calculation must then be employed to develop noise contour mapping

and noise level analyses, and must be provided to the public in an EIS. If Afterburners are used 25% of the time, how will this change all noise contour levels? If afterburners are used 50% of the tine, how will this change all noise contour levels? Where would such flight be expected to be used? Are afterburners used in getting planes to fly at Supersonic speeds?

Please also include full and detailed noise, startle and other analyses taking into account that multiple airplanes may be overflying at excruciatingly loud levels. How do 2 or 4 or more planes close together increase noise levels even more? I will never forget the horrific noise when FOUR War Planes overflew me at very low levels NE of riddle. My ears/head had a hollow ache for days. This also brings up another concern that myself and several other people who spend a lot of time in the Owyhees and other areas overflown by the Military have – i.e. that ourselves and/or our vehicles become "Targets of opportunity" and are incorporated by the military in its War Games. This happens.

Will planes over-flying all of these areas carry only inert ordinances? Will they be carrying live ordinances at any times? What type of ordinances (real or fake) will they be carrying? Even the release of an inert ordnance can have significant impacts. How do the weight and other characteristics of ordnances of any type (and what are they and what toxic or other materials do they contain) impact use of afterburners or impact the noise generated by War Planes to conduct various training maneuvers??

It seems like, at a minimum, the inert ordnances will be on planes nearly all the time.

NOTE that the F-35 EIS touts the Owyhee tri-state region Bombing Ranges and airspace.

The F-35 DEIS failed to reveal that F-35s are being designed to carry nuclear weapons. So it appears that planes that may potentially be using the MHAFB Ranges would be involved with nuclear weapons. Where will any active/live/for real ordnances (including nuclear weapons) be stored? What are the dangers to the environment, the civilian populations, wildlife, etc. from use and storage of inert, active/real ordnance including potential for nuclear weapons? What planes carry nuclear weapons that may use the ranges?

See https://vtdigger.org/2019/08/13/burlington-city-council-unanimously-opposes-nuclear-mission-for-vermont-guards-f-35s/

See also this nuke cheerleading piece: Mattis also cited the emergence of the F-35 as a "nuclear delivery system" in the context of expressing grave concern that US nuclear weapons modernization has not, in recent years, kept pace with a fast-changing global threat environment.
This article references "accelerated development" of F-35s with this capability.

https://nationalinterest.org/blog/buzz/stealth-f-35-americas-next-nuclear-bomber-82401

There are also many other modifications being proposed, and it is highly likely that newer designs of the F-35War Plane may be even louder, especially as more and more technology is strapped on. See for example:

https://www.vice.com/en_us/article/j57e9k/now-the-f-35-is-also-an-anti-nuke-weapon

The Supersonic EIS must fully examine the public health and wildlife impacts of all aspects of military training and War plane overflights in the MOAs including use of laser technologies, radars, and all other technologies (for example hypersonic weapons) to be used and/or that are in the development stage.

Please also fully assess the potential for drone use in association with War Plane activity in the MOAs, and for non-human robotic pilots. In an era of

rapidly changing technologies, a credible EIS Must full disclose the military devices, weaponry and gadgetry the public, wildlife and wild land ecosystems may be exposed to. This is supposed to be, after all, about TRAINING. With training comes mishaps. See for example:

https://www.msn.com/en-us/news/us/air-force-jet-accidentally-fires-rocket-into-arizona-desert/ar-AAGT5VX?ocid=spartanntp

Drones are known to cause significant disturbance to wildlife like Golden eagles, to startle and annoy antelope, and have other adverse impacts. This would be additional stress and disruption to wildlife that suffer the extreme noise levels under the Supersonic EIS.

What are the emissions and air and water pollution levels from all aspects of the current MHAFB War Training in the MOAS and ground ranges? This includes pollution and environmental contamination from every mission and maintenance action, and any other activities. What constitutes the ordnance of all kinds that might potentially be carried on planes? How much fuel will be burned by each plane in a regular mission comparable in length and activity to the way the A-10s currently train? How does this all compare to the A-10? What is the fuel efficiency of the F-35 compared to the A-10 during all aspects of idling, take-off and flight?

What are all of the carcinogenic and hazardous materials that are used on the F-15,A-10, F-35 and all other planes during flight activities in these MOAs, and that may be used in all on the ground and maintenance activities?

The EIS must also provide full information on the activity associated with potentially more planes using these ranges and the use of carcinogenic PFAS/PFOS fire-fighting foam chemicals that have been much in the news lately due to the high levels of pollution and their insidious and permanent

contamination of ground, water and human bodies. The military used very high amounts of these chemicals in incessant training "drills" and other activities. What level of contamination currently exists? How has this been measured? In soil, water, and in air surrounding the base/site when sch chemicals are used? Note that MHAFB is already severely contaminated.

https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=1000302

The 9-square-mile Mountain Home Air Force Base (AFB) site is located on a plateau southwest of Mountain Home, Idaho. The U.S. Department of Defense established the base in 1943 as a training base for several bombardment groups during World War II. Site activities have included the use of hazardous materials for aircraft maintenance and industrial operations; on-site disposal of wastes in landfills and sanitary sewers; and the use of waste oil for fire training exercises and dust suppression. These activities contaminated soil and groundwater with hazardous chemicals.

With more flights, will there be more fire drills? How many drills are there annually currently, and how much use of these chemicals? Materials on some planes such as F-35s appear to be more flammable than some other War Planes. How do they compare? Would this mean more drills, and use of carcinogenic ground water body polluting fire-fighting chemicals?

This describes some of the MHAFB attempts to clean up the Air Force Superfund site: https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.Cleanup&id=1000302#bkground What is the cost to taxpayers? What could the cost to taxpayers be if additional pollution occurs? Please provide baseline information on the current levels of such pollution, well testing, soil testing etc. This EIS must address mitigation and it must explore bad case or worse case scenarios form all War Plane activity including any increased or altered activity and number or types of planes using facilities and air space if the drastic supersonic changes take place.

Airspace

The F-35 DEIS (ID-8-14) minimally described the airspace and Training/Bombing Range activity the F-35 would be engaged in. This greatly failed to provide an adequate analysis of the direct indirect and cumulative impacts of both the Air Force and the Guard's activities across the tri-state region. See also above discussion of Nellis, Fallon, Urban War.

Alarmingly, the F-35 beddown would result in an 18% increase in overflights of essential habitats for Bighorn Sheep, Sage-grouse, Antelope, many species of migratory songbirds, and other very important wildlife species habitats across this region. It would result in an increase in War Plane noise, and an increase in flare use (malfunctioning flares and/or pilot error or chance mishaps can result in flares igniting range fires), and release of polluting chaff.

Please fully lay out all the current BASELINE use of these materials across the MOAS and on the Ranges, and how much use has been authorized in various past EAs and EISs. The military currently uses White Phosphorus on its Bombing Ranges. How will training associated with the lower flight levels and Supersonic activity affect White Phosphorus use (causes range fires, used in War Crimes). How will increased War Plane numbers and use of airspaces across the West add to the existing burden of overflights, ground-based disturbance of wildlife (such as personnel accessing and using range areas traversing/traveling through public lands disturbing wildlife), etc.?

What are the WSAs, wilderness areas, WSAs, important or crucial wildlife habitats, state management areas, and what is their current ecological condition and value for sensitive and other wildlife species? What levels of military activity do these areas and vulnerable wildlife species like Bighorn

Sheep and Sage-grouse currently endure? Do different areas within MOAS suffer differing levels of War Plane activity?

As described in comments submitted on the Urban War scheme, and similarly here with F-35s: The training operations will affect numerous state and federal wildlife conservation and refuge areas and ecologically critical sites, such as the Minidoka National Wildlife Refuge and the Morley Nelson Snake River Birds of Prey National Conservation Area, which contain exceptional concentrations of raptors and songbirds during fall migration. The Intermountain Bird Observatory, located to the east of Boise and within the training circle, is another example of the unique areas adversely impacted by this proposal. While lacking special designations, there are many other areas within the selected training areas that contain exceptional shrub-steppe, mountain shrub, and mixed conifer habitats that are thought to be the primary feature looked for by migrating birds.

A Supersonic EIS must look at the full range potential effects of overflight decibel levels (how LOUD are all War Planes that will use these ranges and that will fly supersonically at various elevations including the flight floor in all airspaces? What very low level highly annoying sounds do these War planes also make? Low level sounds and sonic booms on important species, such as bighorn sheep and sage grouse.

Airplane noise has been shown to displace bighorn sheep and result in increased vigilance, coupled with increased energetic costs. Others showed that Bighorn sheep penned in an area with semi-regular overflights and rigged to heart monitors experienced an increase in heart rate during helicopter flights. See generally Larkin, Ronald P., Effects of Military Noise on Wildlife: A Literature Review, available at http://nhsbig.inhs.uiuc.edu/bioacoustics/noise_and_wildlife.pdf. See Blickley and other sage-grouse studies showing this species sensitivity to noise (on CD, other wildlife noise info in WLD Urban War comments also submitted on CD).

The predicament of many species of native animals has dramatically worsened since the old MHAFB EIS for the Ranges and Air Space, Please see info on CD submitted with these comments related to the Biodiversity Crisis, Avian Declines, and the Climate Crisis. This demonstrates a need for the AF to consider much reduced, higher and less harmful flight levels and other activity in this 2019 EIS process.

In the absence of definitive data on the effect of noise on animals, the U.S. National Research Council has proposed that protective noise criteria for animals be taken to be the same as for humans. We request that the Air Force follow this guidance.

Courts require federal agencies to discuss the effects of their actions on the quality of life for city residents. See Hanley v. Mitchell, 460 F.2d 240 (2d Cir. 1972); Glass Packing Institute v. Regan, 737 F.2d 1083 (D.C. Cir. 1984). Noise from individual F-35

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overflights would generate distinct acoustical events that would be sufficient to interfere with a wide range of daily activities, including relaxation, recreation, and activities requiring concentration. The Urban War "training" is already causing considerable levels of disturbance, So too is the Navy and other modified commercial airliner activity including "practice" landings at private airport facilities within the Boise airport (such as Jackson Jet Center) and "recon" activity planes incessant overflights disturbing Boise residents and our quality of life. The impacts of the latter have NEVER been addressed in any NEPA analysis.

The Supersonic EIS must fully consider significant quality-of-life impacts. In fact, the military often dismisses the potential for such impacts by claiming that overall noise levels would not be incompatible with current land uses. This is not an appropriate proxy for quality of life impacts.

The EIS must take a hard look at potential impacts to natural soundscapes and viewsheds. Visitors to the lands under the MOs expect to be able to escape the sights and sounds of modem life.

The giant roar of War Planes is already making areas unvisitable.

The sky in many areas is grossly polluted with contrails that coalesce to form clouds – resulting in dull white and gray skies. lingering contrails also impact people's ability to enjoy sun on visits to public lands. The Supersonic EIS must fully examine the reduced ability to seek quiet recreation in all areas impacted by this scheme, and the impacts this may have impacts on tourism and property values within the impacted areas.

The EIS must fully assess how the overflights and War Plane activities of all types to be conducted in this area would impact viewsheds (contrail pollution and its many effects), soundscapes, and visitor experience in natural areas.

From info in the F-35 DEIS, it appears that that an F-35 beddown would exceed certain activity levels (flare or chaff release?) established under existing NEPA processes. We are greatly concerned that there are many elements of this F-35 proposal that will changed and added to piecemeal and incrementally over time as soon as the ROD is signed, and that what is minimally presented in the DEIS is only the tip of the iceberg. Once Idaho is assessed, even if Boise is not immediately chosen for F-35 War planes, the military is likely to claim analysis was already conducted, and it will be easier to slide in planes here or in use of remote ranges in the future. Or if more

$$$ are appropriated by Congress, more Guard units could be selected for F-35 siting.

The F-35 EIS provided confusing information about the use of the remote Ranges, for example: ID-8 states:

The NGB expects that the F-35A would operate in the airspace currently used by the 124 FW, with approximately the same number of operations in each airspace unit but may operate somewhat differently than the A-10s now using that airspace. These differences would derive from enhanced capabilities and changed requirements for the F-35A.

This makes no sense, since there will be 18% more flights. Please provide detailed info explaining this. HOWEVER this highlights that different planes may use airspace differently, and that this Supersonic EIS must provide detailed information and analysis of the adverse noise, startle, and all other environmental impacts of any and all War planes that will use, or will foreseeably use, the affected airspace for any purpose.

The F-35 DEIS also stated: *Although the F-35As would perform missions similar to the A-10s, they represent a different aircraft with vastly different capabilities, and would fly somewhat differently. Pilots would adapt training activities, where necessary, to ensure their accomplishment within available airspace.* ***No changes to airspace structure are anticipated.*** *The differences in utilization of the existing airspace include use of higher altitudes overall, combined use of existing airspace, and generally higher altitudes for supersonic flights that occur.*

So the F-35 EIS presented the public with false information. During the F-35 comment deadline extended to Nov. 1, on the F-35 EIS, the AF had released the supersonic EIS which proposes changes to the Airspace structure. One would have to be very naive to believe that the preparers of the F-35 DEIS were not aware of the imminent release of scoping information for the huge Supersonic changes. This also demonstrates that the

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public cannot trust the military to truthfully and accurately present information in public NEPA processes.

Further, this highlights the need for the Supersonic EIS to provide detailed information and analysis of these "vastly different capabilities" among War Planes, drones and whatever other activities the military currently conducts or may be contemplating conducting across the MOAs and Ranges and how this impacts all aspects of any existing and foreseeable training activities. This is necessary so there can be actual public understanding of how the F-15s, A-10s, F-35s and any other transient or foreign War plane that may use this Range will use the land and airspace of this region (this includes the official training areas as well as MTRs, all areas overflown (including foreseeably expanding Urban CAS/War in the region to include the F-35.

The F-35 DEIS states:

The Saddle A and B MOAs/ATCAAs are controlled by the 124 FW. Cooperative scheduling of this airspace by both Mountain Home Air Force Base (AFB) and 124 FW, as well as coordination with the Salt Lake City Air Route Traffic Control Center (ARTCC), has ensured the needs of all airspace users are accommodated. In addition to the A-10s of the 124 FW, daily users of these airspace units include the F-15s located at Mountain Home AFB, the primary users of the airspace, as well as occasional use by UH-60 helicopters located at Boise Airport, B-52s, B- 1s, C-130s, F/A-18s, KC-135s, KC-10s, EA-6Bs, and E/A-18G. Flight restrictions are in place over the Duck Valley Reservation. Overflights are not authorized within a 5-nautical mile (NM) radius around the town of Owyhee, Nevada and are restricted to 15,000 feet above ground level (AGL) and above over the remaining portions of the reservation. Supersonic operations and the use of chaff or flares are not authorized over any part of the Duck Valley Reservation or within the Saddle A and B MOAs/ATCAAs.

This paragraph OMITS the many instances where transient War planes and special "Red Flag" or other exercises are conducted in the Owyhee area – exercises that MHAFB frequently brags about on its Web and Facebook pages – for example, having F-35s use the Range in recent years. This paragraph in the F-35 EIS was also confusing. It is unclear how much of this minimal description applies to the Saddle MOA vs. the much larger airspace areas. Which planes in the long list of other aircraft in the F-35 DEIS and

that may foreseeably use the Supersonic or other Range attributes of the supersonic EIS also use Saddle Butte? Or use each of the other MOAs? How many flights each year by each type of War Plane, helicopter. Drone, etc, has taken place here each year since inception of the Ranges and in what areas? What is the foreseeable use scenario for the future? How many are U.S. War Planes/pilots? How many are foreign War Planes/pilots? How do all these planes train? How will the transients, foreign militaries etc. interact with F-15s, A-10s, F-35s or any other plane using this Range? Will the presence of F-35s result in War Planes using airspace and ground facilities differently?

The USAF at MHAFB has changed and amended the aircraft activity and ground-based uses and facilities many, many times since the Juniper Butte ETI EIS. Please provide full and detailed analysis of all the EAs, CXs and other NEPA analyses that have been issued and the magnitude and type of environmental impacts that they addressed since finalization of the ETI EIS that established the Juniper Butte Range and associated airspaces and other uses. Please provide a detailed year by year summary description of the changes. There is **no current full integrated NEPA analysis for all these uses currently taking place in the region.** There has been an ever-expanding "creep" of Military Activity and highly controversial uses since the ETI EIS. Jarbidge airspace expansion, use of white phosphorus, "convoy training" and other activities in a 2016 EA, Urban CAS/War where MHAFB imposed a war Range over top nine Idaho cities and towns including the Urban Canyons of Boise.

The F-35 EIS referenced a Settlement Agreement with Duck Valley. Note that there are supposed to be no military overflights over the populated area surrounding the townsite of Owyhee. That should be the case here in Boise, too, and the mission of the Guard be changed to be compatible with a civilian population. Given that this ad other aspects of the Settlement is what the people of Duck Valley found tolerable, then this must be analyzed as an alternative in this Supersonic EIS.

Unique and special areas like the OPLMA wilderness areas, BLM WSAs, BLM ACECs and other sites and the wildlife inhabiting them (Bighorn Sheep WSA for example) will also suffer MORE military activity and the impacts of this degradation – noise, flare and chaff debris and fire danger, reduced wildlife and natural values, skies choked with contrails, etc. have not been assessed. We are greatly alarmed at the potential impacts ot the Jarbidge Wilderness, and eastern Oregon and northern Nevada WSAs and Citizen Wilderness Inventory Units in Oregon.

We are concerned about increasing reporting of dangers from Military Radar (plane and ground-based radar sites like MHAFB's Grasmere "Cowboy Control", lasers of all types, threat emitters (electromagnetic radiation emissions of varying intensities/levels) and other devices and technology that the F-35s and these other war planes may use, and that the EIS fails to properly examine. Note that since there will be MORE Gowen War Plane flights, the public, wildlife and the ecosystem will be exposed to more military impacts

and dangers from military activities and technologies. Members of the public recreating on public lands, as well as wildlife and sensitive species, may be exposed to all of these devices and technologies, along with the very high, startling and debilitating levels of A-10, F-15, F-35 and other War Plane noise (overflights, sonic booms, very low frequencies). Of significant concern here is the adverse impacts to human health and to wildlife of the annoyance levels from very low frequency sounds emitted by War Planes. See articles on Whidbey Island "Growlers" on cd. How do the very low frequencies emitted by F-35s vs. A-10s vs. F-15s vs. Growlers vs. F-35s compare to one another? What are the potential health effects? What are the potential effects on disruption of wildlife behaviors and other impacts on biota?

Our contacts on Duck Valley Reservation have related loud and annoying military overflights taking place and expanded National Guard on the ground activity that has many residents quite concerned.

We are also very concerned about greatly increasing contrail pollution of the air, blocking sunlight and blue sky.

F-35 DEUS ID-11 states: *The F-35A would fly more of the time at higher altitudes than the A-10s (Table ID2.2-2), operating more than 90 percent of the time above 10,000 feet mean sea level (MSL). In contrast, the A-10s operate only 37 percent of the time above 10,000 feet MSL, with 63 percent below 10,000 feet AGL, and 37 percent below 5,000 feet AGL. Thus, the F-35A aircraft would conduct most of their operations in the high altitude Jarbidge, Owyhee, and Paradise ATCAAs with some basic fighter maneuver training i the Saddle ATCAA. Regardless of the altitude structure and percent use indicated in Table ID2.2-2, F-35A aircraft (as do existing military aircraft) would adhere to all established floors and ceilings of airspace units. For example, the floor of Saddle A MOA lies at 10,000 feet MSL, so the F-35A would not fly below that altitude in that airspace. Rather, pilots would adapt training to this and other airspace units like the Jarbidge MOAs with lower floors.*

Is this really the case – or is there some mistake or misinformation similar to the potential for much greater afterburner user by F-35s that 5% found in the DEIS? Please explain why F-35 use would be so different.

ID 2.2.3 Table *Approximate 124 FW Current and Proposed Annual Airspace Operations* contains info from 20-16-2017. When were local MHAFB and/or the Guard deployed during this limited time? Where is current data? Would the number of flights be greater if they were deployed less frequently? How many flights are projected in the future? What about transients? How many of the flights are MHAFB? How many transients? How many planes from foreign countries and/or with foreign pilots?

The DEIS ID-12 states: *Similar to the A-10 aircraft, the F-35A would fly approximately 90-minute long missions, including take-off, transit to and from the training airspace, training activities, and landing. The 124 FW A-10 aircraft currently conduct up to 2,500 annual sorties (or approximately 208 monthly sorties) lasting approximately 60 minutes in the airspace. Under the Proposed Action, the F-35A aircraft would conduct up to 3,061 annual sorties (approximately 250 monthly sorties) lasting 30-60 minutes. On occasion during an exercise, the F-35A may spend up to 90 minutes in one or more airspace units. Based on this, the time spent in the airspace by the 124 FW would be expected to increase approximately 47 percent relative to the affected environment.*

This means there will be a lot more military overflight noise, and a lot more air pollution from the F-35s – AND this would also be taking place in the Supersonic EIS training areas. Plus, aren't the F-35 engines highly inefficient? This also sounds more similar to the Urban CAS/WAR EA, where planes circle and circle and circle for 1-2 hour bouts making the lives of people living and working under them Hell suffering the annoying and physically disturbing noise (especially the very low frequency sounds of military War Planes). Is the F-35 going to be engaged in CAS activity of any mind – use of MHAFB Owyhee Ranges Urban War fake building sites, or the Civilian Population Urban War Range the AF CAS EA authorized? These questions must also be addressed in the SS EIS.

Further, the air pollution levels and releases of all War planes, helicopters, other activity conducted in the ranges must be detailed plane/device by plane/device. How does this change depending on flight speed, supersonic flights, etc.?

What is the climate change emission footprint of the current and foreseeable military activities associated with MHAFB, Gowen et al and the Ranges? How much it be reduced by increasing simulator flying, thus negating the crowding the problem and need for this EIS.

There is increasing alarm at the huge detrimental impact of the U. S. military and its hue pollution levels that are feeding the Climate Crisis. See:

https://qz.com/1655268/us-military-is-a-bigger-polluter-than-140-countries-combined/

The US military's carbon bootprint is enormous. Like corporate supply chains, it relies upon an extensive global network of container ships, trucks, and cargo planes to supply its operations with everything from bombs to humanitarian aid and hydrocarbon fuels. Our new study calculated the contribution of this vast infrastructure to climate change.

Greenhouse gas emission accounting usually focuses on how much energy and fuel civilians use. But recent work, including our own, shows that the US military is one of the largest polluters in history, consuming more liquid fuels and emitting more climate-changing gases than most medium-sized countries. If the US military were a country, its fuel usage alone would make it the 47th largest emitter of greenhouse gases in the world, sitting between Peru and Portugal.

Here is a link that just showed up today showing the military whooping and hollering while practicing Urban War at a Military site. Is the same being electronically staged instead - currently taking place over Boise and are current War Training activities in the MHAFB Ranges be engaged in this anywhere in this region? https://thvidoes.com/video-2875113744612816164153

The F-35 DEIS ID-12 states: *To train with the full capabilities of the aircraft, the F-35A would employ supersonic flight at altitudes and within airspace already authorized for such activities. Due to the F-35A's mission and the aircraft's capabilities, the NGB anticipates that approximately 10 percent of the time spent in air combat training would involve supersonic flight. All supersonic flight would be conducted above 15,000 feet MSL, with 90 percent occurring above 30,000 feet MSL…*

Was this a mis-representation of what was actually in the works all along - i.e. this Supersonic EIS?

Please provide information on how large a land area the sound footprint of F-15, F-16 A-10, Growler, F-35, F-22 and any other War plane/helicopter/drone, etc that may use the ranges has under all potential flight conditions, and under all aspects of supersonic flight at any elevation, under various weather conditions, in various terrain, etc. . At what distance will supersonic flight noise and booms be audible? This in reality impacts a huge

land area and all the wildlife, and rare plant pollinating insects including those of Slickspot Peppergrass, under this airspace. Will Supersonic noise overlap the MHAFB Civilian Population Nine Cities Urban War Range CAS circles or other areas?

Please analyze the highly foreseeable possibility for F-35s or other War Planes potentially in this airspace to be carrying nuclear weapons.

WLD also requested that the F-35 EIS: "analyze the highly foreseeable possibility for F-35s to be conducting Urban War and/or flying in and overlapping the same airspace that Urban War flights would be using. Is it possible the Urban War EA is in part designed to mask F-35s flying all over the place at higher altitudes? Additionally, the description of the flight time periods does not comport with how A-10s and F-35s have been described to fly in morning and afternoon". Please also provide this information in the Supersonic EIS, as there may be a considerable overlap and intersection between planes engaged in Urban War and supersonic and other elements of the Ranges.

Most air-to-ground training would be simulated, where nothing is released from the aircraft, and target scoring is done electronically. As was discussed in Chapter 2, Section 2.2.2.7, however, the F-35A is capable of carrying and employing several types of air-to-air and air-to-ground ordnance (including strafing) and pilots would need training in their use. As the NGB currently envisions, the type of ordnance employed at MHRC is expected to remain the same or decrease. F-35A pilots would only use ranges and airspace authorized for the type of ordnance being employed and within the number already approved at a range and/or target. If in the future the NGB identifies weapons systems that are either new or could exceed currently approved levels, appropriate NEPA documentation would need to occur prior to their employment.

WHY can't the "terrain masking" and "supersonic low level" flight also be simulated???

What specifically are ordnances to be used in association with War Games that involve supersonic or lower level flight activities? What are the weapons used for strafing?

F-35 EIS ID 13-14 states:

Like the A-10, the F-35A would employ chaff and flares as defensive countermeasures in training. Chaff and flares are the principal defensive mechanisms dispensed by military aircraft to avoid attack by enemy air defense systems. For the purposes of this analysis, it is estimated that the expenditure of chaff and flares by the F-35As would not exceed use by the legacy A-10s on a per operation basis for the 124 FW.

We are concerned that use of this material may be exceeding levels currently analyzed under various military documents in this region, Is that the case?

WLD is observing large amounts of plastic chaff device military litter all over wild areas. This has not been addressed – including litter in Wilderness and WSAs, and citizens Inventory Units. ARE these materials currently being used in Oregon and Nevada? How much supersonic EIS and the activities to which it s related impact use and amount of use of such materials? We are also dismayed at the release of chaff currently taking place, and the use of flares which start range fires.

The EIS also refers to this material being used in areas "currently authorized". Where is use of these materials NOT authorized? Over the Jarbidge Wilderness for example??? There have been innumerable piecemeal EAs and CXs changing military activity parameters, and in fact this is a long-recognized military strategy to thwart effective NEPA review and ease into highly controversial activities. For example, once 18 F-35s are in Boise, one can readily envision the military incrementally increasing the number, adding more airspace, changing elevation levels of airspace, changing weaponry/gadgets/devices, etc. What areas are foreseeable for expansion? We are very concerned that as soon as the F-35s bed down, the military will claim a "need" for more airspace and more ground-based training disturbance to accommodate them. The EIS description of how the F-35s will actually fly and train and use the airspace differently from A-10s is so vague that it is impossible to understand just what may be planned to take place, and if the current airspace, ground facilities and other activities and weaponry will be adequate. Again, this Supersonic EIS must provide detailed analysis for all War Planes current and foreseeable and all activities in this region and using these Ranges.

The F-35 DEIS states:

Over most of the affected area, minimum flare release altitude is 2,000 feet AGL. Based on the emphasis on flight at higher altitudes for the F-35A, roughly 90 percent of F-35A flare releases throughout the MOAs would occur above 15,000 feet MSL. At this altitude, most flares would be released more

than seven times higher than the minimum release altitude permitted (2,000 feet AGL) over non-government- owned or -controlled property and ensure complete burnout before reaching the ground.

Please explain what the latter part of this means. What is considered to be non-government-owned or controlled property? Are BLM public lands considered government-controlled property? If so, what are flares being used at the 2000 ft. level there? How many wildfires have been caused by flares in the region in recent years? How many flares have been released? Won't the F-35 increased missions in the airspace result in exceeding the level of use assessed in past NEPA documents? Please note a series of Oregon wild fires, including in a portion of Hart Mountain, were attributed to flare use a couple years ago. Materials from chaff devices are now littering large areas of public lands - including WSA and wilderness lands across the region. We are also concerned about pollution of water and the air/inhalation hazards at times from the clouds of chaff the military releases. Please apply ALL of these concerns to the supersonic EIS, which also focuses on LOWER LEVEL flight and TERRAIN MASKING in a manner with zero specifics revealed to the public to allow for informed Scoping comments at this point,

DEIS ID-15 states: *As applicable, the 124 FW will coordinate with the USEPA, Region 10 and Idaho Department of Environmental Quality (DEQ) regarding proposed construction near Environmental Restoration Program (ERP) sites, including potential release locations (PRLs) of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), on the 124 FW installation.*

These sites must be fully revealed and detailed in the Supersonic EIS as well. How much of each of these chemicals will be used annually? How does foreseeable use in relation to F-15s vs. F-35s vs. A-10s? How frequently will fire suppression "training" take place? Wil it be indoors or outdoors? How will the civilian population be protected from this pollution? Won't there be an increase in use of these toxic "forever chemicals" if the military expands the areas with low level and more planes use these facilities - as the AF claims "crowding" in the current low level areas – and an expansion would likely mean increased heavy use elsewhere as well as continuing fairly high levels of use in the "crowded" areas (note that the military recently INCREASED the Singapore plane number at MHAFB)?

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DEIS ID-15 states: *A conformity applicability determination is required for federal actions occurring in nonattainment or maintenance areas for criteria pollutants when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed de minimis thresholds. The 124 FW installation is located within northern Ada County, which is a maintenance area for carbon monoxide (CO) and particulate matter less than or equal to 10 microns in diameter (PM_{10}). Therefore, a conformity applicability analysis is necessary to identify whether a formal conformity determination is required.*

The Supersonic DEIS must include details on the specific components and amount of each of these components in all MHAFB and combined Gowen-base related emissions for planes involved in use of the Ranges subject to the supersonic EIS, and also compare emissions from F-15sa, to F-16s to F-22s to Growlers to F-35s to A-10s and other War planes including transients that pollute the air in our region as well.

We also stress that the public comment for basing F-35s in Idaho was resoundingly opposed. This reflects the concern of the public over military activity "creep" in Idaho. MHAFB is NOT being a good neighbor in trying to increase its already huge noise and activity footprint in the region.

F-35 Scoping Public Comment Expressed Resounding Public Concern

The DEIS states that: *Of the 1,318 general public comments, 47 were in support of the proposed beddown, and 884 expressed concern about noise".*

ALL the issues raised by the public in scoping comments, and listed on p. 17 of the ID F-35 EIS section have not been adequately addressed in the F-35 EIS, and should be addressed in the supersonic EIS as well. This includes: Aircraft noise concerns related to: o General annoyanceo Hearing loss (and OTHER health effects – adverse cumulative effects of noise exposure) ,

Property values Domestic pets, Wildlife, Sleep interference, Impacts to outdoor activities, Request for noise mitigation, safety/crashes, etc.

This from the F-35 EIS statement shows the serious flaws and concerns related to the the military EIS noise modeling and especially the averaging of noise: *Noise Exposure Maps (NEMs) can and do change over time. NEMs include an existing year and a future year (5 years forward in time). These NEMs have to be updated every 5 years or certified to the FAA that they are current. Non-compatible land uses (i.e., residences) can become compatible if the DNL 65 dB noise contour changes shape or becomes smaller due to changes in operational procedures, fleet mix, or nighttime operations.*

This appears to be saying that if there is more military night-time noise (and less day time noise – with flights shifted to night) then the noise models will be churned out to show more homes are "livable". Please explain how this can be – because we are very likely to see contorted and difficult to understand claims made about noise in the Supersonic EIS.

This is made even more ridiculous by the fact that people often work shifts and may be trying to sleep during at least part of the time the EIS defines as day use (example: nurses, bartenders/ waitpersons). Children and infants at home will be exposed to the horrifically loud F-35 noise during any time of the day. They will be exposed to the immediate ear-piercing ear damaging sound that can cause hearing damage, decreased learning ability, sleep interference, and many other health problems, whose impacts are often cumulative. NOTE that these same concerns apply to people (and wildlife) overflown in the areas of the Ranges under the increased low level and supersonic activity being proposed.

Any mitigation associated with the Supersonic EIS must be fully examined in the DEIS. Note that WLD believes that the horrendously loud low level and

supersonic flights are not able to be mitigated – except by AVOIDANCE. In the case of the F-35 EIS, It is absurd to wait until the FEIS to develop any unfunded "plan" as the DEIS attempts to do: "Upon completion of the Final EIS, a mitigation plan will be prepared in accordance with 32 CFR 989.22(d). The mitigation plan will address specific mitigations identified and agreed to during the EIAP, as discussed in the EIS and identified in the Record of Decision (ROD) …"

Specific and detailed mitigation actions must be fully assessed now, and this includes for the civilian population of Boise and other populations impacted by these overflights, wildlife and wild lands recreational users and residents across the landscape impacted by the MHAFB War Plane activities and by any Supersonic EIS. There must be a detailed concrete mitigation plan for wildlife across public lands that will suffer greater numbers of military war Plane overflights even worse than at present. Solid detailed site-specific baseline inventories to establish the current occupied habitats and occurrence, habitat quality and quantity, and status/trends/viability of all local and regional populations of sensitive species and other impacted wildlife must be conducted. This is necessary so that all direct indirect and cumulative effects of the welter of military activities (in combination with other environmental threats) impacting this local and regional area can be understood. Current habitat loss, degradation and levels of fragmentation must be understood.

WLD is very concerned that current levels of noxious noise and other military disturbance may be significantly depressing populations of sage-grouse, migratory birds, raptors, bighorn sheep and other wildlife in this region. All critical seasonal habitats for all of these species must be clearly identified and the number, type, loudness (including immediate sound not averaged sound) and other habitat aspects and attributes must be thoroughly studied.

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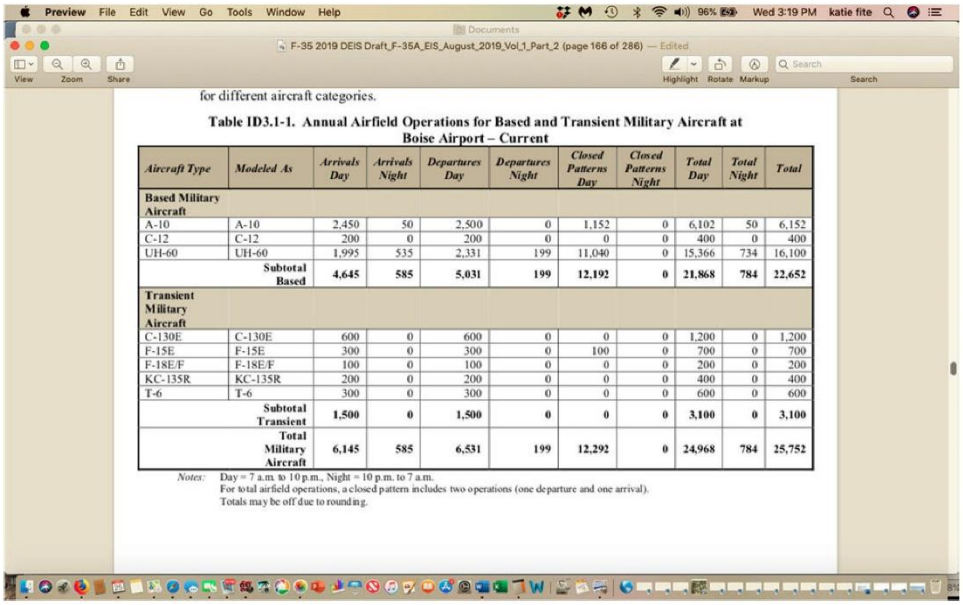
For example, Sage-grouse and Antelope may use very different habitats in winter than in spring. Antelope may move across state lines in the course of the year. Horribly disturbing military War Planes noise and startling flights may disturb animals in these crucial seasonal habitats, and drive them into sub-optimal areas where they have lower survival.

Noise – Supersonic EIS Must Greatly Improve on Noise Analysis of F-35 EIS and other Recent Self-Serving Military NEPA Documents

The F-35 DEIS (pps. 19- 44) continues to use averaged noise statistics that mask the full horrible impact of War Plane noise on people and animals, such as that of the notoriously loud F-35, and of F-15s and other War Planes. Moreover, the EIS fails to include any analysis of very low frequencies that pierce to the bone and leave one's ears dully aching for hours after repeated exposure. This is a matter of serious concern because of the impacts these very low frequencies have on animal tissues. The supersonic EIS must examine this in great detail, as well as all the sound elements and parameters of sonic booms.

The DEIS contains the following Table:



for different aircraft categories.

Table ID3.1-1. Annual Airfield Operations for Based and Transient Military Aircraft at Boise Airport – Current

Aircraft Type	*Modeled As*	*Arrivals Day*	*Arrivals Night*	*Departures Day*	*Departures Night*	*Closed Patterns Day*	*Closed Patterns Night*	*Total Day*	*Total Night*	*Total*
Based Military Aircraft										
A-10	A-10	2,450	50	2,500	0	1,152	0	6,102	50	6,152
C-12	C-12	200	0	200	0	0	0	400	0	400
UH-60	UH-60	1,995	535	2,331	199	11,040	0	15,366	734	16,100
Subtotal Based		**4,645**	**585**	**5,031**	**199**	**12,192**	**0**	**21,868**	**784**	**22,652**
Transient Military Aircraft										
C-130E	C-130E	600	0	600	0	0	0	1,200	0	1,200
F-15E	F-15E	300	0	300	0	100	0	700	0	700
F-18E/F	F-18E/F	100	0	100	0	0	0	200	0	200
KC-135R	KC-135R	200	0	200	0	0	0	400	0	400
T-6	T-6	300	0	300	0	0	0	600	0	600
Subtotal Transient		**1,500**	**0**	**1,500**	**0**	**0**	**0**	**3,100**	**0**	**3,100**
Total Military Aircraft		**6,145**	**585**	**6,531**	**199**	**12,292**	**0**	**24,968**	**784**	**25,752**

Notes: Day = 7 a.m. to 10 p.m., Night = 10 p.m. to 7 a.m.
For total airfield operations, a closed pattern includes two operations (one departure and one arrival).
Totals may be off due to rounding.

Does this include the various Navy and other planes using Jackson's Jet Center and other private facilities at the airport? How many planes would fall in this category, and what type of plane are they? There are white planes that appear to be modified civilian air liners that constantly fly over Boise neighborhoods resulting in distracting plane noise and pollution.

As we stated previously, the EIS must correct the data on the use of afterburners plugged into the various noise models, the validity of which we strongly question.

WHAT would a noise map DNL contours for Boise look like if afterburners were used 50% of the time on F-35s?

WILL the Air Force be using Noise Map contours so the public can visualize the impacts of low level flight, supersonic flight, sonic booms, etc.?

From review of 6 years of consistent Air Force reports, a member of the public assembled the following information:
Five independently prepared Air Force documents show that at most altitudes and speeds, the noise on the ground below the F-35 will be an average of 16 decibels louder than the loudest F-16 currently flying (a difference of roughly 60 times the physical energy and more than three times as loud perceptually).
1. The Elgin AFB Environmental Impact Statement (EIS) reports the F-35 at 500 mph was 121 db, & the F-16 was 97 db (a 24 db difference).
2. A joint empirical test by the AF & Lockheed reported the F-35 at 121 db at 1,000 ft, and 500 mph. While the F-16 at the same speed and height, was 114 db (a 7 db difference).
3. The Nellis EIS, reported the F-35 at minimum (cruising) power at 1,000 feet was 103 db, and the F16 at 89 db (a 14 db difference).
4. The Luke Air Force Base EIS, report landing estimates for the F-35, at normal military power (full throttle without afterburner) was 79 db, compared to the 66 db of the F-16 (a 13 db difference).
5. The Burlington Vermont EIS, reports that the F-35 produces 115 db at ground level, on take-off, while the F-16 produces 94 db (a 21 db difference).

HOW LOUD are F-5s and all other War planes that the Supersonic EIS will cover at 500 mph? At 500 ft AGL? At 1000 ft AGL? At all potential speeds and all potential elevations - including under varying atmospheric and other conditions?

How might supersonic flight under the SS EIS disrupt and/or kill/injure migrating birds?

Generally long-distance migrants seem to start out at about 5,000 feet and then progressively climb to around 20,000 feet. Just like jet aircraft, the optimum cruise altitude of migrants increases as their "fuel" is used up and their weight declines. https://web.stanford.edu/group/stanfordbirds/text/essays/How_Fast.html

We are alarmed at the potential impacts to migrating birds of the MHAFB current and foreseeable War Plane activities in this local and regional area. This must be thoroughly examined in the EIS. There are now known large-scale avian population declines in North America that elevate concerns such as this – and there is a great need for a full military analysis of the role of "training" activities in such declines.

F-35 EIS Table ID 3.1.4 shows that there will be highly significant noise exposure to the public using the Boise airport, using the parking garages, waiting to be picked up from flights, etc. One-time exposure to very high levels of noise can cause hearing damage in infants.

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The DEIS ID-19 states: *Noise modeling utilized annual average day (AAD) aircraft operations computed by dividing the total yearly airport operations by 365 days per year. The noise modeling relies on aircraft's flight tracks (paths over the ground) and profiles (which includes altitude, airspeed, power settings, and other flight conditions). The noise analysis considers the numbers of each type of operation by aircraft/track/profile, local climate, terrain surrounding the airfield, and similar data related to aircraft engine runs that occur at specific static locations on the ground (e.g., pre- and post-flight and maintenance activities). A team primarily made up of representatives from the installation's flying squadrons and air traffic controllers, as well as the NGB, developed this data through iterative meetings and discussions subsequently compiled into a data validation package. The NGB team reviewed the data validation package and approved the operational details for modeling (124 FW 2019).*

This must be independently vetted, and all inputs and modeling fully laid out.

PLEASE fully consider all of these attributes – altitude airspeed, terrain, etc. on noise generated under the current and proposed War plane activities of the supersonic EIS. WHAT are all of these noise parameters and levels under the various training scenarios in all affected Sage-grouse lek sites impacted by activity across the ranges? Note that Blickley studies documented noise impacts – including bird displacement from leks, and elevated stress hormones.

Please provide detailed analysis of Loudest events under the current and proposed and any other foreseeable overflight event by all types of planes that may use the range. What will the Loudest events be by all activity leks? By all known occupied Pygmy Rabbit habitat? By all occupied Bighorn Habitat site? By all known Golden eagle nests? Etc. These species habitat areas must be considered POIs in the supersonic EIS. Please also do the same for all BLM WSAs, all Citizen Wilderness Inventory Units in Oregon, all Lands with Wilderness Characteristics, all WSRs and all Wilderness areas – across the project area.

DEIS ID-25 Table ID3.1-6. *Loudest Events at Each POI, Calculated in SEL contains "Sound Exposure level" information. This shows extreme noise exposures to highly vulnerable populations of children and infants. We stress that the Idaho Humane Society will also suffer significant noise exposures. Animals there are often already very*

traumatized. These SELs range from 92 to 108 (the latter at Frank Church High School!). Why is Table ID3.1-12. Loudest Events at Each POI, Calculated in SEL – Proposed Action Alternative the same as the present

This makes no sense. Except that it does indicate the A-10s are much too loud and incompatible for use at a residential airport like Boise's. This demonstrates that this EIS should in reality be looking at an alternative mission that is compatible with Boise, Madison and other municipal airports.

How would the SEL levels change, and what other facilities and residences would suffer similar DEL sound levels if F-35s use afterburners 50% of the time?

The Supersonic EIS mist thoroughly detail how sound intensity and SEL and immediate sound may be impacted - and increase – under proposed training heights, speeds, terrain masking activity, and other scenarios.

The DEIS includes this: ***Potential for Hearing Loss***. *Potential for Hearing Loss (PHL) applies to people living in high noise environments. The threshold for assessing PHL is exposure to noise greater than 80 dB DNL. Under the affected environment, there are no residential areas on or adjacent to the airport that are exposed to contour bands of 80 dB DNL or greater (see Table ID3.1-6), so PHL does not apply.*

This is deceptive and masks the F-35 impacts, since one-time or only a few times exposure to very high noise levels can cause hearing loss. Throughout much of this section of the EIS, the Air Force provides no scientific citations and information to back up its self-serving assertions.

PLEASE fully provide the levels at which hearing loss would take place for all impacted animal species that currently suffer War Plane activity, and that may be subjected to even worse noise under this Supersonic EIS.

Please prepare a EIS that fully includes all the data and documentation used in the 124 FW 2019 document that the EIS continually cites. What assumptions were made? Where were noise monitors placed? How specifically was this report undertaken and vetted? We request that independent noise experts not associated with any previous military contracts be brought in to conduct a full and complete noise assessment that is designed to understand the complexities of Idaho's and Boise's topography, winter inversions, weather patterns, adequacy of data on noise and airspace and plane use, etc.

THIS highlights the need for the Supersonic EIS to provide all data, documentation, sources, peer review, assumptions used in all models, reports, tables, summaries, etc. in the upcoming EIS.

ID-28 states F-35A aircraft would account for approximately 5 percent of total operations at Boise Airport. There have been recent news reports of considerable F-35 night activity at other bases, so here too the EIS appears to cover up what will actually take place.

How would Figure ID3.1-3."Proposed DNL Contours at Boise Airport" differ if F-35s used afterburners 25% or 50% of the time? Please provide a noise contour map of areas that that will suffer SEL of over 65 decibels from F-35s, and from A-10s. Would that cover nearly all of Boise?

Please provide a contour map of all areas that would suffer SEL of over 65 decibels with the military activities of the Supersonic EIS.

In Scoping, we had raised concerns about winter inversions increasing both noise levels/intensity and pollution, as well as the effects of the noise on homes on the Boise Front -which sit in a straight line across from the airport at a similar elevation. One can readily see the airport communications tower from Military Reserve. This is how close nearly all the population of Boise, including the downtown core area, is.

PLEASE provide detailed analysis in the Supersonic EIS of how winter inversions and other weather conditions may impact noise levels – of current training and that proposed and/or foreseeable.

DEIS ID-37 states: *In rural and open areas, the analysis of noise impacts are vastly different compared to areas near population centers. In these areas, public concerns can include effects to wildlife, domestic animals, natural sounds, and outdoor recreation. Although many studies have been conducted on noise impacts to animals, if the animal of concern has not been included in any of these studies, biological expertise is required to determine if additional research is needed or a surrogate animal can be used for the assessment of impacts.* See Section ID3.11, ***Biological Resources*** for a discussion of noise impacts to wildlife.

Wildlife live in Urban Areas, people's backyards, acreages/pastures, the Boise River corridor, the Foothills, Boise neighborhoods and throughout the very large area that will suffer increased noise levels from F-35 activity.

PLEASE take serious note of this in development of the Supersonic EIS!

The EIS and the Bio Resources section ID3.11 dismisses serious noise impacts to wildlife in the same way it dismisses many noise impacts to human health and quality of life. Please review the Washington State Department of Health report on Navy Growler Noise. Just because a study does not prove a BLM sensitive species or imperiled species or migratory birds are seriously harmed by high amounts of military overflight noise, sonic booms, or other disturbances, does not mean the EIS can ignores very likely and highly foreseeable impacts.

The Supersonic EIS must thoroughly to assess the perilous current baseline state and condition of habitats for many sensitive and other wildlife species. For example, vast areas of the habitats for local and regional populations of greater sage-grouse, pygmy rabbit, Brewer's sparrow, loggerhead shrike, sage sparrow, sage thrasher and other declining native species have suffered large-scale wildfires. How many acres have been burned in wildfires since the ETI EIS? Where? How has this impacted local and regional populations? For example, the Murphy Fire, the Crutcher fire, the Soda Fire, the Clover Fire and many other smaller fires have resulted in tremendous habitat loss and reduction of suitable habitat. There has been sweeping cheatgrass and medusahead infestation. How many areas are currently infested with cheatgrass, vs. at the time of the ETI EIS? How have all of these factors impacted local and regional populations of wildlife? What have rangeland health assessments conducted on livestock grazing allotment across this region found? WHERE are lands overflown by the military where BLM Has documented that lands are not meeting the Rangeland Health standards?

What is the grazing disturbance burden and what are the impacts of grazing and livestock facilities such as lethal and injurious fences and upland water developments that fragment and degraded sagebrush habitats on the local and regional populations of sensitive wildlife species that will also suffer the severe noise impacts from military overflights including the increased F-35 overflight number and more prolonged periods of use?

The F-35 DEIS states: "*Subsonic. Table ID3.1-16 shows the L_{dnmr} levels, rounded to whole decibels, for the affected environment within each of the respective MOAs/ATCAAs. As can be seen, Jarbidge North MOA, Owyhee North MOA, and R-3202 have the highest exposure to noise with the L_{dnmr} reaching 59 dB; all other locations are below 52 dB*".

The Supersonic EIS must start afresh. Full and detailed studies must be conducted of the sound levels at the time the sound is emitted across this landscape – NOT averaged noise.

What is the SEL level for noise events impacting wildlife in these areas? How much Sage-grouse Priority habitat, or former Focal Habitat is overflown, and will be impacted by the Supersonic EIS, by F-35s, etc.? How much Bighorn Sheep habitat? AVERAGED noise does not indicate the extreme noise events, and the potential stress, debilitation, increased vulnerability to predation, hearing loss and habitat displacement that extremely loud military noise as well as the very low frequency of military f data on baseline and noises may cause.

The EIS does not provide sufficient scientific baseline and analysis information to support claims of no noticeable impacts – and the F-35 EIS resoundingly does not do this. HOW will this Supersonic EIS differ?

Please also note that noise may interfere with insect activity and may impact pollinators of rare plants, like the Threatened slickspot peppergrass. Full ESA consultation over this and other potential impacts to LEPA must take place. Please review the proposed critical habitat for LEPA, and you will find that the largest remaining areas of the plant's ever-declining habitat are found in areas impacted in one way or the other by the Owyhee ranges, and the Guard OTA. The site of the Boise airport previously had LEPA present.

https://wildlife.org/noise-pollution-affects-even-the-smallest-wildlife/

"Loud noise and vibrations from natural gas compressors influence the number of insects and spiders surrounding them, which could have consequences on other wildlife in the ecosystem, according to new research.

*"Anyone who studies insects know that they run the world," said Jesse Barber, an associate professor at Boise State University in Idaho, and senior author of the new study published in*Ecology and Evolution*. "These animals are important to ecosystem function, and it's critical to know how human-caused noise is changing their distribution, behavior and ecology."*

As part of the study, the research team used pitfall traps that contained propylene glycol, a sticky, sugary preservative, to capture spiders and non-flying insects in New Mexico's San Juan Basin at five sites with gas compressors and five ecologically similar sites without the compressors for two months. They then placed the bugs in alcohol and determined which species were present in each site".

See also article discussing impacts of noise on insect physiology: https://www.oatext.com/impact-of-environmental-noise-on-insects-physiology-and-ethology-a-study-on-ants-as-models.php

The WA State Health Department Comment and Report Appendix (on cd) which we incorporate by reference describes negative impacts to public health from changes in noise, air quality, use of hazardous materials, and increasing greenhouse gas emissions from increased military War Plane activity. Note that the Growlers are not as loud as F-35s! PLEASE fully consider all noise impacts described in the WA Health Department Study, in the WA Attorney General lawsuit over War Plane noise, and in the "Takings" lawsuit filed by local residents over War Plane noise on Whidbey island.

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We request that a health-based Impact Assessment be prepared for the MHAFB Supersonic Project as well as the F-35 project, for the Supersonic EIS for any affected residents, as did WA Dept of Health for the Growlers. WA also reviews problems with different noise metrics, and how they are used, similar to the confusing analysis of the EIS which fails to adequately address the acute and immediate sound effects to people, pets and wildlife experiencing overflights, sonic booms and other War Plane noise.

Adverse non-auditory health effects of NOISE include chronic stress and sleep disturbance, noise induced annoyance associated with a stress response which affects cardiovascular health. Other environmental noise, including commercial aircraft, add to this stress and must be fully considered in the physiological and other noise analyses.

The full effects [of the F-35s] on people using the Boise airport, including children and infants, must also be assessed. The full effects of the Supersonic EIS military activities on public lands recreational users must be fully considered. For example – in supersonic or other flight – what will be the actual effects of the noise generated at various elevations, or in various terrain and topography?

The description of the sound of an F-35 during takeoff is Lmax (single event maximum sound level). F-35 Lmax during takeoff is (according to 2012 Air Force EIS Table 3.1):

Within 100 feet of the runway - immediate eardrum rupture - 142 decibels.
Within 500 feet of the runway - permanent hearing damage after 8 seconds - 130 decibels.
Within 1,000 of from the runway - severe ear pain - 120 decibels.
Within 2,000 feet of the runway - average human pain threshold - 110 decibels.
Within 1 mile of the runway - similar to a jackhammer - 100 decibels.
Within 2 miles of the runway - similar to a power mower at 3 feet - 90 decibels.

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We note that the 2019 F-35 DEIS is often in sharp contradiction to the 2012 F-35 EIS. Please explain why – as it appears different military analysis of much the same situation generate significantly different claims.

As highlighted by the WA Dept of Health study, we are very concerned that the Supersonic EIS must provide sufficient evidence to ensure the noise models and estimates are applicable to canyon and high desert – just like the F-35 must do to the Boise environment with its terrain, inversions burgeoning population and new development planned for many areas to be overflown by F-35s if based at the Boise airport.

We request that independent consultants who have not previously worked for the military as contractors be hired to validate models used for the local and regional environment including the Owyhee Range use. WE reiterate this request for the Supersonic EIS! This is especially needed given the vague, opaque, elusive answers and lack of concrete info provided by the USAF at the Boise Scoping meeting on the Supersonic EIS.

The DEIS must greatly improve the description and analysis of noise science related to human health, wildlife, and domestic animals.

WA Dept of Health Appendix A includes a Review of epidemiological literature about health effects of noise exposure. The WA Report emphasizes that the military should not require a definitive causal and significant relationship between effects on humans, pets, wildlife prior to including health outcomes in models and EIS analyses. See also WA Attorney General Growler litigation references to noise effects on avian and other species. See WLD comments on Urban War, Scoping including references to Blickley and other Sage-grouse studies for example.

It is very important to consider factors that affect sound propagation, and the different acoustic signatures of War Planes, and how these may impact people and animals.

The Report describes noise-induced hearing loss can come from long-term exposure to steady state sound, or one-time exposure to an intense impulse sound. Such hearing loss can be long-term, progressive and irreversible. Hearing loss effects cognitive performance, attention, and social interactions in humans. Certainly it also affects the behavioral interactions and ability of animals to function in the environment. What is the likely fate of a Bighorn sheep or Sage-grouse deafened by War plane overflights???

Other known noise impacts on humans include: Annoyance, discomfort, anger, exhaustion, displeasure feed depression. Sleep disruption and lead to obesity, hypertension, other physiological changes. AREN'T similar impacts expected on animals. We are including information on cd that shows animal experiments have shown noise exposure can cause "learned helplessness" in animals.

The minimal ecological/environmental review for wildlife must meaningfully consider short/acute, mid and long-term impacts of chronic noise exposure, stress, disruption of species habitat use - especially when added on to the degraded and fragmented habitat conditions, climate change impacts, threats to arid land ecosystems that many species face. The EIS must also consider long-term impacts to animal health. For example, it must adequately address and consider the physiological stress or energetic costs caused by noise-related disturbance; must account for potentially more harmful impacts to avian and mammalian species health during breeding season or other sensitive times of the year such as during winter periods; and must fully consider that Range and War Plane operations may have long- term impacts on animal fitness, including the ability to survive to reproductive age, find a

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mate, and produce offspring, outside of short-term impacts to critical behaviors – and that this will impact species population levels and ultimate viability of populations.

The EIS must also take a hard look at environmental impacts to reptiles and amphibians, and fish (suffer chaff, and potential fire increase form increased flights and fire risk from flares/accidents). We are dismayed at the military attitude - such as with the F-35 The DEIS - that unreasonably concludes that impacts will not be significant because some species that do react will resume normal activities --- without considering longer-term fitness costs associated with the response to overflight noise, the "startle" effect of sonic booms, etc. The Supersonic EIS must not use this ruse.

As another example, the F-35 DEIS ID-104 includes the following self-serving and entirely unsubstantiated and unscientific claims – that animals will somehow adapt or get used to the noise and that magically even though there will be more flights and noise and inert ordnance and likely more use of flares and chaff and more potential for wildland fires, there will be no more impacts:

Existing range management procedures and vegetation removal guidelines would be adhered to and vegetation management measures currently in place would persist. Impacts to wildlife habitat would be negligible. Defensive countermeasures that would be employed by the F-35A with the potential to affect wildlife habitat include chaff and flares. Chaff and flare deployment would be expected to be similar to current levels conducted by A-10 aircraft and would occur within the same approved training areas as the proposed F-35A. Current limitations on the amount or altitude of chaff and flare use would continue to apply. As a result, chaff and flare deployment associated with the Proposed Action would have no significant impact on wildlife habitat.

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Impacts to migratory birds protected under the MBTA would be negligible. In general, animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase. Additional analysis for noise impacts to biological resources can be found in Appendix E, Noise Modeling, Methodology, and Effects in USAF 2016. Noise modeling results suggest subsonic noise levels would increase from 0 to 8 dB within the airspace and would be up to 59 L_{dnmr}; well below the 112 dB shown to elicit major biological responses. Long-term impacts to migratory birds would not be significant.

This is wrong on so many levels. Using a noise level as high as 112 dB completely discounts the impacts of noise in disrupting migratory, nesting, wintering and other behaviors, in making animals more susceptible to predation in increasing stress in driving animals out of habitats with the combined effects of overflights and sonic booms, etc.

Moreover, the EIS relies on claims of "habituation" to reach a conclusion of no or minimal impacts – without addressing a welter of other factors – such as increased stress levels, increased vulnerability to predation, displacement from otherwise optimal habitats, , disruption of reproductive, feeding or other behaviors, etc.

Overall, impacts to the federally- and state-listed species from the proposed change in subsonic and supersonic operations would not be adverse for the

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following reasons: 1) the probability of an animal or nest experiencing overflights more than once per day would be low due to the random nature of flight within the airspace and the large area of land overflown; 2) generally speaking, the F-35A would fly at higher altitudes than F-16 aircraft—the majority (98 percent) of the F-35A operations would occur above 5,000 feet AGL; 3) supersonic flight would only occur above 15,000 feet MSL in the airspace, with 90 percent of these supersonic events above 30,000 feet MSL; and 4) although the total number of supersonic flights and sonic booms occurring would increase from current levels under this alternative, there would only be an increase in dB CDNL ranging from 0 to 5 across airspace units, with a maximum level at 45 dBC CDNL. In addition, studies of supersonic noise on birds and mammals indicate that animals tend to habituate to sonic booms and long-term effects are not adverse. Impacts to federally-listed species would not be significant.

The supersonic EIS MUST address the following serious concerns and critique of such unsupported military statements.

First, the flight is not "random" as there are definitely areas within the airspace where use is more intensive and frequent. We dare whoever wrote this to go out to Little Blue Table or the Bruneau Canyon areas for a couple of days, and then claim the impacts are minimal and "random" and animals will magically "habituate". There are also MTRs. Plus the noise from War Planes and sonic booms carries for vast distances. WHERE is the data on the distance the noise of a sonic boom will carry in the Owyhee Canyonlands, for instance?

The EIS reliance on habituation to current or proposed levels of aircraft activity, and failure to assess species may react differently to the increased noise and flight activity are not valid for determining effects.

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The EIS does not adequately consider the physiological stress or energetic costs caused by the disturbance. Narrow focus on short-term impacts to critical behaviors fails to consider long-term impacts to species health. The DEIS fails to adequately account for potentially more harmful impacts to bird health during breeding season or other sensitive times of the year, and contradicts science demonstrating that aircraft operations, and noise and disturbance of many types, may have long- term impacts on fitness, including the ability to survive to reproductive age, find a mate, and produce offspring, outside of short-term impacts to critical behaviors. See Blickley Oil and Gas traffic noise disturbance effects on breeding sage-grouse.

The Supersonic EIS MUST address ALL Of these concerns.

There is no critical analysis conducted in the F-35 EIS – only circular self-serving arguments why F-35s (and current A-10 activity) is benign.

What are the adverse impacts of the War Plane "startle effect" from low-lying aircraft suddenly appearing on the horizon on people and animals? There is no "habituating" to that. It is an instinctual fear-based reaction.

Since foreseeably there will be F-35s using the MHAFB areas and flying low Supersonic and lowering flight floors under this latest EIS – all of these errors, omissions and deflections of the F-35 EIS must be corrected in the Supersonic EIS.

Facilities/Airspace

This greatly fails to take into account the greatly expanding human population, the City's controversial "Gateway" Urban Renewal District where business workers will suffer high levels of noise exposure, as well as other URDS that will increase Bench area population density and thus the number of people exposed to higher levels of F-35 noise, air pollution, in danger if

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serious accidents at Gowen occur, etc. What is the estimate of the total number of new workers in the URD area if developed as the city plans?

The DEIS ID-46 states: *Under the 124 FW Proposed Action, there would be an increase of 22 percent of sorties, with each sortie lasting 30-60 minutes. Based on this, the time spent in the airspace by the 124 FW would be expected to increase approximately 47 percent relative to the affected environment (see Table ID2.2-3) due to additional sorties expected to be conducted by the F-35A (see Table ID2.2-4).*

The DEIS elsewhere claims there will be some 90 minute missions, and none of this comports with the claim that the planes take off in mid morning and return back to Gowen mid afternoon. Much more specific info on how training activities will take place, and any use of the area that is now part of the MHAFB Urban War Range must be fully assessed.

NOTE that the F-35 EIS downplayed night-time and other activity, which characterizes much of the use in portions of the airspace impacted by the supersonic EIS. An honest, comprehensive, accurate and realistic accounting must be provided.

Air Quality Impacts

The F-35 analysis omits adequate consideration of the air pollution problems across this region, contrail pollution, etc.

ID 48-49 states: "*Climate change can also increase the frequency and severity of fires that burn forests, grasslands, and desert vegetation. On average, nearly 1 percent of the land in Idaho has burned per year since 1984, making it the most heavily burned state in the nation. Changes in climate are likely to more than double the area in the northwest burned by forest fires during an average year by the end of the 21st century*".

The military is a huge polluter contributing an immense share of greenhouse gases to the planet. The EIS never asks the question how can the carbon and

emissions impacts of War planes be minimized? See:
https://grist.org/article/u-s-military-emits-more-co2-than-most-countries/

This must be addressed for all the activities under the Supersonic EIS.

The F-35 EIS admits fire risk – but averages risk across the entire state. It does NOT look at the serious habitat loss that has already occurred for sensitive species in the areas where the F-35s will train/overfly (Owyhee Complex/Urban War Range), including the areas near Boise such as the winter range of the foothills. There is highly significant big game winter habitat on the Boise Front and other areas that will suffer increased F-35 noise. There are crucial sage-grouse wintering habitats as well, but the EIS makes no attempt to map and identify such important and irreplaceable habitats. THESE concerns mmust all be addressed for activities under the supersonic EIS.

DEIS ID-50 states: *if the intensity of any net emissions increase for a project alternative is below 250 tons per year in the context of an attainment criteria pollutant, the indication is the air quality impacts will be insignificant for that pollutant. In the case of criteria pollutants for which the proposed project region does not attain a NAAQS, the analysis compares the net increase in annual direct and indirect emissions to the applicable pollutant de minimis threshold(s). If the net direct and indirect emissions from the project alternative equal or exceed an applicable de minimis threshold, then a positive general conformity determination is required before any emissions from the actions may occur.*

This confusing, and it does not appear that the EIS provides enough data to show all the pollution footprint. The table of emission (ID 3.3.4) makes no sense, as the F-35s will fly more and have very inefficient engines. The full pollution footprint of MHAFB existing and proposed and foreseeable activities and use of the ranges by any parties must be fully assessed in the Supersonic EIS.

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The F-35 DEIS states: *All criteria pollutant emissions would decrease as a result of the aircraft conversion except for SO_x, which would increase slightly.*

What is the source of the data used to draw this conclusion? All data sources must be identified and provided in the Supersonic EIS.

The DEIS does not provide adequate information on ordnance and explosive and the safety of storage or transport.

The SS EIS must provide adequate on crash/mishap risk (higher associated with take off and landing) and assess the potential for greatly increased catastrophic loss of human life if F-35s are bedded down at civilian airports amid the town rather than at military bases like Mountain Home, as well as from more low level flying including supersonic low level flying under the SS EIS.

While the EIS claims great things about the supposed safety of the F-35, there is contradictory information about the plane's safety, including unexplained impacts to pilots. See info on cd. The model of F-35 will highly foreseeably change over the life of the mission – and with newer models comes increased risks (and potentially even louder NOISE). Further, AI may become the pilots, and not humans adding further to unknown and potentially catastrophic risks. ALL of these factors must be considered in the SS EIS.

What also must be considered under any discussion of safety is that having War Planes based at the Boise civilian airport amid the Treasure valley's population predicted to reach a million people means that the population is being used as a "human shield". There is no guarantee that hostile powers might not attempt to bomb or otherwise take out the F-35s, with catastrophic consequences to the Boise and Treasure Valley region.

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The presence of loud war Planes also causes distress to people with PTSD, refugees and others. It may even trigger angry or violent behavior. Boise citizens are exposed not only to War Plane overflights associated with Gowen and the incessant transient War Plane disturbance, but also to the MHAFB "Urban War" F-15 overflights and many transients including the Whidbey growlers,

This can cause serious effects to the mental health state of vulnerable people, people with PTSD, refugees, and those who have become sensitized to the horrible low frequency and other sounds produced by military War Planes. PLEASE fully assess these impacts to folks suffering PTSD or who have fled conflict as they try to recreate on public lands impacted by the SS EIS.

We also stress there has been no comprehensive current analysis of all the War activities taking place with the A-10s, transients, the various military planes using private terminals/facilities at the Boise airport, with the Orchard Training area, and Urban War. See WLD Scoping and EA comments on Urban CAS/WAR EA. This must be addressed in the SS EIS.

The DEIS states: *The F-35A aircraft has a 42 percent composite material by weight, which is more than the A-10 aircraft contains. One disadvantage of composite materials is that they have the potential to degrade under extreme temperatures, resulting in the production of toxic fumes and airborne respirable fibers. Laboratory studies have identified respirable fiber products and toxic gases (including high levels of CO, NO_x, and hydrogen cyanide) from burning composite materials. Because of these characteristics, composite aerospace materials present unique hazards to mishap responders. Individuals exposed to a crash site could experience dermatological and respiratory problems. Exposure to these hazards would not necessarily end when a fire is extinguished; exposure to recovery crews, site security, the surrounding population, and others could continue (Naval Air Warfare Center 2003). However, research on aircraft composite materials similar to that used on F-35A aircraft demonstrate that combustion characteristics of composite materials are similar to other combustible materials and rapid flame spread or excessive heat releases are not a concern.*

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Please provide full details of potential population exposure to this toxic material in the event of a mishap. Where will a pollution plume drift? How many people could potentially be exposed? How carcinogenic are these chemicals? This also elevates concern about the risk of crashes or other mishaps and the huge impact of such an event in a high density population area.

Please conduct this analysis of activities under the SS EIS – for example- what would the impacts on McDermitt or Duck Valley be?

Additional Concerns

Please prepare a noise contour map of the region showing where the F-35 will be significantly audible to residents with the potential for annoyance. How much of the City and area would that noise footprint encompass? Please do the same for any areas subjected to War plane noise under the SS EIS.

The DEIS at ID-77 wrongly ignores the significant adverse economic impact of declines or loss of wildlife populations, harms to recreational uses and enjoyment of public lands, from War Plane activity across the Owyhee region. The DEIS states: "*The socioeconomic aspect of potential impacts to lands underlying SUA was not evaluated because no construction or other ground disturbance would occur to generate economic activity.*

The minority and low income mapping of the DEIS shows large areas of such populations in close proximity to the airport. It is extremely likely that expansion of noise contours once the military correctly employs info on afterburner use and local area characteristic will include large numbers of low and minority income populations. Please prepare a SEL map for these populations as well.

Please fully address these concerns as relevant to the SS EIS activity.

The DEIS p. 102 includes the following inaccurate claim: "Changes in operational noise are not expected to impact terrestrial species in the area because species on and near the installation are likely accustomed to elevated noise levels associated with aircraft and military operations". The increase in noise

is likely to drive animals away, cause increased stress, make some species more likely to be predated, etc.

ID-131 states: "Noise generated in the reconfigured airspace should not perceptibly change in the MHRC when considered along with the F-35A beddown. There would be no changes in the number of flights operating in the airspace, other than the addition of F-35A aircraft and subtraction of A-10A aircraft out of the 124 FW. Fighter jet-generated noise would continue to dominate sound levels in the training airspace". There will be MORE flights. F-35 will use the airspace differently, but the EIS fails to reveal specific details of use, or how the presence of F-35s may alter maneuvers by and/or with other planes using the airspace.

PLEASE provide full and detailed analysis of what is meant by reconfigured airspace, and address in detail if the SS EIS is part of the referenced "reconfiguration" here.

IN the F-35 EIS, there is no adequate analysis of cumulative effects of the noise on sensitive native biota that have suffered over a million acres of wildfire habitat loss since the ETI EIS, extensive livestock grazing degradation and failure to meet Rangeland Health standards which means habitats for species are degraded,, acres of infestations of flammable invasive species and increased human development since analysis of the ETI, the current and foreseeable effects of climate change stress on sensitive species like sage-grouse and threatened slickspot peppergrass, etc. Such analysis must be fully and thoroughly conducted under the SS EIS.

The DEIS fails to include the information on serious flaws and concerns with the F-35 program – for example, those found in this Opinion piece by John Nichols on the failures and faults of the F-35 program:
https://madison.com/ct/opinion/column/john_nichols/john-nichols-f--project-is-the-military-industrial-complex/article_b97662f4-737e-5fa5-8b3f-b5d4408c246a.html

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The DEIS fails to accurately assess the noise impacts on human health, quality of life and just how bone-piercingly loud and annoying War Planes are. Here is an article describing how a community suffers under high levels of military noise. Note the Growlers are not as loud as F-35s! AND this is exactly how members of WLD have experienced the horrific existing noise levels in portions of the MHAFB Range.

"Then the whine arrived. The raw wail of metal slicing the dusky air over Washington's Whidbey Island.

The roar that followed was sound as force — penetrating, suffocating. Jingling pocketed keys. Touching bone.

"People who've heard about it, they think about airplanes, they think about jets, but they really can't imagine it," said Anne Harvey, standing on the porch in her backyard as Star, her aging black lab, lounged on the grass below. The dog, increasingly deaf, was oblivious to the growing growl".

AND: *"Really, what's happened [on Whidbey] and in the country more broadly is that the Department of Defense is not following the guidelines of the National Environmental Policy Act," said Matt Mikkelsen, a soundscape researcher. "It all lends itself to people believing that they're not operating in the public's best interest."*

AND: *Sound moves in fits and starts across a landscape, shaped by air's temperature and land's gradient, said Lauren Kuehne, an ecologist at the University of Washington who studies noise pollution in public spaces. Subtle changes in the orientation between sound sources and recipients alters that flow wildly.*

"Loudness," Kuehne said, "is perceived."

AND: "Ever since the Prowlers were replaced by the Growlers, those who are in the flight includes Coupeville. "This is a lower frequency, so it has a very different impact both on the vibrations in your home but also in your body. ... That's different from how the Navy had described it."

https://bitterrootmag.com/2019/09/13/we-are-collateral-damage-more-louder-jets-roil-military-communities/ Page 5 of 17

'We Are Collateral Damage': More, Louder Jets Roil Military Communities – Bitterroot 9/16/19, 9'59 PM

All but two people who testified at the Boise public hearing on the DEIS OPPOSED the basing of f-35s in Boise – and this included a broad spectrum of the public!

See Kustra article pasted below:
https://www.idahostatesman.com/news/local/community/boise/article234778822.html

The draft environmental impact statement that the Air Force released last month was quite revealing about the impact of the campaign to bring supersonic F-35 jets to Boise's Gowen Field. It raises the question for state and local officials as to what we value most here in Boise: 18 supersonic jets that will have a minimal effect on job opportunities and economic development or citizens of our neighborhoods who can live free of what the Air Force labels a "significant" noise impact.

Let's be clear about what "significant" noise impact is when it's coming from a supersonic jet that breaks the sound barrier and creates sonic booms. This is not your father's Oldsmobile!

In New Jersey a few years ago, there were reports of the ground shaking in south New Jersey that was mistakenly attributed to an earthquake. Eventually, the U.S. Navy claimed responsibility for the sonic booms caused by its supersonic aircraft, similar to the F-35s.

Although the Air Force passed on Boise this time and chose sites in Wisconsin and Alabama for the F-35s, it still lists Boise's Gowen Field as a backup candidate. And Boise Mayor Dave Bieter is still committed to bringing the F-35s to Boise at some future date. Last month's listening session the Air Force held for Boise residents regarding the F-35s sends a message that it's still serious about considering Boise in the future.

The Air Force got an earful of opposition that evening, best summed up by one resident who declared that "Boise is no place for urban war!" It's difficult for those who have control of the skies and the jets that fly overhead to predict exactly how a community will be affected by noise. The reassurances that well-intentioned officials and experts give to communities that life on the ground will not be affected dramatically are too often proved wrong when planes take to the air on a daily basis and pilots sometimes deviate from flight plans that may change from those laid out by official promises years before.

Whatever the prediction of noise impact in an environmental impact statement, it always seemed worse for folks out walking the dog, barbecuing in the backyard, teachers trying

to keep students' attention, parents trying to put babies asleep and every other aspect of daily life in a community.

In the case of the F-35s, the Air Force's analysis is not good news for Boiseans. For starters, there are currently more than 6,000 operations per year of the quieter A-10 fighter jets that currently fly out of Gowen, but the newer supersonic F-35s would increase operations to more than 7,000 operations per year. The missions of the F-35s will be 90 minutes long with take-offs and landings, and some of that mission time will be at supersonic speeds and noise.

The Idaho Statesman has already reported on the environmental impact statement analysis. In all, 272 households in an immediate area of 446 acres around Boise would be subjected to noise as loud as a vacuum cleaner 3 feet away. No telling what the tolerance for noise will be beyond the immediate area examined. To make matters worse for a city with rising property values and a shortage of affordable housing, many of the homes directly affected by noise are in that "affordable" category.

Whidbey Island, northwest of Seattle, can teach Boiseans a thing or two about property values and aircraft noise. The Naval air station there is a constant source of controversy over the noise level of its jets.

Property values are one of the main concerns of its residents. In fact, a map of the communities on Whidbey divides the island into zones that reflect the likelihood of noise from Naval air station jets upsetting daily life in the homes of the communities. If your home lies in one of the zones on the north end of the island, your property values will be less than if you are in a southern zone saved from most of the jet noise.

When you buy or sell a home, there is a document the buyer must review that details the zone the house is in, then the buyer must sign to knowing and understanding the noise risks assumed by the purchase. That would sure slow down a buyer or, at the very least, bring in a lower offering price.

How would all this play out in Boise with the new supersonic F-35s? Can anyone really reassure us that noise will not affect property values down the road when these F-35s are flying over the region, not to mention quality of life in general? These supersonic jets are

in a different class than the current A-10 jets when it comes to noise and the sonic boom in particular.

An analysis of an Air Force environmental impact statement by an anti-F35 group in Vermont called Save Our Skies concluded that the F35 could be as much as four times louder as another fighter jet, the F16.

Now that we have an environmental impact statement in Boise that raises serious concerns about how supersonic jets will affect the quality of life in Boise, this campaign season is the perfect opportunity for citizens to register their opposition to the F-35s.

It's time to send a message to state and local officials and vote for the mayoral candidate in November who says "NO, NOT HERE" and who will protect Boise's neighborhoods, schools, workplaces and homes from intolerable noise that citizens of Boise will come to regret.

Bob Kustra served as president of Boise State University from 2003 to 2018. He is host of Readers Corner on Boise State Public Radio and is a member of the Statesman editorial board.

Read more here: https://www.idahostatesman.com/opini

Boise is no place for F-35s. Boise is no place for Urban War!

We also note that the F-35 EIS did not address the psychological, health effects and financial toll of the repeated efforts to impose F-35s noxious noise on Boise? Please estimate already lowered property values. Please address the stress and uncertainty people living near the airport have faced for nearly a decade now as Idaho politicians and lobbyists have attempted to foist these War Planes on civilians whose homes and health would be substantially jeopardized.

The SS EIS must fully address the very real concerns of the public about the effects of military noise across this region.

Sincerely,



Katie Fite
Public Lands Director
WildLands Defense
PO Box 125
Boise, ID 83701
[redacted]

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IDAHO STATE HISTORICAL SOCIETY
Celebrating 140 YEARS OF SERVICE

8 June 2021

Brad Little
Governor of Idaho

Janet Gallimore
Executive Director
State Historic
Preservation Officer

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Noelle Shaver
366 FW/A7IE
1030 Liberator Street
Mountain Home AFB ID 83648
[redacted]

Via Email

RE: Environmental Assessment for Qatar Emiri Air Force F-15AQ Beddown, Mountain Home Air Force Base / SHPO Rev. No. 2020-651

Dear Ms. Shaver:

Thank you for consulting with our office on the above referenced project. The State Historic Preservation Office is providing comments to the Department of the Air Force pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR § 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

It is our understanding that the scope of the undertaking will include facility improvements to accommodate the Qatar Emiri Air Force F-15QA Beddown at Mountain Home Air Force Base in Idaho. Proposed actions will include the construction of temporary and permanent facilities, as well as demolition of buildings on the base.

We have reviewed the proposed undertaking and concur with the Area of Potential Effects (APE). We appreciate your consulting with our office and look forward to receiving a report which documents potential historic properties and provides an overall recommendation regarding eligibility and project effect. The report should take into consideration those direct and indirect effects, including reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative, as stated in 36 CFR 800.5(a)(1). A reminder, any site form that has not been updated within the last ten years will need to be updated.

Thank you for the opportunity to comment. Please note that our response does not affect the review timelines afforded to other consulting parties.

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Additionally, information provided by other consulting parties may cause us to revise our comments. If you have any questions or the scope of work changes, please contact me via phone or email at [redacted].

Sincerely,



Ashley Brown, M.A.
Historical Review Officer
Idaho State Historic Preservation Office

IDAHO STATE HISTORICAL SOCIETY
Celebrating 140 YEARS OF SERVICE

30 September 2021

Brad Little
Governor of Idaho

Janet Gallimore
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Sheri L. Robertson
366 CES/CEIE
1100 Liberator Street
Mountain Home Air Force Base ID 83648
sheri.robertson@us.af.mil

Via Email

RE: Continuation of Section 106 Consultation and Request for Concurrence on the Facility 3018 Determination of Ineligibility for Listing in the National Register of Historic Places (NRHP) / SHPO Rev. No. 2020-651

Dear Ms. Robertson:

Thank you for continuing consultation with our office on the above-referenced project. The State Historic Preservation Office is providing comments to the Department of the Air Force pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR § 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

It is our understanding that the scope of the undertaking will include facility improvements to accommodate the Qatar Emiri Air Force F-15QA Beddown at Mountain Home Air Force Base in Idaho. Proposed actions will include the construction of temporary and permanent facilities, as well as the demolition of buildings on the base.

We have reviewed the information received on 15 September 2021 and concur that Building 3018 (39-18100) is not eligible for listing in the National Register of Historic Places. We would also like to remind MHAFB at this time that site forms for properties within the area of potential effects that have not been updated in the last ten (10) years must be updated as part of this undertaking. Any updated site form received should be saved in a separate PDF file and should include current photo documentation, topographic map(s) at 1:24,000 scale, and sketch map(s) attached to the site form.

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Thank you for the opportunity to comment. Please note that our response does not affect the review timelines afforded to other consulting parties. Additionally, the information provided by other consulting parties may cause us to revise our comments. If you have any questions or the scope of work changes, please contact me via phone or email at 208.488.7463 or ashley.molloy@ishs.idaho.gov.

Sincerely,



Ashley Molloy, M.A.
Historical Review Officer
Idaho State Historic Preservation Office

B.6 DRAFT EA CORRESPONDENCE

OFFICE OF SPECIES CONSERVATION

Idaho Governor's Office of Species Conservation

304 N. 8th Street Ste. 149
Boise ID 83702

Michael Edmondson
Administrator

DEPARTMENT OF FISH & GAME

15950 N. Gate Blvd
Nampa, ID 83687

Jon Rachael
Regional Supervisor

November 2, 2021

Sheri L. Robinson
Environmental Management Chief
336 FW/PA, 366 Gunfighter Avenue Ste. 310
Mountain Home AFB, ID 83648

Re: Request for Comments Regarding the Notice of Availability of the Draft EA and Proposed FONSI for Qatar Emiri Air Force F-15QA Beddown, Mountain Home AFB, Idaho

Dear Sheri,

The Office of Species Conservation (OSC) and Idaho Department of Fish and Game (IDFG) appreciates the opportunity to review Mountain Home AFB's draft EA and proposed FONSI for the Qatar Emiri Air Force F-15QA Beddown. After reviewing the provided documents, neither OSC or IDFG saw an apparent, material alteration of existing conditions within the proposed action for ESA listed and non-ESA listed fish and wildlife. Therefore, we have no further comments on the proposed actions. We look forward to future opportunities to be included in the NEPA process and continue our working relationship with Mountain Home AFB.

Please contact Jace Hogg, OSC Federal Lands Coordinator [redacted] or Casey Pozzanghera, IDFG Environmental Staff Biologist at [redacted] if you have questions or need additional information.

Sincerely,

/s/ *Mike Edmondson*
MIKE EDMONDSON
Administrator

Jon Rachael, Regional Supervisor
Idaho Department of Fish and Game

IDAHO STATE HISTORICAL SOCIETY
Celebrating 140 YEARS OF SERVICE

4 November 2021

Brad Little
Governor of Idaho

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Sheri L. Robertson
366 CES/CEIE
1100 Liberator Street
Mountain Home Air Force Base ID 83648
sheri.robertson@us.af.mil

Via USPS

RE: Environmental Assessment for Qatar Emiri Air Force F-15AQ Beddown, Mountain Home Air Force Base / SHPO Rev. No. 2021-651

Dear Ms. Robertson:

Thank you for continuing consultation with our office on the above-referenced project. The State Historic Preservation Office (SHPO) is providing comments to the Department of the Air Force pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR § 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

A Draft Environmental Assessment (DEA) was compiled under the National Environmental Policy Act (NEPA) and received by our office on 22 October 2021. Upon review of this document, our office understands that the scope of the undertaking will include facility improvements to accommodate the Qatar Emiri Air Force F-15QA Beddown at Mountain Home Air Force Base (MHAFB) in Idaho. Proposed actions will include the construction of temporary and permanent facilities, as well as the demolition of buildings on the base.

Please note that our office requires digital copies of all Section 106 consultations. Submit all consultation materials (report, site forms, databases, GIS files, etc.) to shsspo@ishs.idaho.gov. For all future submissions to this office, please review the SHPO Coversheet instructions and complete the SHPO Compliance Review Checklist found at our website (https://history.idaho.gov/wp-content/uploads/Digital-Submission-Cover-Sheet-fillable-1.pdf).

After a review of the DEA, our office does not have enough information to concur with MHAFB's effect determination. Is MHAFB conducting its

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responsibilities under NEPA and the NHPA concurrently (per 36 CFR § 800.8(c))?

Identification of Historic Properties (36 CFR § 800.4)
The DEA identified ten historic properties within the area of potential effects (APE) that are eligible for listing in the National Register of Historic Places (NRHP). These include IHSI Nos. 39-17659, -17660, -17661, -17662, and -17663, which also comprise the World War II Hangar Historic District[1] that has been precluded from the DEA. It also includes IHSI Nos. 39-18102, -18151, 18152, -18153, and -18154, which comprise the SAC Nose Dock Historic District. Each district represents a historic property, and the total number of properties should be 12, not 10.

MHAFB did not identify or document the flightline and taxiways that are within the APE. These resources appear to be more than 45-years old and will need to be evaluated for listing in the NRHP. Please review National Register Bulletin 43, "Guideline for Evaluating and Documenting Historic Aviation Properties." In previous documentation for the World War II Hangar Historic District, the flightline is mentioned as an important aspect of the district. The flightline may also contribute to the SAC Nose Dock Historic District, but further analysis is needed to understand that potential relationship.

As previously mentioned in a letter dated 30 September 2021 from our office regarding consultation on this undertaking, site forms for eligible properties within the APE that have not been updated in the past ten years must be updated as part of this undertaking. Any updated site form prepared should be saved in a separate PDF file and should include current photo documentation, topographic map(s) at 1:24,000 scale, and sketch map(s) attached to the site form. Please see *Consulting with the Idaho SHPO* for further guidance.

Assessment of Adverse Effect (36 CFR § 800.5)
The DEA will need to take into account the World War II Hangar Historic District in its assessment of project effects, as well as any additional historic properties identified under 36 CFR § 800.4.

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[1] Historic Preservation and Maintenance Manual for World War II Hangars Historic District, Mountain Home Air Force Base, Elmore County, Idaho. SWCA Environmental Consultants (SHPO Report 2019/641); Mountain Home Air Force Base Cold War-Era Historic Property Survey. Geo-Marine, Inc. Prepared for U.S. Army Corps of Engineers (SHPO Report 2018/90); and Correspondence to N. Shaver (MHAFB) from A. Molloy, 10 October 2021: "Initiation of Section 106 Consultation at 35% Design for Hangars 204 and 205 Structural Repair and Fire Suppression System Installation at Mountain Home Air Force Base (MHAFB) / SHPO Rev. No. 2021-876"

In section 3.8.2.2 under Alternative 1, modifications are planned to Hangar 211, however, the DEA does not include the extent of those modifications. In absence of this information, our office will not be able to concur with a finding of no adverse effect, as it is not reasonable to assume that changes to the hangar would not "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" per 36 CFR § 800.5(1). MHAFB will need to develop a Programmatic Agreement with our office that defers 36 CFR § 800 to a design phase based on the current 2015 MHAFB Programmatic Agreement for alternative regulatory compliance.

Consultation
Has the MHAFB consulted with interested parties (e.g., Preservation Idaho, Elmore County Historical Society, Idaho Military History Museum, or Warhawk Air Museum) about this undertaking pursuant to 36 CFR § 800? Please provide a list of interested parties that MHAB has contacted, and any correspondence summarized.

At this time SHPO review has stopped due to the abovementioned concerns. Thank you for the opportunity to comment. Please note that our response does not affect the review timelines afforded to other consulting parties. Additionally, the information provided by other consulting parties may cause us to revise our comments. Please provide additional information to shsshpo@ishs.idaho.gov. If you have any questions, please contact me via phone or email at [redacted].

Sincerely,



Ashley Molloy, M.A.
Historical Review Officer
Idaho State Historic Preservation Office

CC: Noel Shaver, MHAB; Lindsay Johansson, Idaho SHPO

3

WILDLANDS DEFENSE

Katie Fite
PO Box 125
Boise, ID 83701
[redacted]

11/7/21

RE: Qatar Draft EA, **DRAFT ENVIRONMENTAL ASSESSMENT FOR QATAR EMIRI AIR FORCE F-15QA BEDDOWN MOUNTAIN HOME AIR FORCE BASE, IDAHO**

Dear MHAFB,

Wildlands Defense is greatly disappointed to read the Qatar Draft EA. Our review finds that the AF essentially makes a mockery of NEPA. The EA never seriously considers a broad range of viable alternatives and minimization and mitigation measures to reduce the already significant adverse impact of military war game activity across the tri-state Owyhee Canyonlands region. This is the largest remaining block of relatively intact Sage-grouse habitat in the world, and that also contains a host of other extraordinary values - all harmed and impaired by the increased military war game activity – noise, wild fire potential (plane crash, flares, on-the-ground activities), litter, pollution , contrails marring sky, terrifying low level flights and sonic booms, increased climate change gases, harmful on the ground habitat intrusion and disturbance activity spreading flammable weeds and disturbing wildlife habitat, impaired lands with Wilderness Characteristics and wild land and wilderness values, etc. impaired ACEC values, etc.

The Qatar Draft EA states:

"The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a US Air Force-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the 366th Fighter Wing Commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and US Air Force personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance …

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night

training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a US Air Force fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action".

The AF Qatar EA makes a mockery of NEPA by developing sham "alternatives" about MHAFB activities base tweaks – while providing no hard look at the full very harmful; airspace and public lands footprint of this major Bed Down – which is likely to be the first of multiple Bed Downs – as occurred with Singapore. The EA fails to analyze the adverse direct, indirect, additive, synergistic and cumulative effects of the Qatari Bed Down and training use over an approx. 7 million acre airspace home to imperiled Sage-grouse, Bighorn Sheep and many other wildlife species that are extremely sensitive noise. Nor is there any hard look assessment of the impact to human inhabitants, reservations communities, native American Reservations and cultural sites and uses, and public wild lands recreational uses and enjoyment of the Qatar activity – including that very foreseeably under the horrific "supersonic" EIS with its ear-splitting noise levels.

There is no valid range of alternatives – such as reductions in number of overflights over sensitive wildlife, higher AGL and supersonic flight levels, increased simulator training in order to reduce overflights, or make significant reduction in overflights by USAF or Singapore or other militaries using the MHAFB. There is no examination of using other military war bases for some or all of this "training? Instead Idaho, Oregon and Nevada wildlife will be greatly sacrificed for the benefit of a foreign military of a repressive undemocratic regime.

Please explain in detail WHY basing these Qatari war planes at MHAFB won't "interfere' with missions – while the REA claims basing Qatar planers at another area would "interfere".

The EA admits:

"There would be an approximately 8 percent increase in operations in multiple MTRs with the addition of the QEAF F-15QAs (Table 2-7 and Figure 2-4). MTRs provide opportunities for training at low altitudes within a previously established corridor. The multiple MTRs have minimum altitudes down to 100 ft above ground level (AGL) except where published altitudes are higher in accordance with flight restrictions such as specific noise abatement and obstacle avoidance requirements. The F-15QA pilots would operate in the SUA within the limits of their qualifications and in the same manner as the US Air Force F-15E pilots.

The F-15QAs would conduct supersonic flight as authorized at MHAFB and at altitudes and within authorized airspace to incorporate training to the extent of the aircraft's full capabilities. Currently, approximately 4 percent of all operations would include

supersonic flight (MHAFB, 2018). Current operations also include 90 percent of supersonic flight that would be conducted above 30,000 ft mean sea level (MSL) in the MHRC, with the remaining 10 percent occurring between 10,000 ft AGL and 30,000 ft MSL in Owyhee North MOA/ATCAA and Jarbidge North MOA/ATCAA. Supersonic flight is currently authorized above 30,000 ft MSL in the ATCAA above the Paradise North and South, Jarbidge South, and Owyhee South MOAs. All restrictions of overflights and supersonic flight above the Duck Valley Indian Reservation would be respected by QEAF pilots in the same manner as US Air Force pilots. Additionally, the F-15QAs would obey US Air Force restrictions concerning chaff and flares, which are currently released in the MHRC airspace above 2,000 ft AGL (Table 2-8). Use of chaff and flares is authorized in all six MOAs that make up the MHRC".

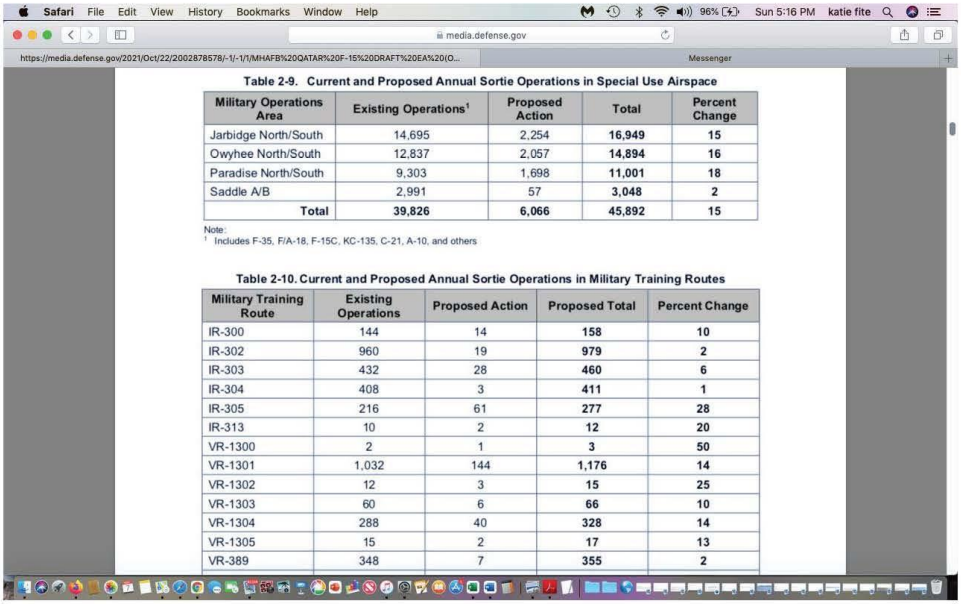


Table 2-9. Current and Proposed Annual Sortie Operations in Special Use Airspace

Military Operations Area	Existing Operations[1]	Proposed Action	Total	Percent Change
Jarbidge North/South	14,695	2,254	16,949	15
Owyhee North/South	12,837	2,057	14,894	16
Paradise North/South	9,303	1,698	11,001	18
Saddle A/B	2,991	57	3,048	2
Total	39,826	6,066	45,892	15

Note:
[1] Includes F-35, F/A-18, F-15C, KC-135, C-21, A-10, and others

Table 2-10. Current and Proposed Annual Sortie Operations in Military Training Routes

Military Training Route	Existing Operations	Proposed Action	Proposed Total	Percent Change
IR-300	144	14	158	10
IR-302	960	19	979	2
IR-303	432	28	460	6
IR-304	408	3	411	1
IR-305	216	61	277	28
IR-313	10	2	12	20
VR-1300	2	1	3	50
VR-1301	1,032	144	1,176	14
VR-1302	12	3	15	25
VR-1303	60	6	66	10
VR-1304	288	40	328	14
VR-1305	15	2	17	13
VR-389	348	7	355	2

This is clearly linked to the horrible proposed USAF Supersonic EIS activities. Under that EIS, sound levels as high as 139 decibels – that cause ear pain and hearing damage would occur.

PLEASE fully consider ALL of the information expressing WLD's serious and scientific concerns with the military war game footprint andf activities – existing and foreseeable – across the 7 million acre airspace and ground sites. Please prepare a drastically revised Supplemental NEPA document at the level of an EIS that examines a broad range of

alternatives – including alternatives referenced previously as well as below – in whole and/or in part.

RE: Comments on the Idaho, Oregon Nevada Supersonic DEIS – Mountain Home AFB Airspace Optimization EIS AND TO BE INCORPORATED INTO WLD QATAR DRAFT EA COMMENTS

http://www.mountainhomeafbairspaceeis.com

Mountain Home AFB Airspace Optimization EIS,
1740 East Fairview Ave,
PMB 20,
Meridian, Idaho 83642

RE: Airspace Optimization for Readiness EIS

https://www.mountainhomeafbairspaceeis.com/content/documents/Draft%20EIS/Volume%201%20(Chapters%201%20-%208)/Vol%201_MHAO_DEIS_July2021.pdf

Dear Decisionmakers,

Here are comments from WildLands Defense on the MHAFB Draft Supersonic "Airspace Optimization for Readiness" EIS. The public was provided with a vague scoping notice and information-deficient public meetings for this Supersonic EIS. WLD attended the Boise Scoping meeting and also provided extensive written scoping comments. At the meeting, Air Force personnel provided no specific information despite repeated inquiries by myself and others in attendance about the specific actions for specific areas, and the actual baseline of the entire and ever-growing military war training footprint across this vast 7 million acre region. We stressed the need to detail the full current military footprint and the current MHAFB adverse direct, indirect, cumulative, additive, and synergistic effects on the regions' wildlife, wild lands, ecosystem and people at the present (i.e. on the actual environment) across vast areas of irreplaceable wild lands critical for wildlife and biodiversity conservation and containing innumerable cultural sites. Laying out the full public lands and the environmental baseline is the foundation of the No Action alternative in NEPA processes, and this DEIS fails dismally in doing so. Unfortunately. the DEIS ignores and minimizes a host of concerns expressed by WLD and other members of the public, and greatly glosses over examination of the many values at stake and the current array of existing threats to them.

The DEIS does not identify any preferred alternative. The DEIS claims it needs lower flight and sonic boom levels for terrain masking – and basically to spread out the hellishly severe Lmax noise levels in Idaho across the entire area ID, OR, NV- plus

inflict even worse sonic boom noise levels within Idaho and across the region. These lower flight levels and lower sonic boom levels will inflict acute sonic hell on animals and humans exposed to them under this vast nearly 7 million acre airspace.

WLD also attended the Boise DEIS Meeting, Regrettably, the AF appears to have conducted no public outreach. We are concerned the AF is trying to move this severely damaging proposal through "under the radar" in the midst of the public being distracted over COVID - despite the proposed actions affecting a vast land area and greatly impacting all the wildlife and animals that inhabit this landscape, two Native American Reservations and innumerable cultural sites, Wilderness areas including portions of the Jarbidge Wilderness, Oregon and Idaho Wild and Scenic Rivers, 3 wild horse Herd Management Areas, and a great array of public recreational and other uses.

The DEIS states:

"The Proposed Action defines altitude adjustments of the existing Special Use Airspace to allow for subsonic low-altitude aircraft training operations, with alternatives that range from 100 feet above ground level (AGL) to 500 feet AGL, and supersonic flight as low as 5,000 feet or 10,000 feet AGL. The use of chaff and flares throughout the airspace will continue". The AF also refers to "terrain masking" which means flying very close to the ground in War Games.

We note the Air Force has used some type of formatting on both the cd sent to some members of the public, and with the on-line text that makes any copied and pasted text appear with line numbers that must be laboriously removed.

The Air Force seeks to impose highly damaging low level overflights and sonic booms and conduct wildlife and human terrorizing "terrain masking" and other activity that will cause "startle effects" and cause tremendous disturbance to wildlife and wild places.

Despite the extreme low level 100 ft. AGL and 10,000 ft. sonic booms in the Idaho MOAs having already made many beautiful wild land areas painful and traumatizing to visit, the AF now seeks to expand what truly is a sonic reign of terror at levels that will cause pain and hearing injury to harms (and to wildlife) across all of the Nevada and Oregon MOAs too. These noise levels cause ear pain and hearing loss (120 decibels is the threshold shown son CDC website information for such serious health effects) It seeks to inflict lower flight levels for sonic booms in Idaho (and OR and NV) to 5000 ft. AGL making the Idaho MOAs even more hellish.

The highly significant DEIS war game/training intensification changes are proposed without key elements o a proper current environmental baseline, (including multi-year surveys for important and sensitive species and a hard look assessment and evaluation of the ecological conditions of the existing sensitive and important wildlife/biota habitats,

and at the and status and trends of local and regional populations, and how precarious the sta6us of many species may be at present. Intensive multi-year baseline surveys are needed to understand how degraded and fragmented habitats may be, the types and significance of environmental threats and stresses wildlife/animal populations are already under, and how tenuous and precarious the viability of some of these species populations may be.

It is essential that a solid current baseline be established - in order to understand how much habitat has been lost/altered/degraded/fragmented since the AF range-wide stale ETI EIS analysis of the war range and activities associated with it. The 2021 DEIS fails to conduct any actual hard look at the effects of both its existing activities and the expanded activities -which represent serious and significant changes since the stale decades old MHAFB Range analysis. A current full and comprehensive hard look at all MHAFB activities is necessary to develop a suitable range of alternatives under NEPA and to be able to minimize environmental harms and adverse impacts.

The public meetings and scoping and DEIS documents provide almost no information on the actual current status of Sage-grouse, Bighorn Sheep, migratory bird, and other wildlife habitats and populations across the region, and how much they have declined and how much sagebrush has been lost and/or infested with cheatgrass and other flammable dooming weeds since the Air Force gained its current low level flights and other expanded training/war game activity in the ETI EIS across the affected Ranges, MOAs and region. These are all elements of a No Action altenrative that must be laid out and assessed for a valid EIS process. There has been no adequate baseline information or data provided on the current impacts of the incessant low level war plane overflights on wildlife now targeted in the 2021 DEIS by the Air Force for even worse aerial assaults on habitat.

Further, many people in southern Idaho are concerned about the increasing military war game disturbance in the region. We have already largely been deprived of enjoyable use in several areas of the Owyhee-Bruneau-Jarbidge Canyonlands MOAs due to the existing Idaho flight levels and sonic boom levels and the noxiously loud military overflights - for example, portions of the Bruneau-Jarbidge River, Jacks Creek, Battle Creek-Big Springs, South Fork Owyhee, and Little Owyhee areas. Now the military wants to inflict this same level of Sonic Hell – or worse - with even lower level supersonic activity and "terrain masking" which sure sounds like flying down in the beautiful canyons and between Jarbidge Wilderness mountain peaks – across two more states plus add even lower sonic boom flight levels in Idaho.

The document and comment web address is not a governmental Website. Why? Will commenting here affect the public's ability to FOIA information? Besides providing no publicity for the EIS and meetings, the AF does not even have a direct link to provide electronic public comment, making the public register at the cumbersome contractor

website, use a password, etc. to submit information electronically. These barriers are likely to discourage some people from commenting, since one has to "register" to submit a comment – another hurdle for the public.

Further, the scoping mailing address was not to a government address – but to a PO Box at Postal site in Meridian, and now with the DEIS to a Leidos address in New Mexico.

History of Expansion

The Air Force claims it "needs" to have these serious harmful and deafening changes. Yet time after time, through incremental EAs, CXs or unanalyzed changes, there has been MHAFB and also Idaho Guard war game land and air activity expansion. This includes all the incremental expansions both before and after the ETI EIS- when the AF has claimed the same "need" – always for more, more, more – never less. Apparently, the AF "need" to take over public wild land airspace in this region is insatiable. This makes no sense, as news and defense industry reports increasingly describe simulator training and/or increased Artificial Intelligence war game use – which should mean the AF and MHAFB need LESS training airspace and fewer in the air climate change gas emitting hours.

As Smedley Butler, famously said, "War is a racket". The incessant expansion of the military footprint in southern Idaho and surrounding areas shows war games are a racket, literally and figuratively, too. Further, US War Plane and equipment contractors are increasingly profiting from selling planes and war equipment to foreign countries. The US airspace and especially our western public lands, are being greatly sacrificed to foreign military overflights by the militaries who purchase the war planes and weaponry. MHAFB has experienced First one, then two Singapore F-15 War Plane units. Right now there is a proposed Qatar War Plane unit bed down. Yet the EIS claims there won't be any increase in supersonic flight levels. We are concerned that there may be "creative accounting" of all the existing flights taking place. It strains credibility to believe that flight activity has not increased and won't increase with all these foreign war planes operating out of MHAFB, plus joint exercises with other foreign and US war planes that are frequently touted on the MHAFB website. We are attaching comments on cd that we have submitted for numerous past expansions of military activity.

For example, besides the two units of Singapore War planes bow at MHAFB, the AF just authorized a biennial "invasion" (Forging Sabre) of sorts by Singapore ground and air forces across the air and ground space of MHAFB. I note that in this latest project although WLD commented on it in scoping, but we never received a copy of the final EIS which now is shown as being "completed" in April on the MHAFB website. Did the AF never even bother to mail a copy of its final document to WLD and others of the public who had commented?

As another example, the news reported on the Air Force conducting activity at "Magic Valley Regional Airport". "Elements of U.S. Army Special Operations Command are conducting training at Joint Base Lewis-McChord, Washington, Magic Valley Regional Airport, Twin Falls, Idaho and Mountain Home Air Force Base, Idaho, January 25-February 4, 2021.

https://www.mountainhome.af.mil/News/Article-Display/Article/2487834/usasoc-conducts-training-in-southern-idaho/ .

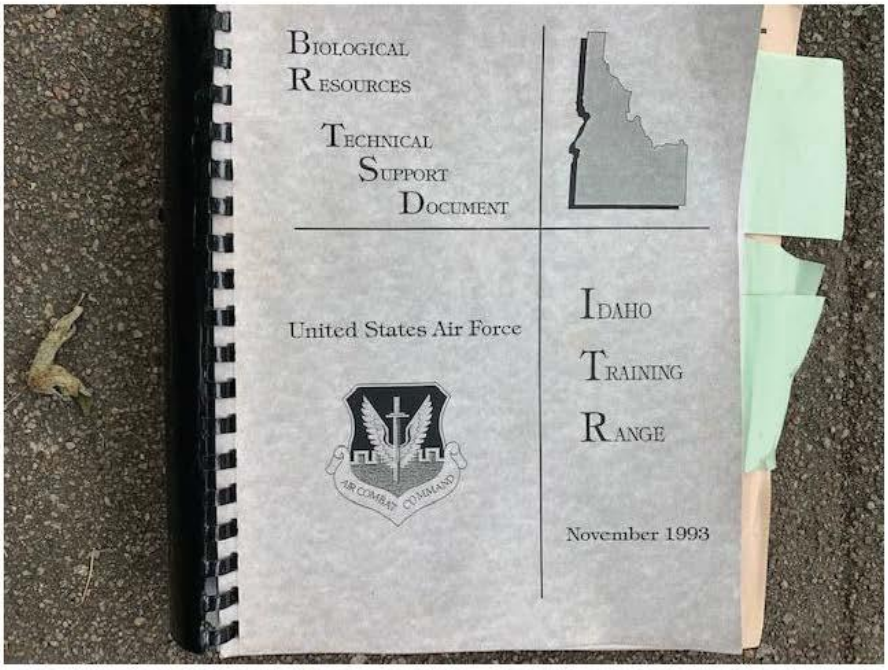
On cd are comments and documents WLD submitted for the Urban War proposal, and AF and other documents showing the Saylor Creek use of White Phosphrous and Jarbidge airspace expansion and flight level changes, national Guard expansion activity and new proposals, and much else.

Early 1990s War Plane Flights and Booms

The minimal DEIS "Background" section greatly fails to describe the incremental and increasingly larger and more harmful expansion of the Air Force's air and ground-based footprint in this tri-state region by simplistically claiming that MHAFB training has occurred since 1942. Understanding this incremental and worsening noise disturbance and other disturbances to the region is essential to preparation of a valid 2021 NEPA document.

For some insight into this, we have exhumed our old hard copy of the Andrus Bombing Range EIS, from 1993 with maps showing what the MHAFB activity in the tri-state region was in the early 1990s, when Bighorn populations were thriving.

First, please consider the information in the environmental activist alert describing creeping military airspace and land grabs, and how uncommon sonic booms were at that time in 1993.


BIOLOGICAL
RESOURCES
TECHNICAL
SUPPORT
DOCUMENT
United States Air Force
AIR COMBAT COMMAND
IDAHO
TRAINING
RANGE
November 1993

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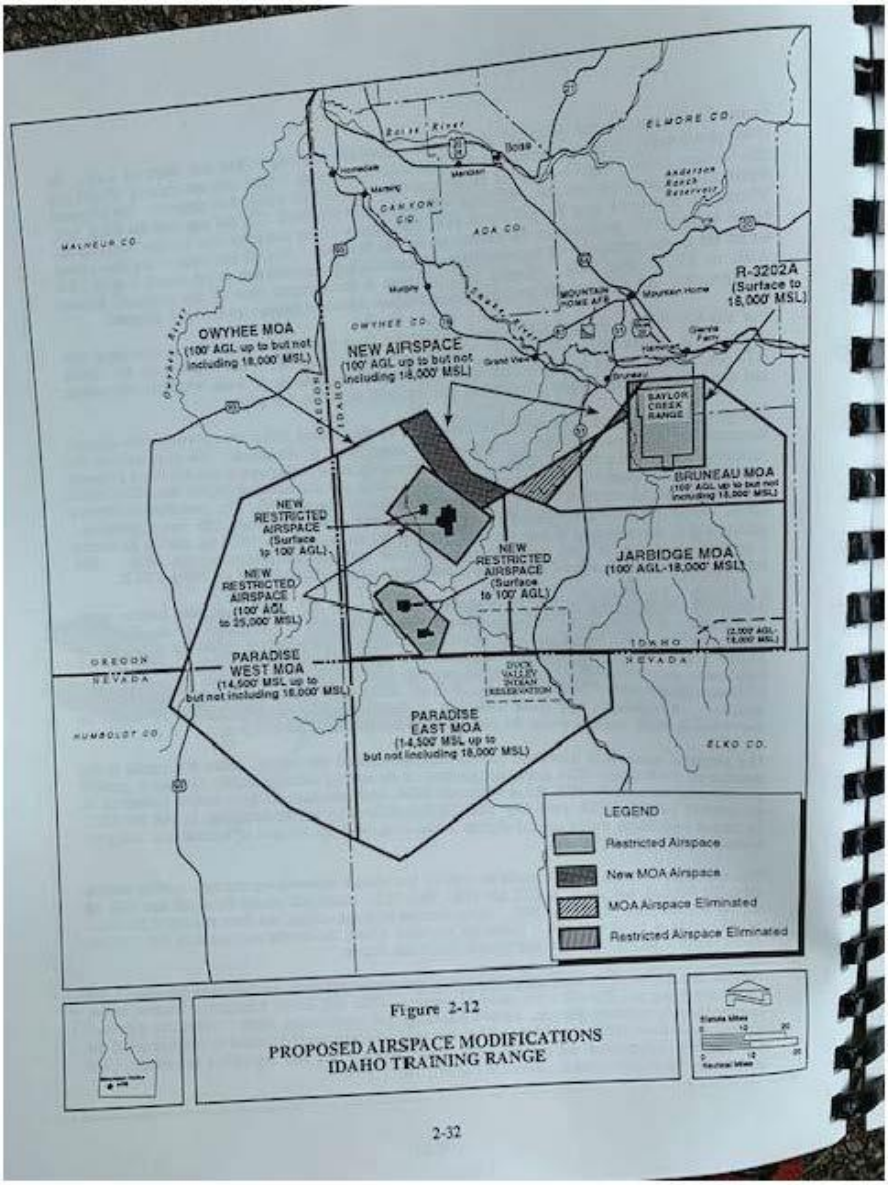
ELMORE CO.
Boise River
Boise
Anderson Ranch Reservoir
CANYON CO.
ADA CO.
MALHEUR CO.
Mountain Home
R-3202A
(Surface to 18,000' MSL)
OWYHEE MOA
(100' AGL up to but not including 18,000' MSL)
OWYHEE CO.
NEW AIRSPACE
(100' AGL up to but not including 18,000' MSL)
Owyhee River
OREGON
IDAHO
MOUNTAIN HOME AFB
Grand View
Bruneau
Glenns Ferry
BAYLOR CREEK RANGE
BRUNEAU MOA
(100' AGL up to but not including 18,000' MSL)
NEW RESTRICTED AIRSPACE (Surface to 100' AGL)
NEW RESTRICTED AIRSPACE (100' AGL to 25,000' MSL)
NEW RESTRICTED AIRSPACE (Surface to 100' AGL)
JARBIDGE MOA
(100' AGL-18,000' MSL)
(2,000' AGL-18,000' MSL)
OREGON
NEVADA
IDAHO
NEVADA
PARADISE WEST MOA
(14,500' MSL up to but not including 18,000' MSL)
DUCK VALLEY INDIAN RESERVATION
PARADISE EAST MOA
(14,500' MSL up to but not including 18,000' MSL)
HUMBOLDT CO.
ELKO CO.
LEGEND
Restricted Airspace
New MOA Airspace
MOA Airspace Eliminated
Restricted Airspace Eliminated
Figure 2-12
PROPOSED AIRSPACE MODIFICATIONS
IDAHO TRAINING RANGE
2-32



Photo by Ted Weigold

OWYHEE SUPERSONIC ALERT!

Oregon-Idaho-Nevada

A new threat has burst upon the high desert plateaus and spectacular canyonlands of Oregon, Idaho, and Nevada. Idaho's governor and the Air Force have revealed plans for a new bombing range at the very center of the Owyhee Canyonlands!

If this project prevails, supersonic flights will become a frequent everyday occurrence over most of Malheur, Elko, Humboldt, and Owyhee counties. The proposal is being pushed rapidly, allowing little time for the public to evaluate its merits. It is vital that your concerns be raised now so they can be examined in the Environmental Impact Statement.

********** BACKGROUND **********

AIR FORCE INVADES WEST

With almost no public awareness or comment, the Air Force in recent years has greatly expanded supersonic and other military operating airspace (MOA) throughout the western U.S. Nevada is almost entirely covered by MOAs or other restricted military airspace and now Oregon and Idaho face similar threats. Worse, the military has physically grabbed entire valleys and mountain ranges in Nevada, causing dislocation of long term residents of ranches and villages.

Many citizens will be surprised to learn that much of southeast Oregon now lies under Military Operating Areas. The Air Force appears to be establishing piece-by-piece the "Continental Operations Area" denied to it by Congress nearly two decades ago. Yet, the Air Force has failed to establish a need for expanded supersonic operating areas in Idaho or Oregon.

After the controversial Saylor Creek Bombing Range proposal was soundly defeated by public opinion last year, Idaho's governor and industrialist J. R. Simplot formulated a new proposal for a bombing range in the obscure hidden heart of the Owyhee canyonlands. Indeed, though discussion has been active for a year with ranchers and some interest groups, conservationists were briefed by the Idaho governor's office barely 80 hours before the first scoping hearing.

MASSIVE LAND SWAP

The governor of Idaho is proposing a massive exchange of Public Land for Idaho state lands. The Bureau of Land Management is being asked to give Idaho title to 147,000 acres of Public Land administered by the BLM in the heart of the Owyhee canyonlands. Then, Idaho proposes to lease this block of state land to the Air Force for a bombing range.
Two ranchers within the proposed bombing range are to be bought out. A third rancher within the boundaries and those adjoining the supersonic bombing range have been ignored. Further details of the deal remain murky.

"With almost no public awareness or comment, the Air Force in recent years has greatly expanded supersonic and other military operating airspace throughout the western US. Nevada is almost entirely covered by MOAs or other restricted military airspace, and now Idaho and Oregon face similar threats. Worse, the military has physically grabbed ranges in Nevada, causing dislocation of long term residents of ranches and villages. Many citizens will be surprised to learn that much of southeast Oregon now lies under Military Operating Areas. The Air Force appears to be establishing, piece by piece, the Continental Operations Area denied to it by Congress nearly two decades ago. Ye the Air force has failed to establish a need for expanded supersonic operating areas in Idaho and Oregon. After the controversial Saylor Creek Bombing range proposal was soundly defeated by public opinion last year, Idaho's Governor and industrialist J. R. Simplot formulated a new proposal for a Bombing Range in the obscure hidden heart of the Owyhee Canyonlands".

Also: "*SONIC BOOMS TO BE ROUTINE". Today, Sonic booms are infrequent over Idaho deserts, but a huge supersonic operating area would be associated with the proposed Big Springs bombing range. If the Air Force is successful, routine sonic booms will rock an area of 8300 square miles in Idaho, Oregon, and Nevada".*

"The Air Force claims supersonic flight will be restricted to 10,000 ft above ground level, but conservationists are not persuaded. At 10,000 ft AGL, sonic booms are still very disturbing, and the sonic boom footprint could be 20 miles wide along the flight path of the war plane. Military airplanes have been observed routinely violating airspace restrictions within the canyons of Idaho and Oregon, and the Air Force flip-flopped so many times during the Saylor Creek bombing range controversy that is has little credibility regarding its intentions".

"The Owyhee country is sacred to man people in Idaho, Nevada and Oregon. At risk are high quality outdoor opportunities … rare plants, dense concentrations of archaeological sites… ".

"WILDLIFE IN BOMBSIGHTS": Burrowing owls and dense concentrations of other raptors … mountain bluebirds Dickshooter Ridge is a critical wintering area for the surviving Owyhee elk herd. The Owyhee is home to perhaps half the nation's bighorn sheep".



Photo by Ted Wolgold

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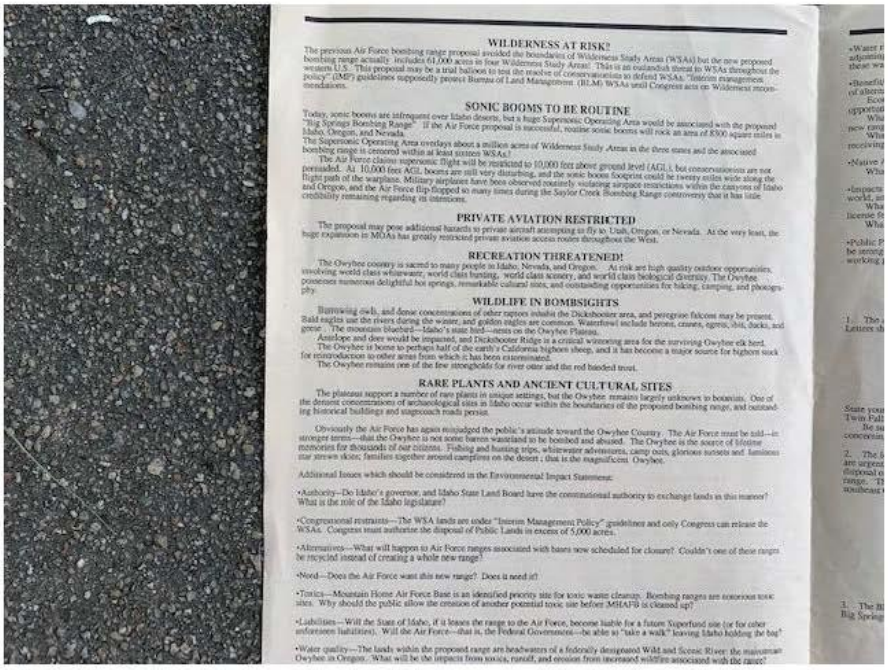


WILDERNESS AT RISK?

The previous Air Force bombing range proposal avoided the boundaries of Wilderness Study Areas (WSAs) but the new proposed bombing range actually includes 61,000 acres in four Wilderness Study Areas! This is an outlandish threat to WSAs throughout the western U.S. This proposal may be a trial balloon to test the resolve of conservationists to defend WSAs. "Interim management policy" (IMP) guidelines supposedly protect Bureau of Land Management (BLM) WSAs until Congress acts on Wilderness recommendations.

SONIC BOOMS TO BE ROUTINE

Today, sonic booms are infrequent over Idaho deserts, but a huge Supersonic Operating Area would be associated with the proposed "Big Springs Bombing Range". If the Air Force proposal is successful, routine sonic booms will rock an area of 8300 square miles in Idaho, Oregon, and Nevada.

The Supersonic Operating Area overlays about a million acres of Wilderness Study Areas in the three states and the associated bombing range is centered within at least sixteen WSAs!

The Air Force claims supersonic flight will be restricted to 10,000 feet above ground level (AGL), but conservationists are not persuaded. At 10,000 feet AGL, booms are still very disturbing, and the sonic boom footprint could be twenty miles wide along the flight path of the warplane. Military airplanes have been observed routinely violating airspace restrictions within the canyons of Idaho and Oregon, and the Air Force flip-flopped so many times during the Saylor Creek Bombing Range controversy that it has little credibility remaining regarding its intentions.

PRIVATE AVIATION RESTRICTED

The proposal may pose additional hazards to private aircraft attempting to fly to Utah, Oregon, or Nevada. At the very least, the huge expansion in MOAs has greatly restricted private aviation access routes throughout the West.

RECREATION THREATENED!

The Owyhee country is sacred to many people in Idaho, Nevada, and Oregon. At risk are high quality outdoor opportunities, involving world class whitewater, world class hunting, world class scenery, and world class biological diversity. The Owyhee possesses numerous delightful hot springs, remarkable cultural sites, and outstanding opportunities for hiking, camping, and photography.

WILDLIFE IN BOMBSIGHTS

Burrowing owls, and dense concentrations of other raptors inhabit the Dickshooter area, and peregrine falcons may be present. Bald eagles use the rivers during the winter, and golden eagles are common. Waterfowl include herons, cranes, egrets, ibis, ducks, and geese. The mountain bluebird—Idaho's state bird—nests on the Owyhee Plateau.

Antelope and deer would be impacted, and Dickshooter Ridge is a critical wintering area for the surviving Owyhee elk herd.

The Owyhee is home to perhaps half of the earth's California bighorn sheep, and it has become a major source for bighorn stock for reintroduction to other areas from which it has been exterminated.

The Owyhee remains one of the few strongholds for river otter and the red banded trout.

RARE PLANTS AND ANCIENT CULTURAL SITES

The plateaus support a number of rare plants in unique settings, but the Owyhee remains largely unknown to botanists. One of the densest concentrations of archaeological sites in Idaho occur within the boundaries of the proposed bombing range, and outstanding historical buildings and stagecoach roads persist.

Obviously the Air Force has again misjudged the public's attitude toward the Owyhee Country. The Air Force must be told—in stronger terms—that the Owyhee is not some barren wasteland to be bombed and abused. The Owyhee is the source of lifetime memories for thousands of our citizens. Fishing and hunting trips, whitewater adventures, camp outs, glorious sunsets and luminous star strewn skies; families together around campfires on the desert ; that is the magnificent Owyhee.

Additional Issues which should be considered in the Environmental Impact Statement:

•Authority—Do Idaho's governor, and Idaho State Land Board have the constitutional authority to exchange lands in this manner? What is the role of the Idaho legislature?

•Congressional restraints—The WSA lands are under "Interim Management Policy" guidelines and only Congress can release the WSAs. Congress must authorize the disposal of Public Lands in excess of 5,000 acres.

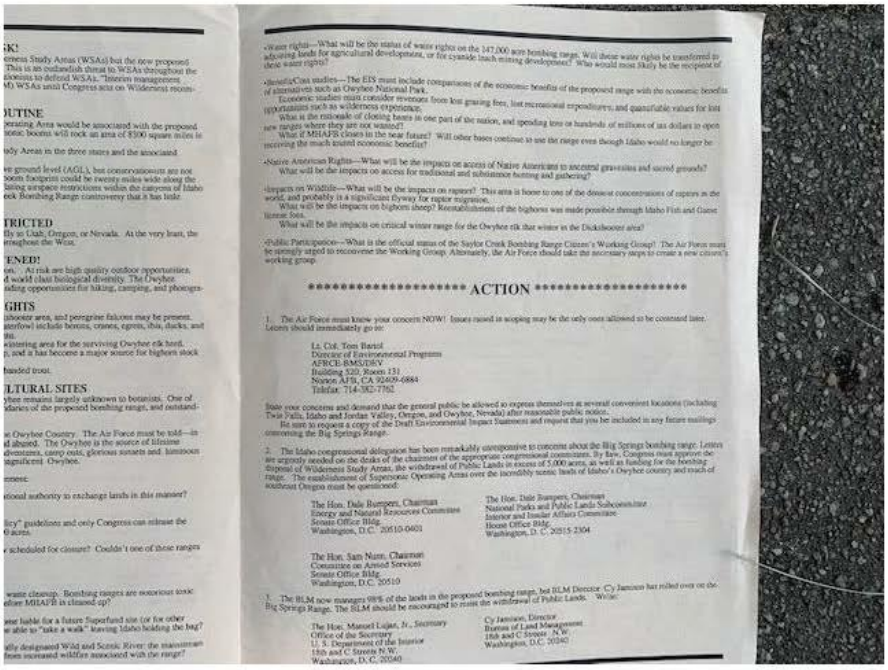
•Alternatives—What will happen to Air Force ranges associated with bases now scheduled for closure? Couldn't one of these ranges be recycled instead of creating a whole new range?

•Need—Does the Air Force want this new range? Does it need it?

•Toxics—Mountain Home Air Force Base is an identified priority site for toxic waste cleanup. Bombing ranges are notorious toxic sites. Why should the public allow the creation of another potential toxic site before MHAFB is cleaned up?

•Liabilities—Will the State of Idaho, if it leases the range to the Air Force, become liable for a future Superfund site (or for other unforeseen liabilities). Will the Air Force—that is, the Federal Government—be able to "take a walk" leaving Idaho holding the bag?

•Water quality—The lands within the proposed range are headwaters of a federally designated Wild and Scenic River: the mainstream Owyhee in Oregon. What will be the impacts from toxics, runoff, and erosion from increased wildfire associated with the range?



•Water rights—What will be the status of water rights on the 147,000 acre bombing range. Will these water rights be transferred to adjoining lands for agricultural development, or for cyanide leach mining development? Who would most likely be the recipient of these water rights?

•Benefit/Cost studies—The EIS must include comparisons of the economic benefits of the proposed range with the economic benefits of alternatives such as Owyhee National Park.
Economic studies must consider revenues from lost grazing fees, lost recreational expenditures, and quantifiable values for lost opportunities such as wilderness experience.
What is the rationale of closing bases in one part of the nation, and spending tens or hundreds of millions of tax dollars to open new ranges where they are not wanted?
What if MHAFB closes in the near future? Will other bases continue to use the range even though Idaho would no longer be receiving the much touted economic benefits?

•Native American Rights—What will be the impacts on access of Native Americans to ancestral gravesites and sacred grounds?
What will be the impacts on access for traditional and subsistance hunting and gathering?

•Impacts on Wildlife—What will be the impacts on raptors? This area is home to one of the densest concentrations of raptors in the world, and probably is a significant flyway for raptor migration.
What will be the impacts on bighorn sheep? Reestablishment of the bighorns was made possible through Idaho Fish and Game license fees.
What will be the impacts on critical winter range for the Owyhee elk that winter in the Dickshooter area?

•Public Participation—What is the official status of the Saylor Creek Bombing Range Citizen's Working Group? The Air Force must be strongly urged to reconvene the Working Group. Alternately, the Air Force should take the necessary steps to create a new citizen's working group.

********** ACTION **********

1. The Air Force must know your concern NOW! Issues raised in scoping may be the only ones allowed to be contested later. Letters should immediately go to:

Lt. Col. Tom Bariol
Director of Environmental Programs
AFRCE-BMS/DEV
Building 520, Room 131
Norton AFB, CA 92409-6884
Telefax: 714-382-7762

State your concerns and demand that the general public be allowed to express themselves at several convenient locations (including Twin Falls, Idaho and Jordan Valley, Oregon, and Owyhee, Nevada) after reasonable public notice.
Be sure to request a copy of the Draft Environmental Impact Statement and request that you be included in any future mailings concerning the Big Springs Range.

2. The Idaho congressional delegation has been remarkably unresponsive to concerns about the Big Springs bombing range. Letters are urgently needed on the desks of the chairmen of the appropriate congressional committees. By law, Congress must approve the disposal of Wilderness Study Areas, the withdrawal of Public Lands in excess of 5,000 acres, as well as funding for the bombing ranges. The establishment of Supersonic Operating Areas over the incredibly scenic lands of Idaho's Owyhee country and much of southeast Oregon must be questioned:

The Hon. Dale Bumpers, Chairman
Energy and Natural Resources Committee
Senate Office Bldg.
Washington, D.C. 20510-0403

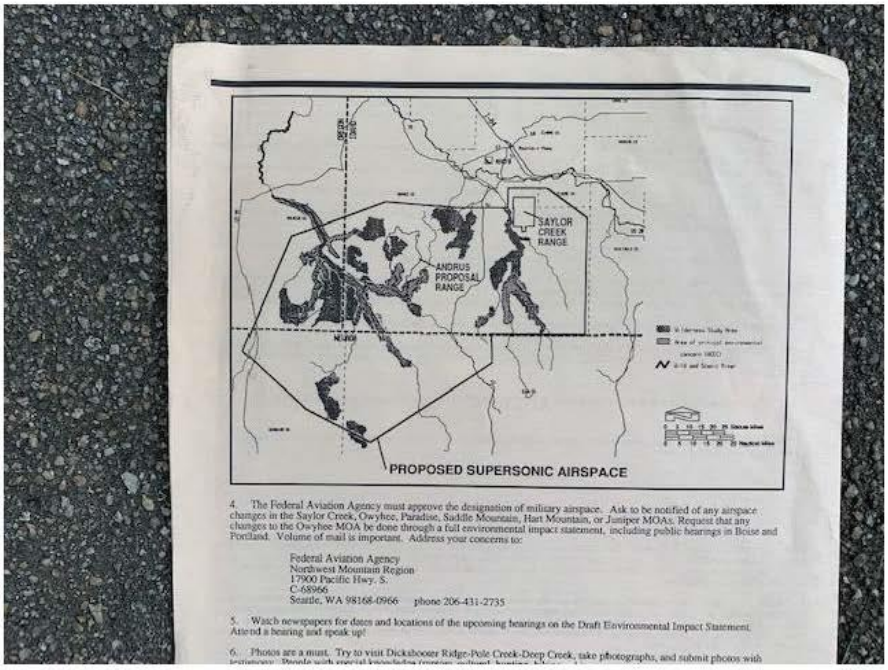
The Hon. Dale Bumpers, Chairman
National Parks and Public Lands Subcommittee
Interior and Insular Affairs Committee
House Office Bldg.
Washington, D. C. 20515 2304

The Hon. Sam Nunn, Chairman
Committee on Armed Services
Senate Office Bldg.
Washington, D.C. 20510

3. The BLM now manages 98% of the lands in the proposed bombing range, but BLM Director Cy Jamison has rolled over on the Big Springs Range. The BLM should be encouraged to resist the withdrawal of Public Lands. Write:

The Hon. Manuel Lujan, Jr., Secretary
Office of the Secretary
U. S. Department of the Interior
18th and C Streets N.W.
Washington, D.C. 20240

Cy Jamison, Director
Bureau of Land Management
18th and C Streets N.W.
Washington, D.C. 20240



This particular Bombing Range scheme and supersonic overflight expansion proposal was defeated, and the AF went on to prepare the now woefully out-dated Enhanced Training in Idaho (ETI) EIS, which is supposed to be the basic document that the AF war game activity over the 7 million acre area is based on.

Note that this Biological document was two inches thick and hundreds of pages, and there was some actual baseline inventory conducted for some wildlife species at that time – unlike now in 2021, when species are in serious decline and climate change stress and the megadrought are bearing down hard. Now the public is provided with a more minimal simplistic self-serving nearly substanceless DEIS Biological Document. To add insult to injury, the 2021 DEIS blithely assures the public that animals would somehow adapt their behavior to the MHAFB ear-splitting war game noise, low level and sonic boom startle effects and a combination of both under the horrific noise levels of the DEIS.

Since the information in this previous biological document was prepared, and since the information in the subsequent but extremely out-dated Juniper Butte Bombing Range ETI EIS was prepared, there have been immense changes in the West, and across this northern Great Basin ecological region, that have exerted great stress on sagebrush wildlife and on public wild lands. This has increased the combined, synergistic and additive threats that

incessant levels of War Game overflight and ground-based activity pose to sensitive and important native species and to sagebrush wildlife biodiversity.

Supplemental 2021 EIS Is Needed - Rigorous NEPA Review Is Essential, But Instead EIS Provides Only Cursory Analysis Lacking Any Credible Environmental Baseline

NEPA is the "basic national charter for protection of the environment." 40 C.F.R. § 150 0.1. "NEPA requires that a federal agency consider every significant aspect of the environmental impact of a proposed action and inform the public that it has indeed considered environmental concerns in its decisionmaking process." Pit River Tribe v. U.S. Forest Serv.,13 469 F.3d 768, 781 (9th Cir. 2006) (quoting Earth Island Inst. v. U.S. Forest Serv., 442 F.3d 1147, 1153–54 (9th Cir. 2006)). "The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(c). The Council on Environmental Quality ("CEQ") promulgated rules implementing NEPA, which apply to all federal agencies, including the Air Force. See 40 C.F.R. pt. 1500.

For "major Federal actions significantly affecting the quality of the human environment," federal agencies must prepare an environmental impact statement. 42 U.S.C. § 4332(C). CEQ regulations define "major federal actions" to include "new and continuing activities" with "effects that may be major and which are potentially subject to federal control and responsibility." 40 C.F.R. § 1508.18. For purposes of NEPA, the "human environment" includes "the natural and physical environment" as well as "the relationship of people with that environment." Id. § 1508.14.

An EIS must contain a detailed discussion of direct, indirect, and cumulative environmental impacts, Id. §§ 1508.7, 1508.8; 1502.16, and appropriate measures to mitigate adverse environmental impacts, Id. §§ 1502.14, 1502.16. City of Sausalito v. O'Neill, 386 F.3d 1186, 1206 (9th Cir. 2004). Impacts or effects of a proposed action include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." Id. § 1508.8. An agency must ensure the "professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements" and "shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other resources relied upon for conclusions in the statement." Id. § 1502.24. NEPA's implementing regulations also require that an agency address "appropriate mitigation measures not already included in the proposed action or alternatives." Id. § 1502.14(f); see also id. § 1502.16(h).

In addition, a final EIS should respond to comments received on the draft EIS among other options, supplementing, improving, or modifying the analysis or explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position. Id. § 1503.4(a).

As we describe in our comments here, and the information that we incorporate by reference from WLD's previous comments on MHAFB and Idaho National Guard war training/war games expansion schemes in recent years , there is already a huge military disturbance burden and footprint across this region. The activities and the environmental baseline of wildlife habitats and populations as well as human recreational uses of the tri-state region have changed dramatically since the ETI EIS and a full hard current NEPA look must be taken at ALL MHAFB and Guard-related War game activity and foreseeable expansions as well – such as the Qatar Bed down.

Just since the Scoping for this DEIS– the MHAFB War Game footprint is proposed for significant new expansion that includes use of this very airspace and ground facilities by a Qatar force bed down at MHAFB, and a new 2021 (but apparently already authorized) biennial "invasion" of SW Idaho by large numbers of Singapore ground and air personnel (Forging Sabre). We are also attaching a series of comments on the Idaho Army National Guard expansion of the Orchard Training Area with a new range east of SIMCO road partially in the Morley Nelson SRBOPA, and where Singapore forces based at MHAFB will be involved in the biennial "Forging Sabre" activities. This demonstrates, that despite very frequent denials by the Army Guard, their activities are increasingly inter-twined with the AF war gaming at MHAFB.

In scoping, we submitted on cd and include by reference information on MHAFB's highly controversial and unprecedented imposition of an Urban War Game range over the people of southern Idaho – using our cities and our bodies and as 'chaos" in sinister War activities; information on MHAFB's 2016 Convoy Training EA that allows closure of Highway 51/GPS scrambling, increased Bombing Range facilities for Urban War games and other activities, and expanded use of unknown illumination and other devices and materials as well as upgrading and expanding Saylor Creek Urban War sites; the Singapore AF Bed down EA for the second Singapore Unit, and referenced other expansion EAs (the "crowding" in the two MOAs appears to be due to foreign aircraft, transients and others from outside Idaho); an earlier (circa 2008) MHAFB airspace expansion EA where the AF using claims of "need" just like in the DEIS swooped in and grabbed the airspace over a significant portion of the Jarbidge Wilderness high peaks and northern Nevada, a circa 2007 EA for use of White Phosphorus (used in War Crimes) and other activities at Saylor Creek Bombing Range, and several other segmented, piecemeal actions.

The bottom line is: MHAFB military training activity has changed and has an expanded harmful footprint since the initial ETI EIS decades ago analyzed the environmental

baseline, and the effects on, and threats to, sensitive species, migratory birds, wildlife in general, aquatic species, public recreational and other uses of public lands, cultural sites and uses and WSA, WSR and wilderness values from the MHAFB and other military war training/game activity.

Alternatives

The USAF must consider a full range of alternatives that reduce its War Plane and ground footprint in this Owyhee landscape crucial for sage-grouse and biodiversity conservation in a valid NEPA pricess

A hard look analysis and a suitable range of alternatives must also examine reducing and minimizing the pollution and greenhouse gas generating footprint of MHAFB activities across the region to aid in addressing the climate crisis. The US military is an immense polluter. See: https://www.sciencedaily.com/releases/2019/06/190620100005.htm

"Summary: Research shows the US military is one of the largest climate polluters in history, consuming more liquid fuels and emitting more CO2e (carbon-dioxide equivalent) than most countries".

"The US military's carbon footprint is enormous and must be confronted in order to have a substantial effect on battling global warming, experts argue.

Research by social scientists from Durham University and Lancaster University shows the US military is one of the largest climate polluters in history, consuming more liquid fuels and emitting more CO_2e (carbon-dioxide equivalent) than most countries".

The huge military carbon and overall pollution footprint demonstrates another important reason for maximizing use of simulators, and this must be considered in alternatives that reduce the overflight and booming activity currently taking place and bombarding the region with noise, chaff and risky flares. The full 2021 and foreseeable greenhouse gas generating activity under the full range of DEIS and MHAFB Range activities must be assessed

July was the hottest month on record. https://www.noaa.gov/news/its-official-july-2021-was-earths-hottest-month-on-record.

The climate catastrophe is real, and the western US in 2021 is seeing its effects in extreme heat, extreme drought, fires and ecosystems pushed to the breaking point.

A full and complete hard look must be taken at the climate crisis in evaluating direct. indirect and cumulative and additive effects on, and threats to, all sensitive species and other important and declining animals and biodiversity, and in developing a suitable

range of alternatives. It is crucial that detailed baseline inventories for all species of concern at the level necessary to determine occupied vs. unoccupied habitat, the ecological condition of habitats, the connectivity of habitats, the effects of the climate crisis and drought already manifesting in habitats, the current affected species population levels and the viability of local and regional populations, and the habitat restoration needs for all affected species. This analysis be conducted, and presented to the public in a Supplemental EIS. The DEIS "Biology" document contains only the most simplistic generalized information with no substantial baseline and effects information of any kind. The full battery of, and the stresses on, native biota and sensitive species whose habitats and populations will also be harmed by the DEIS activities must be fully provided.

See climate and biodiversity documents on cd.

The AF must adopt a range of alternatives that honestly looks at the severity of threats the climate change stress poses to sensitive species, to migratory birds, to a wide range of public recreational uses that may result in our Sage-grouse, Bighorn Sheep and other wildlife, and the public, being exposed to 139 decibel Lmax noise levels and terrifying low level flights and sonic booms. The AF must adapt to substantially reduce and minimize its use of this irreplaceable public wild land area to reduce rather than expand its devastating sonic hell zone impacts and noise and other pollution footprint.

Solid baseline data is critical to determine all necessary minimization and mitigation measures, and to develop a suitable range of reduced spatial area and noise level disturbance alternative actions.

A SEIS must be prepared to identify mitigation measures to understand what is needed to avoid and minimize adverse environmental impacts, and to fulfill, and to comply with the purpose of NEPA to restore and enhance the quality of the environment and avoid or minimize possible adverse effects on the environment. Mitigation measures and any promised environmental commitments identified must be incorporated into and analyzed as part of each alternative.

The AF must also provide detailed information on the number of ground sites and the amount of airspace use by US vs. foreign country war planes (including but not limited to those bedded down at MHAFB) during both routine training exercises as well as larger or special joint exercises, Red Flag exercises, etc. , and that are foreseeable (Qatar bed down, others foreseeable or unannounced, both Singapore units up and running), etc. The AF must also fully consider significantly increasing simulator training to reduce the need for so many deafening overflights.

Instead, the ID, OR, NV public is faced with this appalling DEIS situation:

"Under Alternative 1, all MOAs in the SUA associated with Mountain Home AFB would have 100-foot 17 AGL operational floors. The Owyhee North and Jarbidge North MOAs already have 100-foot AGL 18 operational floors, which creates the "shelf" or unevenness with adjacent MOAs. In the Paradise 19 North, Paradise South, Owyhee South, and Jarbidge South MOAs, operational floors of 10,000 feet 20 MSL or 3,000 feet AGL, whichever is higher, would change to 100 feet AGL. Sorties would be more evenly distributed among the MOAs than under the No Action Alternative due to more consistent altitude floors.

Alternative 2. Under Alternative 2, the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOA operational floors of 10,000 feet MSL or 3,000 feet AGL, whichever is higher, would change to 6 ,300 feet AGL. Owyhee North and Jarbidge North MOAs would continue to have 100-foot AGL operational floors for low-altitude training. The overall number of sorties and operations under Alternative 2 would be the same as those for Alternative 1.

Alternative 3. Under Alternative 3, the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOA operational floors of 10,000 feet MSL or 3,000 feet AGL, whichever is higher, would change to 500 feet AGL. Owyhee North and Jarbidge North MOAs would continue to have a 100-foot AGL operational floor for low-altitude training. The overall number of sorties and operations in Alternative 3 would be the same as those for Alternatives 1 and 2".

In addition to one of the above alternatives the proposal is for either 5000 or 10,000 ft Sonic boom levels in any area – representing a potential dramatic LOWERING of the flight floor for sonic booms across all MOAs. There is no alternative that increases the much too low sonic boom height:

Alternative A: Under Alternative A, the supersonic altitude floor would be 5,000 feet AGL in all six MOAs (includes R-3202 and R-3204) with the exception that supersonic operations would continue to be prohibited over the Duck Valley Indian Reservation. In the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOAs, the existing supersonic floor of 30,000 feet MSL would 1 change to 5,000 feet AGL. In the Owyhee North and Jarbidge North MOAs, the existing supersonic floor of 10,000 feet AGL would become 5,000 feet AGL. The DAF does not propose an increase in supersonic events from Mountain Home AFB squadrons under Alternative A. However, over time, a slight increase in supersonic events could occur from other users.

Alternative B: Under Alternative B, the supersonic altitude floor would be 10,000 feet AGL in all six MOAs (includes R-3202 and R-3204) with the exception that supersonic operations would continue to be prohibited over the Duck Valley Indian Reservation. In the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOAs, the existing supersonic floor of 30,000 feet MSL would change to 10,000 feet AGL. The

Owyhee North and Jarbidge North MOAs would continue to have a supersonic floor of 10,000 feet AGL. Similar to Alternative A, a slight increase in supersonic events could occur from other users over time".

It is absurd for the EIS to claim that because there are existing dangerous and noxiously low 100 ft. AGL ground floors in 2 MOAs, that this creates an "uneven" situation and a "need" for dramatic lowering in OR and NV. If the situation is "uneven" it can be resolved in the other direction – by raising flight levels in Idaho MOAs, and reducing areas overflown.

How long a distance can a War plane keep flying at 100 ft. AGL? Will planes use afterburners when climbing up quickly from 100 ft. AGL or in other maneuvers, and if so, what noise will result? Please provide data from, all possible types of War Planes using this airspace, all possible flight maneuvers and weather conditions as sound is affected by weather. Wildlife in winter are greatly susceptible to disturbance – both big game and Sage-grouse. where are all current wintering areas for all sensitive and important wildlife species?

Note that the noise analysis with the EIS is so poor that the 2021 DEIS Noise Report document doesn't even include the Lmax noise levels generated by F-35s, F-22s, F-15s and all other War Planes that frequently now use the MHAFB air space. F-35s didn't even exist at the time of the ETI EIS.

Comments Regarding Table S-1:

The No Action Table Noise is not adequately characterized and assessed in the DEIS and in this Table. The DEIS states:

"*Under the No Action Alternative, subsonic and supersonic noise levels would not change relative to baseline conditions"*. Just what is the baseline information that No Action is based on? How many Singapore units? How many War Planes like F-35s or others training in special exercises? Is it based on ETI EIS-level "composite wing" and the specific ground facilities and air space activity at the time of the ETI EIS? Or is it based on current activities and conditions? These have not been assessed in a holistic, integrated manner so all direct, indirect, cumulative, additive and synergistic effects of this drastic dangerous deafening proposed noise increase can be understood.

The DEIS glosses vaguely over the harmful proposed noise disturbance levels:

"For Alternatives 1 through 3, potential impacts would be limited to an increased likelihood of annoyance due to more frequent low-altitude and/or sudden onset overflight noise. Noise levels beneath Jarbidge North and Owyhee North would decrease slightly". It's not just an increase in "annoyance" there are real health issues for humans including

hearing loss, and very serious highly foreseeable adverse effects for noise-sensitive species like Sage-grouse, Bighorn Sheep and other rare and sensitive native biota whose populations are already recognized to be declining levels, whose habitats have been substantially adversely altered by fire and flammable invasive cheatgrass in many areas, and who also face megadrought and ever-growing stress form the climate crisis.

"Supersonic noise levels would remain at levels compatible with residential land uses, although increases in C-weighted day-night average sound level in certain areas would result in a greater likelihood of annoyance. Damage to structures from sonic boom overpressures would be possible but unlikely". How much will the Lmax and SEL noise levels increase potentially? Average weighted noise levels are NOT the primary concern in wild land settings.

The horrifying levels of noise that will be generated and that people and animals will be exposed to are not compatible with any current public lands uses or with wildlife species and biodiversity conservation or environmental sustainability in the tri-state region.

Regarding "Residential uses" – effects are minimized through the use of extensive noise averaging and ignoring the Lmax and instantaneous sound levels. It is absurd that the AF would claim that that living under the 100 ft AGL and 5000 ft sonic boom hell would be "compatible with residential use". This is nonsense. It demonstrates bias of the Air Force consultants and the Air Force who pays them to get the wordsmithing results it desires.

The Noise Report's "Biological Resources" section is superficial, and is largely based on selective interpretation of mostly quite old and stale documents, and greatly ignores the current sage-grouse science and work by Blickley and others (see cd) on noise effects on disturbance and displacement of Sage-grouse, for example.

Under the No Action Alternative, subsonic and supersonic noise levels would not change. In addition, no new activities or additional noise impacts would occur. Therefore, biological resources would remain as described in Section 3.5.3 (Biological Resources, Affected Environment), with no significant impacts anticipated for wildlife, domestic animals, special- status species, or protected natural areas. This too is not true. Bed down of Qatar War Planes has been proposed. If that takes place, won't there be MORE flights and more noise?

Without ever adequately characterizing the current noise environment for Sage-grouse in all seasonal ranges across all of the affected tri-state region, and the full current 2020 additive/cumulative/synergistic effects of all the other threats Sage-grouse and other wildlife face, the AF concludes *"biological resources would remain as described in section 3.5.3"*. Where is data showing the Lmax levels and number of flights over all seasonal habitats – breeding (includes lekking, nesting, brood rearing, fall use and winter habitat use) for Sage-grouse? Where specifically are these habitats located? Where is the

data for all nesting migratory bird species of concern, and all native raptor species? For all Pronghorn populations and their seasonal movement corridors and use areas? Where is the data for all Bighorn sheep populations and all of their particular habitat use areas? For all rare bat roost sites and any maternity areas? For all occupied Pygmy Rabbit habitats? What is actually the current LMax and SEL noise levels residents across Duck Valley may face? We know there are reports of broken windows form the existing hellish AF use of surrounding airspace. Now the AF wants to fully enclose the Reservation in hellish War Zone areas with 100-500 ft AGL flight and 500-10,000 Ft AGL sonic boom and "terrain masking" which means extremely low flying very fast. Currently, the exposure to low level flights and sonic booms below=30,000 ft. is only from the Idaho MOA war game zones.

Short-term startle effects to wildlife and federally listed species could occur from low-level flights. Occasional bird aircraft strikes may occur, but would be minimized by Bird/Wildlife Aircraft Strike Hazard (BASH) Plan measures. Migratory bird species involved in a bird-aircraft strike would be considered an incidental taking and the Department of the Air Force (DAF) would be exempt from any permitting requirement. Mountain Home AFB would consult with the United States Fish and Wildlife Service for species federally listed under the Endangered Species Act. There would be no habitat impacts under these alternatives.

There would not be any population- or community-level impacts to any species. Federally listed species within the area of interest are not likely to be adversely affected. Therefore, these alternatives would not result in significant impacts to biological resources".

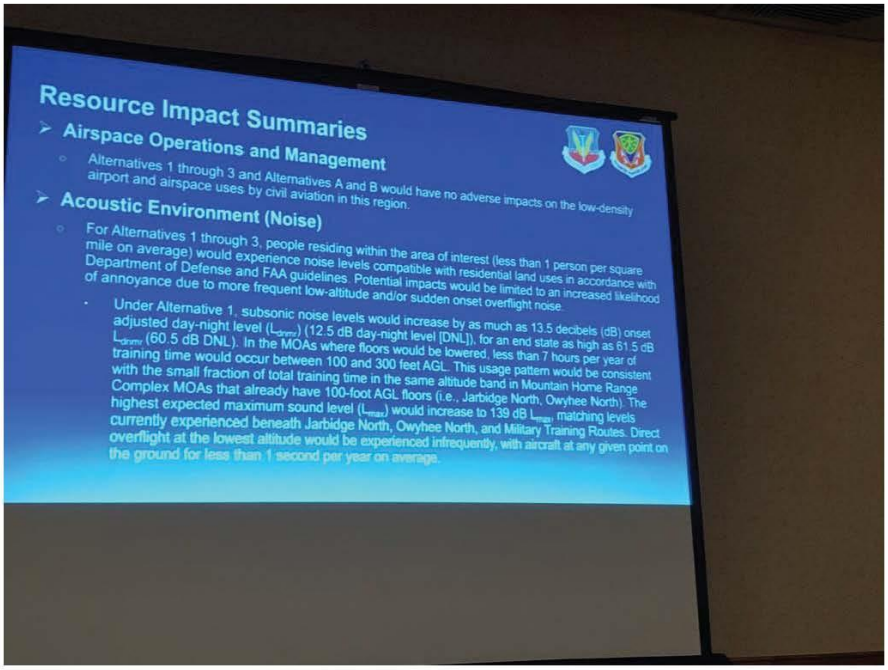
It's easy to make such blithe assumptions when you don't take a hard look at the current baseline situation of habitats and populations, and the actual plight of many species 9see for example, Connelly et al. 2019 *Agencies in Denial* paper describing recent declines in Sage-grouse populations since the 2015 decision not to list the birds, see USGS Remington et al. report 2021 describing 80% declines in Sage-grouse populations, and when you ignore Rosenberg et al. 2019 describing large-scale declines in many North American migratory bird species, including many inhabiting the project area, and when you ignore taking NEPA's requisite hard look.

We also stress that there are BLM and USF land use plans that address ad allocate for species habitats and sustainability, and include cultural, recreational and other protections - under FLPMA and NFMA, as well as Wild Horse HMAs governed by plans and the Wild Horse and Burro Act. The AF must take a hard look at how the full array of its No Action activities and all DEIS alternatives may impact federal and other agencies abilities to comply with management plans, requirements, and federal laws – including BGEPA and the MBTA, and the AF's own compliance with these regulations. This is the type of utterly simplisitic self-serving "analysis" the AF provides:

"Animals in areas newly exposed to sonic booms would be expected to be temporarily more sensitive due to lower previous exposure. Moderate impacts to individual animals may occur in the form of startle responses or mild physiological effects, but such impacts would be of a short duration and animals typically exhibit continually decreasing responses to sonic boom exposure. Minimal to no effects to federally listed species are expected. Due to the supersonic floor heights associated with these alternatives, bird-aircraft strikes are not likely".

Extreme War Game Noise Levels Under DEIS

This is a photo of a slide from the DEIS public meeting powerpoint presentation:

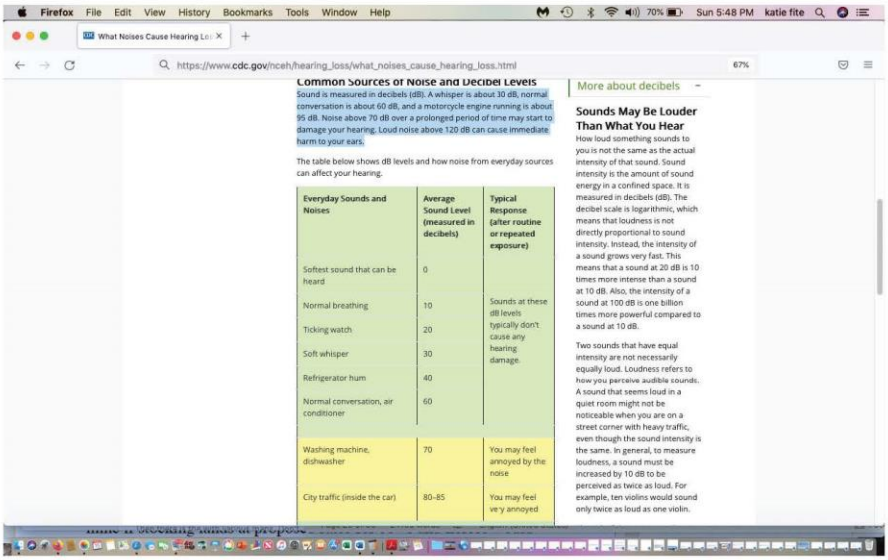


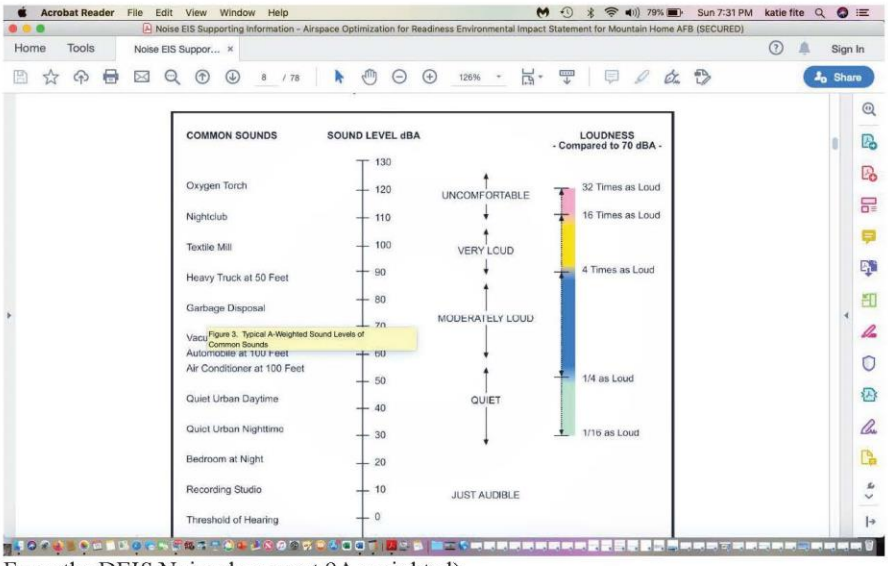
It shows as high as 139 decibel Lmax noise generated.

According to the CDC/NIH:

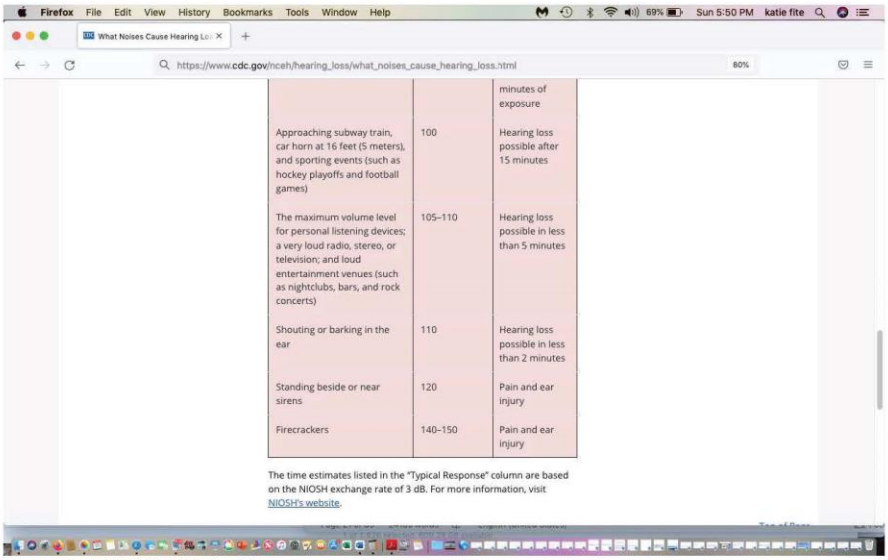
https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html

"Sound is measured in decibels (dB). A whisper is about 30 dB, normal conversation is about 60 dB, and a motorcycle engine running is about 95 dB. Noise above 70 dB over a prolonged period of time may start to damage your hearing. Loud noise above 120 dB can cause immediate harm to your ears".





From the DEIS Noise document 9A-weighted)



From the CDC/NIH Guidance.

110 decibels can cause hearing loss

120 decibels can cause pain and hearing loss.

Alarmingly, DEIS public meeting powerpoint presentation shows the noise levels generated from this hideous War Gaming could be as high as 139 decibels! And how will this affect wildlife, of different species, and their ability to survive? Will a hearing-impaired sage-grouse last for long in the wild? What happens to the hearing ability of songbird nestlings when exposed to 139 decibel noise?

NOISE REPORT

The "Noise" report appears to be aimed primarily at assessing noise effects from flights near airports and residences, and not the type of terrifying extremely disturbing low level terrain masking flight, sudden changes in altitude, sonic booming hell zone the AF seeks to impose across the tri-state region.

Figure 1shows sound spreading outward uniformly. Sound involves Intensity (from sound pressure0 Frequency (pitch of sound), and Duration (length). Note:

"Sound decreased by 6 decibels, with each doubling of distance. Air absorbs sound differently with differences in temperature, humidity, inversions, and other factors. High frequencies are absorbed more in cold, dry conditions. Sounds with different spectra are perceived differently. Low impulsive sound can be felt".

None of this information really encapsulates and describes the horrible mix of very low frequency sounds combined with other frequencies that make War Planes so annoying, stressful and disruptive, an d the effects of winter conditions, or other situations that may further concentrate noise.

The Report describes that at supersonic speeds, sonic booms happen from a pressure wave from the aircraft, there are two boom sounds generated – from the front and the rear of the war plane – forming an N-wave. What happens when sonic boom while the plane is angling or otherwise the boom is not produced from a plane traveling flatly or steadily at 5000 ft AGL? How loud is there a potential for a boom to be if a plane is not flying steadily at 5000 or 10,000 ft? Or if a pilot makes a mistake (these are TRAINING flights, right?) and generates a sonic boom at 2000 or 3000 ft or even lower? How loud might this be, and how much pressure might be generated? How will size and shape of the boom pattern differ depending on trajectory and weather?

Further there very foreseeably will be robots/AI "piloting"/controlling war planes in the near future and no few human pilots- what happens with a robot software malfunction and the planes instead travel at sonic boom generating flight speeds fly at 500 ft. AGL?

For recreational users, all of the Air Force's use of averaged noise levels are largely irrelevant. For residents of Duck Valley, Fort McDermitt and the small communities and isolated habitation under the airspace, and for wildlife - BOTH the chronic noise overflight levels as well as the Lmax and SEL (sound intensity and duration) levels are crucial. It is unclear to us how both are cumulatively and/or additively considered in the analysis.

It is the Lmax ("representative, instantaneous sound) and the associated SEL that is the sound of critical concern. SEL is greater than Lmax.

The EIS is indeed correct that aircraft noise is perceived as MORE annoying than some other forms of noise. We suspect this is from the very low infrasound levels that are deeply disturbing to the mind and body.

Nearly all the information on the AF tables of land use "compatibility" pages 22-23 for example, does not address the environmental context of the wild canyonlands, mountain terrain, and extensive high desert plateaus greatly threatened by the MHAFB's proposed "terrain masking" flight, startle effects, terrifying low level flights and the horrendous sonic booms.

Pages 70-74 states DNL is "computable". XXX. Where is similar information for Lmax?

There is a quite confusing footnote on the FAA at p. 24 of the Report stating that "it is the responsibility for determining compatibility" and "rests with local authorities to determine compatibility". Is it the FAA alone here that is referred to? Or is it the land management agency – in this case the BLM and USFS and/or the County?

The information on "speech interference" that describes a background sound of Lmax 45 decibels is unintelligible.

The information describes effects on human sleep disturbance. War plane overflights and sonic booms have significant potential to startle, disturb and displace birds from night - time roosts, and increase vulnerability to predation. For example, Sage-grouse select wide open very short-statured sagebrush or rocky areas for night roosts, often in close proximity to several to many other grouse. When startled at night, they may collide with the thousands of miles of barbed wire fencing under the military airspace (how much harmful fencing is there actually???), and/or be displaced to sub-optimal roost sites and fall victim to predations. Similarly, birds roosting in vegetation, nesting birds, etc. may be startled and displaced, leaving eggs/chicks/ vulnerable to predation as well as the displaced bird itself.

Communication of migratory birds, and Sage-grouse hens with broods it often critical to survival. Being able to hear the sound of approaching aerial or terrestrial predators is also

critical. The incessant horribly loud sounds of war Plane overflights and sonic booms also decrease an animal's ability to detect predators.

Plus stress and stress hormones levels in a wide variety of wildlife may be increased. Sage-grouse a species very sensitive to disturbance, and been shown to have higher level of stress hormones in grazed areas vs. birds in ungrazed lands, so one can assume they may be highly vulnerable to other forms of disturbance, too and have stress hormone levels impacted. See Jankowski et al. 2014.

Noise doc. P. 32 admits that "noise in low altitude … that can exceed 115 decibels is of "concern". This cites Tsing 1999, and shows effects of sounds > 114 decibels.

The EIS often gives considerably more weight to studies that downplay noise effects on humans and animals vs. those that find adverse impacts, and often relies on old and out-dated information, and a "HYENA" model.

The EIS describes that periodic, intermittent noise is more likely to disrupt performance. Well, for many wildlife species, a disruption of "performance" can be a matter of life and death. As animals are startled, displaced, under chronic stress from incessant war game activity.

Table 11 contains some info on whole body vibration. Sound levels of 130 decibels may cause structural damage. Sonic booms may trigger avalanches.

Section 1.1.2.14 describes some effects on domestic animals, contains mainly old studies and tries to downplay and minimize adverse effects.

It does admit that different species of wildlife have different hearing thresholds, hear differing frequencies and different responses and tolerances, Mammals generally react to sound > 90 db. Noise greater than 20 db can damage mammalian ears, noise

The AF relies on an old study (Manci 1999) to claim that "some" species acclimate. Noise report

Animals pages 46-58.

The analysis admits possible "secondary effects" – stress hypertension, but then again discounts effects and sweeps very serious concerns under the rug – ignoring a host of current studies. The AF claims: "most effects of noise are not detectable at the population level" – yeah if you average in Mcdermitt with Boise populations, they sure might not be. Note very foreseeable effects on animals of fright, trampling stampeding, running. For example, horses may be startled by War Planes, stampeded into wire, stressed, etc. Report p. 46.

Horses – may exhibit extensive flight reactions. Galloping, random movement, niting, kicking. The AF claims horses "adapt somewhat". There are three Wild Horse HMAs designated under the WHB Act, including the very large Owyhee complex significantly impacted by this proposal.

Poultry may experience. Panic, and bruising during pile up. "Poultry" are Galliforms. Sage-grouse are galliforms. This shows there may be serious effects on imperiled Sage-grouse and other avian species

The Report states birds may be more sensitive than mammals. There are many sensitive avian species impacted by the noise footprint of current MHAFB activity and this expansion proposal.

Note that the Report admits wild animals may be much more sensitive than domestic animals. Noise > 120 decibels.

High noise elements, and with Low altitude flight, birds – escape, flushing from nests and perches. The AF claims effects on long-term survival are "less clear". Well, this sounds like there is a clear effect:

"songbirds were observed to become silent prior to the onset of sonic booms". Then, after the boom – emitted "*raucous, discordant cries"*. Were they in pain? The Report cites Manci "*a reduction in reproductive success in some small territorial passerines*". Woodpeckers "did not flush when SELS were 70 decibels. Well, we wonder what would happen with 130 or 139 decibels???

With turkeys "upon the sound of the boom, the hens and poults fled".

The Report refers to USWFS concern about flights below 2000 ft. on Bald Eagles. Nearly all the eagle info deals with helicopters. What about 139 decibels and both booms and ear-splitting low level flight combined?

Also, in the 1970s sonic booms suspected of causing mass hatching failure at tern colony. The Concorde caused Gulls to leave nests.

For aquatic species – there is no real info.

Somehow – the AF ignores all the negative information even in these old studies it cites, completely ignores research on effects of noise on Sage-grouse, and concludes no significant impacts.

It is time for comprehensive analysis of ALL this activity, and this must be undertaken in the supersonic EIS process.

A Settlement with the Shoshone-Paiute Tribe and a Settlement with GOLD also altered and shifted activities from that analyzed in the old EIS. The Sho-Pai Settlement is informative because it lays out what the Tribal people who had been subjected to MHAFB War Plane noise found acceptable to live with.

The DEIS failed to consider the "Humanly Tolerable Alternative" WLD submitted during Scoping, which consisted of the flight levels and the War Plane activity the Air Force agreed to for Duck Valley Reservation in the Sho-Pai settlement. Public land users deserve an environment where they can visit, enjoy nature, view wildlife, experience thriving wildlife populations not greatly depressed/decreased numbers, and otherwise enjoy the natural environment where they are not subjected to harmful and stressful levels of noise and other noxious Air Force activity. From the F-35 DEIS - demonstrating that WLD's alternative was highly reasonable, describing from the Reservation settlement agreement:

"Flight restrictions are in place over the Duck Valley Reservation. Overflights are not authorized within a 5-nautical mile (NM) radius around the town of Owyhee, Nevada and are restricted to 15,000 feet above ground level (AGL) and above over the remaining portions of the reservation. Supersonic operations and the use of chaff or flares are not authorized over any part of the Duck Valley Reservation or within the Saddle A and B MOAs/ATCAAs"

At the time of the GOLD Bombing Range litigation settlement, Sage-grouse were not even a BLM sensitive species. Their populations (and those of many other sagebrush-dependent wildlife including important native raptor species and migratory songbirds, as well as mammals including the California Bighorn sheep populations in the Owyhee Canyonlands, Pygmy Rabbit, Rare Bats) have plummeted since the old MHAFB ETI EIS analysis. That now long outdated EIS was the last semi-integrated "look" at the full spectrum of adverse impacts of MHAFB "training" in the air and ground space and across the region) and the GOLD litigation Settlement. The GOLD settlement limited overflights near canyons for a period in spring, (canyons are not inhabited by Sage-grouse, Pronghorn many sensitive migratory birds and other species of growing conservation concern), the Settlement resulted in shifting low level and supersonic War Plane activity right over top of Sage-grouse spring lek, nesting period and early brood rearing habitats away from canyons.

Sine the old ETI EIS, there has been important Sage-grouse noise research, including research on the very harmful effects of intermittent loud noise on Sage-grouse by

Blickley and others (re: intermittent noise associated with road truck noise in Wyoming energy development areas, and much new scientific information on noise effects on human health that is ignored in the limited information in the EIS and the "Noise" appendix. The War Plane noise is much louder. Birds were displaced from leks due to noise. Stress hormone levels were found to be elevated. See Blickley research papers on cd. There have also been a series of studies showing how noise interferes with songbird activity during nesting season, and many other studies that show adverse impacts of noise to people and animals, and the cumulative effects of noise exposure.

The implications of the Sho-Pai Settlement are that it reveals what was perhaps tolerable to people (note than many wildlife species have much keener senses of hearing, and may also be very startled by the sudden visual appearance of War Planes, too and so may suffer much greater impacts from War Plane noise and activities than humans). Thus, it is likely that considerably MORE protective flight and noise levels must be considered – examples – overflights at 20,000 plus ft., no sonic booms, etc. This must also be viewed as a reasonable alternative and simulator activity combined with War Plane use occasionally at other ranges must be considered a reasonable alternative in a SEIS.

Greatly Changed Environmental Conditions Since Old ETI EIS

There are greatly changed environmental circumstances since the old ETI EIS. This includes:

Climate Crisis.

Biodiversity Crisis and the 6th extinction wave.

Megadrought.

Cheatgrass has undergone a dramatic expansion, irreversibly dooming sagebrush habitats once it takes hold.

Wildfire and other local and regional large-scale habitat loss.

Energy development and other adverse impacts to sage-grouse and other sensitive species range-wide.

Large-scale declines in Sage-grouse populations. Connelly et al 2019 describe how Sage-grouse are in larger-scale decline, and agencies have been in denial. The 2015 plans did not stop declines in any way.

Migratory Bird declines.

Wilderness Designation.

Lands with Wilderness Characteristics Inventories.

New Noise Effects studies of effects on humans and wildlife.

New horrifically loud War planes (F-35s), use of drones.

Two new Singapore Bed downs and a proposed Qatar Bed down (and other changes on cd).

Never-Ending Military Regional Expansion Efforts

This Supersonic proposal is one of several alarming Military Airspace and/or Land Grab efforts meeting strong public resistance in the West. The Military already is authorized for all manner of highly destructive and harmful activities across much of the West – with giant airspaces, very large land areas, etc. Please see info on cd on Navy Fallon proposed expansion over vast areas of BLM lands.

The Air Force at Nellis had proposed expansion in the Desert National Wildlife Refuge – and this appears to have been beaten back for now.

There is also the horrific noise of the Navy Growlers on Whidbey Island, and efforts to expand in the area of the Olympic peninsula and National Park and USFS Cascades wild public lands and Olympic National Park.

There was a recent (Oregon Guard) airspace expansion in the vicinity of Hart Mountain and a recent wildfire at Hart Mountain that consumed Sage-grouse habitat that was caused by a military flare.

See also attached WLD comments and on-line posts re: new proposed Simco War Range expansion, the new proposal for bed down of Qatari-purchased F-15s at MHAFB

MHAFB recently finalization for a bi-ennial Singapore War Game invasion of southern Idaho and use of the tri-state region airspace and ground facilities. This includes use of the a proposed brand new Guard Tank Range from a Guard ROW (land grab of sorts) of BLM lands including by Singapore -i.e. use of national Guard ground facilities by a foreign powers forces – setting a new bad precedent here. The state profiteers by leasing a block of land to the Guard under this scheme.

Urban Closed Air Support (CAS) War Game EA. Sinister and creepy AF proposal to use urban "canyons" for War Games, and the chaos of Idaho citizen activity as part of the

War game -with both ground and air forces. This was ultimately challenged in federal court because it was so egregious a military intrusion into Idaho resident lives.

Convoy Training EA. Use of Bruneau Desert road and state Highway 51 for convoy training and other War Games (includes closing roads). Expansion of facilities and linked activities at range ground sites, (Saylor Creek, Juniper Butte), GPS scrambling.

Saylor Creek range use of White phosphorus (extremely flammable, used in War Crimes in Iraq) and increased facilities/activities.

Expansion of Grasmere radar site amid crucial sage-grouse habitats.

Expansion of Airspace in Nevada including over portions of Jarbidge Wilderness Area.

Development of new extremely loud War Planes and other weaponry like F-35s.

Different types of Joint maneuver activity.

ESA Listing of Bull Trout, Slickspot peppergrass, and other species.

All of these serious concerns are swept under the rug.

This DEIS is a travesty and must be relegated to the scrap heat.

A new EIS process must be developed. It must take an honest and hard look at the 2021 baseline, include a range of war game reduction alternatives and increased use of simulators, or other reasonable alternatives, and conduct a science-based hard look analysis of the true effects this War Game proposal will have on wildlife and wild lands and cultural sites and residents and recreational uses across the region.

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The EIS must comply with NEPA in several fundamental ways, and that includes honestly considering and taking a hard, science-based look at a reasonable range of alternatives. This includes assembling and taking a hard look at:

*Full, adequate and comprehensive scientific and baseline information environmental conditions across the affected landscape and region. This applies to the A-10s, F-15s, visiting Growlers, F-35s and all other current and foreseeable uses of the MHAFB Range Complex, or any other activities the military might be conducting including versions of its now defeated by litigation Urban War Range /Closed Air Support/CAS MHAFB.

*Full and detailed analysis of significant environmental impacts on human health and quality of life, and short and long-term impacts on habitats and populations of wildlife species and other native biota, including species recognized as "sensitive" and/or rare because their populations are already declining. This includes adequately considering and assessing indirect and cumulative impacts of the plethora of threats to native ecosystems, sensitive wildlife species migratory birds, and human populations that will suffer these horrendously loud plane activities. It includes the battery of military War Plane and other overflight noise/disturbance and on the ground military activity the human population in southern Idaho currently endures. This must include full analysis of foreseeable actions.

*Consider a reasonable range of alternatives that include changing to quieter airplanes; increasing activity in areas with few sensitive species and conflicts – UNLIKE the Owyhee Canyonlands region; consideration of the Humanly Tolerable Overflight/Activity alternative (i.e. the flight levels and supersonic activity and other military activity restrictions that the Duck Valley Tribes got in their Settlement with the Air Force); Combining more Simulator training with higher flight levels and less supersonic activity; prioritizing use of MHAFB ranges by US AF planes stationed at MHAFB and NOT promoting and hyping the Idaho war ranges as the AF and IDANG have frequently done to try to build their empires and get more use here - thus making ranges more "crowded". Or did the AF want this as an excuse to expand harmful activities even more, and conduct lower level military training that will terrorize the Sage-grouse, Antelope, Bighorn sheep and people recreating on and/or living near the proposed altered MOAs in eastern Oregon and northern Nevada?

NEPA requires agencies to analyze "reasonable alternatives to the proposed action and the 'no action' alternative in all EAs and EISs, as fully as the proposed action alternative." 32 C.F.R. § 989.8. Reasonable alternatives are defined as those that "meet the underlying purpose and need for the proposed action and that would cause a reasonable person to inquire further before choosing a particular course of action." These specifically include alternatives outside of the jurisdiction of the preparing entity and reasonable alternatives raised during the scoping process, and combinations of the various alternatives.

CDC/NIH Information Shows ALL Air Force Alternatives Will Cause Ear Pain and Hearing Impairment

Civilians including vulnerable children may suffer lifelong hearing loss and cognitive impairment, serious health problems, and lowered quality of life, from exposure to these extreme levels of noise. Thus, the alternatives we suggest as "Humanly Tolerable" based on the Duck Valley Settlement are highly reasonable., and much more conservative alternatives must also be assessed.

Noise in the Idaho MOASsis already deafening and basically intolerable in many areas. The public, including WLD members and supporters, risks ear pain and permanent hearing damage from hiking camping, bird watching, observing and studying wildlife and photographing natural areas, in the Idaho Moas. Now this EIS seeks to expand this sonic terror to vast areas of critically important Sage-grouse Focal and Priority Habitat in Nevada and Oregon.

MORE Specific Comments Based on F-35 EIS Comments

In scoping, we modified portions of our F-35 EIS comments for this process. Fortunately, the F-35s were not based in Boise, will have a very larger adverse footprint, as will MHAFB Ranges F-35 use from planes based anywhere.

The western U.S. is already crowded with War planes and MOAS, MTRS, Bombing Ranges, Emitter, No Drop and other sites. Westerners are increasingly alarmed at the impacts of military Land and Airspace activities on wild lands and wildlife.

Westerners have already shouldered a great burden of military "training", and harms to public lands including large military withdrawals and incessant damaging overflights and other military activity across vast areas of the landscape. Nellis expansion efforts into the Desert National Wildlife Refuge have been met with strong Nevada opposition, and the navy effort to grab more land and expand Fallon is also highly controversial.

The same wildlife species like Sage-grouse) and even the same individuals (of bird species like Brewer's Sparrow or Sage Sparrow in migration and/or while wintering exposed to MHAFB noise in northern NV may suffer serious noise disturbance, War Plane flare-caused wildfires consuming habitats that then become converted to cheatgrass and flammable weeds, and other adverse effects of military flight activity near Fallon or Nellis. The full regional and range-wide adverse impacts of military War Training activity on public lands and Withdrawn lands across the region have never been assessed (noise, flare and range fires, chaff, ground disturbance, species impacted and the magnitude and extent of impacts, amount of habitat loss and fragmentation, indirect/additive/cumulative effects, etc.).

Opposition to large withdrawal of land by Navy Fallon have also been met with strong public concern and opposition. https://www.nevadawilderness.org/fallonexpansion

In May, 2019 the Nevada Legislature passed Assembly Joint Resolution 7 - "Expresses the opposition of the Nevada Legislature to the proposed expansion of the Fallon Range Training Complex." The resolution was introduced by the Committee on Natural Resources, Agriculture, and Mining but a special thanks goes to Assemblywoman Peters for her work championing this resolution. A huge thanks to all of you who called, wrote and attended meetings at the legislature!

Also: https://www.airforcetimes.com/news/your-air-force/2019/04/21/nevada-assembly-against-expanding-nellis-military-training-range-into-refuge/

The Nevada Assembly has gone on record as opposing proposed expansion of the Nellis Air Force Base testing and training range into the Desert National Wildlife Refuge.

See also:
https://www.nevadawilderness.org/nevada_legislature_sends_strong_bipartisan_message_to_congress_opposing_military_expansion_in_wildlife_refuge

The military already controls half of the 1.6 million-acre Desert Refuge and has closed much of it to the public. The proposed expansion would give the Air Force control of another 300,000 acres, including the Sheep Range mountains, which the Nevada Department of Wildlife describes as "irreplaceable" habitat in the "heart" of the refuge. In addition to one of the largest and most important bighorn sheep herds in the American Southwest, the Desert Refuge is home to the imperiled desert tortoise and hundreds of other mammals, birds, reptiles and native plants.

https://www.mcclatchydc.com/latest-news/article210352449.html

The Mountain Home AFB's attempts to impose highly unethical and controversial deeply disturbing War Games across and among nearly half of the population of Idaho has also been met with serious concerns, and litigation (see Complaint excerpts below). We are including this here because much of the information on noise and health and other issues is very relevant to the current 2021Supersonic DEIS, and we fully incorporate all of the concerns described below into this 29021 analysis.

PLEASE APPLY RELEVANT Parts of these comments on the Urban War proposal, and noise, health and other effects to this Supersonic EIS process:.

The attempted highly controversial MHAFB Range Urban War range would have been nearly touching the MHAFB MOAs. So in reality there would have been a huge recently

expanded MHAFB War Range encompassing areas from Meridian to Burley. The scheme included 90 minute bouts of F-15 activity described at times in the DEIS sound suspiciously like Urban War training activity. Yet the EIS is silent on the air and ground activity associated with Urban War F-15 activity, and where specifically it would take place, including any foreseeable future changes once the EIS ROD is issued.

https://taskandpurpose.com/idahoans-to-the-air-force-please-to-stop-secretly-using-our-cities-for-target-practice

A cadre of Idaho residents are suing the Air Force over the "extraordinary and unprecedented" urban training exercises planned to take place in nine cities across the state.

See https://www.counterpunch.org/2018/04/18/chaos-in-urban-canyons-air-force-efforts-to-carve-a-civilian-population-war-game-range-across-southern-idaho/

This describes the use of Boiseans homes, public spaces, our bodies, our pets, our wildlife and open spaces as part of a War Range, where the AF uses us as "chaos", incessantly flying overhead for prolonged noise and pollution bouts.

From the Urban War litigation Complaint:

The Urban CAS Training Project endangers the health, safety, and quality of life of Idahoans, as well as birds and wildlife. Hundreds of thousands of residents in Boise and other cities and towns in southern Idaho would be exposed in their homes, work places, and popular recreation areas to disruptive jet noise with the potential to interrupt sleep cycles, interfere with work and school, and otherwise harm their quality of life.

Despite the extraordinary and unprecedented reach of the training activities, the Air Force approved the project without preparing a full Environmental Impact Statement (EIS) as required by the National Environmental Policy Act (NEPA). Instead, the Air Force relied on a November 2018 Final Environmental Assessment (Final EA) and Finding of No Significant Impact (FONSI) to assert there would be no significant impacts.

… The Urban CAS Training Project will involve repeated overflights by F-15 jets and coordinated operations by military personnel on the ground. The training operations will use existing American F-15E and Singaporean F-15SG aircraft and flight teams operating out of Mountain Home Air Force Base, located in southwestern Idaho.

The selected action will involve up to 160 "Training Events" each year for an indefinite number of years. Each "Training Event" would entail a collection of "Training Operations"—up to 400 in a given year—that would take place within a single urban area on a given day.

Before each of the "Training Operations" begins, and during any operational hand-offs between pairs of jets, two or four jets will begin flying in a circular holding pattern maintaining a fifteen-nautical-mile distance from an urban center. They will circle the urban center an estimated three times an hour for an unknown period of time.

The Final EA describes this holding pattern as occurring on the outskirts of town, but in Boise, for instance, the holding pattern would be directly over major population centers including Meridian, Eagle and Nampa; the Snake River Birds of Prey National Conservation Area; and would impact numerous popular recreation areas including the Boise Foothills.

The holding patterns around other urban areas identified in the CAS Project, including Twin Falls, Mountain Home, Glenns Ferry, Grandview, and Bruneau, will also occur over sensitive wildlife habitats and public lands, including the Bruneau-Jarbidge Rivers Wilderness, Big Jacks Creek Wilderness, Little Jacks Creek Wilderness, the King Hill Creek Wilderness Study Area, and the Owyhee Canyonlands region.

Once the military jets are in their holding patterns, a convoy of up to five vehicles and twenty soldiers will enter the urban center and act as the "Opposing Forces," while a convoy of up to five vehicles and twenty soldiers would act as the "Friendly Forces." These convoys will be comprised of both American and Singaporean forces and they will drive unmarked cars, travel through public spaces, and be disguised as plainclothes civilians.

… The Air Force stated that the threshold for human sleep interference is an SEL of 90 dBA, which presumes a 25 dB noise reduction attributable to a building envelope. Because the Air Force predicted that the SEL of Urban CAS Project training would not exceed 72.3 dBA, the Final EA concluded that the Urban CAS Training Project will have negligible impacts on sleep. But there are several key flaws with this analysis of sleep impacts.

First, the chosen sleep interference threshold of 90 dBA presumes a 25 dB noise reduction attributable to a building envelope, and therefore measures only the probability of awakening individuals who are sleeping indoors. Anyone sleeping outside or in a tent would experience sleep interference at an SEL of just 65 dBA, well below the projected SEL for the Urban CAS Training Project. The Air Force failed to acknowledge or consider the Project's likely impacts on the homeless population and those recreating and camping outside.

Second, the Air Force failed to analyze how a full night of flyovers—as opposed to a single flyover—would impact sleep. The Air Force's selected SEL metric only indicates the threshold at which a single noise event is likely to awaken individuals from sleep.

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Repeated noise events, such as those proposed, are known to substantially increase the likelihood of awakening at any given decibel level. See, e.g., Department of Defense Noise Working Group, Using Supplemental Noise Metrics and Analysis Tools 17 (2009). Nonetheless, the Air Force failed to provide any data on the number of times aircraft would fly over a given location during any given night of trainings, or to analyze the impacts of repeated flyovers.

The Final EA only addressed the potential negative impact of overflights fully waking civilians, and it failed to consider other well-documented impacts of nighttime noise, such as impaired or delayed sleep, which can have serious health and economic impacts.

Speech Interference from Aircraft Noise The Air Force used an analysis of the Maximum Sound Level ("L_{max}")—the max dBA at a single point in time—to determine the impact of individual flyovers on speech and communication. The Final EA estimated that the L_{max} of individual flyovers will not exceed 59.3 dBA and asserted that aircraft noise will not interfere with communication unless the L_{max} is over 75 dBA.

Similar to the Air Force's analysis of sleep, there are several key flaws with its analysis of the impact of overflights on conversations.

Many of the flaws are identical to the problems noted above in regard to sleep disturbance, because the 75 dBA standard for speech interference assumes 25 dBA of protection from being indoors. Outdoor speech interference can occur at just 50 dBA, a level well below the stated 59.3 dBA L_{max} for the Urban CAS Training Project.

Thus, the Urban CAS Training Project has the potential to interfere with the communications of anyone spending time outside in Boise or other parts of southern Idaho— outdoor workers, hikers and runners, students on field trips, audiences at outdoor amphitheaters, and customers dining on patios. Outdoor conversations are incredibly common, and interference with them can cause as much or more annoyance and stress as noise indoors. Nevertheless, the Air Force failed to discuss interference with outdoor conversations at all in the Final EA's analysis of speech interference. [NOTE THESE SAME IMPACTS AND CUMULATIVE IMPACTS WILL RESULT FROM MHAFB "TRAINING"].

Noise Pollution and Community Annoyance: The Air Force further failed to consider potential impacts to the quality or characteristics of the soundscapes within and around the selected urban centers, and the annoyance such impacts will cause.

To assess potential soundscape impacts, the Air Force estimated the cumulative impacts of aircraft noise on each urban center using the Day-Night Sound Level (DNL)—the average dBA level in a 24-hour period with a 10 dBA penalty added to noise between 10:00 p.m. and 7:00 a.m. This DNL was then compared to the background noise levels in

the impacted areas. For this analysis, the Final EA grouped the targeted urban centers into three categories by size and estimated the background noise level, calculated as DNL, within each as follows: large, 57 dBA; medium, 52 dBA; and small, 40 dBA.

Against this backdrop, the Final EA stated that a modeling program showed the DNL for the Urban CAS Training Project will never exceed a 37 dBA DNL and will thus have no impact on the soundscape of the urban center at all. The Final EA cited studies from 1974, 1978, and 2003 to claim less than one in ten million people will be annoyed by this sound level, also asserting that the sound will "blend naturally with the existing soundscapes in these areas.".

However, merely stating that a model predicted there would only be minor noise impacts from the training is insufficient to meet the "hard look" requirement of NEPA. The Air Force failed to disclose any of the variables in height, speed, or flight pattern used to produce this model and did not disclose if the calculation considered changes in elevation, weather, ground impedance, or other pertinent variables which affect the noise caused by overflights. It also failed to disclose whether the projected DNL was based only on operational days or was based on a calendar year, such that non-operational days might artificially depress its noise predictions.

THIS latter IS CRITICALLY important to understand in the highly flawed Supersonic DEIS analysis as well.

The Supersonic EIS noise analysis appears to suffer from many of these very same drastic flaws and scientific defects.

HERE ARE CONCERNS RELATED TO F-35 EIS Basing in Boise that must be fully considered in all relevant aspects with the current 2021 Supersonic EIS analysis.

Nearly all of these very same flaws and issues described above in excerpts from the legal complaint filed over MHAFB's Urban CAS/War Games plague the F-35 DEIS, as well – and are highly foreseeable in the MHAFB Supersonic EIS proposal (and impacting public use of public lands and a broad diversity of wildlife species that will suffer incessant horrific noise and startling disrupting military activity) – especially if the Air Force uses standard military EIS consultants who twist fact and reality to justify warped analysis (such as all kinds of averaging of noise, omission of key data, etc.) to give the military the answers it wants. Boise and other SW Idaho area cities that will also suffer F-35 overflights are already crammed full of military uses disturbance and noise, and the F-35 will make matters significantly worse with INCREASED flight numbers, a much louder War Plane, overflights of 90 minutes (which sound a lot like F-35s being used in Urban War) and other significant disturbances. We incorporate the complaint in its entirety into our comments on often flawed noise modeling, the use of 'averaged" sound when it is the immediate effect of the sound on people and animals that is so harmful and disturbing.

We are very concerned about noise modeling, arbitrary self-serving statements, glib generalizations that serve to make environmental harms. Boiseans and residents of other Idaho cities in southern Idaho now facing increased overflight noise in town and being used without our permission as "Chaos" in Urban War Games - will also face even worse noise when they venture out to public lands. This will result in cumulative adverse impacts – physiological and psychological both.

The Air Force and/or the Guard has at times continued Urban War activity over/in Boise. The results have been very loud and distressing, interfering with citizen's ability to concentrate on work, and producing dull aching sensations in the ear for hours following such bouts. See e-mails from USAF Representative to WLD Fite confirming noise experienced by Fite and others in Boise was indeed Urban CAS War Plane noise.

The F-35 EIS planned for MORE War Plane flights. It seems only logical that there would be more war plane overflights with 2 Singapore squadrons and now a proposed Qatari bed down. It is deceptive for the supersonic EIS to not forthrightly reveal how many war plane flights are actually anticipated instead of falsely claim no increases.

The AF must reveal how many military training flights in the airspace are US war planes/planes stationed at the MHAFB airbase. How many current Singapore flights? How many Qatari flights? How many non-MHAFB overflights? How many of these are US planes vs. foreign planes? Are the existing Idaho MOAs are getting crowded? Is this Supersonic EIS being prepared in part to make more area for foreign War Planes to terrorize wildlife?

In the F-35 EIS it was claimed that Boise would experience over 7000 F-35 flights – an 18% INCREASE in War Plane flights from the A-10 number.

DEIS ID-3. The F-35 DEIS stated:

Under this alternative, the National Guard Bureau (NGB) anticipates that by 2024 all 18 F-35A aircraft would be flying up to 7,274 operations per year at the airfield, compared to 6,152 annual operations currently with the A-10 (Table ID2.1-1). In total, Boise Airport currently supports about 143,665 operations annually (including the military operations), with 82 percent consisting of commercial and civilian flights occurring 365 days per year. Based on proposed requirements and deployment patterns under CAF, the F-35A operational aircraft would fly some operations during deployments at other locations for exercises, or in preparation for deployments. During such periods, home station flying operations would be reduced accordingly. Some of the home station missions could involve inert ordnance delivery training (within the scope of existing National Environmental Policy Act [NEPA] documentation) at approved ranges.

ID-4. The DEIS states: 124 FW A-10s currently do not use afterburner at the airfield, as the A-10 is not equipped with an afterburner. NGB anticipates that the F-35A may use afterburner for take-offs no more than 5 percent of the time. F-35A operations would adhere to existing restrictions, avoidance procedures, and the quiet-hours program at Boise Airport, known as course rules. The A-10s at Boise Airport currently fly about 2 percent of the time between the hours of 10 p.m. and 7 a.m. (environmental night). At this percentage, the A-10s annually fly about 50 operations during environmental nighttime hours, with the majority of the operations after 10 p.m. being associated with arrivals back to the installation.

There has now been extensive reporting on information from sites where F-35s are already based that the F-35 uses afterburners as much as 50% of the time! That is a dramatic INCREASE in afterburner use from the 5% use claimed in the military EIS. This appears to be purposeful deception on the part of the military. Any increase in afterburner use above the 5% in the EIS will significantly INCREASE the number of homes, people, pets, wild animals, open spaces/public space/parks, health care facilities, etc. exposed to high and harmful noise levels.

This also highlights what appears to be a significant lack of candor in military EISs.

Originally, the Vermont Air National Guard and the Pentagon estimated that the F-35s coming to Vermont starting this fall would rarely use afterburners. In their detailed 2013 Environmental Impact Statement (EIS), the military estimated that the planes would use afterburners for roughly 5% of flight operations. This estimate not only influenced the contours of the resulting noise maps, but also the overall decision of whether Vermont was a good fit for the planes.

Across the country, as other communities have been considered to base the planes, the military has plugged in similar afterburner predictions. Yet according to an internal Pentagon document obtained by VTDigger, real afterburner use on the F-35 may be much higher than publicly predicted.

As the Air Force moves forward with environmental impact reviews at other bases, it appears to be counseling officials to calculate afterburner use for at least 50% of all flight operations. The Air Force has already delayed at least one base review by at least four months "due to some discrepancies and concerns over F-35 flight elevation and afterburner usage."

"It's all just a big Charlie Foxtrot," one official involved in this review wrote to colleague in an email, using military slang for a messy situation. This official added that the chaotic situation "could have been addressed over a year ago when we all questioned the validity of only using 5% [afterburner]." He added that this new need to calculate

higher afterburner use for the F-35 will "delay or at least complicate" environmental reviews for the plane going forward".

https://vtdigger.org/2019/08/29/docs-show-f-35-afterburners-use-may-be-higher-than-publicly-predicted/ Article by J. Craven 4/29/19. Docs show F-35 afterburners use may be higher than publicly predicted

Once F-35s are bedded down, night-time flights may become much more frequent and disruptive including for several days at a time. https://kutv.com/news/local/hill-afb-wings-scheduling-nighttime-flight-activity Night time activity over remote ranges may have serious adverse impacts to many species of sensitive wildlife, as well as be deeply disruptive to recreational users.

The Air Force SS EIS failed to provide full details of the current number of night-time flights taking place – at all locations and elevations in the airspace in each MOA, and the number of night-time sonic booms and elevations across the MOAs and use areas. The change in this under the actions in EIS alternatives must be clearly laid out and detailed, and this must take into consideration noises in all weather conditions, and noise from all types of War Planes and other military activities that may use these airspaces and ranges. Night-time loud noises may displace animals from roosts and/or bedding areas, cause them to panic or become injured, or make them more susceptible to predations etc. Birds including Sage-grouse and migratory birds, select roost areas very carefully in sites where they may maximize detection of predators and/or sites that may in other ways offer some protection from predators, Startling loud noises (or bright lights) can cause birds to flush.

In public lands in this area, this may prove lethal due to collisions with barbed wire fences --- even if birds that are displaced don't get preyed upon. There is extensive literature on Sage-grouse mortality collisions with fences. See Van Lanen 2016, where even with marked fences there was 40% mortality. BLM in some limited instances has marked fences with bright reflective material that falls off, loses reflective character and still does not stop a significant number of birds from colliding with fences, only a few fences are marked. While birds disturbed by sudden Sonic Boom noises or planes suddenly appearing roaring loud on the horizon, birds may also be displaced during the day and collide with fences. Imagine what the impacts may be if Grouse in wintering habitat are roosting and are startled and collide with fences

Around 4 years ago, a friend and I were camped in eastern Oregon in the Paradise North MOA (West Little Owyhee) where there are often loud and disruptive night-time overflights at the existing flight levels. There was a sonic boom. The sonic boom (at whatever the existing level) caused my one dog to yelp and jump in the car, and my other dog to bark. Note that sonic booms here are currently not supposed to occur at levels below 30,000 ft. How much more disruptive will the changes proposed in the Supersonic

EIS actually be? How much more might such noise impact wild animals subjected to it routinely as this high desert landscape is turned into even more of a military playground under this Supersonic EIS?

Last year, I documented a sonic boom in the West Little Owyhee country on a calm blue sky day in fall, greatly startling my dog and making her bolt away. I e-mailed to the time and location of the boom to the USAF MHAFB. I was informed the booming plane was perfectly in compliance with the USAF flight levels and other protocols. This area of the West Little Owyhee in Oregon is supposed to have sonic boom levels of 30,000 ft! Yet the sound is so startling and noxious at that level it has very clear and obvious harmful impacts on animals.

The SS EIS must honestly reveal and assess the actual amount of time when afterburners, and all other possible overflight scenarios, including a wide range of weather conditions would be used in any flight activity by all types of planes that may use ranges/sites in the region. This calculation must then be employed to develop noise contour mapping and noise level analyses IN THE CASE OF THE SUPERSONIC EIS THIS MUST BE APPLOED TO SIGNIFICANT WILDLIFE HABITATS, and this must be provided to the public in an EIS. If afterburners are used 25% of the time, how will this change all noise contour levels? If afterburners are used 50% of the time, how will this change all noise contour levels? Where would such flight be expected to be used? Are afterburners used in planes flying at Supersonic speeds? How is afterburner use incorporated into the estimated noise levels under the various averaged metrics and Lmax noise metric?

The DEIS must include full and detailed noise, startle and other analyses taking into account that multiple airplanes may be overflying at excruciatingly loud levels, and sonic booming occurs. How do 2 or 4 or more planes close together increase noise levels even more? I will never forget the horrific noise when FOUR War Planes overflew me at very low levels NE of Riddle around a decade ago. My ears/head had a hollow ache for days. This also brings up another concern that myself and several other people who spend a lot of time in the Owyhees and other areas overflown by the Military have – i.e. that ourselves and/or our vehicles become "Targets of Opportunity" and are incorporated by the military in its War Games. This happens. How often have the MHAFB or other war Planes "training" in the airspace used people and/or vehicles for training purposes? Ow can the Air Force detect if this is taking place?

I have also been so startled by low level War Plane overflights in the Idaho Owyhee that I have dropped - instinctively and reflexively – to my knees as a result of this terrifying experience.

Will planes over-flying all of these areas carry only inert ordinances? Will they be carrying live ordinances at any times? What type of ordinances (real or fake) will they be carrying? Even the release of an inert ordnance can have significant impacts. How do the

weight and other characteristics of ordnances of any type (and what are they and what toxic or other materials do they contain) impact use of afterburners or impact the noise generated by War Planes to conduct various training maneuvers??

It seems like, at a minimum, the inert ordnances will be on planes nearly all the time.

NOTE that the F-35 EIS touted the Owyhee tri-state region Bombing Ranges and airspace.

The F-35 DEIS failed to reveal that F-35s are being designed to carry nuclear weapons. So it appears that planes that may potentially be using the MHAFB Ranges would be involved with nuclear weapons. Where will any active/live/for real ordnances (including nuclear weapons) be stored? What are the dangers to the environment, the civilian populations, wildlife, etc. from use and storage of inert, active/real ordnance including potential for nuclear weapons? What planes carry nuclear weapons that may use the ranges?

See https://vtdigger.org/2019/08/13/burlington-city-council-unanimously-opposes-nuclear-mission-for-vermont-guards-f-35s/

See also this nuke cheerleading piece: *"Mattis also cited the emergence of the F-35 as a "nuclear delivery system" in the context of expressing grave concern that US nuclear weapons modernization has not, in recent years, kept pace with a fast-changing global threat environment".*
This article references "accelerated development" of F-35s with this capability.

https://nationalinterest.org/blog/buzz/stealth-f-35-americas-next-nuclear-bomber-82401

There are also many other modifications being proposed, and it is highly likely that newer designs of the F-35War Plane may be even louder, especially as more and more technology is strapped on. See for example:

https://www.vice.com/en_us/article/j57e9k/now-the-f-35-is-also-an-anti-nuke-weapon

The Supersonic EIS must fully examine the public health and wildlife impacts of all aspects of military training and War plane overflights in the MOAs including use of laser technologies, radars, and all other technologies (for example hypersonic weapons) to be used and/or that are in the development stage.

Please also fully assess the potential for drone use in association with War Plane activity in the MOAs, and for non-human robotic pilots. In an era of rapidly changing technologies, a credible EIS Must full disclose the military devices, weaponry and gadgetry the public, wildlife and wild land ecosystems may be exposed to. This is

supposed to be, after all, about TRAINING. With training comes mishaps. See for example:

https://www.msn.com/en-us/news/us/air-force-jet-accidentally-fires-rocket-into-arizona-desert/ar-AAGT5VX?ocid=spartanntp

Drones are known to cause significant disturbance to wildlife like Golden eagles, to startle and annoy antelope, and have other adverse impacts. This would be additional stress and disruption to wildlife that suffer the extreme noise levels under the Supersonic EIS.

What are the emissions and air and water pollution levels from all aspects of the current MHAFB War Training in the MOAS and ground ranges? This includes pollution and environmental contamination from every mission and maintenance action, and any other activities (chaff, flares, etc.). What constitutes the ordnance of all kinds that might potentially be carried on planes? How much fuel will be burned by each plane in a regular mission comparable in length and activity to the way the A-10s currently train? How does this all compare to the A-10? What is the fuel efficiency of the F-35 compared to the A-10 during all aspects of idling, take-off and flight?

What are all of the carcinogenic and hazardous materials that are used on the F-15,A-10, F-35 and all other planes during flight activities in these MOAs, and that may be used in all on the ground and maintenance activities?

The EIS must also provide full information on the activity associated with potentially more planes using these ranges and the use of carcinogenic PFAS/PFOS fire-fighting foam chemicals that have been much in the news lately due to the high levels of pollution and their insidious and permanent contamination of ground, water and human bodies. The military used very high amounts of these chemicals in incessant training “drills” and other activities. What level of contamination currently exists? How has this been measured? In soil, water, and in air surrounding the base/site when sch chemicals are used? Note that MHAFB is already severely contaminated.

https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=1000302

The 9-square-mile Mountain Home Air Force Base (AFB) site is located on a plateau southwest of Mountain Home, Idaho. The U.S. Department of Defense established the base in 1943 as a training base for several bombardment groups during World War II. Site activities have included the use of hazardous materials for aircraft maintenance and industrial operations; on-site disposal of wastes in landfills and sanitary sewers; and the use of waste oil for fire training exercises and dust suppression. These activities contaminated soil and groundwater with hazardous chemicals.

With more flights, will there be more fire drills? How many drills are there annually currently, and how much use of these chemicals? Materials on some planes such as F-35s appear to be more flammable than some other War Planes. How do they compare? Would this mean more drills, and use of carcinogenic ground water body polluting fire-fighting chemicals?

This describes some of the MHAFB attempts to clean up the Air Force Superfund site: https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.Cleanup&id=1000302#bkground What is the cost to taxpayers? What could the cost to taxpayers be if additional pollution occurs? Please provide baseline information on the current levels of such pollution, well testing, soil testing etc. This EIS must address mitigation and it must explore bad case or worse case scenarios form all War Plane activity including any increased or altered activity and number or types of planes using facilities and air space if the drastic supersonic changes take place.

Airspace

The F-35 DEIS (ID-8-14) minimally described the airspace and Training/Bombing Range activity the F-35 would be engaged in. This greatly failed to provide an adequate analysis of the direct indirect and cumulative impacts of both the Air Force and the Guard's activities across the tri-state region. See also above discussion of Nellis, Fallon, Urban War.

Alarmingly, the F-35 beddown would have resulted in an 18% increase in overflights of essential habitats for Bighorn Sheep, Sage-grouse, Antelope, many species of migratory songbirds, and other very important wildlife species habitats across this region. It would result in an increase in War Plane noise, and an increase in flare use (malfunctioning flares and/or pilot error or chance mishaps can result in flares igniting range fires), and release of polluting chaff.

Please fully lay out all the current BASELINE use of these materials across the MOAS and on the Ranges, and how much use has been authorized in various past EAs and EISs. The military currently uses White Phosphorus on its Bombing Ranges. How will training associated with the lower flight levels and Supersonic activity affect White Phosphorus use (causes range fires, used in War Crimes). How will increased War Plane numbers and use of airspaces across the West add to the existing burden of overflights, ground-based disturbance of wildlife (such as personnel accessing and using range areas traversing/traveling through public lands disturbing wildlife), etc.?

What are the WSAs, wilderness areas, WSAs, important or crucial wildlife habitats, state management areas, and what is their current ecological condition and value for sensitive and other wildlife species? What levels of military activity do these areas and vulnerable

wildlife species like Bighorn Sheep and Sage-grouse currently endure? Do different areas within MOAS suffer differing levels of War Plane activity?

As described in comments submitted on the Urban War scheme, and similarly here with F-35s: The training operations will affect numerous state and federal wildlife conservation and refuge areas and ecologically critical sites, such as the Minidoka National Wildlife Refuge and the Morley Nelson Snake River Birds of Prey National Conservation Area, which contain exceptional concentrations of raptors and songbirds during fall migration. The Intermountain Bird Observatory, located to the east of Boise and within the training circle, is another example of the unique areas adversely impacted by this proposal. While lacking special designations, there are many other areas within the selected training areas that contain exceptional shrub-steppe, mountain shrub, and mixed conifer habitats that are thought to be the primary feature looked for by migrating birds.

A Supersonic EIS must look at the full range potential effects of overflight decibel levels (how LOUD are all War Planes that will use these ranges and that will fly supersonically at various elevations including the flight floor in all airspaces? What very low level highly annoying sounds do these War planes also make? Low level sounds and sonic booms on important species, such as bighorn sheep and sage grouse.

Airplane noise has been shown to displace bighorn sheep and result in increased vigilance, coupled with increased energetic costs. Others showed that Bighorn sheep penned in an area with semi-regular overflights and rigged to heart monitors experienced an increase in heart rate during helicopter flights. See generally Larkin, Ronald P., Effects of Military Noise on Wildlife: A Literature Review, available at http://nhsbig.inhs.uiuc.edu/bioacoustics/noise_and_wildlife.pdf. See Blickley and other sage-grouse studies showing this species sensitivity to noise (on CD, other wildlife noise info in WLD Urban War comments also submitted on CD).

The predicament of many species of native animals has dramatically worsened since the old MHAFB EIS for the Ranges and Air Space, Please see info on CD submitted with these comments related to the Biodiversity Crisis, Avian Declines, and the Climate Crisis. This demonstrates a need for the AF to consider much reduced, higher and less harmful flight levels and other activity in this 2019 EIS process.

In the absence of definitive data on the effect of noise on animals, the U.S. National Research Council has proposed that protective noise criteria for animals be taken to be the same as for humans. We request that the Air Force follow this guidance.

Courts require federal agencies to discuss the effects of their actions on the quality of life for city residents. See Hanley v. Mitchell, 460 F.2d 240 (2d Cir. 1972); Glass Packing Institute v. Regan, 737 F.2d 1083 (D.C. Cir. 1984). Noise from individual F-35

overflights would generate distinct acoustical events that would be sufficient to interfere with a wide range of daily activities, including relaxation, recreation, and activities requiring concentration. The Urban War "training" is already causing considerable levels of disturbance, So too is the Navy and other modified commercial airliner activity including "practice" landings at private airport facilities within the Boise airport (such as Jackson Jet Center) and "recon" activity planes incessant overflights disturbing Boise residents and our quality of life. The impacts of the latter have NEVER been addressed in any NEPA analysis.

The Supersonic EIS must fully consider significant quality-of-life impacts. In fact, the military often dismisses the potential for such impacts by claiming that overall noise levels would not be incompatible with current land uses. This is not an appropriate proxy for quality of life impacts.

The EIS must take a hard look at potential impacts to natural soundscapes and viewsheds. Visitors to the lands under the MOs expect to be able to escape the sights and sounds of modem life.

The giant roar of War Planes is already making areas unvisitable.

The sky in many areas is grossly polluted with contrails that coalesce to form clouds – resulting in dull white and gray skies. lingering contrails also impact people's ability to enjoy sun on visits to public lands. The Supersonic EIS must fully examine the reduced ability to seek quiet recreation in all areas impacted by this scheme, and the impacts this may have impacts on tourism and property values within the impacted areas.

The EIS must fully assess how the overflights and War Plane activities of all types to be conducted in this area would impact viewsheds (contrail pollution and its many effects), soundscapes, and visitor experience in natural areas.

From info in the F-35 DEIS, it appears that that an F-35 bed-down would exceed certain activity levels (flare or chaff release?) established under existing NEPA processes. We are greatly concerned that there are many elements of this F-35 proposal that will changed and added to piecemeal and incrementally over time as soon as the ROD is signed, and that what is minimally presented in the DEIS is only the tip of the iceberg. Once Idaho is assessed, even if Boise is not immediately chosen for F-35 War planes, the military is likely to claim analysis was already conducted, and it will be easier to slide in planes here or in use of remote ranges in the future. Or if more $$$ are appropriated by Congress, more Guard units could be selected for F-35 siting.

The F-35 EIS provided confusing information about the use of the remote Ranges, for example: ID-8 states:

The NGB expects that the F-35A would operate in the airspace currently used by the 124 FW, with approximately the same number of operations in each airspace unit but may operate somewhat differently than the A-10s now using that airspace. These differences would derive from enhanced capabilities and changed requirements for the F-35A.

This makes no sense, since there will be 18% more flights. Please provide detailed info explaining this. HOWEVER this highlights that different planes may use airspace differently, and that this Supersonic EIS must provide detailed information and analysis of the adverse noise, startle, and all other environmental impacts of any and all War planes that will use, or will foreseeably use, the affected airspace for any purpose.

The F-35 DEIS also stated: Although the F-35As would perform missions similar to the A-10s, they represent a different aircraft with vastly different capabilities, and would fly somewhat differently. Pilots would adapt training activities, where necessary, to ensure their accomplishment within available airspace. No changes to airspace structure are anticipated. The differences in utilization of the existing airspace include use of higher altitudes overall, combined use of existing airspace, and generally higher altitudes for supersonic flights that occur.

So the F-35 EIS presented the public with false information. During the F-35 comment deadline extended to Nov. 1, on the F-35 EIS, the AF had released the supersonic EIS which proposes changes to the Airspace structure. One would have to be very naive to believe that the preparers of the F-35 DEIS were not aware of the imminent release of scoping information for the huge Supersonic changes. This also demonstrates that the public cannot trust the military to truthfully and accurately present information in public NEPA processes.

Further, this highlights the need for the Supersonic EIS to provide detailed information and analysis of these "vastly different capabilities" among War Planes, drones and whatever other activities the military currently conducts or may be contemplating conducting across the MOAs and Ranges and how this impacts all aspects of any existing and foreseeable training activities. This is necessary so there can be actual public understanding of how the F-15s, A-10s, F-35s and any other transient or foreign War plane that may use this Range will use the land and airspace of this region (this includes the official training areas as well as MTRs, all areas overflown (including foreseeably expanding Urban CAS/War in the region to include the F-35.

The F-35 DEIS states:

The Saddle A and B MOAs/ATCAAs are controlled by the 124 FW. Cooperative scheduling of this airspace by both Mountain Home Air Force Base (AFB) and 124 FW, as well as coordination with the Salt Lake City Air Route Traffic Control Center (ARTCC), has ensured the needs of all airspace users are accommodated. In addition to

the A-10s of the 124 FW, daily users of these airspace units include the F-15s located at Mountain Home AFB, the primary users of the airspace, as well as occasional use by UH-60 helicopters located at Boise Airport, B-52s, B- 1s, C-130s, F/A-18s, KC-135s, KC-10s, EA-6Bs, and E/A-18G. Flight restrictions are in place over the Duck Valley Reservation. Overflights are not authorized within a 5-nautical mile (NM) radius around the town of Owyhee, Nevada and are restricted to 15,000 feet above ground level (AGL) and above over the remaining portions of the reservation. Supersonic operations and the use of chaff or flares are not authorized over any part of the Duck Valley Reservation or within the Saddle A and B MOAs/ATCAAs.

This paragraph OMITS the many instances where transient War planes and special "Red Flag" or other exercises are conducted in the Owyhee area – exercises that MHAFB frequently brags about on its Web and Facebook pages – for example, having F-35s use the Range in recent years. This paragraph in the F-35 EIS was also confusing. It is unclear how much of this minimal description applies to the Saddle MOA vs. the much larger airspace areas. Which planes in the long list of other aircraft in the F-35 DEIS and that may foreseeably use the Supersonic or other Range attributes of the supersonic EIS also use Saddle Butte? Or use each of the other MOAs? How many flights each year by each type of War Plane, helicopter. Drone, etc, has taken place here each year since inception of the Ranges and in what areas? What is the foreseeable use scenario for the future? How many are U.S. War Planes/pilots? How many are foreign War Planes/pilots? How do all these planes train? How will the transients, foreign militaries etc. interact with F-15s, A-10s, F-35s or any other plane using this Range? Will the presence of F-35s result in War Planes using airspace and ground facilities differently?

The USAF at MHAFB has changed and amended the aircraft activity and ground-based uses and facilities many, many times since the Juniper Butte ETI EIS. Please provide full and detailed analysis of all the EAs, CXs and other NEPA analyses that have been issued and the magnitude and type of environmental impacts that they addressed since finalization of the ETI EIS that established the Juniper Butte Range and associated airspaces and other uses. Please provide a detailed year by year summary description of the changes. There is no current full integrated NEPA analysis for all these uses currently taking place in the region. There has been an ever-expanding "creep" of Military Activity and highly controversial uses since the ETI EIS. Jarbidge airspace expansion, use of white phosphorus, "convoy training" and other activities in a 2016 EA, Urban CAS/War where MHAFB imposed a war Range over top nine Idaho cities and towns including the Urban Canyons of Boise.

The F-35 EIS referenced a Settlement Agreement with Duck Valley. Note that there are supposed to be no military overflights over the populated area surrounding the townsite of Owyhee. That should be the case here in Boise, too, and the mission of the Guard be changed to be compatible with a civilian population. Given that this ad other aspects of

the Settlement is what the people of Duck Valley found tolerable, then this must be analyzed as an alternative in this Supersonic EIS.

Unique and special areas like the OPLMA wilderness areas, BLM WSAs, BLM ACECs and other sites and the wildlife inhabiting them (Bighorn Sheep WSA for example) will also suffer MORE military activity and the impacts of this degradation – noise, flare and chaff debris and fire danger, reduced wildlife and natural values, skies choked with contrails, etc. have not been assessed. We are greatly alarmed at the potential impacts ot the Jarbidge Wilderness, and eastern Oregon and northern Nevada WSAs and Citizen Wilderness Inventory Units in Oregon.

We are concerned about increasing reporting of dangers from Military Radar (plane and ground-based radar sites like MHAFB's Grasmere "Cowboy Control", lasers of all types, threat emitters (electromagnetic radiation emissions of varying intensities/levels) and other devices and technology that the F-35s and these other war planes may use, and that the EIS fails to properly examine. Note that since there will be MORE Gowen War Plane flights, the public, wildlife and the ecosystem will be exposed to more military impacts and dangers from military activities and technologies. Members of the public recreating on public lands, as well as wildlife and sensitive species, may be exposed to all of these devices and technologies, along with the very high, startling and debilitating levels of A-10, F-15, F-35 and other War Plane noise (overflights, sonic booms, very low frequencies). Of significant concern here is the adverse impacts to human health and to wildlife of the annoyance levels from very low frequency sounds emitted by War Planes. See articles on Whidbey Island "Growlers" on cd. How do the very low frequencies emitted by F-35s vs. A-10s vs. F-15s vs. Growlers vs. F-35s compare to one another? What are the potential health effects? What are the potential effects on disruption of wildlife behaviors and other impacts on biota?

Our contacts on Duck Valley Reservation have related loud and annoying military overflights taking place and expanded National Guard on the ground activity that has many residents quite concerned.

We are also very concerned about greatly increasing contrail pollution of the air, blocking sunlight and blue sky.

F-35 DEIS ID-11 states: The F-35A would fly more of the time at higher altitudes than the A-10s (Table ID2.2-2), operating more than 90 percent of the time above 10,000 feet mean sea level (MSL). In contrast, the A-10s operate only 37 percent of the time above 10,000 feet MSL, with 63 percent below 10,000 feet AGL, and 37 percent below 5,000 feet AGL. Thus, the F-35A aircraft would conduct most of their operations in the high altitude Jarbidge, Owyhee, and Paradise ATCAAs with some basic fighter maneuver training i the Saddle ATCAA. Regardless of the altitude structure and percent use indicated in Table ID2.2-2, F-35A aircraft (as do existing military aircraft) would adhere

to all established floors and ceilings of airspace units. For example, the floor of Saddle A MOA lies at 10,000 feet MSL, so the F-35A would not fly below that altitude in that airspace. Rather, pilots would adapt training to this and other airspace units like the Jarbidge MOAs with lower floors.

Is this really the case – or is there some mistake or misinformation similar to the potential for much greater afterburner user by F-35s that 5% found in the DEIS? Please explain why F-35 use would be so different.

ID 2.2.3 Table Approximate 124 FW Current and Proposed Annual Airspace Operations contains info from 20-16-2017. When were local MHAFB and/or the Guard deployed during this limited time? Where is current data? Would the number of flights be greater if they were deployed less frequently? How many flights are projected in the future? What about transients? How many of the flights are MHAFB? How many transients? How many planes from foreign countries and/or with foreign pilots?

The DEIS ID-12 states: Similar to the A-10 aircraft, the F-35A would fly approximately 90-minute long missions, including take-off, transit to and from the training airspace, training activities, and landing. The 124 FW A-10 aircraft currently conduct up to 2,500 annual sorties (or approximately 208 monthly sorties) lasting approximately 60 minutes in the airspace. Under the Proposed Action, the F-35A aircraft would conduct up to 3,061 annual sorties (approximately 250 monthly sorties) lasting 30-60 minutes. On occasion during an exercise, the F-35A may spend up to 90 minutes in one or more airspace units. Based on this, the time spent in the airspace by the 124 FW would be expected to increase approximately 47 percent relative to the affected environment.

This means there will be a lot more military overflight noise, and a lot more air pollution from the F-35s – AND this would also be taking place in the Supersonic EIS training areas. Plus, aren't the F-35 engines highly inefficient? This also sounds more similar to the Urban CAS/WAR EA, where planes circle and circle and circle for 1-2 hour bouts making the lives of people living and working under them Hell suffering the annoying and physically disturbing noise (especially the very low frequency sounds of military War Planes). Is the F-35 going to be engaged in CAS activity of any mind – use of MHAFB Owyhee Ranges Urban War fake building sites, or the Civilian Population Urban War Range the AF CAS EA authorized? These questions must also be addressed in the SS EIS.

Further, the air pollution levels and releases of all War planes, helicopters, other activity conducted in the ranges must be detailed plane/device by plane/device. How does this change depending on flight speed, supersonic flights, etc.?

What is the climate change emission footprint of the current and foreseeable military activities associated with MHAFB, Gowen et al and the Ranges? How much it be

reduced by increasing simulator flying, thus negating the crowding the problem and need for this EIS.

There is increasing alarm at the huge detrimental impact of the U. S. military and its hue pollution levels that are feeding the Climate Crisis. See:

https://qz.com/1655268/us-military-is-a-bigger-polluter-than-140-countries-combined/

The US military's carbon bootprint is enormous. Like corporate supply chains, it relies upon an extensive global network of container ships, trucks, and cargo planes to supply its operations with everything from bombs to humanitarian aid and hydrocarbon fuels. Our new study calculated the contribution of this vast infrastructure to climate change.

Greenhouse gas emission accounting usually focuses on how much energy and fuel civilians use. But recent work, including our own, shows that the US military is one of the largest polluters in history, consuming more liquid fuels and emitting more climate-changing gases than most medium-sized countries. If the US military were a country, its fuel usage alone would make it the 47th largest emitter of greenhouse gases in the world, sitting between Peru and Portugal.

Here is a link that just showed up today showing the military whooping and hollering while practicing Urban War at a Military site. Is the same being electronically staged instead - currently taking place over Boise and are current War Training activities in the MHAFB Ranges be engaged in this anywhere in this region? https://thvidoes.com/video-28751137446128161641 53

The F-35 DEIS ID-12 states: To train with the full capabilities of the aircraft, the F-35A would employ supersonic flight at altitudes and within airspace already authorized for such activities. Due to the F-35A's mission and the aircraft's capabilities, the NGB anticipates that approximately 10 percent of the time spent in air combat training would involve supersonic flight. All supersonic flight would be conducted above 15,000 feet MSL, with 90 percent occurring above 30,000 feet MSL…

Was this a mis-representation of what was actually in the works all along - i.e. this Supersonic EIS?

Please provide information on how large a land area the sound footprint of F-15, F-16 A-10, Growler, F-35, F-22 and any other War plane/helicopter/drone, etc that may use the ranges has under all potential flight conditions, and under all aspects of supersonic flight at any elevation, under various weather conditions, in various terrain, etc. . At what distance will supersonic flight noise and booms be audible? This in reality impacts a huge land area and all the wildlife, and rare plant pollinating insects including those of

Slickspot Peppergrass, under this airspace. Will Supersonic noise overlap the MHAFB Civilian Population Nine Cities Urban War Range CAS circles or other areas?

Please analyze the highly foreseeable possibility for F-35s or other War Planes potentially in this airspace to be carrying nuclear weapons.

WLD also requested that the F-35 EIS: "analyze the highly foreseeable possibility for F-35s to be conducting Urban War and/or flying in and overlapping the same airspace that Urban War flights would be using. Is it possible the Urban War EA is in part designed to mask F-35s flying all over the place at higher altitudes? Additionally, the description of the flight time periods does not comport with how A-10s and F-35s have been described to fly in morning and afternoon". Please also provide this information in the Supersonic EIS, as there may be a considerable overlap and intersection between planes engaged in Urban War and supersonic and other elements of the Ranges.

Most air-to-ground training would be simulated, where nothing is released from the aircraft, and target scoring is done electronically. As was discussed in Chapter 2, Section 2.2.2.7, however, the F-35A is capable of carrying and employing several types of air-to-air and air-to-ground ordnance (including strafing) and pilots would need training in their use. As the NGB currently envisions, the type of ordnance employed at MHRC is expected to remain the same or decrease. F-35A pilots would only use ranges and airspace authorized for the type of ordnance being employed and within the number already approved at a range and/or target. If in the future the NGB identifies weapons systems that are either new or could exceed currently approved levels, appropriate NEPA documentation would need to occur prior to their employment.

WHY can't the "terrain masking" and "supersonic low level" flight also be simulated???

What specifically are ordnances to be used in association with War Games that involve supersonic or lower level flight activities? What are the weapons used for strafing?

F-35 EIS ID 13-14 states:

Like the A-10, the F-35A would employ chaff and flares as defensive countermeasures in training. Chaff and flares are the principal defensive mechanisms dispensed by military aircraft to avoid attack by enemy air defense systems. For the purposes of this analysis, it is estimated that the expenditure of chaff and flares by the F-35As would not exceed use by the legacy A-10s on a per operation basis for the 124 FW.

We are concerned that use of this material may be exceeding levels currently analyzed under various military documents in this region, Is that the case?

WLD is observing large amounts of plastic chaff device military litter all over wild areas. This has not been addressed – including litter in Wilderness and WSAs, and citizens Inventory Units. ARE these materials currently being used in Oregon and Nevada? How much supersonic EIS and the activities to which it s related impact use and amount of use of such materials? We are also dismayed at the release of chaff currently taking place, and the use of flares which start range fires.

The EIS also refers to this material being used in areas "currently authorized". Where is use of these materials NOT authorized? Over the Jarbidge Wilderness for example??? There have been innumerable piecemeal EAs and CXs changing military activity parameters, and in fact this is a long-recognized military strategy to thwart effective NEPA review and ease into highly controversial activities. For example, once 18 F-35s are in Boise, one can readily envision the military incrementally increasing the number, adding more airspace, changing elevation levels of airspace, changing weaponry/gadgets/devices, etc. What areas are foreseeable for expansion? We are very concerned that as soon as the F-35s bed down, the military will claim a "need" for more airspace and more ground-based training disturbance to accommodate them. The EIS description of how the F-35s will actually fly and train and use the airspace differently from A-10s is so vague that it is impossible to understand just what may be planned to take place, and if the current airspace, ground facilities and other activities and weaponry will be adequate. Again, this Supersonic EIS must provide detailed analysis for all War Planes current and foreseeable and all activities in this region and using these Ranges.

The F-35 DEIS states:

Over most of the affected area, minimum flare release altitude is 2,000 feet AGL. Based on the emphasis on flight at higher altitudes for the F-35A, roughly 90 percent of F-35A flare releases throughout the MOAs would occur above 15,000 feet MSL. At this altitude, most flares would be released more than seven times higher than the minimum release altitude permitted (2,000 feet AGL) over non-government- owned or -controlled property and ensure complete burnout before reaching the ground.

Please explain what the latter part of this means. What is considered to be non-government-owned or controlled property? Are BLM public lands considered government-controlled property? If so, what are flares being used at the 2000 ft. level there? How many wildfires have been caused by flares in the region in recent years? How many flares have been released? Won't the F-35 increased missions in the airspace result in exceeding the level of use assessed in past NEPA documents? Please note a series of Oregon wild fires, including in a portion of Hart Mountain, were attributed to flare use a couple years ago. Materials from chaff devices are now littering large areas of public lands - including WSA and wilderness lands across the region. We are also concerned about pollution of water and the air/inhalation hazards at times from the clouds of chaff the military releases. Please apply ALL of these concerns to the supersonic EIS, which

also focuses on LOWER LEVEL flight and TERRAIN MASKING in a manner with zero specifics revealed to the public to allow for informed Scoping comments at this point,

DEIS ID-15 states: As applicable, the 124 FW will coordinate with the USEPA, Region 10 and Idaho Department of Environmental Quality (DEQ) regarding proposed construction near Environmental Restoration Program (ERP) sites, including potential release locations (PRLs) of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), on the 124 FW installation.

These sites must be fully revealed and detailed in the Supersonic EIS as well. How much of each of these chemicals will be used annually? How does foreseeable use in relation to F-15s vs. F-35s vs. A-10s? How frequently will fire suppression "training" take place? Wil it be indoors or outdoors? How will the civilian population be protected from this pollution? Won't there be an increase in use of these toxic "forever chemicals" if the military expands the areas with low level and more planes use these facilities - as the AF claims "crowding" in the current low level areas – and an expansion would likely mean increased heavy use elsewhere as well as continuing fairly high levels of use in the "crowded" areas (note that the military recently INCREASED the Singapore plane number at MHAFB)?

DEIS ID-15 states: A conformity applicability determination is required for federal actions occurring in nonattainment or maintenance areas for criteria pollutants when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed de minimis thresholds. The 124 FW installation is located within northern Ada County, which is a maintenance area for carbon monoxide (CO) and particulate matter less than or equal to 10 microns in diameter (PM10). Therefore, a conformity applicability analysis is necessary to identify whether a formal conformity determination is required.

The Supersonic DEIS must include details on the specific components and amount of each of these components in all MHAFB and combined Gowen-base related emissions for planes involved in use of the Ranges subject to the supersonic EIS, and also compare emissions from F-15sa, to F-16s to F-22s to Growlers to F-35s to A-10s and other War planes including transients that pollute the air in our region as well.

We also stress that the public comment for basing F-35s in Idaho was resoundingly opposed. This reflects the concern of the public over military activity "creep" in Idaho. MHAFB is NOT being a good neighbor in trying to increase its already huge noise and activity footprint in the region.

F-35 Scoping Public Comment Expressed Resounding Public Concern

The DEIS states that: Of the 1,318 general public comments, 47 were in support of the proposed beddown, and 884 expressed concern about noise".

ALL the issues raised by the public in scoping comments, and listed on p. 17 of the ID F-35 EIS section have not been adequately addressed in the F-35 EIS, and should be addressed in the supersonic EIS as well. This includes: Aircraft noise concerns related to: o General annoyanceo Hearing loss (and OTHER health effects – adverse cumulative effects of noise exposure) , Property values Domestic pets, Wildlife, Sleep interference, Impacts to outdoor activities, Request for noise mitigation, safety/crashes, etc.

This from the F-35 EIS statement shows the serious flaws and concerns related to the the military EIS noise modeling and especially the averaging of noise: Noise Exposure Maps (NEMs) can and do change over time. NEMs include an existing year and a future year (5 years forward in time). These NEMs have to be updated every 5 years or certified to the FAA that they are current. Non-compatible land uses (i.e., residences) can become compatible if the DNL 65 dB noise contour changes shape or becomes smaller due to changes in operational procedures, fleet mix, or nighttime operations.

This appears to be saying that if there is more military night-time noise (and less day time noise – with flights shifted to night) then the noise models will be churned out to show more homes are "livable". Please explain how this can be – because we are very likely to see contorted and difficult to understand claims made about noise in the Supersonic EIS.

This is made even more ridiculous by the fact that people often work shifts and may be trying to sleep during at least part of the time the EIS defines as day use (example: nurses, bartenders/ waitpersons). Children and infants at home will be exposed to the horrifically loud F-35 noise during any time of the day. They will be exposed to the immediate ear-piercing ear damaging sound that can cause hearing damage, decreased learning ability, sleep interference, and many other health problems, whose impacts are often cumulative. NOTE that these same concerns apply to people (and wildlife) overflown in the areas of the Ranges under the increased low level and supersonic activity being proposed.

Any mitigation associated with the Supersonic EIS must be fully examined in the DEIS. Note that WLD believes that the horrendously loud low level and supersonic flights are not able to be mitigated – except by AVOIDANCE. In the case of the F-35 EIS, It is absurd to wait until the FEIS to develop any unfunded "plan" as the DEIS attempts to do: "Upon completion of the Final EIS, a mitigation plan will be prepared in accordance with 32 CFR 989.22(d). The mitigation plan will address specific mitigations identified and agreed to during the EIAP, as discussed in the EIS and identified in the Record of Decision (ROD) …"

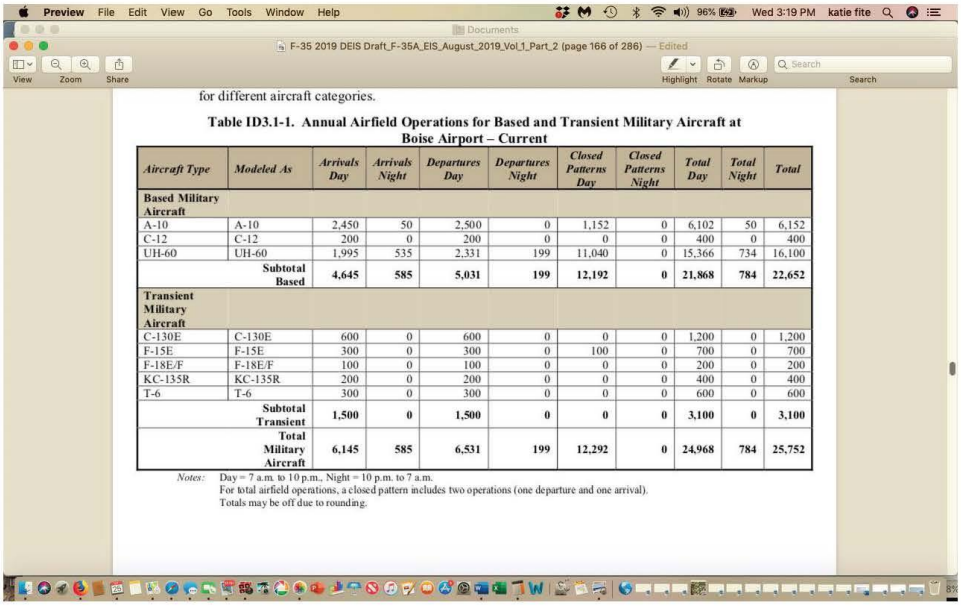
Specific and detailed mitigation actions must be fully assessed now, and this includes for the civilian population of Boise and other populations impacted by these overflights, wildlife and wild lands recreational users and residents across the landscape impacted by the MHAFB War Plane activities and by any Supersonic EIS. There must be a detailed concrete mitigation plan for wildlife across public lands that will suffer greater numbers of military war Plane overflights even worse than at present. Solid detailed site-specific baseline inventories to establish the current occupied habitats and occurrence, habitat quality and quantity, and status/trends/viability of all local and regional populations of sensitive species and other impacted wildlife must be conducted. This is necessary so that all direct indirect and cumulative effects of the welter of military activities (in combination with other environmental threats) impacting this local and regional area can be understood. Current habitat loss, degradation and levels of fragmentation must be understood.

WLD is very concerned that current levels of noxious noise and other military disturbance may be significantly depressing populations of sage-grouse, migratory birds, raptors, bighorn sheep and other wildlife in this region. All critical seasonal habitats for all of these species must be clearly identified and the number, type, loudness (including immediate sound not averaged sound) and other habitat aspects and attributes must be thoroughly studied. For example, Sage-grouse and Antelope may use very different habitats in winter than in spring. Antelope may move across state lines in the course of the year. Horribly disturbing military War Planes noise and startling flights may disturb animals in these crucial seasonal habitats, and drive them into sub-optimal areas where they have lower survival.

Noise – Supersonic EIS Must Greatly Improve on Noise Analysis of F-35 EIS and other Recent Self-Serving Military NEPA Documents

The F-35 DEIS (pps. 19- 44) continues to use averaged noise statistics that mask the full horrible impact of War Plane noise on people and animals, such as that of the notoriously loud F-35, and of F-15s and other War Planes. Moreover, the EIS fails to include any analysis of very low frequencies that pierce to the bone and leave one's ears dully aching for hours after repeated exposure. This is a matter of serious concern because of the impacts these very low frequencies have on animal tissues. The supersonic EIS must examine this in great detail, as well as all the sound elements and parameters of sonic booms.

The DEIS contains the following Table:



for different aircraft categories.

Table ID3.1-1. Annual Airfield Operations for Based and Transient Military Aircraft at Boise Airport – Current

Aircraft Type	*Modeled As*	*Arrivals Day*	*Arrivals Night*	*Departures Day*	*Departures Night*	*Closed Patterns Day*	*Closed Patterns Night*	*Total Day*	*Total Night*	*Total*
Based Military Aircraft										
A-10	A-10	2,450	50	2,500	0	1,152	0	6,102	50	6,152
C-12	C-12	200	0	200	0	0	0	400	0	400
UH-60	UH-60	1,995	535	2,331	199	11,040	0	15,366	734	16,100
	Subtotal Based	**4,645**	**585**	**5,031**	**199**	**12,192**	**0**	**21,868**	**784**	**22,652**
Transient Military Aircraft										
C-130E	C-130E	600	0	600	0	0	0	1,200	0	1,200
F-15E	F-15E	300	0	300	0	100	0	700	0	700
F-18E/F	F-18E/F	100	0	100	0	0	0	200	0	200
KC-135R	KC-135R	200	0	200	0	0	0	400	0	400
T-6	T-6	300	0	300	0	0	0	600	0	600
	Subtotal Transient	**1,500**	**0**	**1,500**	**0**	**0**	**0**	**3,100**	**0**	**3,100**
	Total Military Aircraft	**6,145**	**585**	**6,531**	**199**	**12,292**	**0**	**24,968**	**784**	**25,752**

Notes: Day = 7 a.m. to 10 p.m., Night = 10 p.m. to 7 a.m.
For total airfield operations, a closed pattern includes two operations (one departure and one arrival).
Totals may be off due to rounding.

Does this include the various Navy and other planes using Jackson's Jet Center and other private facilities at the airport? How many planes would fall in this category, and what type of plane are they? There are white planes that appear to be modified civilian air liners that constantly fly over Boise neighborhoods resulting in distracting plane noise and pollution.

As we stated previously, the EIS must correct the data on the use of afterburners plugged into the various noise models, the validity of which we strongly question.

WHAT would a noise map DNL contours for Boise look like if afterburners were used 50% of the time on F-35s?

WILL the Air Force be using Noise Map contours so the public can visualize the impacts of low level flight, supersonic flight, sonic booms, etc.?

From review of 6 years of consistent Air Force reports, a member of the public assembled the following information:
Five independently prepared Air Force documents show that at most altitudes and speeds, the noise on the ground below the F-35 will be an average of 16 decibels louder than the loudest F-16 currently flying (a difference of roughly 60 times the physical energy and more than three times as loud perceptually).

1. The Elgin AFB Environmental Impact Statement (EIS) reports the F-35 at 500 mph was 121 db, & the F-16 was 97 db (a 24 db difference).
2. A joint empirical test by the AF & Lockheed reported the F-35 at 121 db at 1,000 ft, and 500 mph. While the F-16 at the same speed and height, was 114 db (a 7 db difference).
3. The Nellis EIS, reported the F-35 at minimum (cruising) power at 1,000 feet was 103 db, and the F16 at 89 db (a 14 db difference).
4. The Luke Air Force Base EIS, report landing estimates for the F-35, at normal military power (full throttle without afterburner) was 79 db, compared to the 66 db of the F-16 (a 13 db difference).
5. The Burlington Vermont EIS, reports that the F-35 produces 115 db at ground level, on take-off, while the F-16 produces 94 db (a 21 db difference).

HOW LOUD are F-5s and all other War planes that the Supersonic EIS will cover at 500 mph? At 500 ft AGL? At 1000 ft AGL? At all potential speeds and all potential elevations - including under varying atmospheric and other conditions?

How might supersonic flight under the SS EIS disrupt and/or kill/injure migrating birds?

Generally long-distance migrants seem to start out at about 5,000 feet and then progressively climb to around 20,000 feet. Just like jet aircraft, the optimum cruise altitude of migrants increases as their "fuel" is used up and their weight declines. https://web.stanford.edu/group/stanfordbirds/text/essays/How_Fast.html

We are alarmed at the potential impacts to migrating birds of the MHAFB current and foreseeable War Plane activities in this local and regional area. This must be thoroughly examined in the EIS. There are now known large-scale avian population declines in North America that elevate concerns such as this – and there is a great need for a full military analysis of the role of "training" activities in such declines.

F-35 EIS Table ID 3.1.4 shows that there will be highly significant noise exposure to the public using the Boise airport, using the parking garages, waiting to be picked up from flights, etc. One-time exposure to very high levels of noise can cause hearing damage in infants.

The DEIS ID-19 states: Noise modeling utilized annual average day (AAD) aircraft operations computed by dividing the total yearly airport operations by 365 days per year. The noise modeling relies on aircraft's flight tracks (paths over the ground) and profiles (which includes altitude, airspeed, power settings, and other flight conditions). The noise analysis considers the numbers of each type of operation by aircraft/track/profile, local climate, terrain surrounding the airfield, and similar data related to aircraft engine runs that occur at specific static locations on the ground (e.g., pre- and post-flight and

maintenance activities). A team primarily made up of representatives from the installation's flying squadrons and air traffic controllers, as well as the NGB, developed this data through iterative meetings and discussions subsequently compiled into a data validation package. The NGB team reviewed the data validation package and approved the operational details for modeling (124 FW 2019).

This must be independently vetted, and all inputs and modeling fully laid out.

PLEASE fully consider all of these attributes – altitude airspeed, terrain, etc. on noise generated under the current and proposed War plane activities of the supersonic EIS. WHAT are all of these noise parameters and levels under the various training scenarios in all affected Sage-grouse lek sites impacted by activity across the ranges? Note that Blickley studies documented noise impacts – including bird displacement from leks, and elevated stress hormones.

Please provide detailed analysis of Loudest events under the current and proposed and any other foreseeable overflight event by all types of planes that may use the range. What will the Loudest events be by all activity leks? By all known occupied Pygmy Rabbit habitat? By all occupied Bighorn Habitat site? By all known Golden eagle nests? Etc. These species habitat areas must be considered POIs in the supersonic EIS. Please also do the same for all BLM WSAs, all Citizen Wilderness Inventory Units in Oregon, all Lands with Wilderness Characteristics, all WSRs and all Wilderness areas – across the project area.

DEIS ID-25 Table ID3.1-6. Loudest Events at Each POI, Calculated in SEL contains "Sound Exposure level" information. This shows extreme noise exposures to highly vulnerable populations of children and infants. We stress that the Idaho Humane Society will also suffer significant noise exposures. Animals there are often already very traumatized. These SELs range from 92 to 108 (the latter at Frank Church High School!). Why is Table ID3.1-12. Loudest Events at Each POI, Calculated in SEL – Proposed Action Alternative the same as the present

This makes no sense. Except that it does indicate the A-10s are much too loud and incompatible for use at a residential airport like Boise's. This demonstrates that this EIS should in reality be looking at an alternative mission that is compatible with Boise, Madison and other municipal airports.

How would the SEL levels change, and what other facilities and residences would suffer similar DEL sound levels if F-35s use afterburners 50% of the time?

The Supersonic EIS mist thoroughly detail how sound intensity and SEL and immediate sound may be impacted - and increase – under proposed training heights, speeds, terrain masking activity, and other scenarios.

The DEIS includes this: Potential for Hearing Loss. Potential for Hearing Loss (PHL) applies to people living in high noise environments. The threshold for assessing PHL is exposure to noise greater than 80 dB DNL. Under the affected environment, there are no residential areas on or adjacent to the airport that are exposed to contour bands of 80 dB DNL or greater (see Table ID3.1-6), so PHL does not apply.

This is deceptive and masks the F-35 impacts, since one-time or only a few times exposure to very high noise levels can cause hearing loss. Throughout much of this section of the EIS, the Air Force provides no scientific citations and information to back up its self-serving assertions.

PLEASE fully provide the levels at which hearing loss would take place for all impacted animal species that currently suffer War Plane activity, and that may be subjected to even worse noise under this Supersonic EIS.

Please prepare a EIS that fully includes all the data and documentation used in the 124 FW 2019 document that the EIS continually cites. What assumptions were made? Where were noise monitors placed? How specifically was this report undertaken and vetted? We request that independent noise experts not associated with any previous military contracts be brought in to conduct a full and complete noise assessment that is designed to understand the complexities of Idaho's and Boise's topography, winter inversions, weather patterns, adequacy of data on noise and airspace and plane use, etc.

THIS highlights the need for the Supersonic EIS to provide all data, documentation, sources, peer review, assumptions used in all models, reports, tables, summaries, etc. in the upcoming EIS.

ID-28 states F-35A aircraft would account for approximately 5 percent of total operations at Boise Airport. There have been recent news reports of considerable F-35 night activity at other bases, so here too the EIS appears to cover up what will actually take place.

How would Figure ID3.1-3."Proposed DNL Contours at Boise Airport" differ if F-35s used afterburners 25% or 50% of the time? Please provide a noise contour map of areas that that will suffer SEL of over 65 decibels from F-35s, and from A-10s. Would that cover nearly all of Boise?

Please provide a contour map of all areas that would suffer SEL of over 65 decibels with the military activities of the Supersonic EIS.

In Scoping, we had raised concerns about winter inversions increasing both noise levels/intensity and pollution, as well as the effects of the noise on homes on the Boise Front -which sit in a straight line across from the airport at a similar elevation. One can

readily see the airport communications tower from Military Reserve. This is how close nearly all the population of Boise, including the downtown core area, is.

PLEASE provide detailed analysis in the Supersonic EIS of how winter inversions and other weather conditions may impact noise levels – of current training and that proposed and/or foreseeable.

DEIS ID-37 states: In rural and open areas, the analysis of noise impacts are vastly different compared to areas near population centers. In these areas, public concerns can include effects to wildlife, domestic animals, natural sounds, and outdoor recreation. Although many studies have been conducted on noise impacts to animals, if the animal of concern has not been included in any of these studies, biological expertise is required to determine if additional research is needed or a surrogate animal can be used for the assessment of impacts. See Section ID3.11, Biological Resources for a discussion of noise impacts to wildlife.

Wildlife live in Urban Areas, people's backyards, acreages/pastures, the Boise River corridor, the Foothills, Boise neighborhoods and throughout the very large area that will suffer increased noise levels from F-35 activity.

PLEASE take serious note of this in development of the Supersonic EIS!

The EIS and the Bio Resources section ID3.11 dismisses serious noise impacts to wildlife in the same way it dismisses many noise impacts to human health and quality of life. Please review the Washington State Department of Health report on Navy Growler Noise. Just because a study does not prove a BLM sensitive species or imperiled species or migratory birds are seriously harmed by high amounts of military overflight noise, sonic booms, or other disturbances, does not mean the EIS can ignores very likely and highly foreseeable impacts.

The Supersonic EIS must thoroughly to assess the perilous current baseline state and condition of habitats for many sensitive and other wildlife species. For example, vast areas of the habitats for local and regional populations of greater sage-grouse, pygmy rabbit, Brewer's sparrow, loggerhead shrike, sage sparrow, sage thrasher and other declining native species have suffered large-scale wildfires. How many acres have been burned in wildfires since the ETI EIS? Where? How has this impacted local and regional populations? For example, the Murphy Fire, the Crutcher fire, the Soda Fire, the Clover Fire and many other smaller fires have resulted in tremendous habitat loss and reduction of suitable habitat. There has been sweeping cheatgrass and medusahead infestation. How many areas are currently infested with cheatgrass, vs. at the time of the ETI EIS? How have all of these factors impacted local and regional populations of wildlife? What have rangeland health assessments conducted on livestock grazing allotment across this region found? WHERE are lands overflown by the military where BLM Has documented that

lands are not meeting the Rangeland Health standards? What is the grazing disturbance burden and what are the impacts of grazing and livestock facilities such as lethal and injurious fences and upland water developments that fragment and degraded sagebrush habitats on the local and regional populations of sensitive wildlife species that will also suffer the severe noise impacts from military overflights including the increased F-35 overflight number and more prolonged periods of use?

The F-35 DEIS states: "Subsonic. Table ID3.1-16 shows the L_{dnmr} levels, rounded to whole decibels, for the affected environment within each of the respective MOAs/ATCAAs. As can be seen, Jarbidge North MOA, Owyhee North MOA, and R-3202 have the highest exposure to noise with the L_{dnmr} reaching 59 dB; all other locations are below 52 dB".

The Supersonic EIS must start afresh. Full and detailed studies must be conducted of the sound levels at the time the sound is emitted across this landscape – NOT averaged noise.

What is the SEL level for noise events impacting wildlife in these areas? How much Sage-grouse Priority habitat, or former Focal Habitat is overflown, and will be impacted by the Supersonic EIS, by F-35s, etc.? How much Bighorn Sheep habitat? AVERAGED noise does not indicate the extreme noise events, and the potential stress, debilitation, increased vulnerability to predation, hearing loss and habitat displacement that extremely loud military noise as well as the very low frequency of military f data on baseline and noises may cause.

The EIS does not provide sufficient scientific baseline and analysis information to support claims of no noticeable impacts – and the F-35 EIS resoundingly does not do this. HOW will this Supersonic EIS differ?

Please also note that noise may interfere with insect activity and may impact pollinators of rare plants, like the Threatened slickspot peppergrass. Full ESA consultation over this and other potential impacts to LEPA must take place. Please review the proposed critical habitat for LEPA, and you will find that the largest remaining areas of the plant's ever-declining habitat are found in areas impacted in one way or the other by the Owyhee ranges, and the Guard OTA. The site of the Boise airport previously had LEPA present.

https://wildlife.org/noise-pollution-affects-even-the-smallest-wildlife/

"Loud noise and vibrations from natural gas compressors influence the number of insects and spiders surrounding them, which could have consequences on other wildlife in the ecosystem, according to new research.

"Anyone who studies insects know that they run the world," said Jesse Barber, an associate professor at Boise State University in Idaho, and senior author of the

new study published inEcology and Evolution. "These animals are important to ecosystem function, and it's critical to know how human-caused noise is changing their distribution, behavior and ecology."

As part of the study, the research team used pitfall traps that contained propylene glycol, a sticky, sugary preservative, to capture spiders and non-flying insects in New Mexico's San Juan Basin at five sites with gas compressors and five ecologically similar sites without the compressors for two months. They then placed the bugs in alcohol and determined which species were present in each site".

See also article discussing impacts of noise on insect physiology: https://www.oatext.com/impact-of-environmental-noise-on-insects-physiology-and-ethology-a-study-on-ants-as-models.php

The WA State Health Department Comment and Report Appendix (on cd) which we incorporate by reference describes negative impacts to public health from changes in noise, air quality, use of hazardous materials, and increasing greenhouse gas emissions from increased military War Plane activity. Note that the Growlers are not as loud as F-35s! PLEASE fully consider all noise impacts described in the WA Health Department Study, in the WA Attorney General lawsuit over War Plane noise, and in the "Takings" lawsuit filed by local residents over War Plane noise on Whidbey island.

We request that a health-based Impact Assessment be prepared for the MHAFB Supersonic Project as well as the F-35 project, for the Supersonic EIS for any affected residents, as did WA Dept of Health for the Growlers. WA also reviews problems with different noise metrics, and how they are used, similar to the confusing analysis of the EIS which fails to adequately address the acute and immediate sound effects to people, pets and wildlife experiencing overflights, sonic booms and other War Plane noise.

Adverse non-auditory health effects of NOISE include chronic stress and sleep disturbance, noise induced annoyance associated with a stress response which affects cardiovascular health. Other environmental noise, including commercial aircraft, add to this stress and must be fully considered in the physiological and other noise analyses.

The full effects [of the F-35s] on people using the Boise airport, including children and infants, must also be assessed. The full effects of the Supersonic EIS military activities on public lands recreational users must be fully considered. For example – in supersonic or other flight – what will be the actual effects of the noise generated at various elevations, or in various terrain and topography?

The description of the sound of an F-35 during takeoff is Lmax (single event maximum sound level). F-35 Lmax during takeoff is (according to 2012 Air Force EIS Table 3.1):

Within 100 feet of the runway - immediate eardrum rupture - 142 decibels.
Within 500 feet of the runway - permanent hearing damage after 8 seconds - 130 decibels.
Within 1,000 of from the runway - severe ear pain - 120 decibels.
Within 2,000 feet of the runway - average human pain threshold - 110 decibels.
Within 1 mile of the runway - similar to a jackhammer - 100 decibels.
Within 2 miles of the runway - similar to a power mower at 3 feet - 90 decibels.

We note that the 2019 F-35 DEIS is often in sharp contradiction to the 2012 F-35 EIS. Please explain why – as it appears different military analysis of much the same situation generate significantly different claims.

As highlighted by the WA Dept of Health study, we are very concerned that the Supersonic EIS must provide sufficient evidence to ensure the noise models and estimates are applicable to canyon and high desert – just like the F-35 must do to the Boise environment with its terrain, inversions burgeoning population and new development planned for many areas to be overflown by F-35s if based at the Boise airport.

We request that independent consultants who have not previously worked for the military as contractors be hired to validate models used for the local and regional environment including the Owyhee Range use. WE reiterate this request for the Supersonic EIS! This is especially needed given the vague, opaque, elusive answers and lack of concrete info provided by the USAF at the Boise Scoping meeting on the Supersonic EIS.

The DEIS must greatly improve the description and analysis of noise science related to human health, wildlife, and domestic animals.

WA Dept of Health Appendix A includes a Review of epidemiological literature about health effects of noise exposure. The WA Report emphasizes that the military should not require a definitive causal and significant relationship between effects on humans, pets, wildlife prior to including health outcomes in models and EIS analyses. See also WA Attorney General Growler litigation references to noise effects on avian and other species. See WLD comments on Urban War, Scoping including references to Blickley and other Sage-grouse studies for example.

It is very important to consider factors that affect sound propagation, and the different acoustic signatures of War Planes, and how these may impact people and animals.

The Report describes noise-induced hearing loss can come from long-term exposure to steady state sound, or one-time exposure to an intense impulse sound. Such hearing loss can be long-term, progressive and irreversible. Hearing loss effects cognitive

performance, attention, and social interactions in humans. Certainly it also affects the behavioral interactions and ability of animals to function in the environment. What is the likely fate of a Bighorn sheep or Sage-grouse deafened by War plane overflights???

Other known noise impacts on humans include: Annoyance, discomfort, anger, exhaustion, displeasure feed depression. Sleep disruption and lead to obesity, hypertension, other physiological changes. AREN'T similar impacts expected on animals. We are including information on cd that shows animal experiments have shown noise exposure can cause "learned helplessness" in animals.

The minimal ecological/environmental review for wildlife must meaningfully consider short/acute, mid and long-term impacts of chronic noise exposure, stress, disruption of species habitat use - especially when added on to the degraded and fragmented habitat conditions, climate change impacts, threats to arid land ecosystems that many species face. The EIS must also consider long-term impacts to animal health. For example, it must adequately address and consider the physiological stress or energetic costs caused by noise-related disturbance; must account for potentially more harmful impacts to avian and mammalian species health during breeding season or other sensitive times of the year such as during winter periods; and must fully consider that Range and War Plane operations may have long- term impacts on animal fitness, including the ability to survive to reproductive age, find a mate, and produce offspring, outside of short-term impacts to critical behaviors – and that this will impact species population levels and ultimate viability of populations.

The EIS must also take a hard look at environmental impacts to reptiles and amphibians, and fish (suffer chaff, and potential fire increase form increased flights and fire risk from flares/accidents). We are dismayed at the military attitude - such as with the F-35 The DEIS - that unreasonably concludes that impacts will not be significant because some species that do react will resume normal activities --- without considering longer-term fitness costs associated with the response to overflight noise, the "startle" effect of sonic booms, etc. The Supersonic EIS must not use this ruse.

As another example, the F-35 DEIS ID-104 includes the following self-serving and entirely unsubstantiated and unscientific claims – that animals will somehow adapt or get used to the noise and that magically even though there will be more flights and noise and inert ordnance and likely more use of flares and chaff and more potential for wildland fires, there will be no more impacts:

Existing range management procedures and vegetation removal guidelines would be adhered to and vegetation management measures currently in place would persist. Impacts to wildlife habitat would be negligible. Defensive countermeasures that would be employed by the F-35A with the potential to affect wildlife habitat include chaff and flares. Chaff and flare deployment would be expected to be similar to current levels

conducted by A-10 aircraft and would occur within the same approved training areas as the proposed F-35A. Current limitations on the amount or altitude of chaff and flare use would continue to apply. As a result, chaff and flare deployment associated with the Proposed Action would have no significant impact on wildlife habitat.

Impacts to migratory birds protected under the MBTA would be negligible. In general, animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase. Additional analysis for noise impacts to biological resources can be found in Appendix E, Noise Modeling, Methodology, and Effects in USAF 2016. Noise modeling results suggest subsonic noise levels would increase from 0 to 8 dB within the airspace and would be up to 59 L_{dnmr}; well below the 112 dB shown to elicit major biological responses. Long-term impacts to migratory birds would not be significant.

This is wrong on so many levels. Using a noise level as high as 112 dB completely discounts the impacts of noise in disrupting migratory, nesting, wintering and other behaviors, in making animals more susceptible to predation in increasing stress in driving animals out of habitats with the combined effects of overflights and sonic booms, etc.

Moreover, the EIS relies on claims of "habituation" to reach a conclusion of no or minimal impacts – without addressing a welter of other factors – such as increased stress levels, increased vulnerability to predation, displacement from otherwise optimal habitats, , disruption of reproductive, feeding or other behaviors, etc.

Overall, impacts to the federally- and state-listed species from the proposed change in subsonic and supersonic operations would not be adverse for the following reasons: 1) the probability of an animal or nest experiencing overflights more than once per day would be low due to the random nature of flight within the airspace and the large area of land overflown; 2) generally speaking, the F-35A would fly at higher altitudes than F-16 aircraft—the majority (98 percent) of the F-35A operations would occur above 5,000 feet AGL; 3) supersonic flight would only occur above 15,000 feet MSL in the airspace, with 90 percent of these supersonic events above 30,000 feet MSL; and 4) although the total number of supersonic flights and sonic booms occurring would increase from current levels under this alternative, there would only be an increase in dB CDNL ranging from 0 to 5 across airspace units, with a maximum level at 45 dBC CDNL. In addition, studies of supersonic noise on birds and mammals indicate that animals tend to habituate to sonic

booms and long-term effects are not adverse. Impacts to federally-listed species would not be significant.

The supersonic EIS MUST address the following serious concerns and critique of such unsupported military statements.

First, the flight is not "random" as there are definitely areas within the airspace where use is more intensive and frequent. We dare whoever wrote this to go out to Little Blue Table or the Bruneau Canyon areas for a couple of days, and then claim the impacts are minimal and "random" and animals will magically "habituate". There are also MTRs. Plus the noise from War Planes and sonic booms carries for vast distances. WHERE is the data on the distance the noise of a sonic boom will carry in the Owyhee Canyonlands, for instance?

The EIS reliance on habituation to current or proposed levels of aircraft activity, and failure to assess species may react differently to the increased noise and flight activity are not valid for determining effects.

The EIS does not adequately consider the physiological stress or energetic costs caused by the disturbance. Narrow focus on short-term impacts to critical behaviors fails to consider long-term impacts to species health. The DEIS fails to adequately account for potentially more harmful impacts to bird health during breeding season or other sensitive times of the year, and contradicts science demonstrating that aircraft operations, and noise and disturbance of many types, may have long- term impacts on fitness, including the ability to survive to reproductive age, find a mate, and produce offspring, outside of short-term impacts to critical behaviors. See Blickley Oil and Gas traffic noise disturbance effects on breeding sage-grouse.

The Supersonic EIS MUST address ALL Of these concerns.

There is no critical analysis conducted in the F-35 EIS – only circular self-serving arguments why F-35s (and current A-10 activity) is benign.

What are the adverse impacts of the War Plane "startle effect" from low-lying aircraft suddenly appearing on the horizon on people and animals? There is no "habituating" to that. It is an instinctual fear-based reaction.

Since foreseeably there will be F-35s using the MHAFB areas and flying low Supersonic and lowering flight floors under this latest EIS – all of these errors, omissions and deflections of the F-35 EIS must be corrected in the Supersonic EIS.

Facilities/Airspace

This greatly fails to take into account the greatly expanding human population, the City's controversial "Gateway" Urban Renewal District where business workers will suffer high levels of noise exposure, as well as other URDS that will increase Bench area population density and thus the number of people exposed to higher levels of F-35 noise, air pollution, in danger if serious accidents at Gowen occur, etc. What is the estimate of the total number of new workers in the URD area if developed as the city plans?

The DEIS ID-46 states: Under the 124 FW Proposed Action, there would be an increase of 22 percent of sorties, with each sortie lasting 30-60 minutes. Based on this, the time spent in the airspace by the 124 FW would be expected to increase approximately 47 percent relative to the affected environment (see Table ID2.2-3) due to additional sorties expected to be conducted by the F-35A (see Table ID2.2-4).

The DEIS elsewhere claims there will be some 90 minute missions, and none of this comports with the claim that the planes take off in mid morning and return back to Gowen mid afternoon. Much more specific info on how training activities will take place, and any use of the area that is now part of the MHAFB Urban War Range must be fully assessed.

NOTE that the F-35 EIS downplayed night-time and other activity, which characterizes much of the use in portions of the airspace impacted by the supersonic EIS. An honest, comprehensive, accurate and realistic accounting must be provided.

Air Quality Impacts

The F-35 analysis omits adequate consideration of the air pollution problems across this region, contrail pollution, etc.

ID 48-49 states: "Climate change can also increase the frequency and severity of fires that burn forests, grasslands, and desert vegetation. On average, nearly 1 percent of the land in Idaho has burned per year since 1984, making it the most heavily burned state in the nation. Changes in climate are likely to more than double the area in the northwest burned by forest fires during an average year by the end of the 21st century".

The military is a huge polluter contributing an immense share of greenhouse gases to the planet. The EIS never asks the question how can the carbon and emissions impacts of War planes be minimized? See: https://grist.org/article/u-s-military-emits-more-co2-than-most-countries/

This must be addressed for all the activities under the Supersonic EIS.

The F-35 EIS admits fire risk – but averages risk across the entire state. It does NOT look at the serious habitat loss that has already occurred for sensitive species in the areas

where the F-35s will train/overfly (Owyhee Complex/Urban War Range), including the areas near Boise such as the winter range of the foothills. There is highly significant big game winter habitat on the Boise Front and other areas that will suffer increased F-35 noise. There are crucial sage-grouse wintering habitats as well, but the EIS makes no attempt to map and identify such important and irreplaceable habitats. THESE concerns mmust all be addressed for activities under the supersonic EIS.

DEIS ID-50 states: if the intensity of any net emissions increase for a project alternative is below 250 tons per year in the context of an attainment criteria pollutant, the indication is the air quality impacts will be insignificant for that pollutant. In the case of criteria pollutants for which the proposed project region does not attain a NAAQS, the analysis compares the net increase in annual direct and indirect emissions to the applicable pollutant de minimis threshold(s). If the net direct and indirect emissions from the project alternative equal or exceed an applicable de minimis threshold, then a positive general conformity determination is required before any emissions from the actions may occur.

This confusing, and it does not appear that the EIS provides enough data to show all the pollution footprint. The table of emission (ID 3.3.4) makes no sense, as the F-35s will fly more and have very inefficient engines. The full pollution footprint of MHAFB existing and proposed and foreseeable activities and use of the ranges by any parties must be fully assessed in the Supersonic EIS.

The F-35 DEIS states: All criteria pollutant emissions would decrease as a result of the aircraft conversion except for SO_X, which would increase slightly.

What is the source of the data used to draw this conclusion? All data sources must be identified and provided in the Supersonic EIS.

The DEIS does not provide adequate information on ordnance and explosive and the safety of storage or transport.

The SS EIS must provide adequate on crash/mishap risk (higher associated with take off and landing) and assess the potential for greatly increased catastrophic loss of human life if F-35s are bedded down at civilian airports amid the town rather than at military bases like Mountain Home, as well as from more low level flying including supersonic low level flying under the SS EIS.

While the EIS claims great things about the supposed safety of the F-35, there is contradictory information about the plane's safety, including unexplained impacts to pilots. See info on cd. The model of F-35 will highly foreseeably change over the life of the mission – and with newer models comes increased risks (and potentially even louder NOISE). Further, AI may become the pilots, and not humans adding further to unknown and potentially catastrophic risks. ALL of these factors must be considered in the SS EIS.

What also must be considered under any discussion of safety is that having War Planes based at the Boise civilian airport amid the Treasure valley's population predicted to reach a million people means that the population is being used as a "human shield". There is no guarantee that hostile powers might not attempt to bomb or otherwise take out the F-35s, with catastrophic consequences to the Boise and Treasure Valley region.

The presence of loud war Planes also causes distress to people with PTSD, refugees and others. It may even trigger angry or violent behavior. Boise citizens are exposed not only to War Plane overflights associated with Gowen and the incessant transient War Plane disturbance, but also to the MHAFB "Urban War" F-15 overflights and many transients including the Whidbey growlers,

This can cause serious effects to the mental health state of vulnerable people, people with PTSD, refugees, and those who have become sensitized to the horrible low frequency and other sounds produced by military War Planes. PLEASE fully assess these impacts to folks suffering PTSD or who have fled conflict as they try to recreate on public lands impacted by the SS EIS.

We also stress there has been no comprehensive current analysis of all the War activities taking place with the A-10s, transients, the various military planes using private terminals/facilities at the Boise airport, with the Orchard Training area, and Urban War. See WLD Scoping and EA comments on Urban CAS/WAR EA. This must be addressed in the SS EIS.

The DEIS states: The F-35A aircraft has a 42 percent composite material by weight, which is more than the A-10 aircraft contains. One disadvantage of composite materials is that they have the potential to degrade under extreme temperatures, resulting in the production of toxic fumes and airborne respirable fibers. Laboratory studies have identified respirable fiber products and toxic gases (including high levels of CO, NO_X, and hydrogen cyanide) from burning composite materials. Because of these characteristics, composite aerospace materials present unique hazards to mishap responders. Individuals exposed to a crash site could experience dermatological and respiratory problems. Exposure to these hazards would not necessarily end when a fire is extinguished; exposure to recovery crews, site security, the surrounding population, and others could continue (Naval Air Warfare Center 2003). However, research on aircraft composite materials similar to that used on F-35A aircraft demonstrate that combustion characteristics of composite materials are similar to other combustible materials and rapid flame spread or excessive heat releases are not a concern.

Please provide full details of potential population exposure to this toxic material in the event of a mishap. Where will a pollution plume drift? How many people could potentially be exposed? How carcinogenic are these chemicals? This also elevates

concern about the risk of crashes or other mishaps and the huge impact of such an event in a high density population area.

Please conduct this analysis of activities under the Supersonic EIS – for example- what would the impacts on McDermitt or Duck Valley be?

Additional Concerns

Please prepare a noise contour map of the region showing where the F-35 will be significantly audible to residents with the potential for annoyance. How much of the City and area would that noise footprint encompass? Please do the same for any areas subjected to War Plane noise under the Supersonic EIS.

The DEIS at ID-77 wrongly ignores the significant adverse economic impact of declines or loss of wildlife populations, harms to recreational uses and enjoyment of public lands, from War Plane activity across the Owyhee region. The DEIS states: "The socioeconomic aspect of potential impacts to lands underlying SUA was not evaluated because no construction or other ground disturbance would occur to generate economic activity.

The minority and low income mapping of the DEIS shows large areas of such populations in close proximity to the airport. It is extremely likely that expansion of noise contours once the military correctly employs info on afterburner use and local area characteristic will include large numbers of low and minority income populations. Please prepare a SEL map for these populations as well.

Please fully address these concerns as relevant to the SS EIS activity.

The DEIS p. 102 includes the following inaccurate claim: "Changes in operational noise are not expected to impact terrestrial species in the area because species on and near the installation are likely accustomed to elevated noise levels associated with aircraft and military operations". The increase in noise is likely to drive animals away, cause increased stress, make some species more likely to be predated, etc.

ID-131 states: "Noise generated in the reconfigured airspace should not perceptibly change in the MHRC when considered along with the F-35A beddown. There would be no changes in the number of flights operating in the airspace, other than the addition of F-35A aircraft and subtraction of A-10A aircraft out of the 124 FW. Fighter jet-generated noise would continue to dominate sound levels in the training airspace". There will be MORE flights. F-35 will use the airspace differently, but the EIS fails to reveal specific details of use, or how the presence of F-35s may alter maneuvers by and/or with other planes using the airspace.

PLEASE provide full and detailed analysis of what is meant by reconfigured airspace, and address in detail if the SS EIS is part of the referenced "reconfiguration" here.

IN the F-35 EIS, there is no adequate analysis of cumulative effects of the noise on sensitive native biota that have suffered over a million acres of wildfire habitat loss since the ETI EIS, extensive livestock grazing degradation and failure to meet Rangeland Health standards which means habitats for species are degraded,, acres of infestations of flammable invasive species and increased human development since analysis of the ETI, the current and foreseeable effects of climate change stress on sensitive species like sage-grouse and threatened slickspot peppergrass, etc. Such analysis must be fully and thoroughly conducted under the SS EIS.

The DEIS fails to include the information on serious flaws and concerns with the F-35 program – for example, those found in this Opinion piece by John Nichols on the failures and faults of the F-35 program:
https://madison.com/ct/opinion/column/john_nichols/john-nichols-f--project-is-the-military-industrial-complex/article_b97662f4-737e-5fa5-8b3f-b5d4408c246a.html

The DEIS fails to accurately assess the noise impacts on human health, quality of life and just how bone-piercingly loud and annoying War Planes are. Here is an article describing how a community suffers under high levels of military noise. Note the Growlers are not as loud as F-35s! AND this is exactly how members of WLD have experienced the horrific existing noise levels in portions of the MHAFB Range.

"Then the whine arrived. The raw wail of metal slicing the dusky air over Washington's Whidbey Island.

The roar that followed was sound as force — penetrating, suffocating. Jingling pocketed keys. Touching bone.

"People who've heard about it, they think about airplanes, they think about jets, but they really can't imagine it," said Anne Harvey, standing on the porch in her backyard as Star, her aging black lab, lounged on the grass below. The dog, increasingly deaf, was oblivious to the growing growl".

AND: "Really, what's happened [on Whidbey] and in the country more broadly is that the Department of Defense is not following the guidelines of the National Environmental Policy Act," said Matt Mikkelsen, a soundscape researcher. "It all lends itself to people believing that they're not operating in the public's best interest."

AND: Sound moves in fits and starts across a landscape, shaped by air's temperature and land's gradient, said Lauren Kuehne, an ecologist at the University of Washington who

studies noise pollution in public spaces. Subtle changes in the orientation between sound sources and recipients alters that flow wildly.

"Loudness," Kuehne said, "is perceived."

AND: "Ever since the Prowlers were replaced by the Growlers, those who are in the flight includes Coupeville. "This is a lower frequency, so it has a very different impact both on the vibrations in your home but also in your body. ... That's different from how the Navy had described it."

https://bitterrootmag.com/2019/09/13/we-are-collateral-damage-more-louder-jets-roil-military-communities/ Page 5 of 17

'We Are Collateral Damage': More, Louder Jets Roil Military Communities – Bitterroot 9/16/19, 9'59 PM

All but two people who testified at the Boise public hearing on the DEIS OPPOSED the basing of f-35s in Boise – and this included a broad spectrum of the public!

See Kustra article pasted below:
https://www.idahostatesman.com/news/local/community/boise/article234778822.html

The draft environmental impact statement that the Air Force released last month was quite revealing about the impact of the campaign to bring supersonic F-35 jets to Boise's Gowen Field. It raises the question for state and local officials as to what we value most here in Boise: 18 supersonic jets that will have a minimal effect on job opportunities and economic development or citizens of our neighborhoods who can live free of what the Air Force labels a "significant" noise impact.

Let's be clear about what "significant" noise impact is when it's coming from a supersonic jet that breaks the sound barrier and creates sonic booms. This is not your father's Oldsmobile!

In New Jersey a few years ago, there were reports of the ground shaking in south New Jersey that was mistakenly attributed to an earthquake. Eventually, the U.S. Navy claimed responsibility for the sonic booms caused by its supersonic aircraft, similar to the F-35s.

Although the Air Force passed on Boise this time and chose sites in Wisconsin and Alabama for the F-35s, it still lists Boise's Gowen Field as a backup candidate. And Boise Mayor Dave Bieter is still committed to bringing the F-35s to Boise at some future date. Last month's listening session the Air Force held for Boise residents regarding the F-35s sends a message that it's still serious about considering Boise in the future.

The Air Force got an earful of opposition that evening, best summed up by one resident who declared that "Boise is no place for urban war!" It's difficult for those who have control of the skies and the jets that fly overhead to predict exactly how a community will be affected by noise. The reassurances that well-intentioned officials and experts give to communities that life on the ground will not be affected dramatically are too often proved wrong when planes take to the air on a daily basis and pilots sometimes deviate from flight plans that may change from those laid out by official promises years before.

Whatever the prediction of noise impact in an environmental impact statement, it always seemed worse for folks out walking the dog, barbecuing in the backyard, teachers trying to keep students' attention, parents trying to put babies asleep and every other aspect of daily life in a community.

In the case of the F-35s, the Air Force's analysis is not good news for Boiseans. For starters, there are currently more than 6,000 operations per year of the quieter A-10 fighter jets that currently fly out of Gowen, but the newer supersonic F-35s would increase operations to more than 7,000 operations per year. The missions of the F-35s will be 90 minutes long with take-offs and landings, and some of that mission time will be at supersonic speeds and noise.

The Idaho Statesman has already reported on the environmental impact statement analysis. In all, 272 households in an immediate area of 446 acres around Boise would be subjected to noise as loud as a vacuum cleaner 3 feet away. No telling what the tolerance for noise will be beyond the immediate area examined. To make matters worse for a city with rising property values and a shortage of affordable housing, many of the homes directly affected by noise are in that "affordable" category.

Whidbey Island, northwest of Seattle, can teach Boiseans a thing or two about property values and aircraft noise. The Naval air station there is a constant source of controversy over the noise level of its jets.

Property values are one of the main concerns of its residents. In fact, a map of the communities on Whidbey divides the island into zones that reflect the likelihood of noise from Naval air station jets upsetting daily life in the homes of the communities. If your home lies in one of the zones on the north end of the island, your property values will be less than if you are in a southern zone saved from most of the jet noise.

When you buy or sell a home, there is a document the buyer must review that details the zone the house is in, then the buyer must sign to knowing and understanding the noise risks assumed by the purchase. That would sure slow down a buyer or, at the very least, bring in a lower offering price.

How would all this play out in Boise with the new supersonic F-35s? Can anyone really reassure us that noise will not affect property values down the road when these F-35s are flying over the region, not to mention quality of life in general? These supersonic jets are in a different class than the current A-10 jets when it comes to noise and the sonic boom in particular.

An analysis of an Air Force environmental impact statement by an anti-F35 group in Vermont called Save Our Skies concluded that the F35 could be as much as four times louder as another fighter jet, the F16.

We also note that the F-35 EIS did not address the psychological, health effects and financial toll of the repeated efforts to impose F-35s noxious noise on Boise? Please estimate already lowered property values. Please address the stress and uncertainty people living near the airport have faced for nearly a decade now as Idaho politicians and lobbyists have attempted to foist these War Planes on civilians whose homes and health would be substantially jeopardized.

The Supersonic EIS must fully address all of the preceding issues we raised in comments and the very real concerns of the public about the effects of military noise across this region.

Sincerely,



Katie Fite
Public Lands Director
WildLands Defense
PO Box 125
Boise, ID 83701
[redacted]

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

REGIONAL
ADMINISTRATOR'S
DIVISION

November 23, 2021

Sheri L. Robertson
Chief, Environmental Management Branch
1100 Liberator Street
Mountain Home Air Force Base, Idaho 83648

Dear Ms. Robertson:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Assessment for Qatar Emiri Air Force F-15QA Beddown at Mountain Home Air Force Base in Idaho, prepared by the U.S. Department of the Air Force, 366th Fighter Wing. EPA is providing comments on this proposed project pursuant to the National Environmental Policy Act, the Council on Environmental Quality regulations (40 CFR §§ 1500-1508), and Section 309 of the Clean Air Act.

The Draft EA evaluates a proposed action to provide international military training support to the Qatar Emiri Air Force. This proposed action includes: the beddown of twelve QEAF F-15QA aircrafts; associated use of the MHAFB airfield; special use airspace; military training routes; and defensive countermeasures and ordnance. It would also include approximately 300 additional QEAF and U.S. Air Force personnel, as well as the construction and modification of facilities and infrastructure, and housing.

Four action alternatives were evaluated, including the no action. Alternatives 1 and 2 evaluated partial on-base and off-base interim, and all on-base permanent housing for "Sea of Rocks" and "Integrated Campus" locations, respectively. Alternatives 3 and 4 evaluated all off-base interim and permanent housing and flightline for "Sea of Rocks" and "Integrated Campus" locations, respectively. A preferred alternative was not identified in the Draft EA.

In our September 22, 2021 comments on the Draft Environmental Impact Statement for the proposed Airspace Optimization for Readiness at MHAFB, EPA identified concerns about the action's potential impact due to the significant nose levels. Our review identified that the proposed action would result in significant noise levels associated with aircraft overflights in Special Use Airspace and Military Operation Areas. This would result in disproportionately high and adverse impacts to minority and low income populations, including Tribes and youth (under 18 years of age). In addition, EPA's comments noted potential significant impacts to the greater sage-grouse population, which is in a long-term decline.

In consideration of our September 22, 2021 comments, EPA recommends DAF consider its decision on the QEAF F-15QA Beddown proposed project after the public comments have been addressed in the Final EIS and Record of Decision for the Airspace Optimization for Readiness. Additionally, we recommend the QEAF F-15QA Beddown proposed project be evaluated as a reasonably foreseeable future action in the cumulative effects analysis in the Airspace Optimization for Readiness Final EIS/ROD.

EPA recommends the following key issues and concerns be addressed through additional analysis and discussion in the NEPA document:

- Identify and evaluate a reasonable range of alternatives to abate, reduce, and mitigate the significant cumulative noise levels resulting from the overflight of twelve QEAF F-15QA aircrafts in Special Use Airspace and Military Training Routes;
- Develop a noise mitigation strategy and plan. We recommend the strategy and plan include mitigation, monitoring, and other measures to abate, reduce, and mitigate the significant noise levels impacting sensitive receptors, land use and resource areas in SUAs and MTRs;
- Evaluate the day-night noise levels from aircraft overflight operations, trainings, and missions within SUAs and MTRs and include a map(s) depicting the DNL noise contours from aircraft overflights and the noise sensitive receptors, land use and resources areas;
- Evaluate the direct, indirect, and cumulative noise impacts from the QEAF F-15QA aircraft overflights on noise sensitive receptors, land uses, and resources in SUAs and MTRs;
- Collect baseline noise data by directly measuring the ambient noise levels within SUAs and MTRs and during aircraft overflight operations. These direct noise measurements can be compared with anticipated noise levels associated with the proposed project (e.g., *NOISEMAP Version 7.3* modelling results);
- Identify and evaluate land use categories within SUAs and MTRs and their minimum noise levels to ensure compatible uses between the cumulative aircraft noise levels and land use categories; and
- Ensure meaningful participation by local communities and stakeholders in the affected cities and counties and EJ communities, as well as Tribes to identify and discuss concerns regarding the significant cumulative aircraft overflight noise levels at MHAFB. For example, a tribal operations committee could be developed to advise MHAFB on its operations and potential impacts on tribes.

EPA also encourages DAF to include additional clarifying or missing information on topics in our attached detailed comments.

Thank you for the opportunity to review and comment. If you have questions regarding this letter, please contact Mark Jen at [redacted], or you may contact me at [redacted].

Sincerely,

Rebecca Chu Digitally signed by Rebecca Chu
Date: 2021.11.23 16:18:42 -08'00'

Rebecca Chu, Manager
Policy and Environmental Review Branch

U.S. Environmental Protection Agency
Detailed Comments on the Draft Environmental Assessment
for Qatar Emiri Air Force F-15QA Beddown
at the Mountain Home Air Force Base, ID

LEVEL OF NEPA ANALYSIS

DAF recently prepared several NEPA analyses for proposed actions at the MHAFB.

- On November 7, 2018, a Final Environmental Assessment and Finding of No Significant Impact was completed for the Urban Close Air Support Air and Ground Training Spaces.[1]
- On July 9, 2021, the Draft EIS for the Airspace Optimization for Readiness was made available for a 45-day public comment period. The public comment period was subsequently extended an additional 30-days due to significant public concerns regarding impacts from aircraft overflight noise affecting the quality of the human environment.

The NEPA analysis prepared for these proposed actions established a precedent which we recommend be considered in determining the appropriate level of NEPA review and documentation for the QEAF F-15QA Beddown project.

EPA provided comments regarding the Draft EIS for the Airspace Optimization for Readiness.[2] Our review identified that the proposed action would result in significant noise levels associated with aircraft overflights in SUAs and MOAs that will impact noise sensitive receptors, land uses, and resources. Additionally, our review identified that the proposed action would result in disproportionately high and adverse impacts to minority and low income populations, including Tribes and youth (under 18 years of age). This proposed action has the potential to significantly impact the greater sage-grouse population, which is in long-term decline.

The Final EIS and ROD for the Airspace Optimization for Readiness have not been completed. Public comments regarding potential significant noise levels associated with aircraft overflight in SUAs and MOAs and their impacts have not been addressed. The cumulative effects from past, present, and reasonably foreseeable future actions (e.g., QEAF F-15QA Beddown) associated with Airspace Optimization for Readiness at MHAFB have not been evaluated and disclosed to the public.

Recommendations for DAF:

- In the Final EIS for the Airspace Optimization for Readiness:
  (1) Evaluate public comments regarding significant noise levels associated with aircraft overflights in SUAs and MOAs that will impact noise sensitive receptors, land uses, and resources resulting in disproportionately high and adverse impacts to communities with Environmental Justice concerns and sage-grouse populations (refer to EPA's September 22, 2021 Letter);
  (2) Evaluate the QEAF F-15QA Beddown as a reasonably foreseeable future action in the cumulative effect analysis; and
  (3) Incorporate the analysis by reference in this NEPA document.[3]
- Tier the QEAF F-15QA Beddown analysis to the broader Final EIS for the Airspace Optimization for Readiness;[4] and

[1] *Hausrath v. Department of the Air Force*, US District Court for the District of Idaho (Oct 1, 2020). Case no. 1:19-CV-00103-CWD.
[2] U.S. Environmental Protection Agency, Region 10 Letter (September 22, 2021) from Rebecca Chu, Policy and Environmental Review Branch Manager to Sheri Robertson, Environmental Management Branch Chief, MHAFB, Idaho regarding the DEIS for the Airspace Optimization for Readiness.
[3] 40 CFR Section 1502.21. Incorporation by reference.
[4] 40 CFR Section 1502.20. Tiering.

- Consider a decision regarding the QEAF F-15QA Beddown after the public comments have been evaluated in the Final EIS and ROD for the Airspace Optimization for Readiness and disclosed for public review.

ALTERNATIVES ANALYSIS

The proposed action would include the beddown of twelve QEAF F-15QA aircrafts, associated use of the MHAFB airfield, SUAs and MTRs, and defensive countermeasures and ordnance, which may result in cumulatively significant aircraft overflight noise levels resulting in impacts to sensitive receptors, land uses, EJ communities, Tribes, youth, and sage-grouse. The alternatives analysis evaluates a range of flightline facilities and infrastructure alternatives and housing alternatives (on-base/off-base and interim/permanent).

Recommendations for DAF:

- Identify and evaluate a reasonable range of alternatives to abate, reduce, and mitigate the cumulative significant noise levels resulting from the overflight of twelve QEAF F-15QA aircrafts in SUAs and MTRs. We recommend that the alternatives consider noise sensitive receptors, land uses, resources, overflight restrictions and exclusion zones in certain air spaces, locations, routes, schedules, frequency, duration, aircraft speeds, altitudes, power settings, etc.; and
- Evaluate mitigation, monitoring, and other measures which were not included in the proposed action to abate, reduce, and/or minimize the direct, indirect, and cumulative effects of aircraft overflight noise.

Screening Level Alternatives Analysis

The Draft EA included a screening level alternatives analysis for flightline facility and infrastructure and housing (on-base and off-base/interim and permanent), which evaluated five alternatives (A to E). Alternatives C and D met all selection standards and was carried forward for detailed analysis as four Action Alternatives 1, 2, 3, and 4. Alternatives A, B, and E were eliminated from further detailed analysis. The four action alternatives evaluated in detail in the Draft EA included:

Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Sea of Rocks" Location;
Alternative 2. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline "Integrated Campus" Location;
Alternative 3. All Off-Base Interim and Permanent Housing and Flightline "Sea of Rocks" Location;
Alternative 4. All Off-Base Interim and Permanent Housing and Flightline "Integrated Campus" Location.

The range of action alternatives could be simplified for better public understanding and disclosure, and evaluation of their environmental consequences by consolidating them into two action alternatives with different options, for example:

Alternative 1. Partial On-Base and Off-Base Interim and All On-Base Permanent Housing and Flightline
Option A. Sea of Rocks Location
Option B. Integrated Campus Location

Alternative 2. All Off-Base Interim and Permanent Housing and Flightline
Option A. Sea of Rocks Location
Option B. Integrated Campus Location

Recommendations for DAF:

- We recommend the screening level alternatives analysis be included as an Appendix and a brief discussion of the reasons for eliminating those other alternatives (A, B, and E)[5] included in the EA to reduce the overall length of the document; and
- For better public understanding and disclosure, and evaluation of their environmental consequences, the four action alternatives could be consolidated into two with several location options, including "Sea of Rocks" and "Integrated Campus."

SIGNIFICANT CUMULATIVE NOISE LEVELS

Concerns have been raised about noise levels and their effects resulting from aircraft overflights during operations, trainings, and missions within MHAFB SUAs and MTRs regarding impacts to public health and the uncertainty and risk to the quality of the human environment, noise sensitive receptors, land uses, and resources.

The Draft EA identified noise levels and their effects associated with the flightline facilities and infrastructure and housing. *NOISEMAP Version 7.3* was used to model predicted existing day-night levels noise exposures from aircraft overflight activities and operations within MHAFB and up to 4-miles beyond the installation boundary. The proposed action would increase total airfield operations by up to 15% in SUAs and up to 8% in MTRs.[6] This analysis does not account for the daily and seasonal routes, patterns and formations, schedules (day/night), frequency, duration (hours), altitude, aircraft speeds, power settings, etc. of the additional twelve F-15QA aircraft overflight operations, trainings, and missions in SUAs and MTRs beyond 4 miles of MHAFB. The significant cumulative noise levels and impacts from aircraft overflights on noise sensitive receptors, land uses, and resources remain uncertain and should be further evaluated.

Recommendations for DAF:

- Evaluate the DNL noise levels from aircraft overflight operations, trainings, and missions within SUAs and MTRs using *NOISEMAP Version 7.3.* Account for the daily and seasonal routes, patterns and formations, schedules (day/night), frequency, duration (hours), altitude, aircraft speeds, power settings, etc. for the twelve QEAF F-15QA aircraft overflights;
- Evaluate the direct, indirect, and cumulative noise impacts from the QEAF F-15QA aircraft overflights on noise sensitive receptors, land uses, and resources; and
- Utilize *NOISEMAP Version 7.3* modelling results to develop a map(s) depicting the DNL noise contours from aircraft overflights in SUAs and MTRs and to identify the noise sensitive receptors, land uses, and resource areas which would exceed the 65 dBA DNL threshold. Align the map to be similar with the noise contours within the MHAFB, Figure 3-1 (page 3-3).

Significance Thresholds

In 1974, EPA provided information suggesting continuous and long-term noise levels in excess of 65 dBA DNL are unacceptable for noise-sensitive land use areas, such as residences, schools, churches, and hospitals, etc.[7] The Federal Aviation Administration has established 65dBA DNL as the threshold of significance for noise impacts.[8] Noise levels below 65 dBA is considered compatible with all land uses, including residential, transient lodging, mobile home parks, livestock farming, outdoor sports arenas, zoos, parks, resorts golf courses, water recreation, and camps.[9]

[5] 40 CFR Section 1502.14(a).
[6] Draft EA; (Page 3-29).
[7] Draft EA (Page C-4).
[8] *Seattle Community Council federation v. FAA*, US court of appeals, Ninth Circuit (April 9, 1992).
[9] 14 CFR Part 150, App. A, Table 1 (1991).

The Draft EA indicated that the 65 dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft overflight operations.[10] The Draft EA identified on-base and off-base areas (within 4-miles) which are exposed to the 65 dBA DNL or greater noise levels.[11] This analysis does not include a map depicting the areal extent of "off-base" areas beyond 4 miles of MHAFB.

Recommendations for DAF:

- 65 dBA be used as a threshold to determine significant noise levels and impacts to noise sensitive receptors, land uses, and resources, which would require consideration of mitigation, monitoring, and other measures; and
- Develop a noise mitigation strategy and plan, which includes mitigation and monitoring measures to abate, reduce, and mitigation the significant noise levels impacting noise sensitive receptors, land uses and resource areas in SUAs and MTRs.

Existing Baseline Levels

The Draft EA identified the existing conditions for overall sound levels from aircraft overflights within the SUAs,[12] MTRs,[13] and all action alternatives.[14] We note that the data sources included studies conducted in 2007[15] and 2017.[16]

Aircraft noise over natural and quieter soundscapes may appear louder than in urban areas and the ambient background noise levels in urban areas may be different than rural areas. Aircraft noise over natural soundscapes may be several times higher than on MHAFB and urban areas where the background levels may be higher.

Recommendations for DAF:

- Update the existing baseline noise levels for aircraft overflights in SUAs and MTRs to reflect changes in aircraft overflight activities, operations, missions, and trainings from MHAFB since 2007 and 2017. *NOISEMAP Version 7.3* could be a tool to model existing baseline aircraft overflight noise levels within SUAs and MTRs;
- Perform direct on the ground ambient noise data collection within SUAs and MTRs and during aircraft overflight operations at different altitudes, flight speeds, formations, etc. The direct on the ground noise measurements can be compared with the *NOISEMAP Version 7.3* modelling results; and
- If the existing baseline noise level modelling was completed for other NEPA analysis, incorporated this information by reference to the EA.

Noise Sensitive Receptors and Land Use Compatibility

The Draft EA identified and quantified the area of twelve on-base land use categories at MHAFB and off-base areas within 4-miles.[17] Land use categories beneath SUAs and MTRs were identified as primarily rural, range, agriculture, or federally managed land and sensitive areas, such as wilderness areas, national forests, national monuments, and reservation lands in Idaho, Nevada, and Oregon.[18]

Recommendations for DAF:

- Identify and evaluate all land use categories in SUAs and MTRs and the minimum noise levels to ensure compatible uses between the cumulative aircraft noise levels and land use categories in

[10] Draft EA; (Page 3-2).
[11] Draft EA; Table 3-1 (Page 3-4).
[12] Draft EA; Table 3-2 (Page 3-9).
[13] Draft EA; Table 3-7 (Page 3-10).
[14] Draft EA; Table 3-10 (Page 3-13).
[15] US Air Force. 2007. *MRNMap Aircraft Noise Model, Version 3.0.*
[16] US Air Force. 2017. *NOISEMAP Aircraft Noise Model, Version 7.3.*
[17] Draft EA; Table 3-16; (Page 3-27).
[18] Draft EA (Page 3-29).

Idaho, Oregon, Nevada, Tribal Reservations, and public wilderness and recreation lands. Identify land use categories in areas of EJ communities and vulnerable populations (e.g., minority, low-income, youth, elderly, etc.), as well as other noise sensitive habitat areas for sage-grouse and wildlife;
- Quantify the acreage of the land use category of the airspace beneath the SUAs, MTRs, Tribal Reservations, noise sensitive receptors, residential, urban/rural, recreational and wilderness areas, etc.;
- Provide estimates for the ambient noise levels for each land use category and compare it to the estimated aircraft overflight noise levels during operations for the airspace beneath each land use category. Identify if there are any areas that may exceed the significant noise threshold of 65-dBA DNL; and
- Identify mitigation, monitoring, and other measures to be considered to abate, reduce and minimize potential significant impacts in noise sensitive receptors, land use areas, and resources within the SUAs and MTRs to ensure compatibility between the cumulative significant aircraft noise levels and land use categories.

Mitigation, Monitoring, and other Measures
We recommend evaluating mitigation, monitoring, and other measures to abate, reduce, and minimize the significant impacts to noise sensitive receptors, land use areas, and resources given the significant cumulative noise levels and their effects from aircraft overflights during operations and training within SUAs and MTRs.

Recommendations for DAF:
- Convene public informational and outreach meetings with interested local communities and stakeholders in the affected cities and counties and communities with EJ concerns, and Tribal Reservations to identify and discuss concerns regarding significant cumulative aircraft noise levels at MHAFB. Feedback from these public meetings could be used to develop mitigation strategies, plans, and mitigation measures;
- Mitigation, strategies, plans and mitigation measures could include additional restricted areas and exclusion zones within established minimum aircraft overflight altitudes in certain areas within the SUAs, MTRs, Tribal Reservations, wilderness and recreational use areas, wildlife habitat, etc. within the MHAFB complex;
- Convene a body (e.g., a public advisory committee) to provide feedback and guidance to MHAFB regarding aircraft noise and operations; and
- Develop a comprehensive noise mitigation strategy and plan for MHAFB, including implementation of mitigation measures and direct monitoring of noise sensitive receptors and other areas in the SUAs and MTRs to ensure that noise levels are maintained below 65 dBA DNL.

SAGE GROUSE
Sage-grouse populations and other wildlife species have been declining within their habitat, which include areas within the SUAs and MTRs.[19] Cumulative noise from the QEAF F-15QA aircraft overflights may result in potential significant impacts to the greater sage-grouse population. We recommend additional sage-grouse studies be conducted to determine the aircraft overflight noise levels that would result in changes in their behavior, breeding, nesting, feeding, resting, mortality, etc. and

[19] Coates, P.S., Prochazka, B.G., O'Donnell, M.S., Aldridge, C.L., Edmunds, D.R., Monroe, A.P., Ricca, M.A., Wann, G.T., Hanser, S.E., Wiechman, L.A., and Chenaille, M.P., 2021, Range-wide greater sage-grouse hierarchical monitoring framework—Implications for defining population boundaries, trend estimation, and a targeted annual warning system: U.S. Geological Survey Open-File Report 2020–1154, 243 p., Available at: https://doi.org/10.3133/ofr20201.

measures to mitigation those impacts associated with the significant cumulative noise levels from aircraft overflights.

Recommendation for DAF:

- Consult and coordinate with the Bureau of Land Management, U.S. Fish and Wildlife Service, and the U.S. Forest Service regarding on-going studies, developing and implementing mitigation strategies and management plans to minimize sage-grouse population declines.

CLIMATE CHANGE AND GREENHOUSE GASES

E.O. 13990. *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (January 25, 2021)* and EO 14008. *Tackling the Climate Crisis at Home and Abroad* outline policies to promote and protect public health and the environment, such as reducing greenhouse gas emissions and bolstering resilience to the impacts of climate change. We recommend the NEPA analysis evaluate GHG emissions and climate change as reasonably foreseeable future actions, which have a reasonably close causal relationship to the proposed action.

The Draft EA compared the estimated GHG emissions from the proposed action to the global, nationwide, and statewide emissions.[20] Estimates of the existing baseline GHG emissions at the MHAFB should be included and compared to the proposed action. Additional air quality analysis included detailed estimates of GHG emissions (CO_2e) by activity types, such as personnel, construction/demolition, aircrafts, and heating, etc.[21] We recommend that the GHG emissions for these activity types be summarized and consolidated within the main NEPA document.

Recommendations for DAF:

- Estimate the existing baseline GHG emissions (CO_2-e) at the MHAFB and compare those emissions estimates to the proposed action;
- Summarize and consolidate the GHG emissions for all activity types in the NEPA document;
- Estimate the cumulative effects of GHG emissions and climate change from past, present, and reasonably foreseeable future actions at the MHAFB; and
- Evaluate a mitigation strategy and plan, including monitoring and other measures to reduce overall GHG emissions and to bolster resilience of flightline and housing facilities and infrastructure, and aircraft training, operations, and missions to climate change.

ENVIRONMENTAL JUSTICE

E.O. 13985. *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (January 25, 2021) and* E.O. 12898. *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (February 16, 1994)* require federal agencies to identify affected minority (people of color) and low-income populations, and evaluate and address the potential disproportionately high and adverse human health or environmental effects, such as noise from aircraft overflight training, operations, and missions within the SUAs and MTRs. When identifying communities with EJ concerns, we recommend including youth under 18 years of age. Communities with EJ concerns may be more susceptible to adverse noise impacts than the general population. For example, such communities may reside in inadequate housing or lack housing, thus experiencing greater noise impacts resulting in potential adverse impacts to sleep, speech, and learning.

[20] Draft EA; Table 3-14 (Page 3-20).
[21] Draft EA, Appendix C-2 (Page C-24).

The Draft EA identified minority and low income populations for four states and 25 counties within the SUAs and MTRs to form a baseline for potential disproportionate and adverse impacts on communities with EJ concerns.[22]

Recommendations to DAF:

- EPA's Environmental Justice Screening and Mapping Tool (EJScreen),[23] may be useful for identifying historically underserved communities, such as minorities/people of color, and low-income populations within all major urban areas/cities located within SUAs and MTRs;
- Develop baseline ambient noise levels and estimating aircraft overflight noise levels on communities with EJ concerns (e.g., modeling with *NOISEMAP Version 7.3*);
- Evaluate potential disproportionate and/or adverse impacts to minority and low-income populations associated with aircraft overflight noise levels, particularly regarding effects on hearing loss, sleeplessness, and learning ability; and
- Engage in meaningful public outreach and listening sessions with impacted communities with EJ concerns. Utilize these sessions to develop and implement mitigation plans and strategies, including monitoring, and other mechanisms to minimize the potential disproportionately high and adverse human health or environmental effect on low-income and minority population.

TRIBAL GOVERNMENT-TO-GOVERNMENT CONSULTATION AND COORDINATION

Presidential Memorandum on *Tribal Consultation and Strengthening Nation-to-Nation Relationships (January 26, 2021)* reaffirmed E.O. 13175. *Consultation and Coordination with Indian Tribal Governments (November 6, 2000)*. The frequency and duration of noise from aircraft overflight training, operations, and missions may have impacts on Tribal Usual and Accustomed areas for traditional cultural and substance fishing, hunting, harvesting, etc. Mitigation, monitoring, and other measures may be required to reduce the level of noise impacts below the level of significance.

Recommendations for DAF:

- Discuss the steps and process of engaging Tribal Governments in meaningful government-to-government consultation and coordination with the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation and the Shoshone-Bannock Tribes of the Fort Hall Reservation, and other interested and/or affected Tribal Governments;
- Identify Usual and Accustomed Areas used by Tribes near the MHAFB and evaluate the direct, indirect, and cumulative impacts of aircraft overflight noise on these areas;
- Formally invite interested Tribes to engage in regular meaningful government-to-government consultation and coordination to ensure Tribal Treaty Rights are upheld;
- Formally invite interested and/or affected Tribes to be a cooperating agency on the development of this NEPA document and future MHAFB proposed actions;
- Consult and Coordinate with Tribes regarding mitigation and monitoring measures, strategy, and/or plans to reduce aircraft overflight noise levels; and
- Establish an organization (e.g., a tribal operations committee) with interested and/or affected Tribes to advise MHAFB on issues associated with aircraft training, operations, and missions.

ENVIRONMENTAL RESTORATION PROGRAM

In August 1990, MHAFB was listed on EPA's National Priorities List pursuant to the Comprehensive Environmental Response, Compensation and Liability Act. In January 1992, a Federal Facility Agreement was signed between DAF, EPA R10, and Idaho Department of Environmental Quality. For

[22] Draft EA; Table 3-22 (Pages 3-62 and 3-63).
[23] Source: https://www.epa.gov/ejscreen.

site management purposes to address known and suspected contaminants, MHAFB was divided into six Operable Units.

Hazardous and Waste Materials and Toxic Substances
Construction, renovation, demolition, and other ground-disturbing activities to support new flightline facilities and infrastructure and permanent housing may result in the unearthing and discovery of unknown contaminants. In addition, these activities may result in accidental releases of hazardous and petroleum wastes. Impacts from asbestos-containing materials and lead-based paint may also occur during renovation of existing flightline facilities and infrastructure. MHAFB is located within radon zone 1. Existing flightline facilities may contain polychlorinated biphenyls.[24]

Recommendations for DAF:

- Consult and coordinate with the Regional Program Managers with the IDEQ, Dean Nygard (208-373-0285) and EPA, Region 10, Richard Francis (415-972-3342) on proposed construction, renovation, demolition, and other ground-disturbing activities for proposed QEAF infrastructure on MHAFB to ensure that all required steps are taken to comply with institutional and land use controls and appropriate remedies identified in the various CERCLA Records of Decision;
- Hazardous and waste materials and toxic substances that are used, handled, stored, generated, and disposed on the MHAFB (e.g., petroleum products, used oils, jet fuel, etc.) should comply with all State and Federal requirements, such as the Resources Conservation, and Recovery Act;
- Complete surveys and identify areas of known hazardous and waste materials and toxic substances, such as asbestos, lead-based paint, radon, PCBs, etc. Disclose information regarding these materials in the environmental document;
- Develop appropriate plans which include mitigation measures and best management practices to abate and/or minimize the potential release and exposure of hazardous and waste materials, and toxic substances during construction, renovation, demolition, and other ground-breaking activities to support flighline facilities and infrastructure, and housing; and
- Develop appropriate plans to store, handle, and dispose of any hazardous and waste materials, and toxic substances generated during construction, renovation, demolition, and other ground-breaking activities in accordance with State and Federal requirements.

Monitoring Wells
The "Sea of Rocks" Flightline Alternative[25] and Integrated Campus Alternative[26] identified the proposed *QEAF Consolidated Mission Facility*. According to EPA records, this proposed facility is located directly on an existing monitoring well (MW 43-2) in OU-3.

Recommendations for DAF:

- Evaluate other reasonable alternative location(s) for the proposed *QEAF Consolidated Mission Facility* that could avoid potential conflicts with established monitoring wells; and
- If there are no other reasonable alternative locations for the proposed *QEAF Consolidated Mission Facility*, consider decommissioning MW 43-2 in OU-3 and installing a new monitoring in the general vicinity. Consult and coordinate with the State and Federal RPMs regarding decommissioning of MW 43-2 in OU-3.

Entry and Access to QEAF Facilities
The FFA provides EPA and IDEQ with entry and access to MHAFB facilities to conduct inspections and monitoring for groundwater, vapor intrusion, etc. for management of the OUs.

Recommendation for DAF:

[24] Draft EA (Pages 3-50 to 3-52).
[25] Draft EA; Figure C-9 (Page C-66).
[26] Draft EA; Figure C-10 (Page C-67).

- Consult and coordinate with the EPA and IDEQ RPMs regarding entry and access to QEAF related facilities for inspections and monitoring of groundwater and vapor intrusion, and other activities related to management of the OUs at the MHAFB.

WETLAND AND OTHER WATERS OF THE UNITED STATES

The Draft EA indicates that there are no wetlands, other surface waters, or floodplains within the area that would be affected by construction under any of the action alternatives.[27] According to the U.S. Fish and Wildlife Services National Wetland Inventory mapper, certain waters of the United States, such as freshwater ponds, lakes, wetlands, and riverine habitat are identified on MHAFB.[28] Potential ground-disturbing activities for the construction of QEAF related facilities in WOTUS may require further identification and delineation as these areas may be subject to permitting requirements by the U.S. Army Corps of Engineers under the Clean Water Act Section 404.

Recommendations for DAF:

- Identify and delineate WOTUS, including wetlands on the MHAFB according to their type and acreage;
- Determine if jurisdictional WOTUS, including wetlands would be affected and evaluate steps to avoid, minimize and compensate for unavoidable impacts to wetlands and WOTUS; and
- Consult and coordinate with the appropriate Corps District regarding a CWA Section 404 permit for work planned in WOTUS, including wetlands.

[27] Draft EA (Page C-95).
[28] Source: https://www.fws.gov/wetlands/data/mapper.html

From: Dumke, Kassondra J [redacted]
Sent: Tuesday, December 21, 2021 6:59 AM
To: [redacted]

[redacted]

Subject: Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

Dear Ms. Shaver,

This e-mail confirms receipt of the letter transmitting the NOA and copy of the Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for the Qatar Emiri Air Force F-15QA Beddown at Mountain Home Airforce Base. We appreciate notification of your determination however, we do not provide concurrences for "No Effect" determinations and due to limited staff capacity, we do not review Draft EAs or FONSIs. Further, future correspondence regarding the MHAFB should be directed to the Idaho Fish and Wildlife Office consultation inbox (fw1idahoconsultationrequests@fws.gov). Please let us know if we can be of further assistance.

Thank you and Happy Holidays,

Kassy Dumke
Fish and Wildlife Biologist
Conservation & Consultation
U.S. Fish and Wildlife Service
Idaho Fish and Wildlife Office
4425 Burley Drive, Suite A
Chubbuck, Idaho 83202

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

23 December 2021

Sheri L Robertson
366 CES/CEIE
1100 Liberator Street
Mountain Home AFB ID 83648

Ms. Ashley Molloy
Historic Preservation Review Officer
Idaho State Historic Preservation Office
210 Main Street
Boise ID 83702

Dear Ms. Molloy,

The Department of the Air Force (DAF) is continuing consultation under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR 800 for the proposed Qatari F-15QA beddown at Mountain Home Air Force Base (AFB) (undertaking). Per 36 CFR 800.5, DAF provided SHPO a determination of *No Adverse Effect* for the proposed undertaking, 19 October 2021. SHPO responded advising the inability to concur with the agency's determination. In addressing these issues, the DAF proposes the following resolution:

National Register of Historic Places (NRHP) - Eligibility Flightline and Taxiway

While not currently evaluated for NRHP-eligibility, the DAF assumes NRHP-eligibility for the flightline and taxiway for the purposes of assessing potential adverse effects for the undertaking. There is no significant construction or modification proposed to either the flightline or taxiway as part of the undertaking. While the undertaking does propose two additional aircraft sunshades on the flightline, their installation is consistent with existing sunshades utilized by military aircraft and would not adversely affect the characteristics that would qualify it for listing in the NRHP. The runway would continue to operate in accordance with the current training mission.

The DAF conducted an NRHP-eligibility of previously unevaluated facility number 3018 located within the APE and received SHPO concurrence on the determination of ineligibility for listing on 30 September 2021.

Additionally, a project to re-evaluate the WWII hangars individual eligibility and their potential as historic district eligibility is currently on-going. Upon competition, updated Idaho Historic Sites Inventory Form(s) will be provided to your office as requested.

Potential Interested Parties

On 23 November 2021, DAF authored correspondence to Preservation Idaho, Elmore County Historical Society, Idaho Military History Museum, and the Warhawk Air Museum to

request information about historic properties within the undertaking Area of Potential Effects (APE) and interest in participating in the consultation in compliance with 36 CFR 800.4(a)(3) (see Attachment 1). DAF received an email response from Preservation Idaho requesting to participate as an interested party in the consultation (see Attachment 2). No additional responses have been received.

Assessment of Adverse Effect

As stated in the 19 October 2021 DAF letter to SHPO, no archaeological resources would be adversely affected by the undertaking. Additionally, no Traditional Cultural Properties (TCPs) or Native American sacred sites have been identified within the undertaking APE or at Mountain Home AFB. The WWII hangars (Bldgs. 201, 204, 205, 208, 211) and the Cold War Nose Docks Historic District (Bldgs. 1329, 1330, 1331, 1332, 1333) are within the area of potential effect (APE).

In addition to the No Action Alternative, four additional alternatives were considered. Under Alternatives 1 and 3, the proposed flightline facilities would be constructed in the "Sea of Rocks" location and the far northern end of the flightline (see Attachment 3). At these two locations, neither the WWII Hangars nor the Cold War Nose Docks Historic District would be visually affected by the undertaking.

All new construction would occur in previously disturbed locations, specifically at the northern end of the flightline (Attachment 3). The 79,000sq-ft QEAF Hangar, Squadron Operations, and Simulator would be constructed within a 250,000sq-ft footprint ("Sea of Rocks") that originally contained a 72,000sq-ft, 2-story maintenance facility. The new hangar would be 1,000' northwest of building 211 with two structures (a 20,000sq-ft facility, and a small non-descript structure) located between (Figures 1 - 3). Additionally, the Cold War Nose Docks series hangars (bldgs. 1329 - 1333) are located 1,500' further northwest, with multiple (none eligible) buildings in between (Figure 4). The proposed new maintenance facilities are consistent with the 366th Fighter Wing mission.

Remaining flightline facilities (proposed construction) would be located adjacent to the Cold War Nose Dock Hangar Historic District, along the far northwestern end of the flightline (Attachment 3). The Temporary Propulsion, Inspection, and Consolidated Mission Facilities (all single-story) would be similar too, comparable in size, and consistent with past and current facilities in the proposed location (Figures 5 - 8). The new facilities would not visually affect the Cold War Nose Dock Historic District.

Proposed renovations to WWII Hangar (bldg. 211) would not affect the historic hangar. Hangar 211 was originally built as a 160 X 211' structure and was expanded in 1955 with a 43'6" X 200', 2-story addition (Figures 1 & 9) to be used as office space. The extension is located on the northwest side (opposite of the flightline) of the building. The extension has been repeatedly modified since its construction, adjusting to mission change overtime. The current proposed renovations to the WWII Hangar 211would occur in the addition and would be consistent with current use (office space). Renovations to the office space would not alter the buildings character defining features.

Additionally, building 2618 located at 475 Phantom Ave (see Attachment 3) would be demolished under the proposed action. The building was constructed in 1961 as the base Recreation Center. In 2007, SHPO concurred that the building is not eligible for the NRHP therefore, there would be no adverse effect to building 2618 under the proposed demolish.

Subsequently, the Final Environmental Assessment and Finding of No Significant Impact (FONSI) will conclude that a no effect determination can occur without a Programmatic Agreement for Alternatives 1 or 3. Further, the FONSI will conclude that either Alternative 1 or Alternative 3 is the preferred alternative. Therefore, under Alternative 1 or 3, there will be no (direct or indirect) adverse effect to historic properties for the proposed undertaking. Alternatives 2 or 4 would not be implemented without further consultation per 36 CFR 800.

The DAF requests SHPO concurrence on the determination of *Finding of No Adverse Effect* for the proposed undertaking. Please send your comments on this determination or written concurrence within 30-days of receipt to myself at [redacted]

Sincerely

SHERI L ROBERTSON
Chief, Environmental Management

Attachments:
1. Requests to Potential Interested Parties
2. Preservation Idaho Request to Participate in Consultation
3. Map MHAFB Proposed New Construction



Figure 1. WWII Hangar bldg. 211 2-story (office space) addition.
Looking towards the northwest



Figure 2. Proposed location of the new QEAF hangar. Looking east, away from flightline



Figure 3. Buildings between new hangar location and hangar 211. Looking southwest



Figure 4. Proposed new hangar location. Looking northwest.
Cold War Nose Dock hangars in the distance.



Figure 5. Proposed location of inspection facility, mission facility, and propulsion facility. Looking east



Figure 6. Proposed location of flightline facilities (associated bldgs. for size comparison). Looking west towards flightline.



Figure 7. Proposed location for flightline facilities adjacent to Cold War Nose Dock hangars (bldg. 1330 on the left). Facing west.



Figure 8. Proposed location of new flightline facilities.
Looking towards the backside of building 1333. Facing southeast.



Figure 9. WWII Hangar bldg. 211 2-story (office space) addition. Looking towards the southwest

DEPARTMENT OF THE AIR FORCE
366 CIVIL ENGINEERING SQUADRON
MOUNTAIN HOME AIR FORCE BASE

23 November 2021

Sheri L. Robertson
366 CES/CEIE
1100 Liberator St.
Mountain Home AFB ID 83648

Ms. Paula Benson, President
Preservation Idaho
PO Box 1495
Boise ID 83701

Dear Ms. Benson

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) for a proposed action to beddown Qatar Emiri Air Force (QEAF) F-15QA aircraft at Mountain Home Air Force Base (MHAFB). In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations at 54 U.S.C. 306108, the USAF has identified Preservation Idaho as a potential consulting party with interest in the undertaking relative to identified historic properties within the undertaking Area of Potential Effect (APE).

The Proposed Action would establish an USAF-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the USAF wing commander. The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and USAF personnel, and construction and modification of facilities and infrastructure on MHAFB to support the beddown. Basing and operations would begin in early Fiscal Year 2024 and would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The USAF is seeking information and requesting comments relative to historic properties within the APE. If your organization would like to participate as a consulting party or provide comments on the proposed undertaking, please respond within 30 days of receipt of this letter. If I can be of further assistance, please contact me [redacted].

Sincerely

11/24/2021

X

SHERI L. ROBERTSON
Chief, Environmental Management
Signed by: ROBERTSON.SHERI.L.1152447350

3 Attachments:
1. Historic Architectural Properties in the APE
2. Historic Properties – Alternative 1
3. Historic Properties – Alternative 2

DEPARTMENT OF THE AIR FORCE
366 CIVIL ENGINEERING SQUADRON
MOUNTAIN HOME AIR FORCE BASE

23 November 2021

Sheri L. Robertson
366 CES/CEIE
1100 Liberator St.
Mountain Home AFB ID 83648

Elmore County Historical Society
180 S 3rd St.
Mountain Home ID 83647

Dear Elmore County Historical Society

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) for a proposed action to beddown Qatar Emiri Air Force (QEAF) F-15QA aircraft at Mountain Home Air Force Base (MHAFB). In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations at 54 U.S.C. 306108, the USAF has identified Preservation Idaho as a potential consulting party with interest in the undertaking relative to identified historic properties within the undertaking Area of Potential Effect (APE).

The Proposed Action would establish an USAF-led QEAF F-15QA squadron operating as a separate but integrated fighter squadron under the operational command of the USAF wing commander. The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and USAF personnel, and construction and modification of facilities and infrastructure on MHAFB to support the beddown. Basing and operations would begin in early Fiscal Year 2024 and would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The USAF is seeking information and requesting comments relative to historic properties within the APE. If your organization would like to participate as a consulting party or provide comments on the proposed undertaking, please respond within 30 days of receipt of this letter. If I can be of further assistance, please contact me [redacted].

Sincerely

11/23/2021

X

SHERI L. ROBERTSON
Chief, Environmental Management
Signed by: ROBERTSON.SHERI.L.1152447350

3 Attachments:
1. Historic architectural properties in the APE
2. Historic architectural properties-Alternative 1
3. Historic architectural properties-Alternative 2

DEPARTMENT OF THE AIR FORCE
366 CIVIL ENGINEERING SQUADRON
MOUNTAIN HOME AIR FORCE BASE

23 November 2021

Sheri L. Robertson
366 CES/CEIE
1100 Liberator St.
Mountain Home AFB ID 83648

Mr. Rick Johnson, President
Idaho Military History Museum
4692 W Harvard St.
Boise ID 83705

Dear Mr. Johnson

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) for a proposed action to beddown Qatar Emiri Air Force (QEAF) F-15QA aircraft at Mountain Home Air Force Base (MHAFB). In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations at 54 U.S.C. 306108, the USAF has identified Preservation Idaho as a potential consulting party with interest in the undertaking relative to identified historic properties within the undertaking Area of Potential Effect (APE).

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Sincerely

11/24/2021

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SHERI L. ROBERTSON
Chief, Environmental Management
Signed by: ROBERTSON.SHERI.L.1152447350

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1. Historic Architectural Properties in the APE
2. Historic Properties – Alternative 1
3. Historic Properties – Alternative 2

DEPARTMENT OF THE AIR FORCE
366 CIVIL ENGINEERING SQUADRON
MOUNTAIN HOME AIR FORCE BASE

23 November 2021

Sheri L. Robertson
366 CES/CEIE
1100 Liberator St.
Mountain Home AFB ID 83648

Mr. John Paul, President
Warhawk Air Museum
201 Municipal Drive
Nampa ID 83687

Dear Mr. Paul

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) for a proposed action to beddown Qatar Emiri Air Force (QEAF) F-15QA aircraft at Mountain Home Air Force Base (MHAFB). In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations at 54 U.S.C. 306108, the USAF has identified Preservation Idaho as a potential consulting party with interest in the undertaking relative to identified historic properties within the undertaking Area of Potential Effect (APE).

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Chief, Environmental Management
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3 Attachments:
1. Historic Architectural Properties in the APE
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3. Historic Properties – Alternative 2

From: [redacted]
To:
Subject: FW: [Non-DoD Source] Preservation Idaho/QEAF response as consulting party
Date: Tuesday, December 7, 2021 9:44:15 AM

Respectfully,

Sheri L Robertson
Chief, Environmental Management
366 CES/CEIE
Mountain Home AFB ID

[redacted]

From: ROBERTSON, SHERI [redacted]
Sent: Thursday, December 2, 2021 9:24 AM
To: Stumpf, Christa [redacted]
Subject: FW: [Non-DoD Source] Preservation Idaho/QEAF response as consulting party

FYSA

Respectfully,

Sheri L Robertson
Chief, Environmental Management
366 CES/CEIE
Mountain Home AFB ID

[redacted]

From: Paula Benson [redacted]
Sent: Thursday, December 2, 2021 9:19 AM
To: ROBERTSON, SHERI [redacted]; Kellie Wright Whitlock [redacted]
Subject: [Non-DoD Source] Preservation Idaho/QEAF response as consulting party

Hello Sheri

Thank you for reaching out. Preservation Idaho is interested in participating as a consulting party to this project.

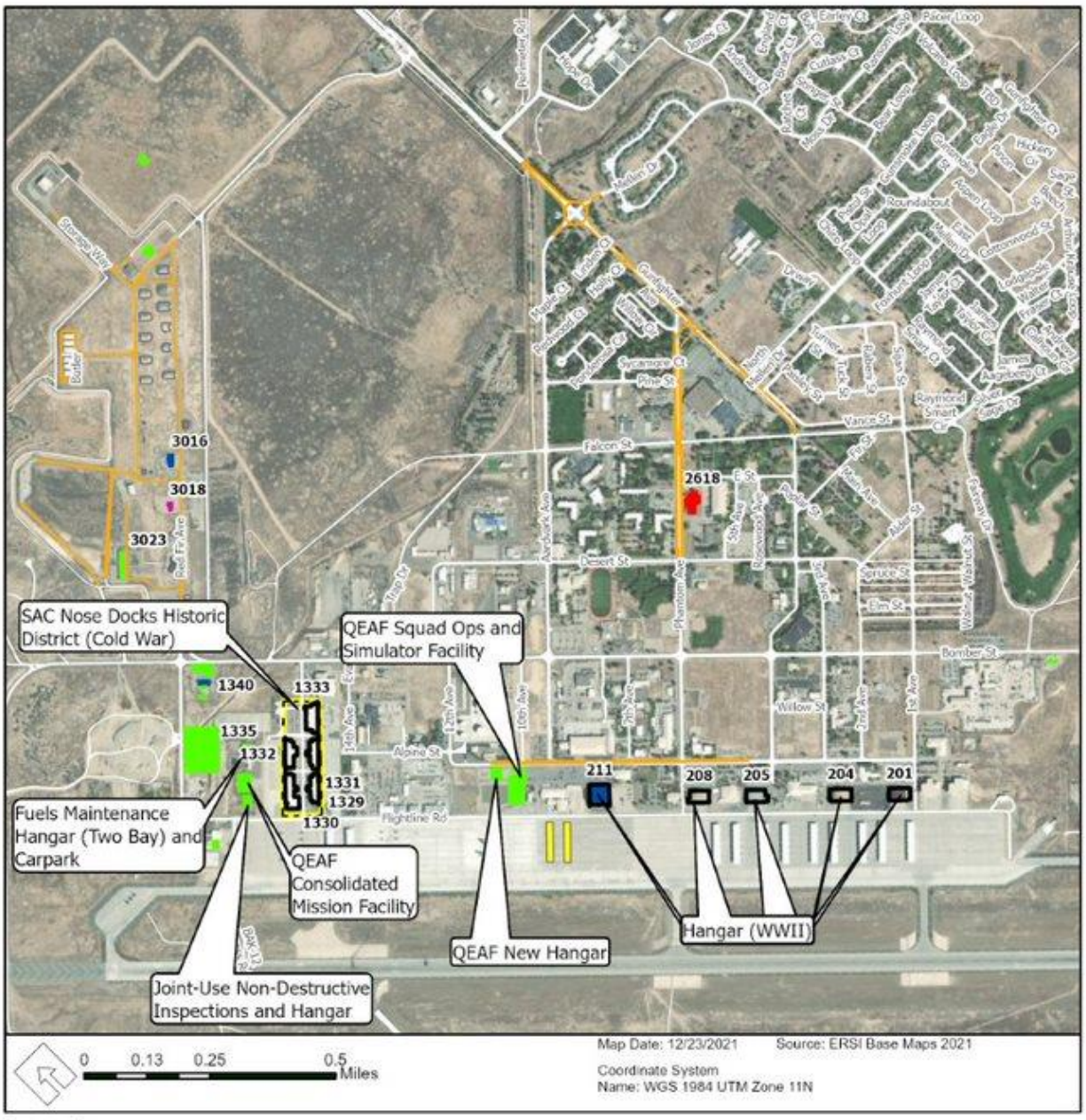
Please include Kellie and I on future communications. We may add someone from our Advocacy Committee to take my role moving forward.

Regards
Paula Benson
Board President
Preservation Idaho

www.preservationidaho.org

"In the end, our society will be defined not only by what we create, but by what we refuse to destroy." – John Sawhill

This email and any files transmitted with it are confidential and intended solely for the named addressee. This message contains confidential information and is intended only for the person so identified. If you are not the named addressee, you should not disseminate, distribute or copy this e-mail. If you received this message by mistake, please reply to this message and then delete it, so that we can ensure such a mistake does not occur in the future.



Legend

Proposed Projects

- Construction
- Improvements
- Demolition
- Retained from Proposed Interim Facilities
- Renovation
- Construction/Demolition
- National Register of Historic Places Eligible Resources (Outlined in Black)

IDAHO STATE HISTORICAL SOCIETY

10 January 2022

Sheri L. Robertson
366 CES/CEIE
1100 Liberator Street
Mountain Home Air Force Base ID 83648
[redacted]

Via USPS

RE: Environmental Assessment for Qatar Emiri Air Force F-15AQ Beddown, Mountain Home Air Force Base / SHPO Rev. No. 2021-651

Dear Ms. Robertson:

Thank you for continuing consultation with our office on the above-referenced project. The State Historic Preservation Office (SHPO) is providing comments to the Department of the Air Force pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR § 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

A Draft Environmental Assessment (DEA) was compiled under the National Environmental Policy Act (NEPA) and received by our office on 22 October 2021. Upon review of this document, our office understands that the scope of the undertaking will include facility improvements to accommodate the Qatar Emiri Air Force F-15QA Beddown at Mountain Home Air Force Base (MHAFB) in Idaho. Proposed actions will include the construction of temporary and permanent facilities, as well as the demolition of buildings on the base. Additional information about the undertaking was received by our office on 23 December 2021.

Identification of Historic Properties within the Area of Potential Effects (36 CFR § 800.4)

Based on the letter received on 23 December 2021, our office understands that the Department of the Air Force will assume National Register of Historic Places (NRHP)-eligibility for the flightline and taxiway to assess potential adverse effects for this undertaking with the understanding that the flightline and taxiway will be documented and formally evaluated for listing in the NRHP.

Brad Little
Governor of Idaho

Janet Gallimore
Executive Director
State Historic Preservation Officer

Administration:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2682
Fax: 208.334.2774

Idaho State Museum:
610 Julia Davis Dr.
Boise, Idaho 83702
208.334.2120

Idaho State Archives and State Records Center:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2620

State Historic Preservation Office:
210 Main St.
Boise, Idaho 83702
208.334.3861

Old Idaho Penitentiary and Historic Sites:
2445 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2844

HISTORY.IDAHO.GOV

Our office also understands that the World War II Hangars; IHSI Nos. 39-17659, -17660, -17661, -17662, and -17663 are each eligible for listing in the NRHP, and that the DAF assumes eligibility of a WWII Hangar Historic District for the purposes of this undertaking. Our office looks forward to receiving the formal evaluation for the hangars as a historic district soon.

We also understand that the Cold War Nose Docks Historic District which comprises IHSI Nos. 39-18102, -18151, -18152, -18153, and -18154 is eligible for listing in the NRHP. The DAF has also determined that building 3018 within the APE is not eligible for listing in the NRHP. Our office concurred with this determination on 30 September 2021.

Assessment of Adverse Effect (36 CFR § 800.5)
Pursuant to 36 CFR § 800.5, we have applied the criteria of effect to the proposed undertaking. Based on the additional information received on 23 December 2021, we concur the proposed project actions will have **no adverse effect to historic properties if Alternative 1 or 3 is chosen, however, if Alternative 2 or 4 is chosen, additional consultation would be required.**

Thank you for the opportunity to comment. Please note that our response does not affect the review timelines afforded to other consulting parties. Additionally, the information provided by other consulting parties may cause us to revise our comments. Please provide additional information to shsshpo@ishs.idaho.gov. If you have any questions, please contact me via phone or email at [redacted]

Sincerely,

A. Molloy cn=Ashley L. Molloy, o=Idaho State Historical Society, ou=State Historic Preservation Office, email=ashley.mollloy@ishs.idaho.gov, c=US 2022.01.10 14:38:26 -07'00'

Ashley Molloy, M.A.
Historical Review Officer
Idaho State Historic Preservation Office

B.7 NOTICE OF AVAILABILITY

NOTICE OF AVAILABILITY

Draft Environmental Assessment for the Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

A Draft Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) have been prepared by the Department of the Air Force (DAF) to consider the potential environmental consequences of establishing a US Air Force-led Qatar Emiri Air Force (QEAF) F-15QA training squadron at Mountain Home Air Force Base (AFB), Idaho.

The Proposed Action includes the basing and operation of 12 F-15QA permanently assigned QEAF aircraft, use of the airfield, associated special use airspace and Military Training Routes for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and US Air Force personnel, and construction and modification of facilities and infrastructure to support the beddown.

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- Albertsons Library – Boise State University, 1865 W. Cesar Chavez Lane, Boise, Idaho 83725
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- Nampa Public Library, 215 12th Avenue South, Nampa, Idaho 83651
- Twin Falls Public Library, 201 Fourth Avenue East, Twin Falls, Idaho 83301
- Elko County Library, 720 Court Street, Elko, Nevada 89801
- Humboldt County Library, 85 E. 5th Street, Winnemucca, Nevada 89445
- McDermitt Library, PO Box 444, McDermitt, Nevada 89421

An electronic copy of the Draft EA and proposed FONSI can also be found at https://www.mountainhome.af.mil/Home/Environmental-News/.

The DAF is soliciting comments from interested local, state, and federal elected officials and agencies, as well as interested members of the public. Although comments can be submitted to the DAF at any time during the EA process, comments are requested within 30 days from the date of publication of this notice to ensure full consideration in the process. Comments can be submitted by email to 366FW.PA.PublicAffairs@us.af.mil or by mail to 366 FW/PA, 366 Gunfighter Avenue, Suite 310, Mountain Home AFB, Idaho 83648.

For further information or questions regarding the Proposed Action or EA development, contact Public Affairs at 366FW.PA.Public.Affairs@us.af.mil or 208-828-6800.

PRIVACY ADVISORY NOTICE

This Draft EA and proposed FONSI are provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality NEPA Regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR § 989, Environmental Impact Analysis Process (EIAP). The EIAP provides an opportunity for the public to provide comments on the proposed action and alternatives and solicits comments on the analysis of potential environmental effects.

Public commenting allows the DAF to make better, informed decisions. Letters or other written 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 only be used to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA; however, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published.

One Publication:
October 27, 2021

AVIT OF PUBLICATION

Elmore
aho } ss.

tinez, do solemnly swear that I am the Legal Clerk of the:

Mountain Home News

A weekly newspaper of general circulation, published once a week, in Mountain Home, Idaho, that the notice attached hereto which is a part of publication thereof; was published in said newspaper for 1 week, the publication date having been made on the 27 day of Oct, 2021; in the Wednesday issue of the paper during the period and time of publication and that the notice was published in the paper proper and not in a supplement thereof.

And I further swear that the said Mountain Home News has been continuously and uninterruptedly published in said Elmore County during the period of 78 consecutive weeks prior to the first publication of the attached notice.

Joy Martinez
Legal Clerk

Subscribed and sworn to me this 27th day of Oct, 2021.

Brenda M. Fincher
Notary Public

Residing in Mountain Home, Elmore County, Idaho.

My commission expires **11-16-2022**.

BRENDA M. FINCHER
Comm. No. 19837
NOTARY PUBLIC
Expires: 11/16/2022
STATE OF IDAHO

*** Proof of Publication ***

Twin Falls Times-News
132 Fairfield St W, Twin Falls, Idaho 83301

SHERRI DAVIS, being duly sworn, deposes and says: That she is the Principal Clerk of the Times-News, a daily newspaper printed and published at Twin Falls, Twin Falls County, State of Idaho, and having a general circulation therein, and which said newspaper has been continuously and uninterruptedly published in said County during a period of twelve consecutive months prior to the first publication of the notice, a copy of which is attached hereto: that said notice was published in the Times-News, in conformity with Section 60-108, Idaho Code, as amended, for:

1 Insertions

Vernadero Group Incorporated
Eric Webb, Ph.D.
3400 S CARROLLTON AVE #850752
NEW ORLEANS LA 70118

ORDER NUMBER 120443

Sherri Davis
(Legals Clerk)

STATE OF IDAHO)
.SS
COUNTY OF TWIN FALLS)

On this 27th day of October in the year of 2021 before me, a Notary Public, personally appeared before me Sherri Davis known or identified to me to be the person whose name subscribed to the within instrument, and being by first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Reba M Davis
Notary Public FOR Idaho
Residing at: Twin Falls, Idaho
My Commission expires: 5/8/2026

REBA M. DAVIS NOTARY PUBLIC MY COMMISSION EXPIRES 5-8-2026 STATE OF IDAHO COMMISSION NUMBER 63586

Section: Legals
Category: 50 Legal
PUBLISHED ON: 10/24/2021

TOTAL AD COST:	130.06
FILED ON:	10/24/2021

TIMES-NEWS | Classifieds 735-3200 | Sunday, October 24, 2021 • C11

T B I R D ■ E L M ■ W A I S T S ■ A B L Y
A U R A E ■ M I A ■ A H C H O O ■ C R E E
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Storage/Warehouse

PAUL - Building for rent. 30'x90'. Includes a 15'x30' office & bathroom and a 12'x14' overhead door. Call to see at 208-678-1474 or 208-650-6648.

JUMBLE

Answer:
GATHER GOSSIP DRAFTY ASSIGN YELLOW ENGAGE

Maria Spelterini was crossing Niagara Falls on a tightrope, and so far it was —

STEADY AS SHE GOES

AGRICULTURE

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ANGUS BULLS
Nice 2 yr olds and long yearlings. Low birth weight, calving ease, registration available. 208-436-9723 or 208-431-3139

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T.S.C. HAY RETRIEVING
tschay.net
Call Con 208-280-0839.

MISCELLANEOUS

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USED APPLIANCES
All types & models. Starting price $85 with warranties. Appliance Repairs. Delivery available.
Call 208-733-0114.

Hot Tubs & Pools

HOT SPRINGS "NEW" HOT TUB. Steps & railings. Only used few times. Read to enjoy during the winter months! Call 208-220-5394.

Firewood

FIREWOOD - Mixed hardwoods **CUT and SPLIT** $240/cord - U Pick Up $275/cord - Delivered **208-308-6232**

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SNOW BLOWER Ariens 24" electric start $300. Snapper Lawn Mower Series 6.75EXI self propelled $50. Stihl Wood Eater FS36 $35. 208-320-8603

Miscellaneous For Sale

CAMERO TIRES on 20" painted aluminum rims. Pirelli Scorpion Winter 245/45R20 Low Miles $500 208-829-5196

Classified Department
HOURS OF OPERATION
8:30am-5:00pm, Monday-Friday
Closed major Holidays
Place an ad today call
208-735-3200

Tools & Machinery

GENERATOR KOHLER - 7500 KW LP Generator, with 14.5 hours on it. $1900 Pictures available via email. Call 208-720-9706.

Wanted to Buy

$$PAY CASH$$
★★★★★★★★★
For Junk Cars, Trucks, Scrap Metal and Farm Machinery
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◆ CASH ◆
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$$ PAID NOW! $$
We WANT YOUR JUNK CARS & TRUCKS
★ 7 Days - Free pickup! ★
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Guns & Rifles

SMITH & WESSON stainless 44 mag, custom action job, in box. $1500/obo. BROWNING 22 semi auto, with skinner peep sight and leather custom case. $500/obo. 208-421-3846

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★ BRING IT ❖
TO THE AUCTION
Hunt Brothers Auctions
165 Eastland Drive - 734-2548

RECREATIONAL

ATVs

POLARIS 2011 Outlaw 90CC for kids, great condition, low hours. REDUCED TO $1000. 208-720-9706

Motor Homes & RVs

Wilson's

WINTER PROJECT
"Don't get caught in the seasonal service rush and save a little money on major RV repairs or remodels! Get discounted shop labor rates on qualified repairs. Our service & sales departments are open all winter by appointment!" CALL TODAY!

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1894 N Frontage Rd, Wendell ID
208-536-2301

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KEYSTONE 2021 Hideout.



This family trailer is better than brand new. 21.5 ft, one slide, bunks. Only used twice. $23,900.

Wilson's RV & PARK
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1894 N Frontage Rd, Wendell ID
208-536-2301

SALEM 2009 32' travel trailer. 5th wheel, 2 slides, very good cond, $16,500. Call 208-308-1950.

Wilson's

WINTER'S ON THE WAY!
Get on the schedule for your RV to be winterized! Only $119.99

(Formerly Intermountain Motor Homes)
1894 N Frontage Rd, Wendell ID
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Travel Trailers

FORSEST RIVER 2019 E-PRO.



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We will pay all taxes & fees, right now only $23,000 out the door!
(Good through Oct 31, 2020)

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439K mi. sleeper, white. $27,900.
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Motor Homes & RVs

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(Formerly Intermountain Motor Homes)
1894 N Frontage Rd, Wendell ID
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Lazy J Ranch in Twin Falls. Long term RV, 30 days or more. GREAT LOCATION. 208-733-2281

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Call 735-3200

Legal

Legal Notice

Fabiola Ramirez A4, Crystal Weber A35, Sean O'Donahue F5, Rebecca Kennedy F39, Kim Espinoza F60, Jesse Washburn G38, Sierra Rebollozo H19, Janeffe Dubose H22, Corey Tipton M321, Deidra Wageman M248, Deidra Wageman M322, Angelica Hernandez R13, Charisse Eldridge R17, Jesse Washburn RB1S7, Vianey Renova or Martin Hernandez S19, Clay Collard WM7-29, Everardo Prado WM17, Eligio Hernandez or Dulce Beronica WM38, Rebecca Pool W45, Corey Tipton W51, Shannon Fairchild W55, Davy Lewis Hubbard W63, Galindo Santacruz W92

Your possessions will be sold for non-payment of rent on November 6, 2021 at 9:00 am. Payment IN FULL (no personal checks accepted) by October 28, 2021 is required to retain your goods.
Credit cards are accepted. Notice is given pursuant to Idaho Statutes Title 55 Chapter 2306.
Public Auction will begin on November 6, 2021 at 9:00am at 1240 East Main Street - Burley, Idaho 83318.

Publish October 17, 24, 2021

Legal

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October 24, 2021



Legal

ALL STAR SECURE STORAGE, 301 West Blvd. in Jerome, Idaho will be auctioning the contents of abandoned storage units **A2, A5, B11, C5, D7, E 17, E 18, G16, G20** and **H3** on October 28, 2021 at 9:00 A.M. All interested meet at the opening of the Storage facility at this time.

Publish October 17, 24, 2021

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO
IN AND FOR THE COUNTY OF TWIN FALLS
MAGISTRATE DIVISION
Case No: CV42-21-3522

IN THE MATTER OF THE ESTATE OF:
ERIC ALEX HETTINGA aka
ERIC A. HETTINGA aka
ERIC HETTINGA aka ERIC ATSE
HETTINGA aka ERIC ALEC HETTINGA,
Deceased.

NOTICE TO CREDITORS

NOTICE IS HEREBY GIVEN that the undersigned has been appointed Personal Representative of the above-named Decedent. All persons having claims against the Decedent or the Estate are required to present their claims within four months after the date of the first publication of this Notice or said claims will be forever barred.

Claims must be presented to the undersigned at the address indicated and filed with the Clerk of the Court.
DATED: 10-13-2021
Eric Alex Hettinga, Jr.
c/o RandsLaw, PLLC
1502 Locust St. N., Ste. 500B
Twin Falls, ID 83301

October 17, 24, 31, 2021

NOTICE OF ELECTION
KING HILL IRRIGATION DISTRICT

Please take notice that a special election has been set by the Board of Directors of King Hill Irrigation District (KHID) for **November 2, 2021**. Electors who satisfy the qualification criteria of Idaho Code Sections 43-111(1) and 43-119 (as applicable) may vote in the election. The statutory criteria require that, in addition to possessing the qualifications required of electors under the general laws of the state, each elector must own land within the KHID district and be a resident of the county in which the KHID district, or a portion thereof, is located for at least thirty (30) days before the election.

The election shall be conducted from 8 a.m. to 8 p.m. Mountain Daylight Time at the King Hill Irrigation District office at 75 E First Ave, Glenns Ferry, Idaho, which also shall be the consolidated polling place for each precinct of the KHID district.

The question to be voted on at the election is whether King Hill Irrigation District shall be authorized to contractually assume indebtedness for purposes of leveraging available grant funding opportunities and further funding a capital improvement project involving the construction and installation of new pumping plant facilities on the Snake River and related water conveyance infrastructure to replace aged and inefficient infrastructure.

Copies of related project cost estimates, preliminary design, and maps of proposed location are on file with the KHID office located at 75 E First Ave, Glenns Ferry, Idaho and are open to inspection by KHID district landowners during regular business hours pursuant to Idaho Code Sections 43-303 and 43-401.

Published: 17, 21, 24 and 28 October, 2021

BURLEY HIGHWAY DISTRICT
CALL FOR BIDS

NOTICE IS HEREBY GIVEN that the Burley Highway District will receive sealed bids for providing one or two new 2022 or newer TWO AXLE PUP TRAILERS.

Minimum specifications, bidding instructions and bid forms are available at the Burley Highway District Office located at 19 East 200 South, Burley, Idaho 83318, or by contacting Melanie Adams at 208-678-5322. Bids will be received until 1:45 p.m. on Monday, November 8, 2021 at the above address.

Quotations should be F.O.B. Burley, Idaho and terms will be cash on delivery and acceptance. The Highway District reserves the right to reject any and all bids.

No bidder may withdraw his or her bid after the hour set for opening bids which is 1:45 p.m. on November 8, 2021.
Dated this 19th day of October, 2021.
BURLEY HIGHWAY DISTRICT

October 24, 31, 2021

NOTICE OF PUBLIC MEETING
TO CORRECT ASSESSMENTS
BURLEY IRRIGATION DISTRICT

NOTICE IS HEREBY GIVEN that on the 9th day of November, 2021 the Board of Directors of the Burley Irrigation District will meet as a Board of Corrections for the purpose of correcting assessments. If you have bought or sold land within the boundaries of the District the Board must be notified of the change in ownership. The Board of Directors will meet at the Burley Irrigation District Office, 246 East 100 South of Burley, Idaho at 10:00 AM until completion of necessary business. The assessment rolls of the District will be in the office of the District and open for inspection Monday through Friday during the hours of 8:00 AM and 4:00 PM.

ASSESSMENTS WILL BE levied in the amount of $65.00 per acre and $5.00 per billing for the operation and maintenance of the system and works of the district, for the administration of its affairs, which may be reviewed with the Board upon request of any person. Assessments are due and payable and will become delinquent if not postmarked or received by five o'clock p.m. on the 20th day December next thereafter. Payment of assessment may be made at the office of the District Monday through Friday during the hours of 8:00 AM and 4:00 PM.
Dated this 12th day of October, 2021.
/s/Lana Pincock
Secretary/Treasurer

October 17, 24, 2021

BOARD OF TWIN FALLS COUNTY COMMISSIONERS
MINUTES OF MEETING BRIEF SYNOPSIS

A complete set of minutes are on file at the County West Facility, Twin Falls, Idaho.
A limited number of Commissioners' minutes are available at www.twinfallscounty.org

Jul 1 – approved consent agenda, approved contracts, conducted a public hearing, approved a lot line adjustment.
Jul 2 – approved alcohol licenses.
Jul 6 – met as the Board of Equalization, met in executive session, denied 3 county assistance applications, approved the consent agenda, approved at large district, approved 2020 Tax Late Charge and Interest Cancellation Request, approved contract, modified 15 property assessments, upheld 6 property assessments.
Jul 7 – met as Board of Equalization, modified 2 property assessments, upheld 4 property assessments.
Jul 8 – met as Board of Equalization, modified 10 property assessments, upheld 6 property assessments, approved consent agenda, approved contracts, approved Resolutions #2021-034 and #2021-035.
Jul 9 – met as Board of Equalization, modified 5 property assessments, approved alcohol license.
Jul 12 – approved contracts, approved release of letter of credit.
Jul – 13 met in executive session, approved 2 county assistance applications, denied 4 county assistance applications, approved consent agenda, approved public assembly permit, approved election on Buhl Recreation District.
Jul 14 – met in executive session, upheld decision on county assistance application.
Jul 15 – approved consent agenda, approved Resolutions #2021-036, #2021-037, #2021-038, #2021-039, approved MOU with Filer Cemetery District, approved contracts, approved Resolution #2021-040, approved status sheet.
Jul 19 – approved consent agenda, approved June accounts payable, approved contracts.
Jul 20 – met in executive session, denied 2 county assistance applications, approved consent agenda, approved grant award, approved credit card request.
Jul 22 – approved consent agenda, approved contract, approved vacation extension.
Jul 26 – approved consent agenda, approved Resolutions #2021-041, #2021-042, #2021-043.
Jul 27 – met in executive session, denied 4 county assistance applications, approved consent agenda, approved request to release lots.
Jul 29 – approved consent agenda, approved contracts, approved Development Agreement and Final Plat, met in executive session, approved county assistance application.
Expenditures by fund for July 2021: Current Expense $1,979,381.87; Safehouse 40,185.26; Capital Projects Fund 273,793.48; Weeds 42,058.51; Parks and Recreation 47,437.61; Solid Waste 536,851.87; Ad Valorem 109,394.43; District Court 75,023.53; Indigent Fund 135,163.35; Public Health 39,908.80; Revenue Sharing 2,912.17; Election Consolidation 20,439.91; County Boat License Fund 6,571.75; Snowmobiles 1,075.00; Justice Fund 1,370,678.20; DSO Clinician 4,660.96; Juvenile Correction Act Funds 13,680.20; Tobacco Tax Grant 27,081.57; Boat Grant Waterways Match 13,028.34; ASAT-216 1,037.86; R.S.A.T Grant 13,093.58; Invasive Check Station 20,712.50; S.U.D Funds 1,486.36; OHV Law Enforcement 174.00; BCP Basic-Safehouse Grant 21,303.44; JAG Grant 4,036.62; Sheriff Drug Seizure Money 283.98; Prosecutor Drug Reimb 8,938.02; Twin Falls Co Sheriff Search & Rescue 1,144.50; VOCA Mediation Grant 5,695.61; Problem Solving Courts 53,044.60; Family Court Services 5,017.50; Sheriff's Grants 8,914.19
TOTAL $4,884,209.57
PUBLISH: October 24, 2021

McClatchy

Beaufort Gazette
Belleville News-Democrat
Bellingham Herald
Bradenton Herald
Centre Daily Times
Charlotte Observer
Columbus Ledger-Enquirer
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AFFIDAVIT OF PUBLICATION

Account #	Order Number	Identification	Order PO	Amount	Cols	Depth
28979	159112	Print Legal Ad - IPL0046412		$76.24	2	62 L

Attention: Eric Webb

VERNADERO GROUP INCORPORATED
3400 S. CARROLLTON AVE. #850752
NEW ORLEANS, LA 70185

NOTICE OF AVAILABILITY
Draft Environmental Assessment for the Qatar Emiri Air Force F-15QA Beddown, Mountain Home Air Force Base, Idaho

A Draft Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) have been prepared by the Department of the Air Force (DAF) to consider the potential environmental consequences of establishing a US Air Force-led Qatar Emiri Air Force (QEAF) F-15QA training squadron at Mountain Home Air Force Base (AFB), Idaho.

The Proposed Action includes the basing and operation of 12 F-15QA permanently assigned QEAF aircraft, use of the airfield, associated special use airspace and Military Training Routes for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and US Air Force personnel, and construction and modification of facilities and infrastructure to support the beddown.

The Draft EA and proposed FONSI are available for review at the following locations:

- Boise Main Library, 715 S. Capitol Boulevard, Boise, Idaho 83702
- Albertsons Library – Boise State University, 1865 W. Cesar Chavez Lane, Boise, Idaho 83725
- Bruneau Valley District Library, PO Box 253, Bruneau, Idaho 83604
- Glenns Ferry Public Library, 298 S. Lincoln Street, Glenns Ferry, Idaho 83623
- Mountain Home AFB Library, 480 5th Avenue, Building 2610, Mountain Home AFB, Idaho 83648
- Mountain Home Public Library, 790 N. 10th East, Mountain Home, Idaho 83647
- Nampa Public Library, 215 12th Avenue South, Nampa, Idaho 83651
- Twin Falls Public Library, 201 Fourth Avenue East, Twin Falls, Idaho 83301
- Elko County Library, 720 Court Street, Elko, Nevada 89801
- Humboldt County Library, 85 E. 5th Street, Winnemucca, Nevada 89445
- McDermitt Library, PO Box 444, McDermitt, Nevada 89421

An electronic copy of the Draft EA and proposed FONSI can also be found at https://www.mountainhome.af.mil/Home/Environmental-News/.

The DAF is soliciting comments from interested local, state, and federal elected officials and agencies, as well as interested members of the public. Although comments can be submitted to the DAF at any time during the EA process, comments are requested within 30 days from the date of publication of this notice to ensure full consideration in the process. Comments can be submitted by email to 366FW.PA.PublicAffairs@us.af.mil or by mail to 366 FW/PA, 366 Gunfighter Avenue, Suite 310, Mountain Home AFB, Idaho 83648.

For further information or questions regarding the Proposed Action or EA development, contact Public Affairs at 366FW.PA.Public.Affairs@us.af.mil or 208-828-6800.

PRIVACY ADVISORY NOTICE

This Draft EA and proposed FONSI are provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality NEPA Regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR § 989, Environmental Impact Analysis Process (EIAP). The EIAP provides an opportunity for the public to provide comments on the proposed action and alternatives and solicits comments on the analysis of potential environmental effects.

Public commenting allows the DAF to make better, informed decisions. Letters or other written 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 only be used to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA; however, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published.

IPL0046412
Oct 24 2021

Bettina Jantzen, being duly sworn, deposes and says: That she is the Principal Clerk of The Idaho Statesman, a daily newspaper printed and published at Boise, Ada County, State of Idaho, and having a general circulation therein, and which said newspaper has been continuously and uninterruptedly published in said County during a period of twelve consecutive months prior to the first publication of the notice, a copy of which is attached hereto: that said notice was published in The Idaho Statesman, in conformity with Section 60-108, Idaho Code, as amended, for:

No. of Insertions: 1
Beginning Issue of: 10/24/2021
Ending Issue of: 10/24/2021

(Legals Clerk)

On this 27th day of October in the year of 2021 before me, a Notary Public, personally appeared before me Bettina Jantzen known or identified to me to be the person whose name subscribed to the within instrument, and being by first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Notary Public in and for the state of Texas, residing in Dallas County

AMANDA DAWN GRISHAM
My Notary ID # 132031326
Expires May 30, 2023

Extra charge for lost or duplicate affidavits.
Legal document please do not destroy!

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APPENDIX C
DEFINITIONS OF RESOURCES AREAS ANALYZED, METHODOLOGIES, AND MODELING

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C.1 NOISE

C.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-weighing", 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 C-1**.

Table C-1. Common Sounds and Their Levels

Outdoor	Sound Level (dBA)	Indoor
Jet flyover at 1,000 ft	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: Harris 1998

dBA = A-weighted decibels; ft = feet

The sound pressure level noise metric describes steady noise levels, although very 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;
- 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 penalty added to the nighttime levels. Due to the potential to be particularly intrusive, noise events occurring between 10:00 p.m. and 7:00 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; and
- onset rate adjusted day-night sound level (L_{dnmr}) - L_{dnmr} is the average sound energy in a 24-hour period with penalties added to the nighttime levels and to account for the abrupt onset of noise from aircraft when flying low and fast. L_{dnmr} provides a measure of the overall acoustical

environment and is normally used to assess subsonic aircraft noise in military airspaces. As with DNL, it does not directly represent the sound level at any given time.

Regulatory Review and Land Use Planning. 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 United States (US) Environmental Protection Agency (USEPA) provided information suggesting continuous and long-term noise levels in excess of 65-dBA DNL are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. The Department of the Air Force's (DAF's) land use guidelines for noise exposure are outlined in Air Force Instruction (AFI) 32-7063, *Air Installations Compatible Use Zone Program***. Table C-2** provides a general overview of recommended noise limits from aircraft operations and sonic booms for land use planning purposes. A detailed list of DAF land use compatibility guidelines is in **Appendix C.1.3**.

Table C-2. Recommended Noise Limits for Land Use Planning

General Level of Noise	Percent Highly Annoyed	Aircraft Noise (DNL/L_{dnmr})	Sonic Boom Noise (CDNL)	General Recommended Uses
Low	<15%	<65 dBA	<62 dBC	Noise-sensitive land uses acceptable
Moderate	15%-39%	65–75 dBA	62–70 dBC	Noise-sensitive land uses normally not recommended
High	>39%	>75 dBA	>70 dBC	Noise-sensitive land uses not recommended

Source: AFI 32-7063, *Air Installation Compatible Use Zone (AICUZ) Program*; US Army, 2007

CDNL = C-weighted day night sound level; dBA = A-weighted decibels; dBC = C-weighted decibels; DNL = day-night sound level; L_{dmnr} = onset rate adjusted day-night sound level

Neither, the State of Idaho nor Elmore County maintain a noise ordinance, but the Elmore County zoning guidelines address zoning for all airports within Elmore County, including Mountain Home Air Force Base (MHAFB). This zoning ordinance is consistent with the recommendations contained in the MHAFB Air Installation Compatible Use Zone plan. The ordinance establishes an Airport Hazard Zone for MHAFB which protects the base from encroachment (Elmore County Zoning and Development Ordinance §6-36). The City of Mountain Home maintains a nuisance noise ordinance which exempts construction activities between 8:00 a.m. and 10:00 p.m. (City of Mountain Home Code §7 Noise). There are no local noise ordinances that apply to aircraft operations throughout the Mountain Home Range Complex (MHRC).

The region of influence (ROI) for noise includes areas on and adjacent to MHAFB and beneath the special use airspace (SUA).

C.1.2 Sound and Noise

C.1.2.1 Introduction

This appendix discusses sound and noise. **Section C.1.2.2** provides an overview of the basics of sound and noise. **Section C.1.2.3** defines and describes the different metrics used to describe noise. **Section C.1.4** contains data used in the noise modeling process. A number of noise metrics are defined and described in this appendix. Some metrics are included for the sake of completeness when discussing each metric and to provide a comparison of cumulative noise metrics.

C.1.2.2 Basics of Sound

C.1.2.2.1 Sound Waves and Decibels

Sound consists of minute vibrations in the air that travel through the air and are sensed by the human ear. **Figure C-1** is a sketch of sound waves from a tuning fork. The waves move outward as a series of crests

where the air is compressed and troughs where the air is expanded. The height of the crests and the depth of the troughs are the amplitude or sound pressure of the wave. The pressure determines its energy or intensity. The number of crests or troughs that pass a given point each second is called the frequency of the sound wave.

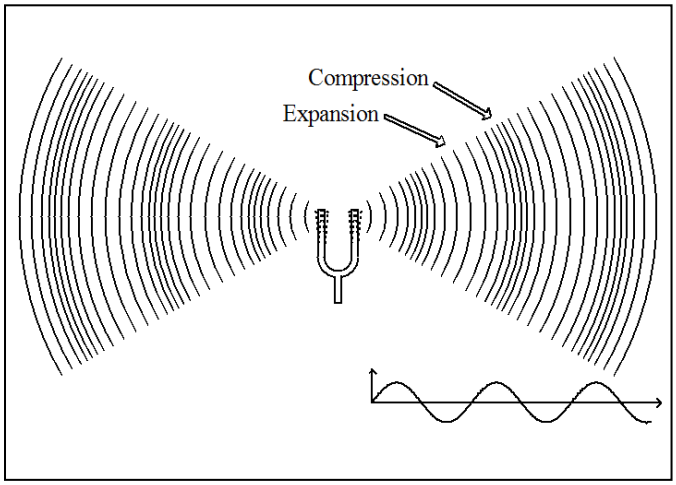


Figure C-1. Sound Waves from a Vibrating Tuning Fork.

The measurement and human perception of sound involves three basic physical characteristics: intensity, frequency, and duration.

- Intensity is a measure of the acoustic energy of the sound and related to sound pressure. The greater the sound pressure, the more energy carried by the sound and the louder the perception of that sound.
- Frequency determines how the pitch of the sound is perceived. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches.
- Duration or the length of time the sound can be detected.

The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because of this vast range, it is unwieldy to use a linear scale to represent the intensity of sound. As a result, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of 0 dB is approximately the threshold of human hearing and barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall, 1995).

As shown on **Figure C-1**, the sound from a tuning fork spreads out uniformly as it travels from the source. The spreading causes the sound's intensity to decrease with increasing distance from the source. For a source such as an aircraft in flight, the sound level will decrease by about 6 dB for every doubling of the distance. For a busy highway, the sound level will decrease by 3 to 4.5 dB for every doubling of distance.

As sound travels from the source, it also is absorbed by the air. The amount of absorption depends on the frequency composition of the sound, temperature, and humidity conditions. Sound with high frequency content gets absorbed by the air more than sound with low frequency content. More sound is absorbed in colder and drier conditions than in hot and wet conditions. Sound is also affected by wind and temperature gradients, terrain (elevation and ground cover), and structures.

Because of the logarithmic nature of the decibel unit, sound levels cannot simply be added or subtracted and are somewhat cumbersome to handle mathematically; however, some simple rules are useful in

dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and
80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

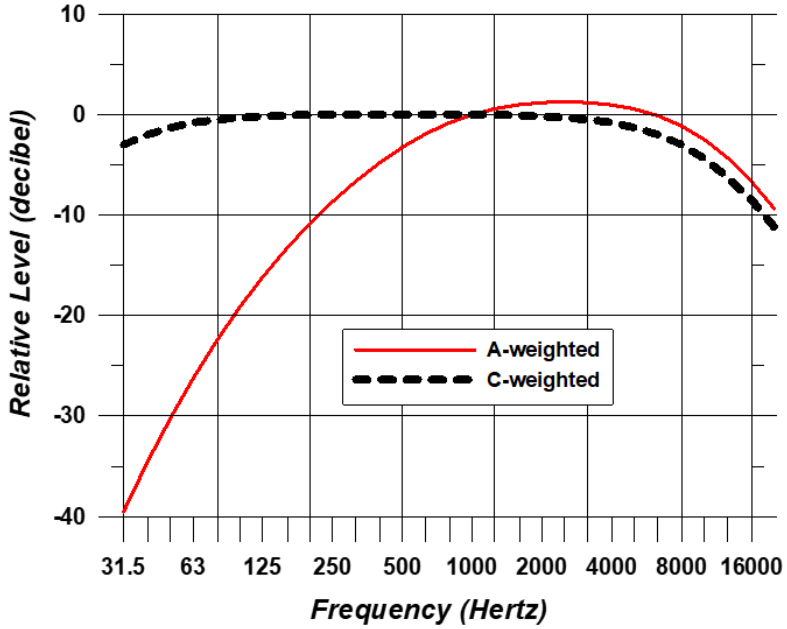
60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels is different than that of ordinary numbers, this process is often referred to as "decibel addition."

The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness. This relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound intensity but only a 50 percent decrease in perceived loudness because the human ear does not respond linearly.

Sound frequency is measured in terms of cycles per second or hertz (Hz). The normal ear of a young person can detect sounds that range in frequency from about 20 to 20,000 Hz. As we get older, we lose the ability to hear high frequency sounds. Not all sounds in this wide range of frequencies are heard equally. Human hearing is most sensitive to frequencies in the 1,000- to 4,000-Hz range. The notes on a piano range from just over 27 to 4,186 Hz, with middle C equal to 261.6 Hz. Most sounds (including a single note on a piano) are not simple pure tones like the tuning fork on **Figure C-1** but contain a mix, or spectrum, of many frequencies.

Sounds with different spectra are perceived differently even if the sound levels are the same. Weighting curves have been developed to correspond to the sensitivity and perception of different types of sound. A-weighting and C-weighting are the two most common weightings. These two curves, shown on **Figure C-2**, are adequate to quantify most environmental noises. A-weighting puts emphasis on the 1,000- to 4,000-Hz range where human hearing is most sensitive.



Source: ANSI S1.4A -1985 "Specification of Sound Level Meters"

Figure C-2. Frequency Characteristics of A- and C-Weighting.

Very loud or impulsive sounds, such as explosions or sonic booms, can sometimes be felt and cause secondary effects, such as shaking of a structure or rattling of windows. These types of sounds can add to annoyance and are best measured by C-weighted sound levels, denoted dBC. C-weighting is nearly flat throughout the audible frequency range and includes low frequencies that may not be heard but cause shaking or rattling. C-weighting approximates the human ear's sensitivity to higher intensity sounds.

C.1.2.2.2 Sound Levels and Types of Sounds

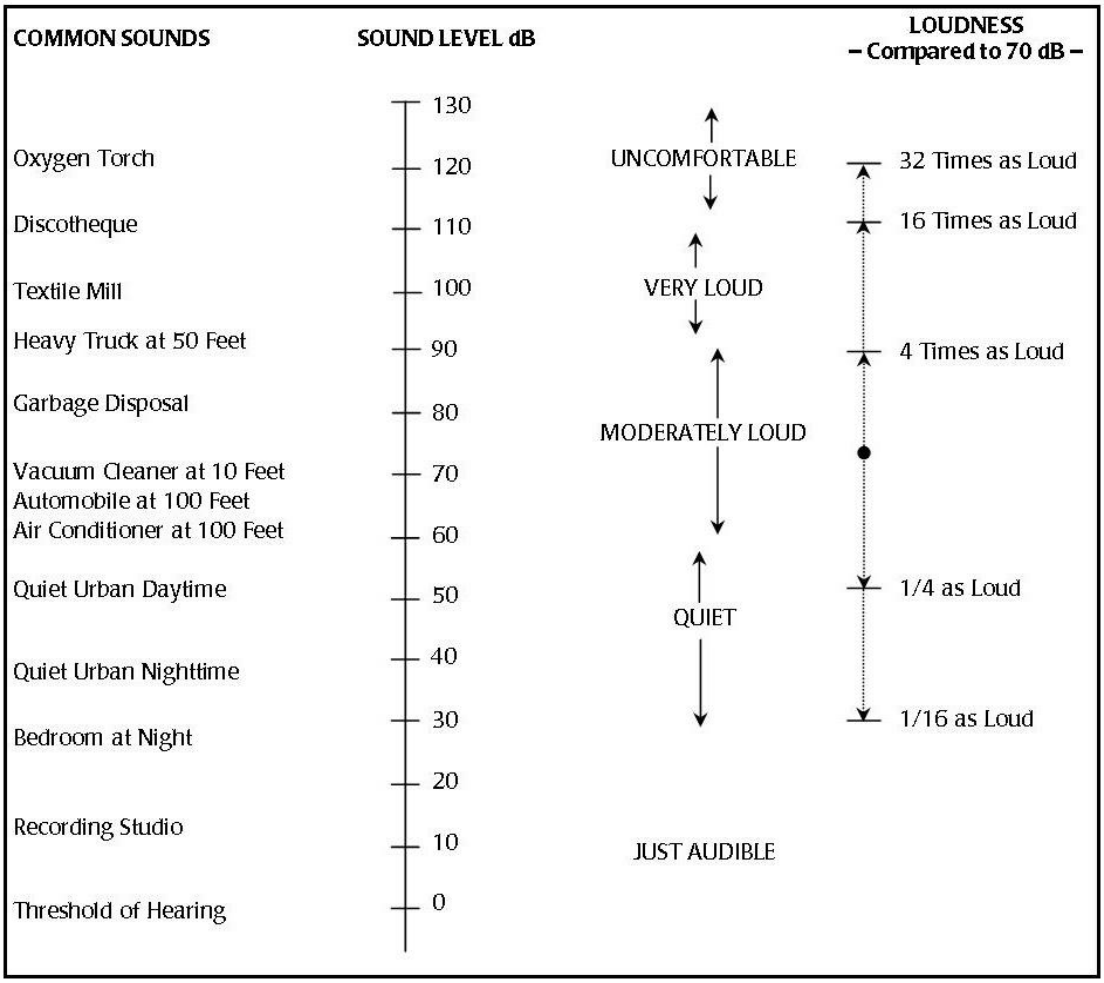
Most environmental sounds are measured using A-weighting. They are called A-weighted sound levels and sometimes use the unit dBA or dB(A) rather than dB. When the use of A-weighting is understood, the term "A-weighted" is often omitted and the unit dB is used. Unless otherwise stated, dB units refer to A-weighted sound levels.

Sound becomes noise when it is unwelcome and interferes with normal activities, such as sleep or conversation. Noise is unwanted sound. Noise can become an issue when its level exceeds the ambient or background sound level. Ambient noise in urban areas typically varies from 60 to 70 dB but can be as high as 80 dB in the center of a large city. Quiet suburban neighborhoods experience ambient noise levels around 45 to 50 dB (USEPA, 1978).

Figure C-3 shows A-weighted sound levels from common sources. Some sources, like the air conditioner and vacuum cleaner, are continuous sounds whose levels are constant for some time. Some sources, like the automobile and heavy truck, are the maximum sound during an intermittent event like a vehicle pass-by. Some sources like "urban daytime" and "urban nighttime" are averages over extended periods. A variety of noise metrics have been developed to describe noise over different time periods. These are discussed in detail in **Section C.1.2.3**.

Aircraft noise consists of two major types of sound events: flight (including takeoffs, landings, and flyovers) and stationary, such as engine maintenance run-ups. The former is intermittent and the latter primarily continuous. Noise from aircraft overflights typically occurs beneath main approach and departure paths, in local air traffic patterns around the airfield, and in areas near aircraft parking ramps and staging areas. As aircraft climb, the noise received on the ground drops to lower levels, eventually fading into the background or ambient levels.

Impulsive noises are generally short, loud events. Their single-event duration is usually less than 1 second. Examples of impulsive noises are small-arms gunfire, hammering, pile driving, metal impacts during rail-yard shunting operations, and riveting. Examples of high-energy impulsive sounds are quarry/mining explosions, sonic booms, demolition, and industrial processes that use high explosives, military ordnance (e.g., armor, artillery and mortar fire, and bombs), explosive ignition of rockets and missiles, and any other explosive source where the equivalent mass of dynamite exceeds 25 grams (American National Standards Institute [ANSI], 1996).



Source: Harris, 1979

Figure C-3. Typical A-weighted Sound Levels of Common Sounds.

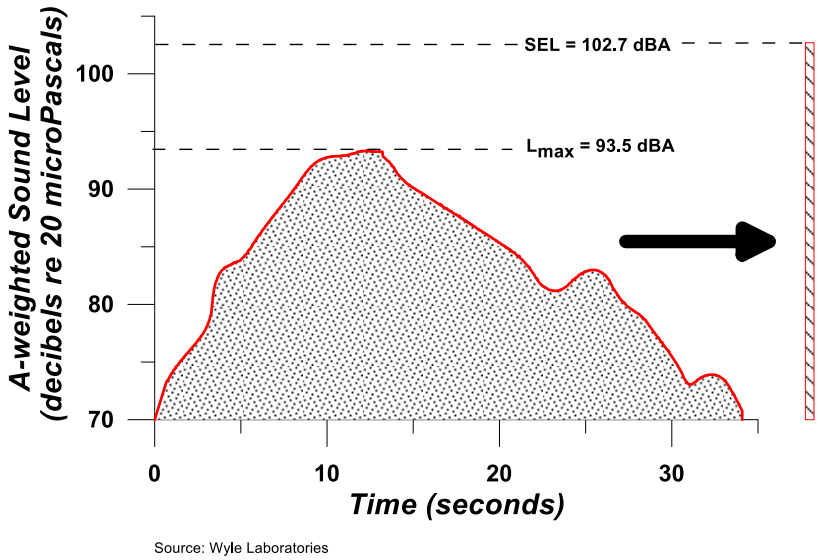
C.1.2.3 Noise Metrics

Noise metrics quantify sounds so they can be compared with each other and with their effects, in a standard way. There are a number of metrics that can be used to describe a range of situations, from a particular individual event to the cumulative effect of all noise events over a long time. This section describes the metrics relevant to environmental noise analysis.

C.1.2.3.1 Single Events

Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound changes with time is called the maximum A-weighted sound level or Maximum Sound Level and is abbreviated L_{max}. The L_{max} is depicted for a sample event on **Figure C-4**.



Source: Wyle Laboratories

Figure C-4. Example Time History of Aircraft Noise Flyover.

L_{max} is the maximum level that occurs over a fraction of a second. For aircraft noise, the "fraction of a second" is one-eighth of a second, denoted as "fast" response on a sound level measuring meter (ANSI, 1988) (**Figure C-4**). Slowly varying or steady sounds are generally measured over 1 second, denoted as "slow" response. L_{max} is important in judging if a noise event will interfere with conversation, television or radio listening, or other common activities. Although it provides some measure of the event, it does not fully describe the noise because it does not account for how long the sound is heard.

Peak Sound Pressure Level

The Peak Sound Pressure Level (L_{pk}) is the highest instantaneous level measured by a sound level measurement meter. L_{pk} is typically measured every 20 microseconds and usually based on unweighted or linear response of the meter. It is used to describe individual impulsive events such as blast noise. Because blast noise varies from shot to shot and varies with meteorological (weather) conditions, the US Department of Defense (DOD) usually characterizes L_{pk} by the metric PK 15(met), which is the L_{pk} exceeded 15 percent of the time. The "met" notation refers to the metric accounting for varied meteorological or weather conditions.

Sound Exposure Level

SEL combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part lasts. It represents the total sound energy in the event. **Figure C-4** indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second.

Aircraft noise varies with time. During an aircraft overflight, noise starts at the background level, rises to a maximum level as the aircraft flies close to the observer, then returns to the background as the aircraft recedes into the distance. This is sketched on **Figure C-4**, which also indicates two metrics (L_{max} and SEL) that are described above. Over time, there can be a number of events, not all the same. Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

Overpressure

The single event metrics commonly used to assess supersonic noise are overpressure in pounds per square foot and C-Weighted Sound Exposure Level (CSEL). Overpressure is the peak pressure at any location within the sonic boom footprint.

C-Weighted Sound Exposure Level

CSEL is SEL computed with C frequency weighting, which is similar to A-weighting (discussed in **Section C.1.1.2.2**) except that C-weighting places more emphasis on low frequencies below 1,000 Hz.

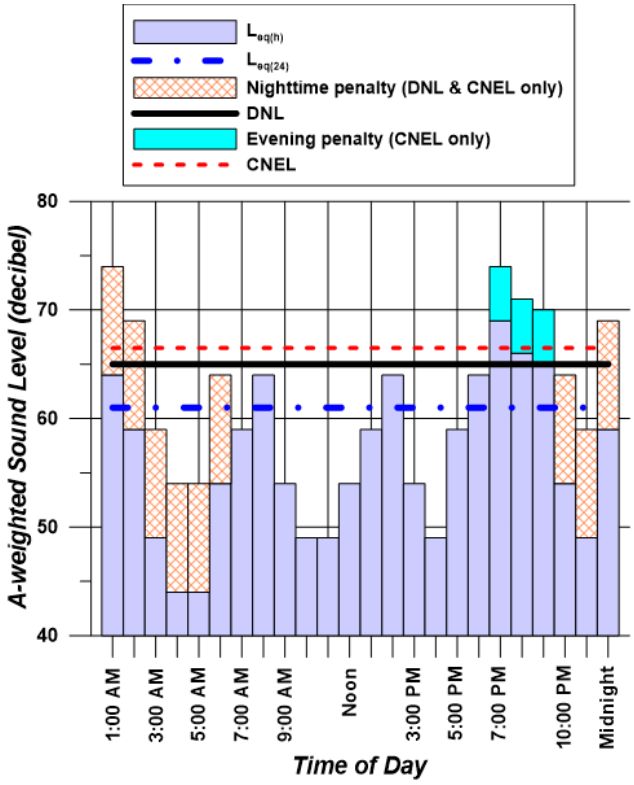
C.1.2.3.2 Cumulative Events

Equivalent Sound Level

L_{eq} is a "cumulative" metric that combines a series of noise events over a period of time. L_{eq} is the sound level that represents the decibel average SEL of all sounds in the time period. Just as SEL has proven to be a good measure of a single event, L_{eq} has proven to be a good measure of series of events during a given time period.

The time period of an L_{eq} measurement is usually related to some activity and is given along with the value. The time period is often shown in parenthesis (e.g., L_{eq}[24] for 24 hours). The L_{eq} from 7:00 a.m. to 3:00 p.m. may give exposure of noise for a school day.

Figure C-5 gives an example of L_{eq}(24) using notional hourly average noise levels (L_{eq}[h]) for each hour of the day as an example. The L_{eq}(24) for this example is 61 dB.



Source: Wyle Laboratories

Figure C-5. Example of Cumulative Noise Exposure From All Events Over a Full 24 Hours, Day-Night Average Sound Level and C-Weighted Sound Exposure Level Computed from Hourly Equivalent Sound Levels.

Day-Night Average Sound Level and Community Noise Equivalent Level

DNL or L_{dn} is a cumulative metric that accounts for all noise events in a 24-hour period; however, unlike $L_{eq}(24)$, DNL contains a nighttime noise penalty. To account for our increased sensitivity to noise at night, DNL applies a 10-dB penalty to events during the nighttime period, defined as 10:00 p.m. to 7:00 a.m. The notations DNL and L_{dn} are both used for Day-Night Average Sound Level and are equivalent.

Community Noise Equivalent Level (CNEL) is a variation of DNL specified by law in California (California Code of Regulations Title 21, Public Works) (Wyle Laboratories, 1970). CNEL has the 10-dB nighttime penalty for events between 10:00 p.m. and 7:00 a.m. but also includes a 4.8-dB penalty for events during the evening period of 7:00 p.m. to 10:00 p.m. The evening penalty in CNEL accounts for the added intrusiveness of sounds during that period. For airports and military airfields, DNL and CNEL represent the average sound level for annual average daily aircraft events.

Figure C-5 gives an example of DNL and CNEL using notional hourly average noise levels ($L_{eq}[h]$) for each hour of the day as an example. Note the $L_{eq}(h)$ for the hours between 10:00 p.m. and 7:00 a.m. have a 10-dB penalty assigned. For CNEL, the hours between 7:00 p.m. and 10:00 p.m. have a 4.8-dB penalty assigned. The DNL for this example is 65 dB. The CNEL for this example is 66 dB.

Figure C-6 shows the ranges of DNL or CNEL that occur in various types of communities. Under a flight path at a major airport, the DNL may exceed 80 dB while rural areas may experience DNL less than 45 dB. The decibel summation nature of these metrics causes the noise levels of the loudest events to control the 24-hour average. As a simple example, consider a case in which only one aircraft overflight occurs during the daytime over a 24-hour period, creating a sound level of 100 dB for 30 seconds. During the remaining 23 hours, 59 minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The DNL for this 24-hour period is 65.9 dB. Assume, as a second example that 10 such 30-second overflights occur during daytime hours during the next 24-hour period, with the same ambient sound level of 50 dB during the remaining 23 hours and 55 minutes of the day. The DNL for this 24-hour period is 75.5 dB. The averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and number of those events.

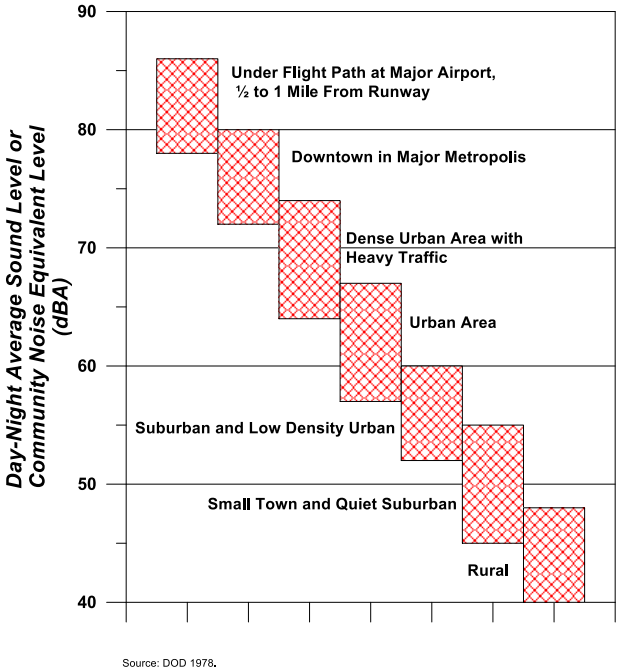


Figure C-6. Typical Day-Night Average Sound Level or Community Noise Equivalent Level Ranges in Various Types of Communities.

A feature of the DNL metric is that a given DNL value could result from a very few noisy events or a large number of quieter events. For example, one overflight at 90 dB creates the same DNL as 10 overflights at 80 dB.

DNL or CNEL does not represent a level heard at any given time but represent long-term exposure. Scientific studies have found good correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz, 1978; USEPA, 1978).

Onset-Rate Adjusted Monthly Day-Night Average Sound Level and Onset-Rate Adjusted Monthly Community Noise Equivalent Level

Military aircraft utilizing SUA such as Military Operations Areas (MOAs) and Restricted Areas, as well as Military Training Routes (MTRs), generate a noise environment that is somewhat different from that around airfields. Rather than regularly occurring operations like at airfields, activity in SUA is highly sporadic. It is often seasonal, ranging from 10 per hour to less than 1 per week. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, with rates of up to 150 dB per second.

The cumulative daily noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of SUA activity is the L_{dnmr}. Onset rates between 15 and 150 dB per second require an adjustment of 0 to 11 dB to the event's SEL while onset rates below 15 dB per second require no adjustment to the event's SEL (Stusnick et al., 1992). The term 'monthly' in L_{dnmr} refers to the noise assessment being conducted for the month with the most operations or sorties -- the so-called busiest month.

C.1.3 Land Use Compatibility Guidelines

The DAF guidelines for land use compatibility in aircraft noise zones is shown in **Table C-3** and are extracted from Appendix A of AFI 32-7063 dated 15 July 2015. These land use compatibility guidelines have been included for reference purposes.

Table C-3. Land Use Compatibility in Aircraft Noise Zones

SLUCM No.	Land Use	DNL or CNEL 65-69	DNL or CNEL 70-74	DNL or CNEL 75-79	DNL or CNEL 80-84	DNL or CNEL 85+
10	Residential					
11	Household units	N1	N1	N	N	N
11.11	Single units: detached	N1	N1	N	N	N
11.12	Single units: semidetached	N1	N1	N	N	N
11.13	Single units: attached row	N1	N1	N	N	N
11.21	Two units: side-by-side	N1	N1	N	N	N
11.22	Two units: one above the other	N1	N1	N	N	N
11.31	Apartments: walk-up	N1	N1	N	N	N
11.32	Apartment: elevator	N1	N1	N	N	N
12	Group quarters	N1	N1	N	N	N
13	Residential hotels	N1	N1	N	N	N
14	Mobile home parks or courts	N	N	N	N	N
15	Transient lodgings	N1	N1	N1	N	N
16	Other residential	N1	N1	N	N	N
20	Manufacturing					
21	Food and kindred products; manufacturing	Y	Y2	Y3	Y4	N
22	Textile mill products; manufacturing	Y	Y2	Y3	Y4	N

Table C-3. Land Use Compatibility in Aircraft Noise Zones

SLUCM No.	Land Use	DNL or CNEL 65-69	DNL or CNEL 70-74	DNL or CNEL 75-79	DNL or CNEL 80-84	DNL or CNEL 85+
23	Apparel and other finished products; products made from fabrics, leather, and similar materials; manufacturing	Y	Y2	Y3	Y4	N
24	Lumber and wood products (except furniture); manufacturing	Y	Y2	Y3	Y4	N
25	Furniture and fixtures; manufacturing	Y	Y2	Y3	Y4	N
26	Paper and allied products; manufacturing	Y	Y2	Y3	Y4	N
27	Printing, publishing, and allied industries	Y	Y2	Y3	Y4	N
28	Chemicals and allied	Y	Y2	Y3	Y4	N
29	Petroleum refining and related industries	Y	Y2	Y3	Y4	N
30	Manufacturing (continued)					
31	Rubber and misc. plastic products; manufacturing	Y	Y2	Y3	Y4	N
32	Stone, clay, and glass products; manufacturing	Y	Y2	Y3	Y4	N
33	Primary metal products; manufacturing	Y	Y2	Y3	Y4	N
34	Fabricated metal products; manufacturing	Y	Y2	Y3	Y4	N
35	Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks	Y	25	30	N	N
39	Miscellaneous manufacturing	Y	Y2	Y3	Y4	N
40	Transportation, communication, and utilities					
41	Railroad, rapid rail transit, and street railway transportation	Y	Y2	Y3	Y4	N
42	Motor vehicle transportation	Y	Y2	Y 3	Y4	N
43	Aircraft transportation	Y	Y2	Y3	Y4	N
44	Marine craft transportation	Y	Y2	Y3	Y4	N
45	Highway and street right-of-way	Y	Y	Y	Y	N
46	Automobile parking	Y	Y	Y	Y	N
47	Communication	Y	255	305	N	N
48	Utilities	Y	Y2	Y3	Y4	N
49	Other transportation, communication, and utilities	Y	255	305	N	N
50	Trade					
51	Wholesale trade	Y	Y2	Y3	Y4	N
52	Retail trade – building materials, hardware, and farm equipment	Y	25	30	Y4	N
53	Retail trade – including shopping centers, discount clubs, home improvement stores, electronics superstores, etc.	Y	25	30	N	N
54	Retail trade – food	Y	25	30	N	N
55	Retail trade – automotive, marine craft, aircraft, and accessories	Y	25	30	N	N
56	Retail trade – apparel and accessories	Y	25	30	N	N
57	Retail trade – furniture, home,	Y	25	30	N	N
58	Retail trade – eating and drinking establishments	Y	25	30	N	N
59	Other retail trade	Y	25	30	N	N
60	Services					
61	Finance, insurance, and real estate services	Y	25	30	N	N
62	Personal services	Y	25	30	N	N

Table C-3. Land Use Compatibility in Aircraft Noise Zones

SLUCM No.	Land Use	DNL or CNEL 65-69	DNL or CNEL 70-74	DNL or CNEL 75-79	DNL or CNEL 80-84	DNL or CNEL 85+
62.4	Cemeteries	Y	Y2	Y3	Y4,11	Y6,11
63	Business services	Y	25	30	N	N
63.7	Warehousing and storage	Y	Y2	Y3	Y4	N
64	Repair services	Y	Y2	Y3	Y4	N
65	Professional services	Y	25	30	N	N
65.1	Hospitals, other medical facilities	25	30	N	N	N
65.16	Nursing homes	N1	N1	N	N	N
66	Contract construction services	Y	25	30	N	N
67	Government services	Y1	25	30	N	N
68	Educational services	25	30	N	N	N
68.1	Childcare services, child development centers, and nurseries	25	30	N	N	N
69	Miscellaneous Services	Y	25	30	N	N
69.1	Religious activities (including places of worship)	Y	25	30	N	N
70	Cultural, entertainment and recreational					
71	Cultural activities	25	30	N	N	N
71.2	Nature exhibits	Y1	N	N	N	N
72	Public assembly	Y	N	N	N	N
72.1	Auditoriums, concert halls	25	30	N	N	N
72.11	Outdoor music shells, amphitheaters	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y	Y	N	N	N
73	Amusements	Y	Y	N	N	N
74	Recreational activities	Y	25	30	N	N
75	Resorts and group camps	Y	25	N	N	N
76	Parks	Y	25	N	N	N
79	Other cultural, entertainment and recreation	Y	25	N	N	N
80	Resource production and extraction					
81	Agriculture (except live- stock)	Y8	Y9	Y10	Y10,11	Y10,11
81.5-81.7	Agriculture-Livestock farming including grazing and feedlots	Y8	Y9	N	N	N
82	Agriculture related activities	Y8	Y9	Y10	Y10,11	Y10,11
83	Forestry activities	Y8	Y9	Y10	Y10,11	Y10,11
84	Fishing activities	Y	Y	Y	Y	Y
85	Mining activities	Y	Y	Y	Y	Y
89	Other resource production or extraction	Y	Y	Y	Y	Y

KEY:
SLUCM – Standard Land Use Coding Manual, US Department of Transportation
Y (Yes) – Land use and related structures compatible without restrictions.
N (No) – Land use and related structures are not compatible and should be prohibited.
Y_x – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.
N_x – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.
25, 30, or 35 – The numbers refer to noise level reduction (NLR) levels. NLR (outdoor to indoor) is achieved through the incorporation of noise attenuation into the design and construction of a structure. Land use and related structures are generally compatible; however, measures to achieve NLR of 25, 30, or 35 must be incorporated into design and construction of structures. However, measures to achieve an overall noise reduction do not necessarily solve noise difficulties outside the structure and additional evaluation is warranted. Also, see notes indicated by superscripts where they appear with one of these numbers.

DNL = Day-Night Average Sound Level; CNEL = Community Noise Equivalent Level (normally within a very small decibel difference of DNL); L_{dn} = Mathematical symbol for DNL.

Notes:
1. General
a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-69 and strongly discouraged in DNL 70-74. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones. Existing residential development is considered as pre-existing, non-conforming land uses.
b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 decibels (dB) in DNL 65-69 and 30 dB in DNL 70-74 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-79.
c. Normal permanent construction can be expected to provide an NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.
d. NLR criteria will not eliminate outdoor noise problems. However, building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
2. Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. If project or proposed development is noise sensitive, use indicated NLR; if not, land use is compatible without NLR.
6. Buildings are not permitted.
7. Land use is compatible provided special sound reinforcement systems are installed.
8. Residential buildings require an NLR of 25
9. Residential buildings require an NLR of 30.
10. Residential buildings are not permitted.
11. Land use that involves outdoor activities is not recommended, but if the community allows such activities, hearing protection devices should be worn when noise sources are present. Long-term exposure (multiple hours per day over many years) to high noise levels can cause hearing loss in some unprotected individuals.

C.1.4 Noise Model Operational Data and Results

The DAF adopted the NOISEMAP computer program to describe noise impacts from aircraft operations. NOISEMAP is a suite of computer programs and components developed by the DAF to predict noise exposure in the vicinity of an airfield due to aircraft flight, maintenance, and ground run-up operations. NOISEMAP Version 7.3 was used to calculate the existing DNL noise contours at MHAFB. NOISEMAP accounts for all aircraft activities, including landings, take-offs, in-flight operations, maintenance activities, and engine run-ups.

The aircraft proposed for this action is the F-15QA fitted with F110-GE-129 engines. The proposed action for the F15QA is modeled using the F-15E with the F100-PW-229 engines because engine data for the F-15QA are unavailable. NOISEMAP does not include noise estimates from an F-15 variant with the F110-GE-129 engines, and obtaining such data was not reasonable during the preparation of this EA due to cost and time constraints. However, NOISEMAP includes noise estimates for the F-15E with the F100-PW-229 engines. Under 40 CFR 1502.21, existing credible scientific evidence is acceptable for analyses and therefore a surrogate engine was selected. The most appropriate surrogate available in NOISEMAP is the F-15E with the F100-PW-229 engines. Noise levels from the F-15E with the F100-PW-229 engines are likely to be similar to that of the F-15QA; this is an appropriate engine surrogate for modeling based on engine type and maximum thrust. Furthermore, there would be no difference in noise due to differences in airframes because both use the same airframe. The only potential for differences in noise between the aircraft are the engines and both have nearly identical thrust specifications. Therefore, the confidence level for using the F-15E as a surrogate is very high and there is no need at this time to make any adjustments. The F-15A with the F100-PW-100 engines was the last aircraft to have been measured and the F-15E with the F100-PW-229 engines is an estimate itself. This estimation was performed by experts at the Air Force Research Laboratory and was approved for use in NOISEMAP in the mid-1990s. With the greater thrust specification, the F-15E aircraft with the F100-PW-229 engines was estimated to be approximately 1.5

decibels louder than the F-15A version. This has been the DOD approved and industry standard for over 25 years.

Tables C-4 through **C-10** provide the modeled operations and sound levels from existing and proposed training operations in the SUA and MTRs.

Table C-4. Current and Proposed Annual Sortie Operations in Special Use Airspace

Military Operations Area	Existing Operations[1]	Proposed Action	Total	Percent Change
Jarbidge North/South	14,695	2,254	**16,949**	**15**
Owyhee North/South	12,837	2,057	**14,894**	**16**
Paradise North/South	9,303	1,698	**11,001**	**18**
Saddle A/B	2,991	57	**3,048**	**2**
Total	**39,826**	**6,066**	**45,892**	**15**

Note:
[1] Includes F-35, F/A-18, F-15C, KC-135, C-21, A-10, and others

Table C-5. Distribution of Training Missions and Airspace Utilization for F-15E Mountain Home Range Complex Squadrons

	Jarbidge North	Owyhee North	Paradise North	Jarbidge South	Owyhee South	Paradise South
Existing F-15 Operations						
Aircraft Handling Characteristics (AHC)	254	254	168	0	0	0
Basic Fighter Maneuvers (BFM)	442	442	0	0	61	0
Air Combat Maneuvers (ACM)	509	945	0	35	35	0
Defensive Counter-Air (DCA)	2073	2073	2073	890	890	890
Surface Attack Tactics (SAT)	3704	3704	3704	285	285	285
Basic Surface Attack (BSA)	660	73	0	0	0	0
Close Air Support (CAS)	696	0	0	63	0	0
Proposed F-15QA Operations						
Aircraft Handling Characteristics (AHC)	60	60	40	0	0	0
Basic Fighter Maneuvers (BFM)	104	104	0	0	14	0
Air Combat Maneuvers (ACM)	119	222	0	8	8	0
Defensive Counter-Air (DCA)	486	487	494	209	209	212
Surface Attack Tactics (SAT)	869	870	883	67	67	68
Basic Surface Attack (BSA)	155	17	0	0	0	0
Close Air Support (CAS)	163	0	0	15	0	0

Table C-6. Overall Sound Levels beneath the Mountain Home Range Complex

Military Operations Area	Jarbidge North	Jarbidge South	Owyhee North	Owyhee South	Paradise North	Paradise South	Saddle A	Saddle B
Aircraft Overflights – L_{dnmr} (dBA)								
Existing	62.9	48.2	63.5	47.2	51.0	47.1	37.9	42.3
Proposed Action	63.7	48.6	64.3	51.0	51.4	47.5	37.9	42.4
Change	0.8	0.4	0.8	3.8	0.4	0.4	0.0	0.1
Sonic Booms – CDNL (dBC)								
Existing	53.0	-	53.0	-	<47	-	-	-
Proposed Action	53.6	-	53.6	-	<47	-	-	-

Change	0.6	-	0.6	-	0.0	-	-	-

Source: US Air Force, 2017; Plotkin, 1993

CDNL = C-weighted day night sound level; dBA = A-weighted decibels; dBC = C-weighted decibels; L_{dmnr} = onset rate adjusted day-night sound level

Table C-7. Overall Sound Levels beneath the Military Training Routes Outside the Mountain Home Range Complex

Military Training Route	Existing Sound Level (dBA DNL)	Percent Increase	Proposed Action Sound Level (dBA DNL)	Increase in Sound Level (dBA DNL)
IR-300	40.4	10%	40.8	0.4
IR-302	43.9	2%	44.0	0.1
IR-303	37.0	6%	37.3	0.3
IR-304	39.8	1%	39.8	0.0
IR-305	35.3	28%	36.4	1.1
IR-313	<35.0	20%	<35.0	-
VR-1300	<35.0	50%	<35.0	-
VR-1301	42.7	14%	43.3	0.6
VR-1302	<35.0	25%	<35.0	-
VR-1303	36.2	10%	36.6	0.4
VR-1304	41.8	14%	42.4	0.6
VR-1305	<35.0	13%	<35.0	-
VR-389	<35.0	2%	<35	-
VR-391	36.2	5%	36.4	0.2
Minimum	35.3		36.4	0.0
Maximum	43.9		44.0	1.1

Source: US Air Force, 2017

dBA = A-weighted decibels; DNL = day-night sound level; IR = instrument route; VR = visual route

Table C-8. Peak Overpressures and Peak Sound Levels from Sonic Booms

Flight Altitude (feet above ground level)	Peak Overpressure (pounds per square foot)	
	Directly Beneath Flight Path	Aircraft at 45° from Directly Overhead
10,000	4.4	3.2
15,000	3.1	2.1
20,000	2.3	1.5
25,000	1.9	does not reach ground

Source: Plotkin, 1996

Table C-9. Individual F-15E Overflight – Sound Exposure Level (dBA)

Distance (ft)	F-15E-Approach	F-15E-Cruise	F-15E-Takeoff	F-15E-Afterburner
200	100.1	99.9	123.8	132.3
250	98.6	98.4	122.2	130.6
315	97.1	96.9	120.6	128.8
400	95.5	95.3	119	127
500	93.9	93.7	117.3	125.1
630	92.3	92.1	115.6	123.1
800	90.6	90.4	113.8	121.1

Table C-9. Individual F-15E Overflight – Sound Exposure Level (dBA)

Distance (ft)	F-15E-Approach	F-15E-Cruise	F-15E-Takeoff	F-15E-Afterburner
1000	88.9	88.7	112	118.9
1250	87.1	86.9	110.1	116.6
1600	85.3	85	108.2	114.4
2000	83.4	83.1	106.1	112.2
2500	81.3	81.1	104	109.9
3150	79.2	78.9	101.8	107.6
4000	77	76.7	99.4	105.3
5000	74.6	74.4	97	102.8
6300	72.2	71.9	94.3	100.2
8000	69.5	69.3	91.5	97.5
10000	66.7	66.6	88.4	94.6
12500	63.7	63.7	85.1	91.5
16000	60.5	60.6	81.6	88.3
20000	57	57.3	77.8	84.8
25000	53.4	53.7	73.7	81.1

dBA = A-weighted decibels; ft = feet

Table C-10. Individual F-15E Overflight - Maximum Sound Level (dBA)

Distance (ft)	F-15E-Approach	F-15E-Cruise	F-15E-Takeoff	F-15E-Afterburner
200	97	97.2	120.2	131.6
250	94.9	95	118.1	129.3
315	92.8	92.9	115.9	127
400	90.6	90.8	113.7	124.6
500	88.5	88.6	111.4	122.1
630	86.2	86.3	109.1	119.5
800	84	84.1	106.7	116.8
1,000	81.6	81.7	104.3	114.1
1,250	79.3	79.3	101.8	111.2
1,600	76.8	76.9	99.2	108.3
2,000	74.3	74.3	96.6	105.5
2,500	71.7	71.7	93.9	102.7
3,150	69	69	91.1	99.8
4,000	66.1	66.1	88.1	96.8
5,000	63.2	63.2	85	93.8
6,300	60.1	60.1	81.8	90.6
8,000	56.8	57	78.3	87.2
10,000	53.4	53.6	74.7	83.8
12,500	49.8	50.1	70.8	80.1
16,000	46	46.5	66.7	76.2
20,000	42	42.6	62.3	72.2
25,000	37.7	38.4	57.6	67.9

dBA = A-weighted decibels; ft = feet

C.1.5 References

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C.2 AIR QUALITY AND AIR CONFORMITY APPLICABILITY ANALYSIS

C.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, vapor) potentially 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, a regulatory overview, and a summary of climate and greenhouse gases (GHGs).

The ROI for air quality includes all the counties surrounding MHAFB and beneath the MHRC, including Elmore, Owyhee, and Twin Falls Counties in Idaho; Humboldt County in Nevada; and Malheur County in Oregon. The "mixing height" is the altitude above which pollutants readily disperse and have limited effects at ground level. Air quality impacts were assessed from military aircraft operations below the mixing height of 3,000 feet (ft) above ground level within the ROI (40 Code of Federal Regulations [CFR] § 93.153[c][2]).

The USEPA Region 10 and Idaho Department of Environmental Quality regulate air quality in Idaho. The USEPA Region 10 and Oregon Department of Environmental Quality regulate air quality in Oregon. USEPA Region 9 and the Nevada Division of Environmental Protection regulate air quality in Nevada. The Clean Air Act (42 US Code [U.S.C.] §§ 7401-7671q), as amended, assigns USEPA responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), 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. **Table C-11** outlines the NAAQS for each criteria pollutant. The states of Idaho, Oregon, and Nevada have accepted the federal standards.

Table C-11. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		Primary and Secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide (NO_2)		Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	Annual	53 ppb	Annual mean
Ozone (O_3)		Primary and Secondary	8-hour	0.070 ppm	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
Particulate Matter	($PM_{2.5}$)	Primary	Annual	12 µg/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	(PM_{10})	Primary and Secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years

Table C-11. National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Sulfur Dioxide (SO_2)	Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: 40 CFR §§ 50.1–50.12; USEPA, 2021

$\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion

C.2.2 Climate and Greenhouse Gases

Historically, the average high temperature at Mountain Home, Idaho, is 91.7 degrees Fahrenheit in the hottest month of July, and the average low temperature is 20.3 degrees Fahrenheit in the coldest month of December. Mountain Home, Idaho, has average annual precipitation of 10.6 inches per year. The wettest month of the year is December with an average rainfall of 1.4 inches (IDcide, 2021).

Executive Order (EO) 14008, *Tackling the Climate Crisis at Home and Abroad*, outlines policies to reduce GHG emissions and to bolster resilience to the impacts of climate change. The EO directs Council on Environmental Quality to review, revise, and update its 2016 *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. When considering GHG emissions and their significance, agencies should use appropriate tools and methodologies for quantifying GHG emissions and comparing GHG quantities across alternative scenarios. The Council on Environmental Quality guidance specifically requires agencies within the DOD to quantify GHG emissions in National Environmental Policy Act assessments and review federal actions in the context of future climate scenarios and resiliency.

In addition, EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, requires federal agencies to capture the full costs of GHG emissions as accurately as possible, including taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The "social cost of carbon" is an estimate of the monetized damages associated with incremental increases in GHG emissions, such as reduced agricultural productivity, human health effects, property damage from increased flood risk, and the value of ecosystem services. The current social cost of carbon is estimated at 52 dollars per metric ton (Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, 2021).

C.2.3 References

IDcide. 2021. W*eather and Climate for Mountain Home AFB*. <http://www.idcide.com/weather/id/mountain-home-afb.htm>. Accessed May 2021.

Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. 2021. *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*.

USEPA. 2021. *National Ambient Air Quality Standards*. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>. Accessed June 2021.

C.2.4 Detailed Air Conformity Applicability Model Report

ACAM does not include emissions estimates from an F-15 variant with the F110-GE-129 engines that is proposed for the F-15QA aircraft. Under 40 CFR 1502.21, existing credible scientific evidence is acceptable for analyses and therefore a surrogate engine was selected. The most appropriate surrogate available in ACAM is the F-15E with the F100-PW-229 engines. As emissions from the F-15E with the F100-PW-229 engines are likely to be similar to that of the F-15QA, this is an appropriate engine surrogate for modeling based on engine type, max thrust, fuel flow rate, and emission factors.

1. General Information

- Action Location
Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Qatar Emiri Air Force F-15QA Beddown

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2024

- Action Purpose and Need:
The need for the Proposed Action is to further strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request. The purpose of the Proposed Action is to establish a DAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS. The Secretary of the Air Force and the Chief of Staff of the Air Force would identify the installation that would meet the needs of the QEAF through the strategic basing process.

- Action Description:
The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use

of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

- Activity List:

Activity Type		Activity Title
2.	Personnel	Addtional Personnel
3.	Construction / Demolition	Construction and Demolition - All
4.	Aircraft	F-15 LTO at Base
5.	Aircraft	MHRC Operations Idaho AQCR
6.	Aircraft	F-15 TGO
7.	Heating	Heating of Buildings

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Personnel

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: Addtional Personnel

- Activity Description:
Proposed QEAF Personnel/Proposed DAF Personnel/Total
Military 169/5/174
Civilian 0/126/126

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.676003
SO_x	0.004517
NO_x	0.613514
CO	7.610778
PM 10	0.018133

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.016348
Pb	0.000000
NH_3	0.041549
CO_2e	648.4

2.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel:	174
Civilian Personnel:	126
Support Contractor Personnel:	0
Air National Guard (ANG) Personnel:	0
Reserve Personnel:	0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

Active Duty Personnel:	5 Days Per Week (default)
Civilian Personnel:	5 Days Per Week (default)
Support Contractor Personnel:	5 Days Per Week (default)
Air National Guard (ANG) Personnel:	4 Days Per Week (default)
Reserve Personnel:	4 Days Per Month (default)

2.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

2.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_X	NO_X	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

2.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)

VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year
$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

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

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

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

- Activity Title: Construction and Demolition - All

- Activity Description:
Activity Square Feet
Construction 299,528
Grading 449,292
Trenching 59,906
Architectural Coatings 149,764
Paving 178,729
Demolition 17,832

Proposed Interim Flightline Facilities
Construction Heating Parking
Two rows of sunshades for 12 aircraft 1 Flightline in front of Building 1225 12 0 0
Munitions support equipment parking expansion Building 1340 17,818 0 0
Temporary propulsion adjacent to DAF propulsion Adjacent to Building 1334 6,458 6,458 6,458
Temporary maintenance and storage Behind Building 1335 1,351 1,351 1,351
Storage addition Addition to Building 1225 1,000 0 1,000
Temporary aviation ground equipment facility Between Buildings 1359 and 1360 5,240 5,240 5,240
Total 31879 13049 14049

Proposed Permanent Flightline Facilities
Construction
Addition to Precision Guided Missile Facility Building 3023 669 669 0
Two rows of sunshades for 12 aircraft2 Flightline in front of Building 1225 12 0 0
Conventional maintenance building Northern end of the munitions area 4,989 4,989 4,989
Expand I-PAD and install lightning protection Building 3018 34,753 0 0
Administration expansion Building 3023 600 600 0
Storage building addition Building 1340 1,850 0 0
Maintenance bay expansion Building 1340 2,000 2,000 0
Munitions support equipment parking expansion Building 1340 17,818 0 17,818

Addition to Cowboy Control Building 1795 10,170 10,170 10,170
QEAF hangar and Aircraft Maintenance Unit with wheels and tire, egress, propulsion, tools and parts, and armament maintenance equipment storage New building 79,185 79,185 20,000
QEAF Fighter Squadron and simulator facility New building 38,682 38,682 38,682
T9 Hush House New building adjacent to Building 1344 20000 20000 20000
Fuels Maintenance Hangar (two-bay) and district carpark New building adjacent to Building 1335 2,873 2,873 2,873
QEAF Consolidated Mission Facility New building 19294 19294 19294
Joint-use Non-destructive Inspections Facility and Hangar New building 24,396 24,396 24,396
Hayman Igloo Adjacent to Building 2996 3,900 0 0
Temporary Propulsion facility Adjacent to Building 1333/1339 6,458 6,458 6,458
Total 267,649 209,316 164,680

Demolition
Partial demolition (walls and roof) Building 3018 2,575 2,575 0
Demolish building and parking spaces Building 2618 15,257 15,257 0
Total 17,832 17,832 0

- Activity Start Date
Start Month: 1
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.407357
SO_x	0.011704
NO_x	3.876383
CO	4.796766
PM 10	15.390289

Pollutant	Total Emissions (TONs)
PM 2.5	0.147856
Pb	0.000000
NH_3	0.004357
CO_2e	1149.3

3.1 Demolition Phase

3.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 17832
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.1.3 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0357	0.0006	0.2608	0.3715	0.0109	0.0109	0.0032	58.544
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)

0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.2 Site Grading Phase

3.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 449292
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e

Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.3 Trenching/Excavating Phase

3.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 59906
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.3.3 Trenching / Excavating Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.4 Building Construction Phase

3.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 12
Number of Days: 0

3.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 299528
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

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

3.4.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0715	0.0013	0.4600	0.3758	0.0161	0.0161	0.0064	128.78
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0246	0.0006	0.0973	0.2146	0.0029	0.0029	0.0022	54.451
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0303	0.0006	0.2464	0.2674	0.0091	0.0091	0.0027	61.061
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0227	0.0003	0.1427	0.1752	0.0059	0.0059	0.0020	25.653

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

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

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

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

3.5 Architectural Coatings Phase

3.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category: Non-Residential
Total Square Footage (ft^2): 149764
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

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

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

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

3.6 Paving Phase

3.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 178729

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.6.3 Paving Phase Emission Factor(s)

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

Excavators Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Off-Gassing Emissions per Phase
VOC_P = (2.62 * PA) / 43560

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

4. Aircraft

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: F-15 LTO at Base

- Activity Description:
11504 Operations = 5858 Arrivals and Departures + 5645 Closed Patterns = 2929 LTO + 5645 TGO

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	9.852837
SO_x	3.478117
NO_x	52.707052
CO	27.963803
PM 10	5.784074

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.319486
Pb	0.000000
NH_3	0.000000
CO_2e	7185.8

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	4.666455
SO_x	2.433365
NO_x	37.783047
CO	18.863345
PM 10	4.245625

Pollutant	Emissions Per Year (TONs)
PM 2.5	3.827045
Pb	0.000000
NH_3	0.000000
CO_2e	6400.0

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

Pollutant	Emissions Per Year (TONs)
VOC	5.186382
SO_x	1.044752
NO_x	14.924005
CO	9.100459
PM 10	1.538450

Pollutant	Emissions Per Year (TONs)
PM 2.5	1.492441
Pb	0.000000
NH_3	0.000000
CO_2e	785.8

4.2 Aircraft & Engines

4.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

4.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

4.3 Flight Operations

4.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft:	12
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft:	2929
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:	0
Number of Annual Trim Test(s) per Aircraft:	12

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins):	0
Takeoff [Military] (mins):	0.02
Takeoff [After Burn] (mins):	0.65
Climb Out [Intermediate] (mins):	0.68
Approach [Approach] (mins):	4.32
Taxi/Idle In [Idle] (mins):	0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins):	12
Approach (mins):	27
Intermediate (mins):	9
Military (mins):	9
AfterBurn (mins):	3

4.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

4.4 Auxiliary Power Unit (APU)

4.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

4.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

4.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

4.5 Aerospace Ground Equipment (AGE)

4.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 2929

- Aerospace Ground Equipment (AGE) (default)

Total Number of AGE	Operation Hours for Each LTO	Exempt Source?	AGE Type	Designation
1	0.33	No	Air Compressor	MC-1A - 18.4hp
1	1	No	Bomb Lift	MJ-1B
1	0.33	No	Generator Set	A/M32A-86D
1	0.5	No	Heater	H1
1	0.5	No	Hydraulic Test Stand	MJ-2/TTU-228 - 130hp
1	8	No	Light Cart	NF-2
1	0.33	No	Start Cart	A/M32A-60A

4.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
MC-1A - 18.4hp	1.1	0.267	0.008	0.419	0.267	0.071	0.068	24.8
MJ-1B	0.0	3.040	0.219	4.780	3.040	0.800	0.776	141.2
A/M32A-86D	6.5	0.294	0.046	6.102	0.457	0.091	0.089	147.0
H1	0.4	0.100	0.011	0.160	0.180	0.006	0.006	8.9
MJ-2/TTU-228 - 130hp	7.4	0.195	0.053	3.396	0.794	0.089	0.086	168.8
NF-2	0.0	0.010	0.043	0.110	0.080	0.010	0.010	22.1
A/M32A-60A	0.0	0.270	0.306	1.820	5.480	0.211	0.205	221.1

4.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

AGE_{POL}: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

5. Aircraft

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: MHRC Operations Idaho AQCR

- Activity Description:

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	19.680116
SO_x	8.396412
NO_x	124.512901
CO	76.118615
PM 10	13.440125

Pollutant	Emissions Per Year (TONs)
PM 2.5	12.101311
Pb	0.000000
NH_3	0.000000
CO_2e	20353.7

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	19.680116
SO_x	8.396412
NO_x	124.512901
CO	76.118615
PM 10	13.440125

Pollutant	Emissions Per Year (TONs)
PM 2.5	12.101311
Pb	0.000000
NH_3	0.000000
CO_2e	20353.7

5.2 Aircraft & Engines

5.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine

Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate

Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

5.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

5.3 Flight Operations

5.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 1
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 0

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins): 0
Takeoff [Military] (mins): 0
Takeoff [After Burn] (mins): 10019
Climb Out [Intermediate] (mins): 37127
Approach [Approach] (mins): 14769
Taxi/Idle In [Idle] (mins): 0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 0
Approach (mins): 0
Intermediate (mins): 0
Military (mins): 0
AfterBurn (mins): 0

5.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft

NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

5.4 Auxiliary Power Unit (APU)

5.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

5.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

5.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

6. Aircraft

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: F-15 TGO

- Activity Description:
5645 TGOs

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.819135
SO_x	3.441899
NO_x	57.928536
CO	4.243427
PM 10	6.423478

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.772754
Pb	0.000000
NH_3	0.000000
CO_2e	10402.9

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	1.819135
SO_x	3.441899
NO_x	57.928536
CO	4.243427
PM 10	6.423478

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.772754
Pb	0.000000
NH_3	0.000000
CO_2e	10402.9

6.2 Aircraft & Engines

6.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

6.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

6.3 Flight Operations

6.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft:	12
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft:	5645
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:	0
Number of Annual Trim Test(s) per Aircraft:	12

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins):	0
Takeoff [Military] (mins):	0
Takeoff [After Burn] (mins):	0
Climb Out [Intermediate] (mins):	4.48
Approach [Approach] (mins):	0
Taxi/Idle In [Idle] (mins):	0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins):	12
Approach (mins):	27
Intermediate (mins):	9
Military (mins):	9
AfterBurn (mins):	3

6.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

6.4 Auxiliary Power Unit (APU)

6.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

6.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

6.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

7. Heating

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: Heating of Buildings

- Activity Description:
204,533 square feet of addtional heated space

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.041837
SO_x	0.004564
NO_x	0.760668
CO	0.638961
PM 10	0.057811

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.057811
Pb	0.000000
NH_3	0.000000
CO_2e	915.8

7.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method

Area of floorspace to be heated (ft^2):	204533
Type of fuel:	Natural Gas
Type of boiler/furnace:	Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$):	0.00105
Energy Intensity ($MMBtu/ft^2$):	0.0781

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

7.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

7.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
$FC_{HER} = HA * EI / HV / 1000000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year
$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

1. General Information

- Action Location
Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Qatar Emiri Air Force F-15QA Beddown

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2024

- Action Purpose and Need:
The need for the Proposed Action is to further strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request. The purpose of the Proposed Action is to establish a DAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS. The Secretary of the Air Force and the Chief of Staff of the Air Force would identify the installation that would meet the needs of the QEAF through the strategic basing process.

- Action Description:
The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

Phone Number: -

- Activity List:

Activity Type		Activity Title
2.	Personnel	Addtional Personnel

3.	Construction / Demolition	Construction and Demolition - All
4.	Aircraft	F-15 LTO at Base
5.	Aircraft	MHRC Operations Idaho AQCR
6.	Aircraft	F-15 TGO
7.	Heating	Heating of Buildings

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Personnel

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: Addtional Personnel

- Activity Description:
Proposed QEAF Personnel/Proposed DAF Personnel/Total
Military 169/5/174
Civilian 0/126/126

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.676003
SO_x	0.004517
NO_x	0.613514
CO	7.610778
PM 10	0.018133

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.016348
Pb	0.000000
NH_3	0.041549
CO_2e	648.4

2.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 174
Civilian Personnel: 126
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

Active Duty Personnel:	5 Days Per Week (default)
Civilian Personnel:	5 Days Per Week (default)
Support Contractor Personnel:	5 Days Per Week (default)
Air National Guard (ANG) Personnel:	4 Days Per Week (default)
Reserve Personnel:	4 Days Per Month (default)

2.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

2.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_X	NO_X	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

2.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

V_{POL}: Vehicle Emissions (TONs)

VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

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

- Activity Title: Construction and Demolition - All

- Activity Description:
Activity Square Feet
Construction 299,528
Grading 449,292
Trenching 59,906
Architectural Coatings 149,764
Paving 178,729
Demolition 17,832

Proposed Interim Flightline Facilities
Construction Heating Parking
Two rows of sunshades for 12 aircraft 1 Flightline in front of Building 1225 12 0 0
Munitions support equipment parking expansion Building 1340 17,818 0 0
Temporary propulsion adjacent to DAF propulsion Adjacent to Building 1334 6,458 6,458 6,458
Temporary maintenance and storage Behind Building 1335 1,351 1,351 1,351
Storage addition Addition to Building 1225 1,000 0 1,000
Temporary aviation ground equipment facility Between Buildings 1359 and 1360 5,240 5,240 5,240
Total 31879 13049 14049

Proposed Permanent Flightline Facilities
Construction
Addition to Precision Guided Missile Facility Building 3023 669 669 0
Two rows of sunshades for 12 aircraft2 Flightline in front of Building 1225 12 0 0
Conventional maintenance building Northern end of the munitions area 4,989 4,989 4,989
Expand I-PAD and install lightning protection Building 3018 34,753 0 0
Administration expansion Building 3023 600 600 0
Storage building addition Building 1340 1,850 0 0
Maintenance bay expansion Building 1340 2,000 2,000 0
Munitions support equipment parking expansion Building 1340 17,818 0 17,818
Addition to Cowboy Control Building 1795 10,170 10,170 10,170
QEAF hangar and Aircraft Maintenance Unit with wheels and tire, egress, propulsion, tools and parts, and armament maintenance equipment storage New building 79,185 79,185 20,000
QEAF Fighter Squadron and simulator facility New building 38,682 38,682 38,682
T9 Hush House New building adjacent to Building 1344 20000 20000 20000
Fuels Maintenance Hangar (two-bay) and district carpark New building adjacent to Building 1335 2,873 2,873 2,873
QEAF Consolidated Mission Facility New building 19294 19294 19294
Joint-use Non-destructive Inspections Facility and Hangar New building 24,396 24,396 24,396
Hayman Igloo Adjacent to Building 2996 3,900 0 0

Temporary Propulsion facility Adjacent to Building 1333/1339 6,458 6,458 6,458
Total 267,649 209,316 164,680

Demolition
Partial demolition (walls and roof) Building 3018 2,575 2,575 0
Demolish building and parking spaces Building 2618 15,257 15,257 0
Total 17,832 17,832 0

- Activity Start Date
Start Month: 1
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.407357
SO_x	0.011704
NO_x	3.876383
CO	4.796766
PM 10	15.390289

Pollutant	Total Emissions (TONs)
PM 2.5	0.147856
Pb	0.000000
NH_3	0.004357
CO_2e	1149.3

3.1 Demolition Phase

3.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 17832
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.1.3 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0357	0.0006	0.2608	0.3715	0.0109	0.0109	0.0032	58.544
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_X	NO_X	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment

WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.2 Site Grading Phase

3.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 449292
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83

Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.3 Trenching/Excavating Phase

3.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 59906
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.3.3 Trenching / Excavating Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

3.4 Building Construction Phase

3.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 12
Number of Days: 0

3.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 299528
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

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

3.4.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0715	0.0013	0.4600	0.3758	0.0161	0.0161	0.0064	128.78
Forklifts Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0246	0.0006	0.0973	0.2146	0.0029	0.0029	0.0022	54.451
Generator Sets Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0303	0.0006	0.2464	0.2674	0.0091	0.0091	0.0027	61.061

Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875
Welders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0227	0.0003	0.1427	0.1752	0.0059	0.0059	0.0020	25.653

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

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

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

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

3.5 Architectural Coatings Phase

3.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

3.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 149764
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

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

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

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

3.6 Paving Phase

3.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3

Number of Days: 0

3.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 178729

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

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

3.6.3 Paving Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0584	0.0013	0.2523	0.5090	0.0100	0.0100	0.0052	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.316	000.002	000.241	003.506	000.009	000.008		000.023	00320.042
LDGT	000.378	000.003	000.413	004.709	000.011	000.010		000.024	00411.658
HDGV	000.691	000.005	001.080	015.443	000.024	000.021		000.044	00752.986
LDDV	000.131	000.003	000.136	002.381	000.004	000.004		000.008	00308.501
LDDT	000.266	000.004	000.387	004.046	000.007	000.006		000.008	00437.634
HDDV	000.538	000.013	005.426	001.822	000.169	000.155		000.029	01481.841
MC	002.411	000.003	000.857	013.650	000.027	000.024		000.054	00397.874

3.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

4. Aircraft

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: F-15 LTO at Base

- Activity Description:
11504 Operations = 5858 Arrivals and Departures + 5645 Closed Patterns = 2929 LTO + 5645 TGO

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	9.852837
SO_x	3.478117
NO_x	52.707052
CO	27.963803
PM 10	5.784074

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.319486
Pb	0.000000
NH_3	0.000000
CO_2e	7185.8

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	4.666455
SO_x	2.433365
NO_x	37.783047
CO	18.863345
PM 10	4.245625

Pollutant	Emissions Per Year (TONs)
PM 2.5	3.827045
Pb	0.000000
NH_3	0.000000
CO_2e	6400.0

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

Pollutant	Emissions Per Year (TONs)
VOC	5.186382
SO_x	1.044752
NO_x	14.924005
CO	9.100459
PM 10	1.538450

Pollutant	Emissions Per Year (TONs)
PM 2.5	1.492441
Pb	0.000000
NH_3	0.000000
CO_2e	785.8

4.2 Aircraft & Engines

4.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

4.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

4.3 Flight Operations

4.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 12
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 2929
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 0
Takeoff [Military] (mins): 0.02
Takeoff [After Burn] (mins): 0.65
Climb Out [Intermediate] (mins): 0.68
Approach [Approach] (mins): 4.32

Taxi/Idle In [Idle] (mins): 0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 12
Approach (mins): 27
Intermediate (mins): 9
Military (mins): 9
AfterBurn (mins): 3

4.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)

$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

4.4 Auxiliary Power Unit (APU)

4.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

4.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

4.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

4.5 Aerospace Ground Equipment (AGE)

4.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 2929

- Aerospace Ground Equipment (AGE) (default)

Total Number of AGE	Operation Hours for Each LTO	Exempt Source?	AGE Type	Designation
1	0.33	No	Air Compressor	MC-1A - 18.4hp
1	1	No	Bomb Lift	MJ-1B
1	0.33	No	Generator Set	A/M32A-86D
1	0.5	No	Heater	H1
1	0.5	No	Hydraulic Test Stand	MJ-2/TTU-228 - 130hp
1	8	No	Light Cart	NF-2
1	0.33	No	Start Cart	A/M32A-60A

4.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
MC-1A - 18.4hp	1.1	0.267	0.008	0.419	0.267	0.071	0.068	24.8
MJ-1B	0.0	3.040	0.219	4.780	3.040	0.800	0.776	141.2
A/M32A-86D	6.5	0.294	0.046	6.102	0.457	0.091	0.089	147.0
H1	0.4	0.100	0.011	0.160	0.180	0.006	0.006	8.9
MJ-2/TTU-228 - 130hp	7.4	0.195	0.053	3.396	0.794	0.089	0.086	168.8
NF-2	0.0	0.010	0.043	0.110	0.080	0.010	0.010	22.1
A/M32A-60A	0.0	0.270	0.306	1.820	5.480	0.211	0.205	221.1

4.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

AGE_{POL}: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

5. Aircraft

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Elmore

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: MHRC Operations Idaho AQCR

- Activity Description:

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	19.680116
SO_x	8.396412
NO_x	124.512901
CO	76.118615
PM 10	13.440125

Pollutant	Emissions Per Year (TONs)
PM 2.5	12.101311
Pb	0.000000
NH_3	0.000000
CO_2e	20353.7

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	19.680116
SO_x	8.396412
NO_x	124.512901
CO	76.118615
PM 10	13.440125

Pollutant	Emissions Per Year (TONs)
PM 2.5	12.101311
Pb	0.000000
NH_3	0.000000
CO_2e	20353.7

5.2 Aircraft & Engines

5.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

5.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

5.3 Flight Operations

5.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 1
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 0

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins): 0
Takeoff [Military] (mins): 0
Takeoff [After Burn] (mins): 10019
Climb Out [Intermediate] (mins): 37127
Approach [Approach] (mins): 14769
Taxi/Idle In [Idle] (mins): 0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 0
Approach (mins): 0
Intermediate (mins): 0
Military (mins): 0
AfterBurn (mins): 0

5.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

5.4 Auxiliary Power Unit (APU)

5.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

5.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

5.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

6. Aircraft

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: F-15 TGO

- Activity Description:
5645 TGOs

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.819135
SO_x	3.441899
NO_x	57.928536
CO	4.243427
PM 10	6.423478

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.772754
Pb	0.000000
NH_3	0.000000
CO_2e	10402.9

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	1.819135
SO_x	3.441899
NO_x	57.928536
CO	4.243427
PM 10	6.423478

Pollutant	Emissions Per Year (TONs)
PM 2.5	5.772754
Pb	0.000000
NH_3	0.000000
CO_2e	10402.9

6.2 Aircraft & Engines

6.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

6.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

6.3 Flight Operations

6.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 12
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 5645
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins):	0
Takeoff [Military] (mins):	0
Takeoff [After Burn] (mins):	0
Climb Out [Intermediate] (mins):	4.48
Approach [Approach] (mins):	0
Taxi/Idle In [Idle] (mins):	0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins):	12
Approach (mins):	27
Intermediate (mins):	9
Military (mins):	9
AfterBurn (mins):	3

6.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines

TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

6.4 Auxiliary Power Unit (APU)

6.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

6.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

6.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

APU_{POL} = APU * OH * LTO * EF_{POL} / 2000

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

7. Heating

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: Heating of Buildings

- Activity Description:
204,533 square feet of addtional heated space

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.041837
SO_x	0.004564
NO_x	0.760668
CO	0.638961
PM 10	0.057811

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.057811
Pb	0.000000
NH_3	0.000000
CO_2e	915.8

7.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 204533
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0781

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

7.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

7.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement (MMBtu/ft^2)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year
HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

1. General Information

- Action Location
Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Qatar Emiri Air Force F-15QA Beddown

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2025

- Action Purpose and Need:
The need for the Proposed Action is to further strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request. The purpose of the Proposed Action is to establish a DAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS. The Secretary of the Air Force and the Chief of Staff of the Air Force would identify the installation that would meet the needs of the QEAF through the strategic basing process.

- Action Description:
The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

- Activity List:

Activity Type		Activity Title
2.	Aircraft	MHRC Operations Nevada AQCR

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Aircraft

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: MHRC Operations Nevada AQCR

- Activity Description:

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	4.227690
SO_x	1.743345
NO_x	25.942678
CO	16.313455
PM 10	2.724368

Pollutant	Emissions Per Year (TONs)
PM 2.5	2.452749
Pb	0.000000
NH_3	0.000000
CO_2e	4186.5

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	4.227690
SO_x	1.743345
NO_x	25.942678
CO	16.313455
PM 10	2.724368

Pollutant	Emissions Per Year (TONs)
PM 2.5	2.452749
Pb	0.000000
NH_3	0.000000
CO_2e	4186.5

2.2 Aircraft & Engines

2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes

Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

2.3 Flight Operations

2.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 1
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 0

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 0
Takeoff [Military] (mins): 0
Takeoff [After Burn] (mins): 2159
Climb Out [Intermediate] (mins): 8174
Approach [Approach] (mins): 1661
Taxi/Idle In [Idle] (mins): 0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
Idle (mins): 0
Approach (mins): 0
Intermediate (mins): 0
Military (mins): 0
AfterBurn (mins): 0

2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)

TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.4 Auxiliary Power Unit (APU)

2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

1. General Information

- Action Location
Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Qatar Emiri Air Force F-15QA Beddown

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2025

- Action Purpose and Need:
The need for the Proposed Action is to further strengthen relationships between the United States and Qatar. Training of QEAF personnel is necessary to help ensure the combat readiness and enhanced performance of this partner nation in the event that multinational conflicts arise. The Proposed Action meets the QEAF's need to ensure the combat readiness and enhanced performance of its personnel. The QEAF requested that the training squadron be collocated with an existing F-15E wing at a CONUS Air Force Base (AFB), beddown costs be minimized, and their aircraft have access to adequate airspace over variable topography similar to Qatar's operational region. The Proposed Action is needed to support this QEAF beddown request. The purpose of the Proposed Action is to establish a DAF-led QEAF F-15QA training squadron and maintenance training center within the CONUS. The Secretary of the Air Force and the Chief of Staff of the Air Force would identify the installation that would meet the needs of the QEAF through the strategic basing process.

- Action Description:
The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

- Activity List:

Activity Type		Activity Title
2.	Aircraft	MHRC Operations OregonAQCR

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Aircraft

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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

- Activity Title: MHRC Operations OregonAQCR

- Activity Description:

- Activity Start Date
Start Month: 1
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	7.793162
SO_x	3.367147
NO_x	50.109310
CO	30.029874
PM 10	5.383820

Pollutant	Emissions Per Year (TONs)
PM 2.5	4.847024
Pb	0.000000
NH_3	0.000000
CO_2e	8192.8

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	7.793162
SO_x	3.367147
NO_x	50.109310
CO	30.029874
PM 10	5.383820

Pollutant	Emissions Per Year (TONs)
PM 2.5	4.847024
Pb	0.000000
NH_3	0.000000
CO_2e	8192.8

2.2 Aircraft & Engines

2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: F-15E
Engine Model: F100-PW-229
Primary Function: Combat
Aircraft has After burn: Yes

Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? Yes
Original Aircraft Name: F-15 QA
Original Engine Name: F110-GE-129

2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	1087.00	0.45	1.07	3.80	10.17	2.06	1.85	3234
Approach	3098.00	0.24	1.07	15.08	1.17	2.63	2.37	3234
Intermediate	5838.00	0.35	1.07	17.54	0.15	2.06	1.85	3234
Military	11490.00	0.31	1.07	29.29	0.33	1.33	1.20	3234
After Burn	20793.00	5.26	1.07	14.30	21.51	1.15	1.04	3234

2.3 Flight Operations

2.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 1
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 0
Number of Annual Trim Test(s) per Aircraft: 0

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 0
Takeoff [Military] (mins): 0
Takeoff [After Burn] (mins): 3957
Climb Out [Intermediate] (mins): 15559
Approach [Approach] (mins): 5068
Taxi/Idle In [Idle] (mins): 0

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
Idle (mins): 0
Approach (mins): 0
Intermediate (mins): 0
Military (mins): 0
AfterBurn (mins): 0

2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.4 Auxiliary Power Unit (APU)

2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

C.2.5 Summary Air Conformity Applicability Model Report Record of Air Analysis (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:
Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Qatar Emiri Air Force F-15QA Beddown

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.
The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.
The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).
Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission

estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Total Construction Emissions – Compressed into a Single Year

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.407	250	No
NOx	3.876	250	No
CO	4.797	250	No
SOx	0.012	250	No
PM 10	15.390	250	No
PM 2.5	0.148	250	No
Pb	0.000	25	No
NH3	0.004	250	No
CO2e	1149.3		

Total Annual Operational Emissions in Idaho – Full Implementation

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	32.070	250	No
NOx	236.523	250	Yes
CO	116.576	250	Yes
SOx	15.326	250	No
PM 10	25.724	250	No
PM 2.5	23.268	250	No
Pb	0.000	25	No
NH3	0.042	250	No
CO2e	39506.6		

The steady state estimated annual net emissions associated with this action exceed the insignificance indicators, indicating a potential for a significant impact to air quality. Therefore, the ACAM analysis is inconclusive and further air quality impact assessment is needed.

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Qatar Emiri Air Force F-15QA Beddown

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2022

e. Action Description:

The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Total Annual Operational GHG Emissions – Full Implementation

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
CO2e	112507.2		

The steady state estimated annual net emissions associated with this action exceed the insignificance indicators, indicating a potential for a significant impact to air quality. Therefore, the ACAM analysis is inconclusive and further air quality impact assessment is needed.

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Qatar Emiri Air Force F-15QA Beddown

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2025

e. Action Description:

The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Total Annual Operational Emissions in Nevada – Full Implementation

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	4.228	250	No
NOx	25.943	250	No
CO	16.313	250	No
SOx	1.743	250	No
PM 10	2.724	250	No
PM 2.5	2.453	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	4186.5		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: MOUNTAIN HOME AFB
State: Idaho
County(s): Elmore
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Qatar Emiri Air Force F-15QA Beddown

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2025

e. Action Description:

The QEAF requested that the DAF provide CONUS-based international military training. The DAF proposes to provide training support to the QEAF in response to this request. The Proposed Action would base and operate a DAF led QEAF F 15QA squadron operating as a separate but integrated fighter squadron under the operational command of the DAF wing commander.

The Proposed Action would include the basing and operation of up to 12 QEAF F-15QA Primary Aerospace Vehicle Authorized aircraft, use of the airfield and associated airspace for training, use of defensive countermeasures and ordnance during training, approximately 300 additional QEAF and DAF personnel, and construction and modification of facilities and infrastructure to support the beddown. Basing and operations would begin in early Fiscal Year (FY) 2024. The QEAF would beddown for 10 years with an option to extend the beddown beyond the initial 10 years.

The F-15QA includes Raytheon's APG-82(V)1 Active Electronically Scanned Array radar, fly-by-wire systems, and multiple weapons stations capable of carrying a variety of air-to-air and air-to-surface ordnance. The F-15QA is powered by two General Electric F110-GE-129 engines. The F-15QA is approximately 65 feet (ft) long with a wingspan of approximately 43 ft and wing area of 608 square feet (ft2).

Training by QEAF personnel with the F-15QA would be similar to current operations occurring at the installation and special use airspace (SUA) proposed for use. Night training, supersonic activity, and use of defensive countermeasures and ordnance would be similar. As QEAF operations would be integrated with training operations of a DAF fighter squadron, no airspace modifications would be required for QEAF training as part of the Proposed Action.

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Total Annual Operational Emissions in Oregon – Full Implementation

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	7.793	250	No
NOx	50.109	250	No
CO	30.030	250	No
SOx	3.367	250	No
PM 10	5.384	250	No
PM 2.5	4.847	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	8192.8		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

C.3 SAFETY

C.3.1 Definition of the Resource

The analysis of health and safety evaluates whether a Proposed Action would have the potential to affect safety, well-being, or health. Safety concerns associated with both ground and flight activities are considered in this section, including construction, operations and maintenance, aircraft mishaps, bird-aircraft strike hazards, fire management, and munitions. These safety concerns are discussed on-base, off-base, and in the SUA and MTRs.

The ROI includes MHAFB and areas off-base where transportation safety concerns are described, as well as the airspace where flight safety is discussed.

Flight Safety. Flight safety considers aircraft flight risks such as midair collision, bird/wildlife-aircraft strike hazard, and in-flight emergency. Proposed Action aircraft would follow DAF safety procedures and aircraft specific emergency procedures based on the aircraft design which are produced by the original equipment manufacturer of the aircraft. Basic airmanship procedures also exist for handling any deviations to Air Traffic Control procedures due to an in-flight emergency; these procedures are defined in AFI 11-202 (Volume 3), *General Flight Rules*, and established aircraft flight manuals. The Flight Crew Information File is a safety resource for aircrew day-to-day operations which is composed of air and ground operation rules and procedures.

Ground Safety. Occupational Safety and Health Administration Standards (29 CFR) govern general safety requirements relating to general industry practices (§ 1910), construction (§ 1926), and elements for federal employees (§ 1960). These standards include guidance for entry into areas in which a hazard may exist. Air Force Occupational Safety and Health requirements are identified within AFI 91-202 (2019), The *US Air Force Mishap Prevention Program*, and Air Force Manual 91-203 (2018), *Air Force Occupational Safety, Fire, and Health Standards*. The Air Force Occupational Safety and Health program's purpose is to minimize loss of DAF resources and protect DAF personnel from occupational deaths, injuries, or illnesses by managing risks and ensure all DAF workplaces meet Occupational Safety and Health Administration requirements.

Aircraft Mishaps. Aircraft mishaps are classified as A, B, C, or D, with Class A mishaps being the most severe with total property damage of $2 million or more or a fatality or permanent total disability and Class D representing minor incidents. Class A mishaps are calculated by aircraft type per 100,000 flying hours; combat losses are excluded from these mishap statistics. Class B mishaps result in total costs of more than $500,000 but less than $2 million or result in permanent partial disability or hospitalization for three or more individuals. Class C mishaps involve costs of more than $50,000 but less than $500,000 or a loss of worker productivity of one or more days. Class C mishaps form the most common occurrences, primarily involving minor damage and injuries but rarely affecting property or the public. Class D represents minor incidents not meeting any of the criteria for Class A, B, or C.

F-15 aircraft fly the vast majority (85 percent) of sorties at MHAFB. The lifetime Class A mishap rate for F-15 aircraft, as derived from records collected since 1972 and based on more than 5.5 million hours flown, is 2.42 per 100,000 flying hours; however, despite logging over 190,000 flying hours, only one based aircraft has been involved in a Class A mishap at MHAFB since 2000 (Air Force Safety Center, 2010). During an airshow in 2003, an F-16 from the Thunderbirds crashed while performing aerobatics. Previous to that, in October 1998, an F-15E crashed during a low-altitude, terrain-following training flight.

C.3.2 Reference

Air Force Safety Center. 2010. Flying Hours and Mishaps for Hill AFB, Shaw AFB, and Mountain Home AFB.

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C.4 LAND USE

C.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 local zoning laws; however, no nationally recognized convention or uniform terminology has been adopted for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Land use designations vary per municipality but often include government, agriculture, institutional/industrial, utilities, multifamily residential, single family residential, conservation, aviation, and open space.

The location(s) and extent of a proposed action is evaluated for the potential impacts on project sites and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with applicable land use planning and zoning regulations. Other relevant factors include existing land use at the project site, the types of land use on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.” The ROI for land use is MHAFB and the land surrounding the installation that is within the airfield noise contours.

Land Use categories identified on MHAFB include

- Administration – headquarter, security operations, offices;
- Airfield – runways, taxiways, aprons, overruns;
- Aircraft operations and maintenance – hangars, aircraft maintenance units, squadron operations;
- Commercial – commissary, base exchange, dining;
- Commercial/Service – gym, recreation center, theater;
- Housing – total zoned housing;
- Housing (accompanied) – family housing;
- Housing (unaccompanied) – airman housing, visitor housing, temporary lodging;
- Industrial – manufacturing and production;
- Medical – medical offices, dental offices, base hospital;
- Open Space – conservation area, buffer space; and
- Outdoor recreation – ballfields, outdoor courts, and golf course.

The ROI for land use on the installation includes the land surrounding the facilities proposed for use and construction as well as the land within the airfield noise contours and safety zones. Land use is depicted on **Figures C-7** through **C-10.**

The ROI also includes the land beneath the SUA and MTRs proposed for training. In addition, sensitive lands beneath the SUA are considered. Sensitive lands include those intended to preserve natural or cultural resources, contain recreational opportunities and public access, or provide for management of public lands. Natural areas include uses such as forestry and agriculture, as well as conservation areas, wildlands, and parks. Population centers under the SUA and MTRs are listed in **Table C-12.**

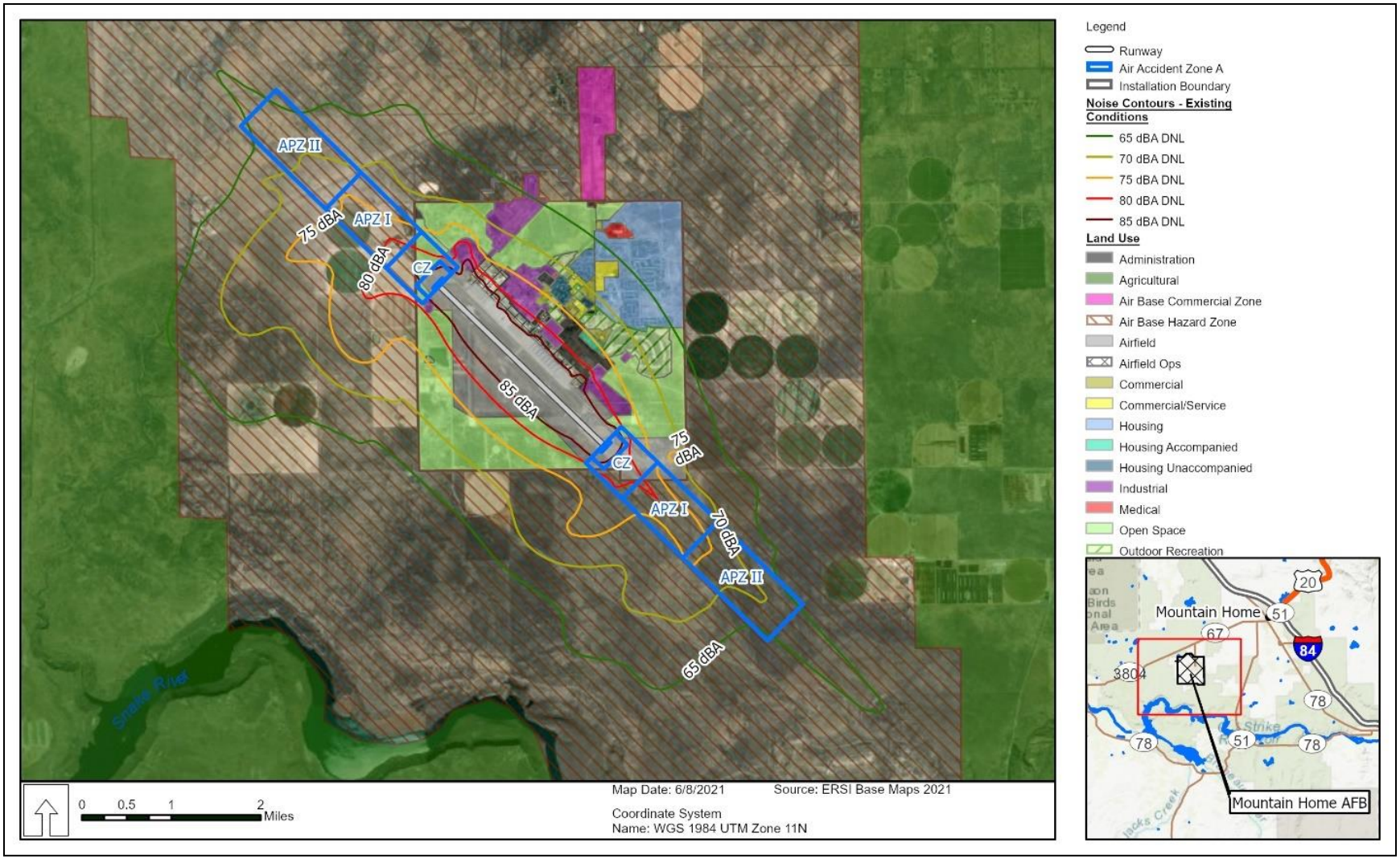

Figure C-7. Land Use with Existing Noise Contours.

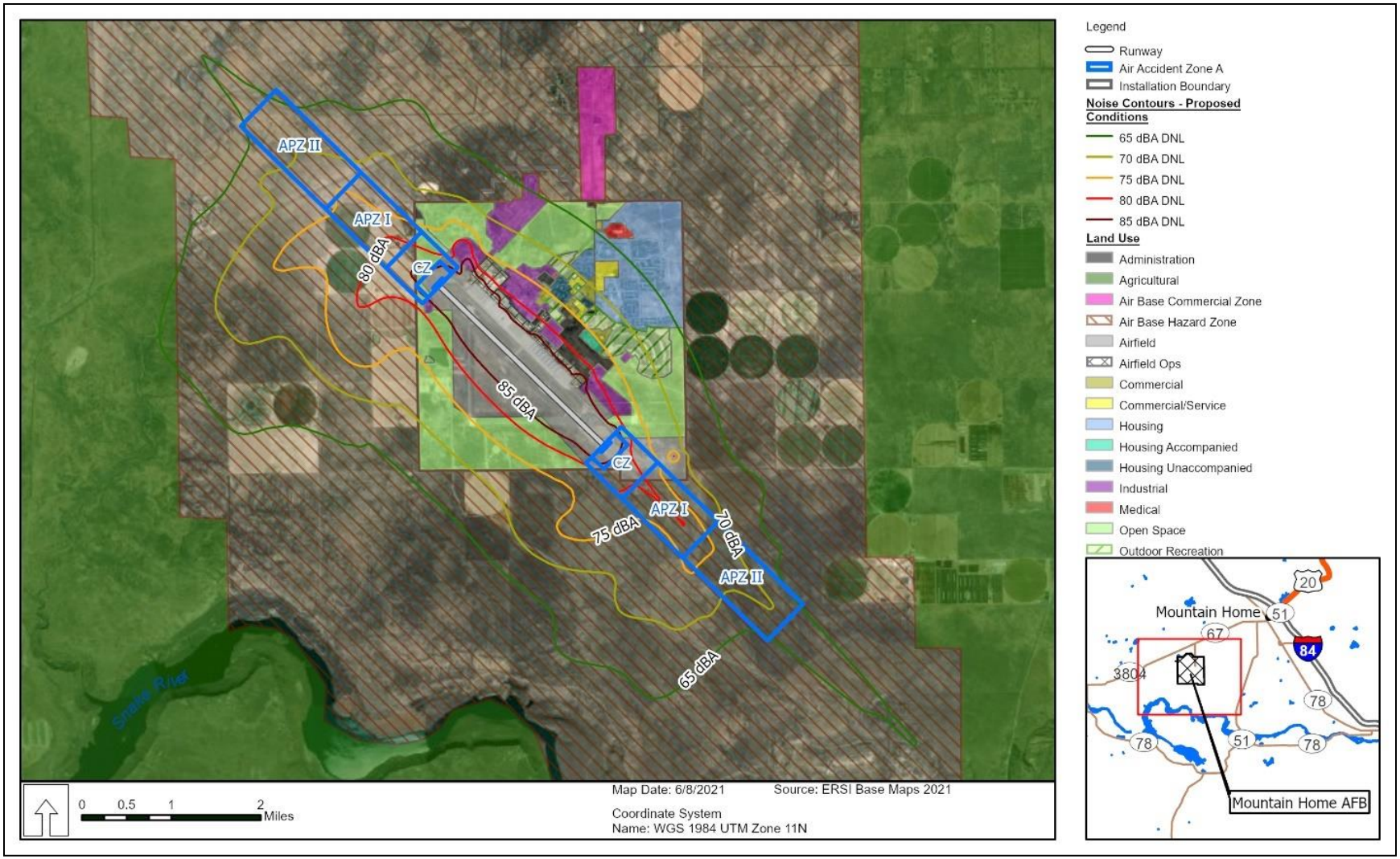

Figure C-8. Land Use with Proposed Noise Contours.

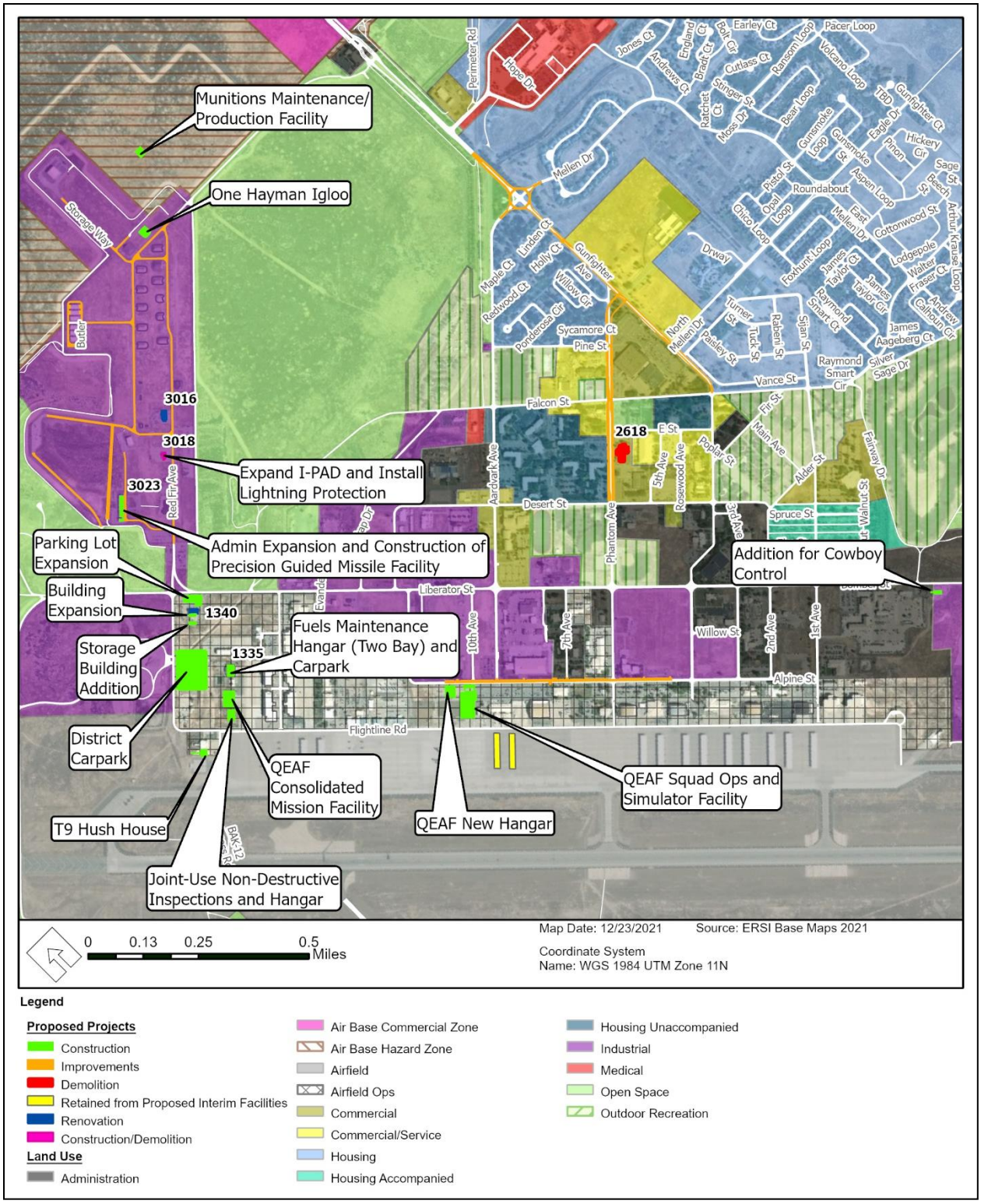

Figure C-9. Proposed Sea of Rocks Flightline Alternative with Land Use.

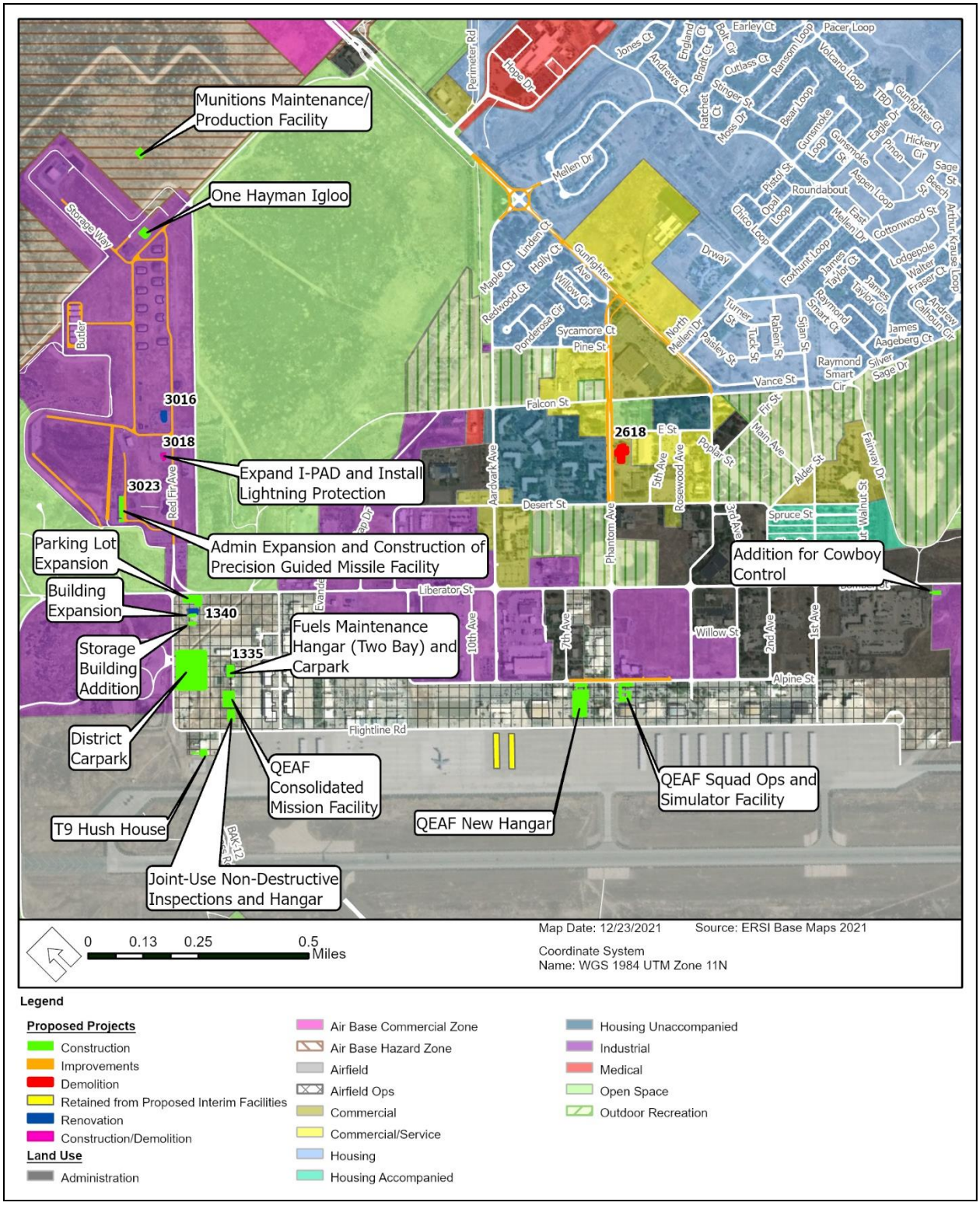

Figure C-10. Proposed Integrated Campus Alternative with Land Use.

Table C-12. Population Centers Beneath the Airspace Proposed for Qatar Emiri Air Force Training

Incorporated Cities	Unincorporated Communities
IDAHO	
VR-1304	
Counties	
Blaine, Custer, Cassia	
Population Centers	
Ketchum, Lost River, Malta	None
VR-1305	
Counties	
Blaine, Custer, Cassia	
Population Centers	
Ketchum, Lost River, Malta	None
IR-302	
Counties	
Custer, Cassia	
Population Centers	
Lost River, Malta	None
IR-305	
Counties	
Custer, Cassia	
Population Centers	
Lost River, Malta	None
VR-1300	
Counties	
Cassia	
Population Centers	
Lost River, Malta	None
VR-1301	
Counties	
Washington	
Population Centers	
Midvale	McDermitt
VR-1303	
Counties	
Cassia	
Population Centers	
Malta	None
Jarbidge North MOA	
Counties	
Elmore, Owyhee, Twin Falls	
Population Centers	
None	None

Table C-12. Population Centers Beneath the Airspace Proposed for Qatar Emiri Air Force Training

Incorporated Cities	Unincorporated Communities
Jarbidge South MOA	
Counties	
Owyhee, Twin Falls	
Population Centers	
None	None
Owyhee North MOA	
Counties	
Owyhee	
Population Centers	
None	None
Owyhee South MOA	
Counties	
Owyhee	
Population Centers	
None	None
Paradise North MOA	
Counties	
Owyhee	
Population Centers	
None	None
Paradise South MOA	
Counties	
Owyhee	
Population Centers	
None	None
R-3202 High	
Counties	
Elmore, Owyhee	
Population Centers	
None	None
R-3202 Low	
Counties	
Elmore, Owyhee	
Population Centers	
None	None
R-3203A	
Counties	
Ada, Elmore	
Population Centers	
None	None
R-3203B	
Counties	
Ada, Elmore	

Table C-12. Population Centers Beneath the Airspace Proposed for Qatar Emiri Air Force Training

Incorporated Cities	Unincorporated Communities
Population Centers	
None	None
R-3203C	
Counties	
Ada, Elmore	
Population Centers	
None	None
R-3203D	
Counties	
Ada	
Population Centers	
None	None
R-3204A	
Counties	
Owyhee	
Population Centers	
None	None
R-3204B	
Counties	
Owyhee	
Population Centers	
None	None
R-3204C	
Counties	
Owyhee	
Population Centers	
None	None
OREGON	
IR-300	
Counties	
Malheur	
Population Centers	
Adrian, Jordan Valley, Vale	Fort McDermitt, Harper, Juntura
IR-313	
Counties	
Malheur	
Population Centers	
Adrian, Jordan Valley, Vale	Fort McDermitt, Harper, Juntura
VR-389	
Counties	
Malheur	
Population Centers	
None	Fort McDermitt, McDermitt

Table C-12. Population Centers Beneath the Airspace Proposed for Qatar Emiri Air Force Training

Incorporated Cities	Unincorporated Communities
VR-391	
Counties	
Malheur	
Population Centers	
None	Fort McDermitt, McDermitt
VR-1301	
Counties	
Grant	
Population Centers	
Seneca	None
Paradise North MOA	
Counties	
Malheur	
Population Centers	
None	None
Paradise South MOA	
Counties	
Malheur	
Population Centers	
None	None
Saddle A MOA	
Counties	
Malheur	
Population Centers	
None	None
Saddle B MOA	
Counties	
Harney, Malheur	
Population Centers	
None	None
NEVADA	
IR-300	
Counties	
Humboldt	
None	Fort McDermitt, Orovado
IR-313	
Counties	
Humboldt	
None	Fort McDermitt, Orovada
VR-389	
Counties	
Humboldt	
None	Fort McDermitt, McDermitt, Orovada

Table C-12. Population Centers Beneath the Airspace Proposed for Qatar Emiri Air Force Training

Incorporated Cities	Unincorporated Communities
VR-391	
Counties	
Humboldt	
None	Fort McDermitt, McDermitt, Orovada
Paradise South MOA	
Counties	
Humboldt	
None	Fort McDermitt, McDermitt
Jarbidge South MOA	
Counties	
Elko	
None	Mountain City, Owyhee
Owyhee South MOA	
Counties	
Elko	
None	Owyhee

Note: No population centers exist in the areas where the Military Training Ranges overlay Utah and California
IR = instrument route; MOA = Military Operations Area; R- = Restricted Area; VR = visual route

C.5 EARTH RESOURCES

C.5.1 Definition of the Resource

Earth resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards. Topography and physiography pertain to the general shape and arrangement of the land surface, including its height and the position of its natural and man-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types, in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential, affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. The intent of the FPPA is to minimize the extent that federal programs contribute to the unnecessary conversion of high-quality farmland to nonagricultural uses. The FPPA also ensures that federal programs are administered in a manner that, to the extent practicable, is compatible with private, state, and local government programs and policies to protect farmland. The implementing procedures of the FPPA (7 CFR Part 658) require federal agencies to evaluate the adverse effects (direct and indirect) of their activities on farmland, which includes prime farmland, unique farmland, and farmland of statewide or local importance, and to consider alternative actions that could avoid adverse effects.

The ROI for earth resources includes the land surrounding the sites for the on-base facilities proposed for demolition and construction. Earth resources would not be affected by the potential use of existing off-base housing units for QEAF personnel nor activities in the SUA and MTRs.

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C.6 BIOLOGICAL RESOURCES

C.6.1 Definition of the Resource

Biological resources include native, nonnative, and invasive plants and animals; sensitive and protected floral and faunal species; and the habitats, such as wetlands, forests, and grasslands, in which they exist. Habitat can be defined as the resources and conditions in an area that support a defined suite of organisms. The management of these resources is critical to the maintenance of functioning, intact ecosystems that are necessary to ensure the military's continued access to its land, air, and water resources for realistic military training and testing and to sustain the long-term ecological integrity of natural resources and the ecosystem services they provide (DOD Instruction 4715.03, *Natural Resources Conservation Program*). Air Force Policy Directive 32-70, *Environmental Considerations in Air Force Programs and Activities*, and AFI 32-7064, *Integrated Natural Resources Management*, require all DAF installations to protect species classified as federally or state endangered or threatened. In addition, the MHAFB *Bird and Wildlife Strike Hazard Safety Plan* (MHAFB, 2018) outlines operational protocols for airfield and airspace avoidance of strike hazards, and the MHAFB *Pest Management Plan* (MHAFB, 2007) outlines best management practices (BMPs) for effective control of various insects, rodents, birds, and weeds.

The ROI for biological resources includes MHAFB and the SUA and MTRs, including the land underlying the airspace.

C.6.1.1 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.) established protection over and conservation of threatened and endangered species and the ecosystems upon which they depend. Sensitive and protected biological resources include plant and animal species listed as threatened, endangered, or special status by the US Fish and Wildlife Service (USFWS). Under the ESA (16 U.S.C. § 1536), an "endangered species" is defined as any species in danger of extinction throughout all, or a large portion, of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS maintains a list of species considered to be candidates for possible listing under the ESA. The ESA also allows the designation of geographic areas as critical habitat for threatened or endangered species. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant protection under the ESA.

Section 9 of the ESA prohibits the take of federally listed species. "Take" as defined under the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 7 of the ESA prohibits any federal agency from engaging in any action that is likely to "jeopardize" the continued existence of listed endangered or threatened species or that destroys or adversely affects the critical habitat of such species. Any federal agency proposing an action which may adversely impact an endangered or threatened species must "consult" with USFWS (on an informal or formal basis, as appropriate) before carrying out that action would place a listed species and/or its critical habitat in jeopardy.

C.6.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful for anyone to take migratory birds or their parts, nests, or eggs unless permitted to do so by regulations. Per the MBTA, "take" is defined as to "pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50 CFR § 10.12). Migratory birds include nearly all species in the United States, with the exception of some upland game birds and nonnative species.

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement the MBTA.

The National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314, 116 Stat. 2458) provided the Secretary of the Interior the authority to prescribe regulations to exempt the armed forces from the incidental take of migratory birds during authorized military readiness activities. Congress defined military readiness activities as all training and operations of the US armed forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

In December 2017, the US Department of the Interior issued M-Opinion 37050 (US Department of Interior, 2017) which concluded that the take of migratory birds from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not the take of a migratory bird. The USFWS interprets the M-Opinion to mean that the MBTA's prohibition on take does not apply when the take of birds, eggs, or nests occurs as a result of an activity, the purpose of which is not to take birds, eggs, or nests.

On 7 January 2021, the USFWS issued Final Rule (86 Federal Register 1134), effective 8 February 2021 determining that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same, applies only to actions directed at migratory birds, their nests, or their eggs; however, the MBTA ruled 8 March 2021 in conformity with the Congressional Rule Act (86 Federal Register 8715). On 7 May 2021, the USFWS published a proposal to revoke the 7 January 2021 final regulation that limited the scope of the MBTA. In addition, the USFWS opened a public comment period and solicited public comments on issues of fact, law, and policy raised by the MBTA rule published on 7 January. The public comment period closed on 7 June 2021. On 20 July 2021, the USFWS published a public notice announcing the availability of two economic analyses documents for review and comment. These documents are associated with the proposed MBTA revocation rule and USFWS provided a 30-day public comment period on these documents. The public comment period closed on 19 August 2021.

C.6.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. § 668 to 668c) prohibits the “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), alive or dead, or any part, nest, or egg thereof.” “Take” is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb," and “disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in productivity by substantially interfering with the eagle’s normal breeding, feeding or sheltering behavior, or nest abandonment by substantially interfering with the eagle’s normal breeding, feeding or sheltering behavior.” The Bald and Golden Eagle Protection Act also prohibits activities around an active or inactive nest site that could result in an adverse impact on the eagle.

C.6.1.4 Bureau of Land Management Sensitive Species

Bureau of Land Management (BLM) sensitive species designations are used for species that occur on BLM public land and for which BLM has the capacity to significantly affect the conservation status of the species through management (BLM, 2018). These designations are particularly important on BLM-leased lands and are assigned to animal and plant species.

C.6.1.5 United States Fish and Wildlife’s Birds of Conservation Concern

The USFWS was mandated by the Fish and Wildlife Conservation Act (16 U.S.C. §§ 2901 to 2911) to identify all migratory nongame bird species that are likely to become candidates for listing under the ESA without additional conversation measures. The resulting 2008 Birds of Conservation Concern list identifies species, beyond those already designated as federally threatened or endangered, that represent the USFWS’s highest conservation priorities (USFWS, 2008).

C.6.1.6 State Special Status Species

Species designated as threatened, endangered, proposed, or candidate by the Idaho Department of Fish and Game (IDFG) or the Idaho Governor's Office of Species Conservation (IDFG, 2017) and species of greatest conservation need (SGCN) are other special status species that need to be considered. All state-protected wildlife species and SGCN are identified in the Idaho State Wildlife Action Plan, which is the state's guiding document for managing and conserving at-risk species (IDFG, 2017).

C.6.1.7 Invasive Species

In addition to sensitive and protected species, nonnative invasive species are a major component of the natural ecosystem on MHAFB and pose a significant threated to health and integrity of ecosystems and special status species that they support. DAF policy on invasive species management is outlined in AFI 32-7004, *Integrated Natural Resources Management*, which establishes the requirement that invasive species management be addressed in the installation Integrated Natural Resources Management Plan (MHAFB, 2019) and identifies requirements of the Federal Noxious Weed Act of 1974 (as amended) (7 U.S.C. § 2814) and EO 13112, *Safeguarding the Nation from the Impacts of Invasive Species* (as amended 5 December 2016), on DAF properties. The federal Noxious Weed Act requires federal land management agencies to develop a management program for control of plants that are classified under federal or state law as undesirable, noxious, or harmful and to cooperate with state governments in control of undesirable plants on federal lands. The Idaho Noxious Weed Law of 1977 identifies and establishes a legal requirement to control weeds designated by the state as noxious.

C.6.2 Existing Conditions

Vegetation and Habitat. Open space on MHAFB is covered by a mixture of annual grasses and invasive species such as kochia (*Bassia scoparia*), Russian thistle (*Salsola kali*), and bur buttercup (*Ceratocephala testiculata*). Seedings and weed control treatments on MHAFB have improved areas by establishing perennial grasses and removing cheatgrass (*Bromus tectorum*) and other weeds.

Idaho state-listed noxious weed species that occur on MHAFB include rush skeletonweed (*Chondrilla juncea*), with small, incidental infestations of field bindweed (*Convolvulus arvensis*), buffalobur (*Solanum rostratum*), black henbane (*Hyoscyamus niger*), puncturevine (*Tribulus terrestris*), perennial sowthistle (*Sonchus arvensis*), perennial pepperweed (*Lepidium latifolium*), whitetop (*Cardaria draba*), and Canada thistle (*Circium arvense*). Noxious weeds are those species defined by the State of Idaho as having the potential to cause injury to public health, crops, livestock, land, or other property. Landowners are required by Idaho law to control noxious weeds on their lands (MHAFB, 2019).

Bat species known to MHAFB include silver-haired bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicus fuscus*), long-eared myotis (*Myotis evotis*), and Yuma myotis (*Myotis yumanensis*) (MHAFB, 2019). Several small mammals also occur throughout MHAFB. Piute ground squirrels (*Spermophilus mollis*) are abundant around the golf course and various landscaped areas (MHAFB, 2019).

C.6.3 Threatened and Endangered Species/Critical Habitat

Table C-13 provides a complete list of federally listed species that could occur at or near MHAFB and associated Training Areas and in the SUA, along with other species of concern which include those listed as SGCN by the IDFG and BLM Sensitive Species. This species list is derived from the MHAFB Integrated Natural Resources Management Plan (MHAFB, 2019); USFWS Information for Planning and Consultation (USFWS, 2021); the IDFG Natural Heritage Program website (IDFG, 2021), BLM's Idaho Special Status Animals Species and Sensitive Species Lists (BLM, 2014), and the IDFG's Idaho Species Diversity Database (2018).

Table C-13. Federal and State Listed Species with the Potential to Occur at or near Mountain Home Air Force Base, Associated Training Ranges, Special Use Airspace, and Military Training Routes

Species	Federal Status[1,2]	State Status[2]	MHAFB and Training Ranges	SUA and MTRs
Birds				
Yellow-billed cuckoo (*Coccyzus americanus*)	T			X
Sagebrush sparrow (*Artemisiospiza nevadensis*)	BLM SS	SGCN	X	X
Sage thrasher (*Oreoscoptes montanus*)	BLM SS	SGCN	X	X
Loggerhead shrike (*Lanius ludovicianus*)	BLM SS		X	X
Western burrowing owl (*Athene cunicularia*)	BLM SS	SGCN	X	X
California gull (*Larus californicus*)		SGCN	X	X
Long-billed curlew (*Numenius americanus*)	BLM SS	SGCN	X	X
Golden eagle (*Aquila chrysaetos*)	BLM SS	SGCN	X	X
Bald eagle (*Haliaeetus leucocephalus*)	BLM SS		X	
Ferruginous hawk (*Buteo regalis*)	BLM SS	SGCN	X	X
White-faced ibis (*Plegadis chihi*)		SGCN	X	
American white pelican (*Pelecanus erythrorhynchos*)		SGCN	X	
Common nighthawk (*Chordeiles minor*)		SGCN	X	X
Brewer's sparrow (*Spizella breweri*)	BLM SS		X	X
Mammals				
Long-eared myotis (*Myotis evotis*)	BLM SS		X	X
Yuma myotis (*Myotis yumanensis*)	BLM SS		X	X
Big brown bat (*Eptesicus fuscus*)	BLM SS		X	X
Silver-haired bat (*Lasionycteris noctivagans*)	BLM SS	SGCN	X	X
Little brown bat (*Myotis lucifugus*)	BLM SS	SGCN	X	X
Piute ground squirrel (*Urocitellus mollis*)	BLM SS		X	X
Gray wolf (*Canis lupus*)	Proposed E		X	X
Canada lynx (*Lynx canadensis*)	T			X
Fish				
Bull trout (*Salvelinus confluentus*)	T CH		X	X

Table C-13. Federal and State Listed Species with the Potential to Occur at or near Mountain Home Air Force Base, Associated Training Ranges, Special Use Airspace, and Military Training Routes

Species	Federal Status[1,2]	State Status[2]	MHAFB and Training Ranges	SUA and MTRs
Lahontan Cutthroat Trout (*Onchorhynchus clarkia henshawi*)	T		X	X
Shortnose sucker (*Chasmistes brevirostris*)	E			X
Warner sucker (*Catostomus warnerensis*)	T CH			X
Desert dace (*Eremichthys acros*)	T			X
Snails				
Bruneau hot springsnail (*Pyrgulopsis bruneauensis*)	E		X	
Insects				
Monarch butterfly (*Danaus plexippus*)	C		X	X
Plants				
Slickspot peppergrass (*Lepidium papilliferum*)	T Proposed CH		X	X
Whitebark Pine (*Pinus albicaulis*)	Proposed T		X	X
Davis' peppergrass (*Lepidium davisii*)	BLM SS		X	

Source:
[1] USFWS, 2021; BLM, 2014
[2] MHAFB, 2019; IDGF, 2018, 2021

BLM SS = Bureau of Land Management Sensitive Species; C = Candidate; CH = Critical Habitat; E = Endangered; MHAFB = Mountain Home Air Force Base; MTR = Military Training Route; SGCN = Species of Greatest Conservation Need; SUA = special use airspace; T = Threatened

Federally Protected Species

Slickspot peppergrass is the only federally listed threatened species that has the potential to occur on or near MHAFB. SUA associated with MHAFB (i.e., Jarbidge MOAs) overlies lands containing the proposed USFWS critical habitat for this species (USFWS, 2021). Surveys completed on MHAFB determined that this species does not occur on MHAFB except at the Juniper Butte Range, and that the habitat is not suitable to support it elsewhere on MHAFB (MHAFB, 2019). No habitat for other federally listed threatened or endangered species is present on MHAFB (MHAFB, 2019).

C.6.4 Species of Concern

Several species of concern have been documented on MHAFB and MHRC, including sagebrush sparrow (*Artemisiospiza nevadensis*), golden eagle (*Aquila chrysaetos*), western burrowing owl, ferruginous hawk (*Buteo regalis*), bald eagle (*Haliaeetus leucocephalus*), loggerhead shrike (*Lanius ludovicianus*), California gull (*Larus californicus*), long-eared myotis, Yuma myotis, long-billed curlew (*Numenius americanus*), sage thrasher (*Oreoscoptes montanus*), American white pelican (*Pelecanus erythrorhynchos*), white-faced ibis (*Plegadis chihi*), Brewer's sparrow (*Spizella breweri*), and Davis' peppergrass (*Lepidium davisii*) (MHAFB, 2019).

Sagebrush sparrow is a bird that prefers semiopen habitats with evenly spaced shrubs that are approximately 1 to 2 meters tall (Chase and Carlson, 2002). This species is commonly found in hot, dry areas with mature sagebrush stands. These sparrows seem to prefer sites with sparse shrub cover,

arranged in patches, with bare ground in between. They are found on MHAFB in the spring, summer, and fall (MHAFB, 2019). They are seldom seen in habitats without sagebrush.

Golden eagles are large raptors that are typically found in open country, in prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions. Golden eagles have been observed on MHAFB as a year-round resident (MHAFB, 2019). Most typically, they are found in association with open sagebrush plains. This eagle feeds primarily on small mammals, with its main prey species in the area being the black-tailed jackrabbit. Nesting generally occurs on cliff faces.

Western burrowing owl inhabits dry, open grasslands, sometimes in areas of high human density, such as in cities, golf courses, airports, and similar areas. This owl nests in burrows excavated by mammals, usually badger (*Taxidea taxus*), ground squirrel, or coyote (*Canis latrans*). Burrowing owls are known to occur on MHAFB immediately adjacent (within 20 ft) to the flightline, in the northern portion near the Environmental Flight Building, the southwestern areas adjacent to the MHAFB exercise area, the retired Explosive Ordnance Disposal proficiency range, the golf course, and in an undeveloped lot in the center of the Base (MHAFB, 2019). Human and aircraft activities do not seem to disturb these owls. Remains left at the entrance to burrows indicate that the owls on MHAFB forage heavily on Ord's kangaroo rats (*Dipodomys ordii*), grasshoppers, and beetles (MHAFB, 2019).

Ferruginous hawk is a migratory raptor that breeds in open habitats, such as grasslands, sagebrush-steppe, deserts, saltbush-greasewood shrub lands, and the outer edges of pinyon-pine and other forests. Ferruginous hawks typically roost in trees and high brush and exhibit a high degree of nest site fidelity. They are migratory in Idaho and generally arrive from their winter grounds in March, departing by mid-October. The birds can nest from 15 February through 15 July and could occur at MHAFB and in the SUA (MHAFB, 2019).

Bald eagles winter in deciduous and coniferous trees or other sheltered sites. Winter roost sites vary in their proximity to food resources. Wintering areas are commonly associated with open water, though in some areas these eagles use habitats with little or no open water if other food resources are readily available. A bald eagle was observed in March 2010 on the golf course on MHAFB, presumably hunting ground squirrels (USFWS, 2008). This was the first time this species had been observed on MHAFB (MHAFB, 2019). Waterfowl may provide potential prey for bald eagles; however, foraging by bald eagles on MHAFB is not known to occur (MHAFB, 2019).

Loggerhead shrike is a robin-sized bird that prefers habitats consisting of grasslands and open, agricultural areas characterized by short vegetation and scattered trees, shrubs, or hedgerows (Bent, 1950; Evers, 1994). Habitats of this type provide for nesting cover as well as for hunting and lookout perches. Loggerhead shrike is commonly found in pastures, old fields, orchards, roadside fencerows, and within native prairies and grasslands (Bent, 1950). In addition, this species will utilize riparian areas and open woodlands (Yosef and Grubb, 1992) as well as agricultural fields with row crops (Bent, 1950), mowed roadsides, parks, cemeteries, and golf courses (Little, 1991). They are found on MHAFB in the spring and summer (MHAFB, 2019). They are seldom seen in habitats without sagebrush and are most visible when perched on fences. Loggerhead shrikes are uncommon on MHAFB, as little high-quality nesting habitat remains on MHAFB (MHAFB, 2019).

California gull is an inland breeding bird that inhabits lakes, farms, and marshes during its breeding season. This bird forages along lakes, bogs, farm fields, lawns, pastures, sagebrush, garbage dumps, feedlots, parking lots, ocean beaches, and in the open ocean. This species breeds in lakes and marshes in interior western North America. They nest in colonies, occasionally with other birds. These birds are migratory and move to the Pacific coast during the winter. They will forage in flight or pick up objects while swimming, walking, or wading. They eat mainly insects, fish, and eggs. California gulls are commonly seen foraging at the landfill but are less often observed on MHAFB due to the landfill closure (MHAFB, 2019).

Long-eared myotis is a bat that is found in a wide range of habitats, often associated with forests. This may roost in buildings and trees within the base and is likely to forage around lights. This species inhabits coniferous forests and woodlands, including areas containing ponderosa pine, juniper, and spruce-fir (Manning and Jones, 1989). The long-eared myotis can be found under exfoliating bark, in cavities, in trees,

and in stumps resulting from logging (IDGF, 1998). In addition, this bat can be found in shrub communities within crevices in cliffs and rocks, in lava-tube caves, and abandoned mines. It has also been found occasionally in buildings and under bridges (IDGF, 1998). In an Idaho study, all roosts of this species were located near water (IDGF, 1998). The long-eared myotis begins swarming and mating in the fall, prior to hibernation. Fertilization ensues when ovulation occurs in the spring. A single pup is born, as late as mid-July in Idaho.

Yuma myotis occurs in a variety of western lowland habitats in areas of abundant water. In these areas, the bat forages for insects just above the surface of slack water. Yuma myotis is an important riparian species that roosts within crevices in cliffs, old buildings, mines, caves, bridges, and abandoned cliff swallow nests. In Idaho, no large winter concentrations of this species have been observed (MHAFB, 2019). Mating in these bats occurs during the fall, with ovulation and implantation taking place in spring. In female-only maternity colonies, only a single pup will be produced (Betts, 1997).

Long-billed curlew inhabits prairies, open shrub-steppe, and grassy wet meadows. The long-billed curlew is a large “shorebird” with a very long, curved bill. It is cinnamon brown on top and buff colored on its underside. In Idaho, this species prefers open, recently grazed grasslands containing short vegetation for nesting. Long-billed curlews are commonly seen resting or foraging in cheatgrass dominated habitats on MHAFB (MHAFB, 2019). Long-billed curlews breed on the dry, native grasslands of the arid West, where they use their long, curved bills to feed on grasshoppers, beetles, and caterpillars. They are often found in farm fields and grasslands during migration and winter. They also winter in coastal marshes and mudflats where they feed on large marine invertebrates. Spring migrants appear from late March through early April during most years on MHAFB (MHAFB, 2019).

Sage thrasher is a medium-sized passerine bird that highly depends on healthy shrub-steppe communities comprised of tall, dense sagebrush (Rich, 1980). In Idaho, sage thrashers use sites that are characterized with high sagebrush cover within large blocks of shrub-steppe (Knick and Rotenberry, 1995). Sage thrashers are found on MHAFB in the spring and summer (MHAFB, 2019). They are generally seen in association with sagebrush but have also been recorded in a variety of habitats. Sage thrashers nest in stands of sagebrush, placing their nests in or beneath shrubs that are typically 22 to 36 inches tall (Reynolds and Rich, 1978). Nests are bulky and located in large bushes containing thick branches for support (Ryser, 1985).

American white pelican nest on isolated islands in lakes and rivers. They feed in shallow lakes, rivers, and marshes. During the winter, they are usually found in warm, coastal marine habitats such as protected bays and estuaries. In Idaho, this species is found on large inland reservoirs and island nests. White pelicans nest in colonies of several hundred pairs on islands in remote brackish and freshwater lakes of inland North America. They feed while they swim, eating primarily carp, chubs, shiners, yellow perch, catfish, and jackfish. American white pelicans are rarely observed on MHAFB. They will infrequently use the treated effluent storage lagoon and the golf course ponds (MHAFB, 2019).

White-faced ibis is a wading bird that breeds colonially in marshes, usually nesting in bushes or low trees (Sibley, 2000). This bird is highly gregarious and often found in marshes and wetlands; however, the white-faced ibis is seminomadic and will quickly find new habitat in cases of excessive rainfall or temporary flooding (Bent, 1926). The white-faced ibis is generally rare in Idaho, with the majority of their breeding range outside the state; however, in May 2007, four white-faced ibis landed near the golf course pond on MHAFB (MHAFB, 2019). This was the first time this species was recorded on MHAFB. White-faced ibis are not typical for the habitat present on MHAFB.

Brewer’s sparrow breeds primarily in shrub-steppe habitats. They sometimes inhabit high desert scrub (greasewood) habitats, particularly if these habitats are adjacent to shrub-steppe, and large sagebrush openings in pinyon-juniper habitat or coniferous forests. Brewer’s sparrows are closely associated with sagebrush habitat (Peterson and Best, 1985). They prefer stands with a substantial grass understory. Adults return to the same breeding sites each year. The breeding season starts in mid-April and continues for several months. Breeding pairs can be found in high densities. The nest is placed on or near the ground, and the male often helps with incubation. In the winter, they favor low, dry vegetation, where they can be found in large, noisy flocks. They forage on or close to the ground (Vasquez, 2005). Brewer’s sparrows

have been observed in the fields bordering the base golf course, within the fields north of the MHAFB exercise area, and north of the runway (MHAFB, 2019).

Davis' peppergrass is a small perennial herbaceous forb and is a regional endemic, known to be extant (still present) at 293 sites and extirpated (eliminated) from at least two others (Moseley, 1995). Populations are scattered throughout an area of southwestern and south-central Idaho, north-central Nevada, and southeastern Oregon from an area that is approximately 180 miles long by 90 miles wide (MHAFB, 2019). Populations occur in six distinct clusters or distribution centers: Mountain Home Desert (Idaho), Inside Desert (Idaho), Salmon Falls Creek (Idaho), South Fork Owyhee River (Idaho, Oregon, and Nevada), Alvord Desert (Oregon), and Barren Valley (Oregon). Its habitat is a unique type of wetland: vernal lakes or playas. These areas fill with water in the spring and can become dry and hardened as concrete in the summer. Davis' peppergrass has been documented northeast of the base hospital on MHAFB (MHAFB, 2019). Nearly half of this playa has been damaged by firebreak construction. In 1997, a sign was posted to reduce the potential for any additional damage, and a habitat restoration effort was undertaken to protect this population. To aid in protection, a population monitoring study was implemented in 1997, 1998, and 1999. In 1999, a 40-person volunteer effort cleared halogeton and Russian thistle from this playa. A broadcast seeding of grasses was done adjacent to this playa in fall 1999 and fall 2000. In 2005, the area around the playa was again seeded with range grasses.

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C.7 CULTURAL RESOURCES

C.7.1 Definition of the Resource

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs.

Cultural Resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);
- Architectural (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Properties (resources of traditional, religious, or cultural significance to Native American tribes and other communities).

In accordance with the National Historic Preservation Act of 1966 (NHPA) and its implementing regulations at 36 CFR 800, federal agencies are required to assess the potential for adverse effects to cultural resources as the result of a proposed action [undertaking]. Cultural resources are defined as buildings, structures, objects, prehistoric and historical archaeological sites, and traditional cultural properties. A cultural resource is considered significant/an historic property when listed in, or determined eligible for listing in, the National Register of Historic Places (NRHP). NRHP-eligibility generally requires a cultural resource to be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture associated with one, or more of four criteria. NRHP-eligible resources must also possess sufficient integrity that conveys the resource's significance such as

- associating with events that have made a significant contribution to the broad patterns of our history (Criterion A);
- associating with the lives of persons significant in our past (Criterion B);
- embodying of distinctive characteristics of a type, period, or method of construction; representing the work of a master; possessing high artistic values; or representing a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or
- having yielded or being likely to yield information important in prehistory or history (Criterion D).

Other federal laws pertaining to cultural resources include the Archaeological and Historic Preservation Act of 1960 as amended, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, the Native American Graves Protection and Repatriation Act of 1990, and the NHPA as amended through 2016, and associated regulations (36 CFR 40 Part 800).

Although the installation has a Programmatic Agreement with the Idaho State Historic Preservation Office for streamlined NHPA compliance (36 CFR § 800.14), the Programmatic Agreement only applies to specifically designated, routine maintenance projects. Because the current undertaking is not a routine maintenance project, the agency has engaged standard procedural compliance in accordance with 36 CFR Part 800, and consultation is ongoing.

Section 106 of the NHPA requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects on historic properties (36 CFR § 800.1[a]). For cultural resource analysis, the Area of Potential Effects (APE) is used as the ROI. APE is defined as the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist," (36 CFR § 800.16[d]) and thereby diminish their historic integrity. Because any proposed off-base housing development would be determined separately by the QEAF outside of this EA and independent of the DAF, the APE for cultural resources is defined using limitations of the proposed interim and permanent flightline facilities at the Sea of Rocks and Integrated Campus Alternative locations and proposed on-base permanent housing projects. The APE includes all locations of proposed ground disturbance, existing facilities modifications, and new construction.

C.7.2 Architectural Properties

In 1990, MHAFB conducted an archival search to identify all resources on base constructed between 1943 and 1945. These included permanent facilities (e.g., telephone duct facilities, taxiways, steam heat mains) and temporary structures (e.g., hangars). After assessing these facilities against criteria developed for the DOD Nationwide Programmatic Memorandum of Agreements for World War II (WWII) buildings, 20 temporary buildings were identified as requiring formal NRHP eligibility evaluations. Five WWII hangars, all possessing an expansive birchwood type bowstring truss roof support system that characterize the construction design of the period, were determined to be eligible for the NRHP. The Idaho SHPO concurred with these determinations. Hangars 201, 204, 205, and 208 were constructed in 1943 and their original square footage expanded in 1955. Hangar 211 is the largest hangar on MHAFB, also constructed in 1943 and expanded in 1955. Although all the hangars have been modified somewhat over the years, enough architectural integrity remains to reflect their WWII origins (MHAFB, 2020).

MHAFB has also conducted architectural surveys addressing Cold War era development on base. The first, in 1995, included development of a listing of Cold War era facilities (1946-1989), and an evaluation of two resources based on their association within the national Cold War context. These two resources, the Cold War Alert Facility (Building 291) and its surrounding 103-ac Christmas Tree Alert Apron and Guard Station (Building 289) were determined to be eligible for inclusion in the NRHP but are outside the APE and not discussed further (MHAFB, 2020).

An additional project evaluated all extant facilities on MHAFB dating between 1943 and 1961, including both WWII and Cold War resources not previously evaluated. The survey determined 18 additional Cold War facilities were eligible for inclusion on the NRHP including Facilities 1329–1333, comprising the Strategic Air Command (SAC) Nose Dock Historic District (Weitze et al., 2006). SAC Bomber Alert was the major Cold War mission of MHAFB and the “nose dock” style hangars were the “workhorses” of the flightline for the SAC bomber mission Air Force wide throughout 1951–1991 (Headquarters, Air Combat Command, 1999).

Buildings 1329, 1330, 1331, 1332, and 1333 were identical when constructed during 1953 to mid-1955. Each hangar is a tall one-story, steel-frame structure, sloped in height from front to rear. As erected, Buildings 1329–1333 accommodated large aircraft parked in the hangars for maintenance; when fully pulled into a nose dock, the aircraft’s tail remained outside the hangar. Buildings 1329–1333 are sheathed in insulated corrugated-metal siding.

C.7.3 References

Weitze, Karen J., Ph.D., Mikel Travisano, Julian W. Adams. 2006. *Historic Building Inventory and Evaluations, Mountain Home Air Force Base, Elmore County, Idaho.* Prepared by Geo-Marine for US Army Corps of Engineers, Ft. Worth District and the US Air Force Air Combat Command.

Headquarters, Air Combat Command. 1999. *Cold War Infrastructure for Strategic Air Command: The Bomber Mission*.

MHAFB. 2020. *U.S. Air Force Integrated Cultural Resources Management Plan, Mountain Home Air Force Base*.

C.8 INFRASTRUCTURE

C.8.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly man-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure information was primarily obtained from the 2017 MHAFB Installation Development Plan (MHAFB, 2017) and provides a brief overview of each infrastructure component and comments on its existing general condition.

The infrastructure components include transportation, utilities, and solid waste management. Transportation is defined as the system of roadways, highways, and transit services that are in the vicinity of the installation and could be reasonably expected to be potentially affected by the Proposed Action. Utilities include electrical, natural gas, liquid fuel, water supply, sanitary sewage/wastewater, stormwater handling, and communications systems. Solid waste management primarily relates to the availability of landfills to support a population’s residential, commercial, and industrial needs.

The ROI for this resource is MHAFB and the on and off-base locations that make up each alternative considered.

C.8.2 Reference

MHAFB. 2017. *Final Installation Development Plan for Mountain Home Air Force Base*. April.

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C.9 HAZARDOUS MATERIALS AND WASTES, ENVIRONMENTAL RESTORATION PROGRAM, AND TOXIC SUBSTANCES

C.9.1 Definition of the Resource

The Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act and the Toxic Substances Control Act (TSCA), defines hazardous materials (HAZMAT). HAZMAT is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. HAZMAT is also defined under Section 1802 of the Hazardous Materials Transportation Act as "a substance or material in a quantity and form which may pose an unreasonable risk to health and safety or property when transported in commerce" (49 U.S.C. §§ 5101-5127). Occupational Safety and Health Administration (OSHA) is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety under 29 CFR Part 1910. OSHA also includes the regulation of HAZMAT in the workplace and ensures appropriate training in their handling.

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

HAZMAT are often stored in bulk quantities in aboveground or underground storage tanks and fueling operations such as required for aircraft operations require the bulk storage of HAZMAT such as petroleum, oils, and lubricants. Therefore, the evaluation of HAZMAT and hazardous wastes focuses on underground storage tanks and aboveground storage tanks as well as the storage, transport, and use of pesticides, fuels, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of HAZMAT and hazardous wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of HAZMAT or hazardous wastes, the extent of contamination varies based on type of soil, topography, weather conditions, and water resources.

Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing materials, lead-based paint (LBP), radon, and polychlorinated biphenyls (PCBs). The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

Asbestos. Asbestos is regulated by the USEPA with the authority promulgated under OSHA, 29 U.S.C. § 669 et seq. Section 112 of the Clean Air Act regulates emissions of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Lead-based Paint. Human exposure to lead has been determined an adverse health risk by agencies such as OSHA and the USEPA. Sources of exposure to lead are dust, soils, and paint. In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (Public Law 101-608, as implemented by 16 CFR Part 1303), the Consumer Product Safety Commission lowered the allowable lead level in paint to 0.06 percent (600 parts per million). The Act also restricted the use of LBP in nonindustrial facilities. The DOD implemented a ban of LBP use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain LBP.

Radon. The US Surgeon General defines radon as an invisible, odorless, and tasteless gas, with no immediate health symptoms, that comes from the breakdown of naturally occurring uranium inside the earth (US Surgeon General, 2005). Radon that is present in soil can enter a building through small spaces and openings, accumulating in enclosed areas such as basements. No federal or state standards are in place to regulate residential radon exposure at the present time, but guidelines were developed. Although 4.0 picocuries per liter is considered an "action" limit, any reading over 2 picocuries per liter qualifies as a "consider action" limit. The USEPA and the US Surgeon General have evaluated the radon potential around the country to organize and assist building code officials in deciding whether radon-resistant features are applicable in new construction. Radon zones can range from 1 (high) to 3 (low).

Polychlorinated Biphenyls. PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the United States until they were banned in 1979. The disposal of PCBs is regulated under the federal TSCA (15 U.S.C. § 2601 et seq., as implemented by 40 CFR Part 761), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems.

The TSCA regulates and the USEPA enforces the removal and disposal of all sources of PCBs containing 50 parts per million or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

The ROI for HAZMAT, hazardous wastes, and toxic materials is MHAFB. No hazardous materials or wastes or toxic substances would be used, handled, or disposed of in the SUA and MTRs during aircraft training operations.

C.9.2 Reference

US Surgeon General. 2005. *Surgeon General Releases National Health Advisory on Radon*. US Department of Health and Human Services. January.

C.10 SOCIOECONOMICS

C.10.1 Definition of the Resource

Socioeconomics is the relationship between economics and social elements, such as population levels and economic activity. There are several factors that can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region. Data on housing identify the affordability, availability, and distribution of owner-occupied and rental properties as well as building permits being issued to change future housing stock relative to demand. Economic data are typically presented at county, state, and US levels to characterize baseline socioeconomic conditions in the context of regional, state, and national trends.

The ROI of the on-base and off-base facility and housing alternatives includes Ada and Elmore Counties, Idaho. The ROI for the SUA and MTRs is Modoc County, California; Ada, Blaine, Butte, Camas, Cassia, Custer, Elmore, Gooding, Lincoln, Minidoka, Owyhee, Power, Twin Falls, and Washington Counties, Idaho; Elko, Humboldt, Pershing, and Washington Counties, Nevada; Baker, Grant, Harney, Lake, and Malheur Counties, Oregon; and Box Elder County, Utah.

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C.11 ENVIRONMENTAL JUSTICE

C.11.1 Definition of the Resource

EOs direct federal agencies to address disproportionate environmental and human health effects in minority and low-income communities and to identify and assess environmental health and safety risks to children.

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various socioeconomic groups and disproportionate impacts that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health, or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. EO 12898 was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

For the purposes of this project, minority populations are defined as Alaska Natives and American Indians, Asians, Blacks or African-Americans, Native Hawaiians, and Pacific Islanders or persons of Hispanic origin (of any race); low-income population include persons living below the poverty threshold as determined by the US Census Bureau; and youth populations are children under the age of 18 years.

The ROI of the on-base and off-base facility and housing alternatives includes Ada and Elmore Counties, Idaho. The ROI for the SUA and MTRs includes Modoc County, California; Ada, Blaine, Butte, Camas, Cassia, Custer, Elmore, Gooding, Lincoln, Minidoka, Owyhee, Power, Twin Falls, and Washington Counties, Idaho; Elko, Humboldt, Pershing, and Washington Counties, Nevada; Baker, Grant, Harney, Lake, and Malheur Counties, Oregon; and Box Elder County, Utah.

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C.12 RESOURCE CATEGORIES ELIMINATED FROM DETAILED ANALYSIS

Based on the components of the Proposed Action, DAF focused on specific resources potentially affected by the proposed QEAF beddown and associated F-15QA aircraft operations. The following are the resources eliminated from further detailed study in this EA and the rationale for eliminating them.

Airspace. The Proposed Action and alternatives do not include any proposals for new airspace nor do they include changes in how the existing airspace is used for training operations. Under the Proposed Action, all F-15QAs would conduct operations within existing airspace and training areas currently authorized for and utilized by F-15Es and F-15SGs operating from MHAFB. Therefore, impacts on airspace would not occur.

Water Resources. There are no wetlands, other surface waters, or floodplains within the area that would be affected by construction under any of the action alternatives. Therefore, there would be no potential for construction-related fill or material placement in wetlands, surface waters, or floodplains and construction activities would not include excavation deep enough to affect groundwater.

In addition, construction would be conducted in accordance with the National Pollutant Discharge Elimination System permit for stormwater management. Erosion and sediment controls (e.g., silt fences and sediment traps downslope from construction) and stormwater BMPs (e.g., spill cleanup and appropriate disposal) would be implemented and be consistent with the MHAFB Storm Water Pollution Prevention Plan, the project-specific Storm Water Pollution Prevention Plans, and the Catalog of Stormwater BMPs for Idaho Cities and Counties to minimize the potential for erosion and sedimentation into surface waters.

After construction activities, MHAFB would adhere to the guidance within Section 438 of the Energy Independence and Security Act of 2007 that requires federal agencies to reduce stormwater runoff from federal development and redevelopment projects to protect water resources and maintain or restore predevelopment site hydrology to the maximum extent that is technically achievable.

Due to the precautions in place to protect surface water and the lack of water resources in the project vicinity, none of the action alternatives are expected to adversely affect water resources. The water supply and distribution system are described in **Section 3.9, Infrastructure**.

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APPENDIX D
REASONABLY FORESEEABLE FUTURE ACTIONS

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Table D-1. Reasonably Foreseeable Projects

Project	Project Summary	Implementation Date	Relevance to Proposed Action
Establishment of a Sustainable Water Supply for MHAFB (BLM and US Air Force, 2017)	The project consisted of establishing a new sustainable water supply conveyed via predominantly linear underground infrastructure to a proposed Water Treatment Facility to be established within the installation boundary. An EA was completed for this project in September 2017 and concluded with a Finding of No Significant Impact.	Currently being rescoped.	The project would increase water supply to MHAFB.
Geothermal Energy Development (MHAFB, 2020)	The Proposed Action would construct and operate a geothermal power facility on MHAFB that would provide the installation with resilient and self-sufficient power year-round. The total area for construction and operation of the permanent geothermal facility and supporting infrastructure would be approximately 35 acres. The power facility would be capable of generating 100 percent power for MHAFB, up to 15 megawatts, and MHAFB would remain connected to the Idaho Power transmission lines currently servicing the installation. An EA was completed for this project in June 2020 concluded with a Finding of No Significant Impact.	Undetermined	The project would increase power availably to MHAFB.
Idaho JLUS (Idaho Department of Commerce, 2010)	The JLUS is a planning process to establish a working relationship among military installations in southwestern Idaho and their proximate communities to act as a team to prevent and or curtail encroachment issues associated with future mission expansion and local growth.	Ongoing	Actions taken to reduce encroachment into military activities may lessen pressure on military operations.
Forging Sabre Biennial Exercises at MHAFB (MHAFB, 2021a,b)	MHAFB proposes to support Forging Sabre exercises beginning in 2021 and occurring every other year thereafter. Components of each Forging Sabre exercise would include construction, facility modifications, personnel increases, aircraft operations, ground operations, and munitions use. All facilities, aircraft operations, ground operations, and munitions use during exercises would occur on military or joint civil-military use property, or within military ranges that currently support similar operations. An EA completed for this project in April 2021 concluded with a Finding of No Significant Impact.	Planned for Fall 2021	Project would include construction, facility modifications, personnel increases, increases in aircraft operations, and munitions use. The baseline operations included in this QEAF EA account for the proposed Forging Sabre operations.
Airspace Optimization for Readiness (DAF, 2021)	The proposed modifications would optimize the airspace and remove vertical constraints to low altitude training in the Paradise North, Paradise South, Owyhee South, and Jarbidge South MOAs to provide consistent low-altitude floors and lower altitudes for supersonic operations. The Final EIS is currently being prepared.	Undetermined	Project would include modifications to the special use airspace.

BLM = Bureau of Land Management; DAF = Department of the Air Force; EA = Environmental Assessment; EIS = Environmental Impact Statement; JLUS = Joint Land Use Study; MHAFB = Mountain Home Air Force Base; MOA = military operations area; QEAF = Qatar Emiri Air Force

D.1 REFERENCES

BLM and US Air Force. 2017. *Environmental Assessment for the Establishment of a Sustainable Water Supply for Mountain Home Air Force Base*. DOI-BLM-ID-B011-2017-0002-EA. September.

DAF. 2021. *Environmental Impact Statement for the Airspace Optimization for Readiness for Mountain Home Air Force Base*. Draft. July.

MHAFB. 2020. *Environmental Assessment for Geothermal Energy Development at Mountain Home Air Force Base, Idaho*. April.

Idaho Department of Commerce. 2010. *Idaho Joint Land Use Study*. Prepared by Matrix Design Group, Inc. August.

MHAFB. 2021a. *Finding of No Significant Impact (FONSI) for Forging Sabre Biennial Exercises at Mountain Home Air Force Base, Idaho*. Draft.

MHAFB. 2021b. *Environmental Assessment for Forging Sabre Biennial Exercises at Mountain Home Air Force Base, Idaho*. April.

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