Proposed Range 71 Desert Operations Area Expansion

Draft
Environmental Assessment

Nevada Test and Training Range
November 2013

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
APE	Area of Potential Effect
amsl	above mean sea level
BLM	Bureau of Land Management
BMP	Best Management Practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DOE	Department of Energy
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
ExpeRT	Expeditionary Readiness Training
°F	Degrees Fahrenheit
FARRP	Forward Area Refueling/ Rearming Point
GHG	Greenhouse Gas
HDMT	High Desert Mountain Terrain
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
kW	Kilowatt
MBTA	Migratory Bird Treaty Act
MLWA	Military Lands Withdrawal Act
MOA	Military Operating Area
MOUT	Military Operations in Urban Terrain
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NDEP BAQ	Nevada Division of Environmental Protection Bureau of Air Quality
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
NRS	Nevada Revised Statute
NTI	Nevada Training Initiative
NTTR	Nevada Test and Training Range
O_3	Ozone
OPTC	Operating Permit to Construct
Pb	Lead
PL	Public Law
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter less than 10 microns in diameter
PSD	Prevention of Significant Deterioration
ROI	Region of Influence
RTA	Regional Training Area
SFA	Silver Flag Alpha
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxide
TTR	Tonopah Test Range
UAS	Unmanned Aerial System
UBC	Uniform Building Code
UOC	Urban Operations Complex
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound

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PROPOSED RANGE 71 DESERT OPERATIONS AREA EXPANSION

Draft
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EXECUTIVE SUMMARY

This Environmental Assessment (EA) analyzes the potential environmental consequences of the United States Air Force (Air Force) proposal to expand the Range 71 Desert Training Operations Area at the Nevada Test and Training Range (NTTR) to allow for the development of new tactics, techniques, and procedures applicable to Military Operations in Urban Terrain (MOUT) and High Desert Mountain Terrain (HDMT). Nellis Air Force Base (AFB) prepared this EA in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations implementing NEPA; Environmental Impact Analysis Process for the Air Force (32 Code of Federal Regulations [CFR] 989); and other applicable federal and state environmental legislation.

PURPOSE AND NEED

The purpose of the proposed action is to provide realistic training situations and high-quality mission feedback for combat forces, be cost-effective, and provide realistic urban and high desert terrain warfare training for US forces commensurate with the mission of air/ground intervention in these unique environments. Implementation of the proposed action would create a vast expanse of scalable targets that could be rapidly assembled and would be geographically separated to address rapidly changing military scenarios.

The proposed expansion of the Range 71 Desert Training Operations Area is needed to develop the tactics, techniques, and procedures that combat forces will utilize to win future combat engagements. The skills developed by this training are needed to reduce civilian casualties and fratricide, reduce collateral damage to non-hostile facilities, protect convoy movements through small villages to large towns, improve coordination between ground troops and air power, and improve the military's ability to navigate overland where few or no roads exist.

PROPOSED ACTION AND NO-ACTION ALTERNATIVE

The Air Force proposes to upgrade the Range 71 Desert Training Operations Area to integrate existing target arrays and road infrastructure with three new target areas located within Range 71 North. This action would also include the construction and operation of a proposed target warehouse area, a proposed access road to the target areas, and a proposed groundwater well. No significant increases in the frequency of training or the number of units rotating through the NTTR are proposed. This action would provide additional resources and training scenarios for units already training on the NTTR.

Under the no-action alternative, the Air Force would not make any improvements to Range 71, and MOUT and HDMT training would continue using existing resources on the NTTR. Failure to expand the Range 71 Desert Training Operations Area would limit the level and quality of target realism required by today's training standards. Range 71 would not be able to rapidly establish a "new look" with

reconfigurable targets, resulting in time and cost inefficiencies and additional impacts to the environment.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action would not result in significant impacts in any resource category.

Air Quality. The proposed action would contribute to increased air pollutants in the study area as a result of short-term (temporary) construction activities and long-term operational emissions. These activities would emit air pollutants (i.e., carbon monoxide [CO], nitrogen oxides [NO_x], sulfur dioxide [SO_2]) and fugitive dust (i.e., particulate matter measuring 10 or 2.5 microns in diameter [PM_{10} and $PM_{2.5}$]) into the air, but impacts would primarily be localized in the immediate vicinity of the construction area and along roadways. Air quality impacts would not contribute substantially to regional air quality.

Biological Resources. The proposed action would result in ground disturbance in the study area and could disturb habitat for special-status species. Ground-disturbing activities could require the relocation of state-protected cacti and yuccas and other special-status plants known to occur in the region. Construction activities and training operations could affect nesting migratory bird species protected under the Migratory Bird Treaty Act (MBTA); no other federally- or state-protected species are likely to occur within Range 71. During operation, training activities would likely result in surface disturbances that could directly affect onsite vegetative resources, and the increase in onsite vehicles could cause accidental mortality of wildlife. However, any incidental losses occurring during construction or operation of the range would not seriously affect regional population levels.

Cultural Resources. The proposed action would result in ground disturbance of the study area and could expose or damage buried cultural resources or human remains. No eligible historic properties are expected to be affected by the proposed action. Implementation of the proposed action would primarily occur in previously disturbed areas, reducing the potential for impacts on cultural resources. Lithic scatter sites and other sites found during cultural resources surveys would be avoided.

Geology and Soils. The proposed action would remove vegetation and involve grading activities in the study area. These activities would expose soils to water and wind erosion, which could result in fugitive dust, soil erosion, and sediment in runoff. No impacts on paleontological resources are expected, and seismic activity has a low potential of damaging new facilities or structures.

Water Resources. The proposed action would involve construction activities in the study area that could disturb soils and discharge sediment and other pollutants in runoff, which could be transported into nearby surface water features. However, direct impacts to jurisdictional waters are not anticipated during the proposed construction activities or training operations at Range 71. The proposed

groundwater well would not substantially affect the groundwater aquifer. Well construction and operations would be conducted in accordance with Nevada Administrative Code (NAC) 445 and NAC 534. Any potential effects would be minor and localized due to the fact that the study area is located within a closed basin.

BEST MANAGEMENT PRACTICES

To minimize potential impacts of construction activities and training operations occurring under the proposed action, Nellis AFB would implement a variety of standard best management practices (BMPs). All activities would be required to comply with applicable federal, state, and local regulations and permits.

Air Quality. Nellis AFB would implement appropriate BMPs, including a dust mitigation plan, during construction in compliance with NAC 445B.22037, Nye County dust control requirements, and the existing Fugitive Dust Control Plan included in the NTTR Title V permit. Specific construction measures would include watering disturbed areas to minimize dust, using a dust palliative, using low-emission equipment, and minimizing construction during high winds. Construction activities would be monitored to ensure that no visible dust plumes exit the construction area or extend over 100 feet within the area. All activities would comply with existing permits.

Biological Resources. To avoid or minimize impacts on special-status plants and animals, construction activities would adhere to the requirements of the Nellis AFB Integrated Natural Resources Management Plan (INRMP) and applicable agency protocols and guidelines. Prior to construction, surveys for special-status species would be conducted in the proposed construction area. If such surveys were to identify special-status species in the proposed construction area, additional measures would be required to transplant populations of plants, establish no-construction buffer zones if appropriate, or monitor the area during construction. To avoid impacts to migratory birds, construction activities would be conducted outside of the nesting season. If construction activities occur during the nesting season, a pre-construction survey would be conducted, and if active nests or evidence of nesting is found, appropriate mitigation measures would be implemented. Nellis AFB would restore temporarily disturbed habitat to pre-construction conditions, and if needed, install temporary fencing around ground-disturbing activities.

Cultural Resources. To protect cultural resources, the Air Force would comply with Section 106 of the National Historic Preservation Act (NHPA) (36 CFR 800), other laws applicable to protecting cultural resources and human remains, and the Integrated Cultural Resources Management Plan (ICRMP; Nellis AFB 2010a). Specific actions may include implementation of mitigation measures, consultation with tribal representatives, and coordination with the State Historic Preservation Officer (SHPO) and the Advisory Council for Historic Preservation (ACHP). In addition, the construction area would be examined by an archaeologist prior to any ground-disturbing activities. Any mitigation measures

identified through the consultation process or further studies would be implemented prior to activities that could affect the resources.

***Geology and Soils*.** Implementation of a dust mitigation plan and BMPs, such as proper grading, stabilization, straw bales and other devices to channel storm water runoff, and watering construction sites to limit fugitive dust, would minimize adverse effects on soils. If paleontological resources are discovered during construction, all activities in the immediate vicinity would be halted, and a qualified paleontologist would be consulted to assess the resources and to determine whether consultation with the Secretary of the Interior is warranted. All activities would comply with the ICRMP (Nellis AFB 2010a).

To prevent damage from seismic events, all buildings and structures would be designed to comply with the seismic stability requirements of the area, as identified in the Uniform Building Code (UBC).

Water Resources. Standard BMPs would be implemented during construction activities to prevent water quality impacts. These measures may include emplacement of hay bales and silt fences to limit soil erosion and further deposition of sediments. If, through consultation with the United States Army Corps of Engineers, it is determined that onsite surface water are jurisdictional wetlands, Nellis AFB would comply with Section 404 of the Clean Water Act (CWA). As erosion and channelization occurs near target areas, maintenance and repairs would be performed, as necessary.

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Appendix A Interagency and Public Coordination

CHAPTER 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) analyzes the potential environmental consequences of a Nellis Air Force Base (AFB) proposal to expand the Range 71 Desert Training Operations Area to allow for the development of new tactics, techniques, and procedures applicable to Military Operations in Urban Terrain (MOUT) and High Desert Mountain Terrain (HDMT). Nellis AFB prepared this EA in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations implementing NEPA; Environmental Impact Analysis Process for the Air Force (32 Code of Federal Regulations [CFR] 989); and other applicable federal and state environmental legislation.

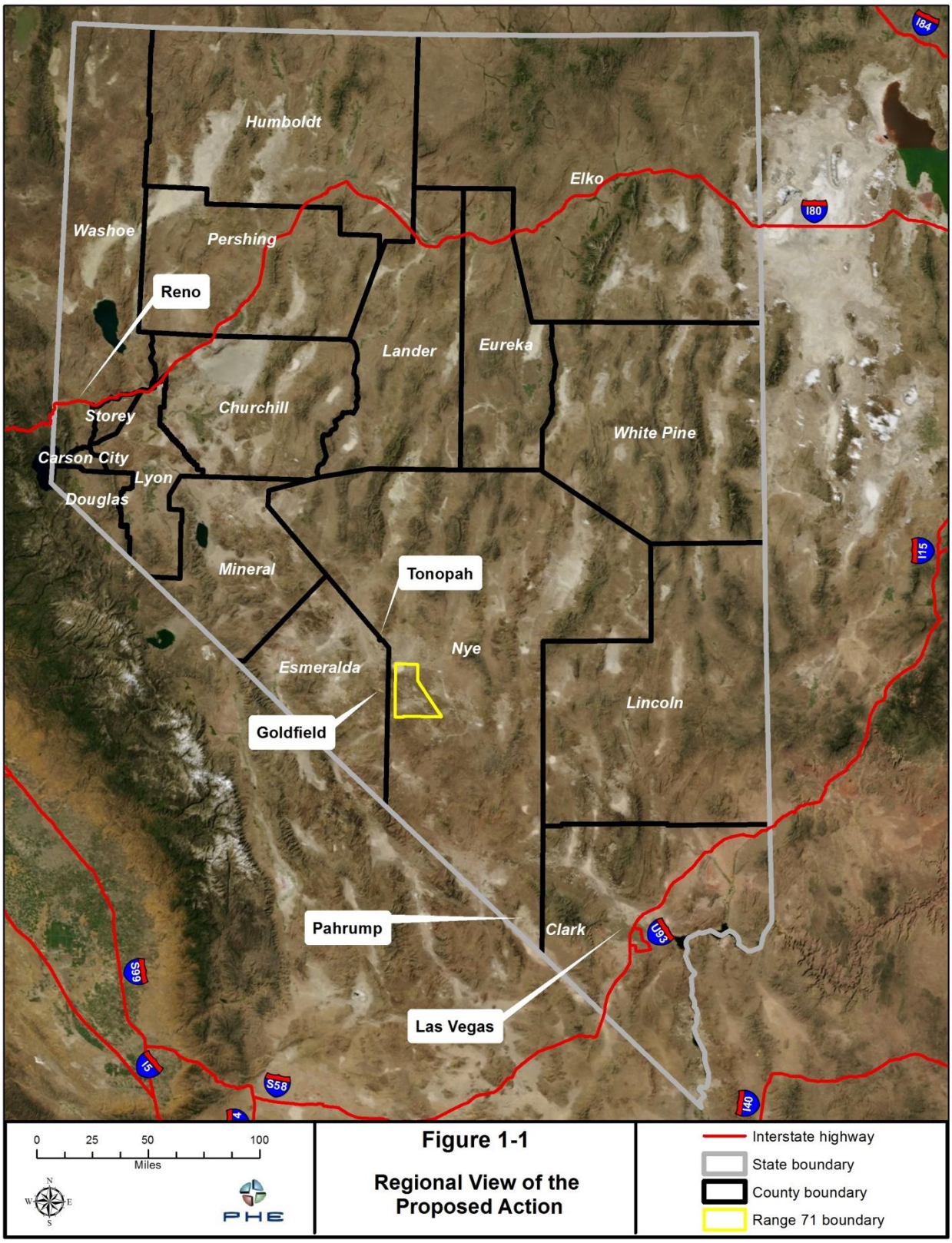
1.2 LOCATION OF THE PROPOSED ACTION

Range 71 encompasses approximately 206,600 acres in the northwest corner of the Nevada Test and Training Range (NTTR). The NTTR is responsible for the world's largest contiguous air and ground space available for military operations. Altogether, the NTTR is composed of approximately 2.9 million acres of land, over 5,000 square miles of restricted airspace, and another 7,000 square miles of Military Operating Area (MOA) airspace shared with civilian aircraft. The combined 12,000 square mile range provides a realistic arena for operational testing and training aircrews to improve combat readiness.

The NTTR was originally established by Executive Order (EO) 8578 as the Las Vegas Bombing and Gunnery Range in 1940. In 1999, the NTTR was withdrawn from public use under Public Law (PL) 106-65 (Military Lands Withdrawal Act [MLWA] of 1999), which extended the NTTR land withdrawal until 2021. The NTTR contains two functional areas: the North Range and South Range, both of which are further divided into sub-ranges. Range 71 is located in the western portion of the North Range on the east side of United States (US) Route 95, approximately 30 miles southeast of Tonopah, Nevada and 130 miles northwest of Las Vegas, Nevada (Figure 1-1).

1.3 BACKGROUND

Nellis AFB has previously completed several environmental assessments evaluating different aspects of ground combat training expansion at the NTTR, including: *Regional Training Area (RTA) Expansion, US Air Force 99th Ground Combat Training Flight, Indian Springs Air Force Auxiliary Field* [now named Creech AFB] *Final Environmental Assessment* (RTA EA, Nellis AFB 1997), the *Nevada Training Initiative (NTI) Final Environmental Assessment* (NTI EA, Nellis AFB 2003), the *Expeditionary Readiness Training Course Expansion Final Environmental Assessment* (ExpeRT EA, Nellis Air Force Base 2006), and the *Supplemental Expeditionary Readiness Training Course Expansion Environmental Assessment (Supplemental ExpeRT Course EA,* North State Resources, Inc. 2010*)*.


Humboldt
Elko
Washoe
Pershing
Reno
Lander
Eureka
Churchill
Storey
White Pine
Carson City
Lyon
Douglas
Mineral
Tonopah
Nye
Esmeralda
Goldfield
Lincoln
Pahrump
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Las Vegas
I84
I80
115
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S99
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S58
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0 25 50 100
Miles
N
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S
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Figure 1-1
Regional View of the Proposed Action
Interstate highway
State boundary
County boundary
Range 71 boundary

Public and agency correspondence relating to this EA is provided in Appendix A.

1.4 PURPOSE AND NEED

MOUT and HDMT are the battlefields of the 21st century in which critical battles will be won or lost. Conducting combat operations in MOUT or HDMT environments create a unique set of challenges for American combat forces the Department of Defense is rapidly working to address.

The Range 71 Desert Training Operations Area would be expanded to allow for the development of tactics, techniques, and procedures that combat forces will utilize to win future combat engagements. Units from all services would be able to conduct realistic training integrating ground vehicle convoys, supporting ground-based assets, manned aircraft, and Unmanned Aerial Systems (UASs). The skills developed by this training would reduce civilian casualties and fratricide, reduce collateral damage to non-hostile facilities, protect convoy movements through small villages to large towns, improve coordination between ground troops and air power, and improve the military's ability to navigate overland where few or no roads exist. By expanding targets into Range 71 North, the military would be able to apply lessons learned in places such as Kuwait, Iraq, Somalia, Bosnia and Herzegovina, and more recently, Afghanistan. The goal is to create a vast expanse of scalable targets that can be rapidly assembled and are geographically separated to address rapidly changing military scenarios.

Currently, all active targets are located within Range 71 South. Range 71 North has two inactive targets that would be reactivated in the future as mission requirements change. The proposed action would add three new target areas in Range 71 North, which would significantly increase the distance units must travel while encountering both friendly and hostile environments. Range 71 provides ample space to safely conduct live-fire ground maneuvers, air to ground ordnance deliveries, and surface to air operations. Any and all live-fire event safety footprints would be confined within the NTTR withdrawn land boundary. Range 71 North includes an area previously used by the Department of Energy (DOE) for the Double Track plutonium test. The impacted area is currently fenced and signs are posted; this area will not be utilized for any military activities.

The improvements to Range 71 would provide realistic training situations and high-quality mission feedback for combat forces, be cost-effective, and provide realistic urban and high desert terrain warfare training for US forces commensurate with the mission of air/ground intervention in these unique environments. Air Force personnel would have the ability to quickly change high fidelity targets that would ultimately provide a ‘new look’ for Range 71 without having to create whole new target areas. This quick change capability would provide substantial cost and time savings and reduce the environmental impacts associated with typical range reconfiguration procedures.

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CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

This chapter describes the Nellis AFB proposal to expand the Range 71 Desert Training Operations Area to allow for the development of new tactics, techniques, and procedures applicable to MOUT and HDMT. In conformance with NEPA and CEQ guidelines, this chapter also describes the no-action alternative.

2.1 ALTERNATIVE IDENTIFICATION PROCESS

Nellis AFB considered alternative locations and scenarios within the NTTR, including expanding operations into the Southern Range Urban Operations Complex (UOC) and Silver Flag Alpha (SFA; located on Range 63), but determined this was not feasible. Expanding MOUT and HDMT operations within the UOC or SFA would not provide the terrain requirements, distance between targets, and would conflict with current activities occurring at those locations. Additionally, expanding operations into Range 71 North will improve the integration of current Forward Air Refueling/Rearming Point (FARRP) operations into these training exercises. Expanding Range 71 would provide additional resources to complement activities taking place at the UOC and SFA, rather than competing for resources in those same areas.

2.2 PROPOSED ACTION

The Air Force proposes to upgrade the Range 71 Desert Training Operations Area to integrate existing target arrays and road infrastructure with three new target areas located within Range 71 North. This action would also include the construction of a new target warehouse area, a new access road to the target areas, and a groundwater well. Altogether, this proposed action would require approximately 115.25 acres. Figure 2-1 illustrates the proposed location of each element of the proposed action. Each element is discussed in greater detail below. No significant increases in the frequency of training or the number of units rotating through the NTTR are proposed. This proposed action would provide additional resources and training scenarios for units already training on the NTTR.

Proposed Target Areas

The three new target areas would consist of either concrete or improved gravel pads to support various structures built to replicate areas US combat forces are or will be operating against. The structures would consist of various types of building materials to include mud, wood, stone, brick, sea-land containers or other available material. Targets may be live or inert, and munitions ranging from small arms to aerial delivered ordnance may be deployed against them. All target safety footprints would

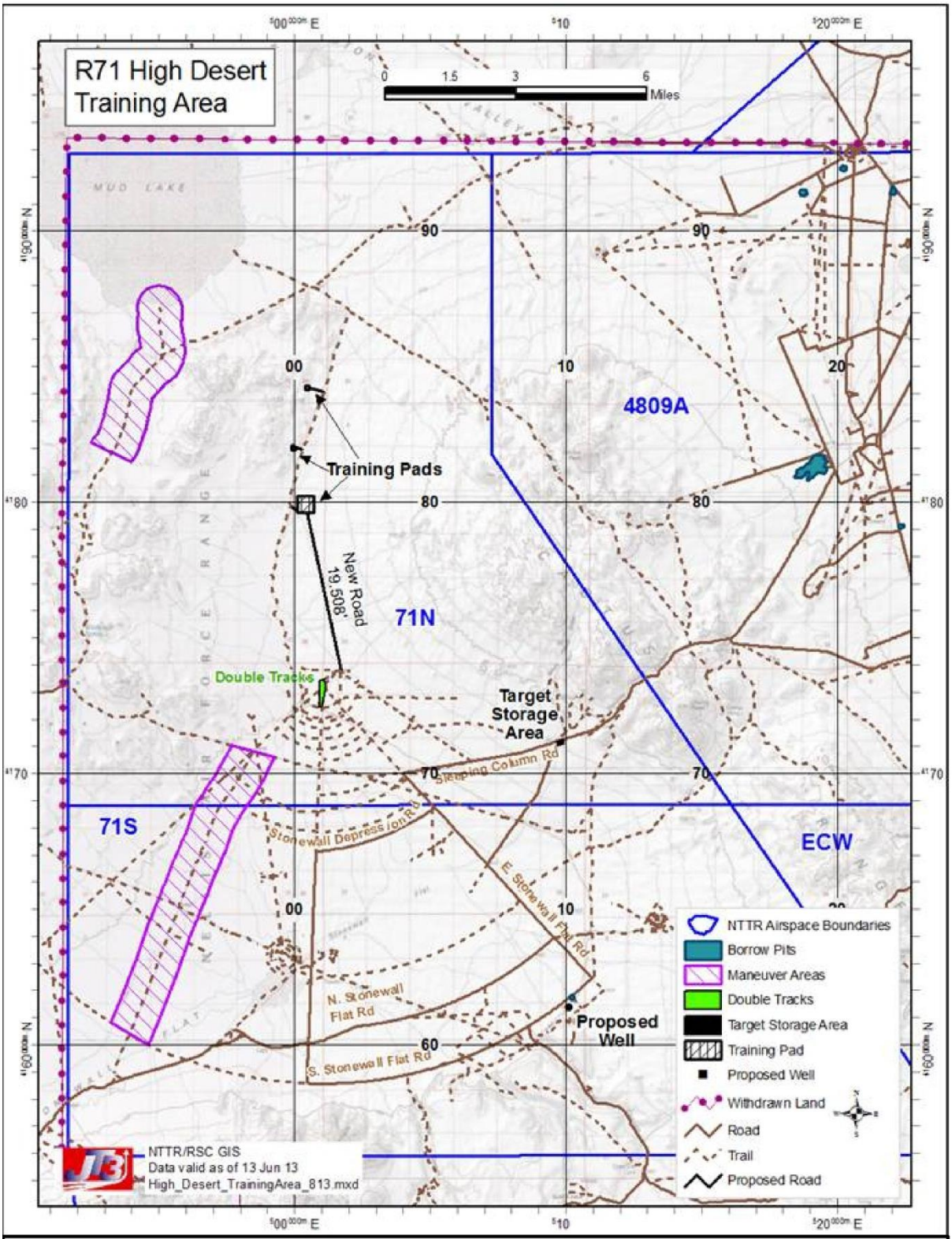

Figure 2-1

Elements of the Proposed Action

remain within the NTTR withdrawn land boundary. Nellis AFB would continue to manage target debris and munitions residue in accordance with current Air Force instructions and NTTR procedures. These specific target pad areas were selected because of the unique terrain features, the fact they have been previously disturbed, and/or their capability to effectively support a variety of MOUT and HDMT training scenarios.

Target Area 1 would encompass an area approximately 500 feet wide by 500 feet long (approximately 5.73 acres). This proposed site would provide for the development of small reconfigurable target arrays and allow ample space to move equipment within the area. Two 10-foot wide roads would each extend approximately 1,800 feet from an existing unimproved access road to Target Area 1. These proposed roads would encompass a total of approximately 0.83 acre.

Target Area 2 would encompass an area approximately 500 feet wide by 500 feet long (approximately 5.73 acres). This site would provide for the development of a small reconfigurable target array and allow ample space to move equipment within the area. A 10-foot wide road would extend approximately 1,200 feet from an existing unimproved access road to Target Area 2. This proposed road would encompass approximately 0.28 acre.

Target Area 3 would be the largest of the proposed target areas at approximately 2,000 feet wide by 2,000 feet long (approximately 91.83 acres). Target Area 3 would be sited on a previously disturbed target area that was used in the 1940s and has the profile of two battleships graded into the ground. This proposed target area would be graded and covered with gravel.

Proposed Target Warehouse Area

Three warehouses would be constructed inside of a 1-acre graded lot to store target materials. Two of the warehouses would be 5,000-square foot K-Spans, and the third would be a 1,800-square foot facility. The warehouses would be wired for electrical power but would not have any other utilities installed. Should a generator(s) be permanently installed, the unit(s) would be included in the Title V Operating Permit prior to installation.

The three warehouses would be installed in a row, approximately 30 feet apart, within a 200-foot wide by 200-foot long area adjacent to Sleeping Column Road (see Figure 2-1). The area in which the proposed warehouses would be sited was previously used as a range residue holding area and underwent a cultural resources survey in 1997 and consultation with the State Historic Preservation Officer (SHPO) (Nellis AFB 2010a).

Proposed Target Access Road

A new 22-foot wide by 19,508-foot long road (approximately 9.85 acres) would be constructed from

Target Area 3 to intersect an existing road north of the Double Tracks site. The road would allow heavy equipment to transport building materials to and from the proposed storage areas. The road would be improved with appropriate drainage, culverts, and shoulders.

Proposed Groundwater Well

A new non-potable groundwater well would be constructed adjacent to an existing borrow pit to provide water for range maintenance and firefighting activities. The well would consist of a 14-inch diameter pipe of sufficient depth to provide for the required water demand. Either solar panels or a generator could provide power for the well. If required, a generator would be included in the Title V air permit prior to installation. The Air Force holds water rights to an unused well at the northern edge of Range 71. The water rights from that well could be transferred to the proposed well as both wells are within the same groundwater management basin. The NTTR would coordinate these requirements per the 1999 *Memorandum of Agreement Concerning Pre-Filing Notification of Proposed Water Right Applications By Federal Agencies in Southern Nevada*. Additionally, well construction would comply with Nevada Administrative Code (NAC) 445A and NAC 534.

Proposed Off-Road Maneuver Areas

The Air Force has also identified two potential areas in Range 71 for future off-road ground maneuvers (see Figure 2-1), but is not making a decision regarding the maneuver areas at this time. The maneuver areas are discussed as a reasonably foreseeable future action in the Cumulative Effects section in Chapter 4 of this EA, and would be evaluated in a future NEPA document when a decision on their implementation is appropriate.

2.3 NO-ACTION ALTERNATIVE

In conformance with NEPA and CEQ guidelines, this EA also evaluates the no-action alternative. Under the no-action alternative, no improvements would be made to Range 71, and MOUT and HDMT training would continue using existing resources on the NTTR. Failure to expand the Range 71 Desert Training Operations Area would adversely impact future combat operations by limiting the level and quality of target realism required by today's training standards. Range 71 would not be able to rapidly establish a 'new look' with reconfigurable targets, resulting in time and cost inefficiencies, and additional impacts to the environment.

2.4 REGULATORY REQUIREMENTS, PERMITS, APPROVALS, AND BEST MANAGEMENT PRACTICES

The NEPA process is intended to assist decision makers in understanding the environmental consequences of a proposed action and in taking appropriate actions that protect, restore, and enhance the environment to minimize the effects of a proposed action. In addition to the lead agency's review and approval process, permits or authorizations from other federal, state, or local agencies may be

required prior to implementation of a proposed action. The proposed action would be subject to similar environmental statutes, regulations, and EOs.

All air emissions resulting from earth moving activities, combustion engines, or other construction activities would comply with the terms of the Title V Operating Permit and the Surface Area Disturbance Permit and Fugitive Dust Control Plan (updated 2013) issued to Nellis AFB and NTTR.

In order to transfer water rights to the new well via an in-basin transfer, the NTTR will coordinate with the Nevada State Engineer per the 1999 *Memorandum of Agreement Concerning Pre-Filing Notification of Proposed Water Right Applications By Federal Agencies in Southern Nevada*. Should the new well or other infrastructure elements require the installation of a power generator, the Title V Operating Permit would first be modified to address this equipment.

The Air Force would protect all cultural resources in the project area in accordance with Section 106 of the National Historic Preservation Act (36 CFR 800) and would consult with the SHPO and the Advisory Council for Historic Preservation (ACHP) as required. In accordance with the Integrated Cultural Resources Management Plan (ICRMP) (Nellis AFB 2010a), a certified archaeologist would examine portions of the study area that have not been previously surveyed prior to any ground-disturbing activities.

Range 71 is located outside of the known habitat of the federally listed (threatened) desert tortoise (*Gopherus agassizii*), and no other threatened or endangered species would likely be impacted by the proposed action. Should the Air Force identify the presence of any threatened or endangered species within the study area, it would initiate Section 7 consultation with the United States Fish and Wildlife Service (USFWS) as appropriate.

In addition, Nellis AFB would implement the Best Management Practices (BMPs), or Environmental Protection Measures, listed in Table 2-1 as part of the proposed action. These include "mitigation by design" measures that are routinely incorporated into all proposed projects at Nellis AFB and NTTR. These measures, incorporated as part of the proposed action, serve to proactively "mitigate" adverse environmental effects. BMPs differ from "mitigation measures", which are defined as project-specific requirements, not routinely implemented, necessary to reduce identified potentially significant adverse environmental effects to less-than-significant levels.

2.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 2-1 summarizes the anticipated environmental consequences of the no-action alternative and proposed action and identifies BMPs that would be incorporated into the proposed action to avoid adverse impacts.

Table 2-1. Summary Matrix of Anticipated Impacts and BMPs

Resource Topic	***Proposed Action***		***No-Action***
Air Quality	*Impacts:* ▪ Increased air pollutants from temporary construction activities, less than *de minimis* thresholds. ▪ Increased long term vehicle and operational emissions.	*BMPs:* ▪ Implement dust control plan and operational requirements in the Surface Area Disturbance Permit, including include watering disturbed areas, using a dust palliative, using low-emission equipment, and minimizing construction during high winds. ▪ Comply with other applicable laws, regulations and conditions of the Title V Operating Permit for the NTTR.	*Impacts:* ▪ Same emissions and fugitive dust from ongoing operations as existing conditions.
Biological Resources	*Impacts:* ▪ Ground-disturbing activities could affect special-status plant and wildlife species and habitat. ▪ Training activities could affect nesting migratory birds.	*BMPs:* ▪ Comply with Integrated Natural Resource Management Plan and agency guidelines. ▪ Conduct pre-construction surveys for special-status plant and wildlife species. ▪ Restore temporarily disturbed habitat to pre-construction conditions. ▪ If necessary, relocate special-status plant and wildlife species outside of the construction area. ▪ Implement speed limit restrictions. ▪ Install temporary fencing around ground-disturbing activity, if needed. ▪ Limit construction activities to non-nesting season. ▪ Establish construction-free buffer zones around nests. ▪ If rare plant populations cannot be avoided in project siting, transplant them to a new location such that they can be avoided by future impacts.	*Impacts:* ▪ Same plant and wildlife impacts from ongoing operations as existing conditions.

Table 2-1. Summary Matrix of Anticipated Impacts and BMPs (cont.)

Resource Topic	*Proposed Action*		*No-Action*
Cultural Resources	*Impacts:* ▪ Construction and ground-disturbing activities could expose or damage buried cultural resources or human remains. ▪ No known, eligible resources would be affected.	*BMPs:* ▪ Comply with the Integrated Cultural Resources Management Plan. ▪ Comply with Section 106 of the National Historic Preservation Act. ▪ Use monitors and implement data recovery efforts, if determined necessary during consultations. ▪ Lithic scatter sites and other known sites found during cultural resources surveys would be avoided during construction.	*Impacts:* ▪ Same potential for cultural resource impacts from ongoing operations as existing conditions.
Geology and Soils	*Impacts:* ▪ Vegetation removal would expose soils to wind and water erosion. ▪ Construction and training activities would disturb soils. ▪ Ground disturbance could expose or damage paleontological resources.	*BMPs:* ▪ Implement dust control plan and operational requirements in the Surface Area Disturbance Permit. ▪ Comply with the Cultural Resources Management Plan. ▪ If paleontological resources are discovered, stop activities and consult a qualified paleontologist. ▪ Comply with the seismic stability requirements of the Uniform Building Code.	*Impacts:* ▪ Same soil disturbance from ongoing operations as existing conditions. ▪ Very low potential for paleontological resource impacts.
Water Resources	*Impacts:* ▪ Construction activities and munitions firing could discharge sediment and pollutants into washes and playas following precipitation events. ▪ Road and target area grading could alter natural drainage pathways. ▪ Increased flood risk from construction/ munitions debris and soil erosion.	*BMPs:* ▪ Make use of hay bales or other barriers to control site runoff if construction occurs during rainy seasons ▪ Comply with Section 404 of the Clean Water Act, if needed. ▪ As erosion and channelization occurs near the target area, maintenance and repairs would be performed, as necessary.	*Impacts:* ▪ Same water quality impacts from ongoing operations as existing conditions.

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CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ANALYSIS APPROACH

This chapter describes the affected environment at the NTTR, with a focus on Range 71, the applicable regulatory requirements for each resource area, and discusses the anticipated environmental consequences of implementing the proposed action and no-action alternative described in Chapter 2. NEPA requires a focused analysis of the resources potentially affected by a federal agency's action or alternatives to its action.

CEQ regulations (40 CFR 1500-1508) for NEPA require an EA to discuss impacts in proportion to their significance and present only enough discussion of other-than-significant issues to show why more study is not warranted. The analysis approach in this EA considers the current conditions of the affected environment and compares them to conditions that might occur should either the proposed action or the no-action alternative be implemented.

Study Area Definition

The description of the affected environment and analysis of environmental consequences in this EA are focused on Range 71 of the NTTR (i.e., the "study area"; see Figures 1-1 and 2-1). This study area corresponds to the location of the proposed action's elements, with a buffer to accommodate operational impacts beyond where range improvements are proposed. The description of the affected environment for each resource topic evaluated in this EA includes a regional overview of the general vicinity and a more localized setting of proposed range improvements and surrounding areas, as appropriate. The environmental consequences focus on sensitive resources that could be adversely affected in the study area.

Resource Analysis

The Air Force conducted a preliminary assessment of various resources to determine which resources warranted detailed analysis in this EA (Table 3-1). Several resources did not warrant further evaluation in accordance with CEQ regulations; a brief discussion of these resources and the reasons for their elimination from further evaluation is provided below. The remaining resources (Air Quality, Biological Resources, Cultural Resources, Geology and Soils, and Water Resources) are discussed in more detail in the following sections.

Table 3-1. Resources Considered in the Environmental Assessment		
	Analyzed in Detail?	
Resources	*Yes*	*No*
Airspace Management and Use		√
Air Quality	√	
Biological Resources	√	
Cultural Resources	√	
Environmental Justice and Protection of Children		√
Geology and Soils	√	
Hazardous Materials and Waste		√
Health and Safety		√
Land Management and Use, Recreation, and Visual Resources		√
Noise		√
Socioeconomics		√
Transportation		√
Water Resources	√	

Resources Eliminated from Further Evaluation

Airspace Management and Use. The proposed action would not result in changes to airspace classes, impose any additional flight restrictions, or appreciably increase the annual frequency of flight operations. Construction related to range improvements would occur on the ground and would not conflict with overlying airspace activities. For this reason, airspace management was eliminated from further analysis.

Environmental Justice and Protection of Children. Environmental justice addresses the disproportionate effect a federal action may have on low-income or minority populations. The proposed action would not result in adverse impacts to communities or population centers nor disproportionately affect low-income or minority populations. In addition, the proposed action would not create environmental health or safety risks to children because all activities would occur on the NTTR, which has restricted access. Therefore, environmental justice and protection of children were eliminated from further analysis.

Hazardous Materials and Waste. The proposed action would entail the use of hazardous materials during construction and operations (e.g., fuel, solvents, live ordnance) and could generate some hazardous waste, but existing environmental programs at the NTTR would continue to be implemented to minimize impacts of hazardous materials or waste. Training-related activities would be implemented

in compliance with existing Air Force instructions, policies, and procedures and would comply with applicable federal and state laws regulating hazardous materials and waste. Given the enforced requirements to ensure proper handling of hazardous materials and waste, including recycling when feasible, the potential for adverse effects from such hazards would be low. Therefore, hazardous materials and waste were eliminated from further analysis.

Health and Safety. Effects on human health and safety related to construction and operation of the proposed action would be similar to current, on-going activities occurring at the NTTR. None of the proposed facilities would create unique or extraordinary safety issues. All facilities used for training at Range 71 would be on withdrawn military lands, be contained within prescribed safety zones, and would not endanger civilian populations (which are located more than 15 miles away). Existing Air Force safety procedures would continue to be followed under the proposed action. Aircraft safety would not be an issue because current operations and safety procedures in the airspace overlying the NTTR would not change. For these reasons, health and safety were eliminated from further analysis.

Land Management and Use, Recreation, and Visual Resources. The proposed action would occur entirely on withdrawn military lands within the NTTR. Land management and use would not change from existing military-related activities. Recreation resources would not be affected by the proposed action because recreational use of these lands is restricted and would continue to be restricted under the proposed action. Visual resources would not be affected because the study area is not considered visually sensitive due to existing disturbances and man-made facilities, and is not within range of public viewpoints. In summary, the proposed action would have negligible effects on land management and use, recreation, and visual resources; therefore, no further analysis is warranted.

Noise. Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Noise generated from construction activities associated with the proposed action would be confined to remote areas at the NTTR. Noise from training activities would result from vehicles and small arms firing. These types of noise would remain confined to the NTTR, an area already affected by louder, more frequent noise from aircraft operations overhead. No new noise sources would be introduced to new areas, and people in local communities, such as Goldfield and Tonopah, would not be exposed to construction or operation noise given the distance between the proposed activities and the nearest sensitive receptors. Therefore, noise has been eliminated from further analysis.

Socioeconomics. Socioeconomic resources are the general features of the local economy, such as employment, revenue, or economic growth that could be affected by the proposed action. The proposed action would involve some construction activity, but would primarily use internal Air Force personnel and assets. Local spending would not measurably increase, and no jobs would be created or lost. Because no adverse effects are anticipated, socioeconomics has been eliminated from further analysis.

Transportation. The proposed action would create some new target access roads in Range 71, but these roads would be used sporadically, and would not affect traffic patterns on established roads on the North Range. Likewise, during the construction phase, some additional vehicles would travel up to Range 71, but traffic flow on the North Range would remain unchanged. The proposed action would not result in any changes to gate access nor traffic patterns on off-base roads such as US-95. For these reasons, transportation has been eliminated from further analysis.

3.2 AIR QUALITY

Air quality in a given location is described by the concentration of various pollutants in the atmosphere and the climate of the region. The significance of the pollutant concentration is determined by comparing it to the federal and state ambient air quality standards. Understanding air quality in the study area requires knowledge of (1) applicable regulatory requirements; (2) types and sources of air quality pollutants; and (3) the extent of ongoing and proposed activities in the study area.

Regulatory Requirements

The Clean Air Act (CAA) and its subsequent amendments (CAAA) established the National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants: ozone (O_3) (the precursors of which are volatile organic compounds [VOCs]), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns (PM_{10}), and lead (Pb). These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. The Nevada Division of Environmental Protection (NDEP), Bureau of Air Quality (BAQ) has adopted the NAAQS, with some exceptions and additions. For purposes of this analysis, all criteria pollutants (with the exception of lead because no lead-generating activities are proposed) are evaluated. Based on measured ambient criteria pollutant data, the US Environmental Protection Agency (USEPA) designates all areas of the US as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. An area that is currently in attainment, but was formerly a nonattainment area is termed a maintenance area. An area is often designated as unclassified when there are insufficient ambient criteria pollutant data for the USEPA to form a basis for attainment status. Unclassified areas are typically rural or remote, with few sources of air pollution. Due to Nye County's rural nature and lack of significant sources of pollutants, it is unclassified for state and federal air quality standards.

The CAA requires each state to develop a State Implementation Plan (SIP), which is its primary mechanism for ensuring that the NAAQS are achieved and/or maintained within that state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants. The CAA provides that federal actions in nonattainment and maintenance areas do not hinder future attainment with the NAAQS and conform with the applicable SIP (i.e., Nevada SIP). There are no specific requirements for federal actions in unclassified or attainment areas. However, all

federal actions must comply with all state and local regulations.

The CAA also establishes a national goal of preventing degradation or impairment in any federally-designated Class I area. As part of the Prevention of Significant Deterioration (PSD) program, mandatory Class I status was assigned by Congress to all national parks, national wilderness areas, memorial parks greater than 5,000 acres and national parks greater than 6,000 acres. In Class I areas, visibility impairment is defined as a reduction in visual range and atmospheric discoloration. Stationary sources, such as industrial complexes, are typically an issue for visibility within a Class I PSD area. The closest Class I Area to Range 71 on NTTR is Death Valley National Park, which overlaps the California/Nevada border. However, this park is located more than 50 miles south of Range 71.

In October 2009, President Barack Obama passed Federal EO 13514 (*Federal Leadership in Environmental, Energy, and Economic Performance)*, requiring federal agencies to increase energy efficiency and consider the effects of their activities on greenhouse gas (GHG) emissions, among other sustainability goals. Specific to NEPA, the EO requires federal agencies to identify and analyze impacts from energy use in NEPA documents.

All construction activities must comply with the NTTR Facility Wide Fugitive Dust Control Plan. Section V of the NTTR Surface Area Disturbance/Fugitive Dust Control Plan indicates that up to 11,612 acres can be disturbed.

Affected Environment

Regional Setting. Nye County is located in southern Nevada on the eastern side of the Sierra Nevada mountain range. This range forms a barrier to wind patterns coming off the Pacific Ocean and influences the overall climatic patterns throughout the state. Seasons in southern Nevada consist of long, hot summers with short, mild winters. Daily temperatures vary greatly due to strong surface heating and rapid nighttime cooling. The average annual temperature near Range 71 is 51degrees Fahrenheit (°F), but temperatures frequently fall below 0°F during winter (Western Regional Climate Center 2013). Variations in precipitation are due mainly to differences in elevation and exposure to precipitation-bearing storms. Slightly more rain falls in the North Range than in the South Range, and higher elevations tend to receive significantly more precipitation than lower elevations. Elevations within the study area range between 1,400 and 2,200 feet above mean sea level (amsl), and the local area receives an average of approximately 6.5 inches of precipitation ever year (Nellis AFB 2010b).

Air quality in Nye County is generally good, with localized variations in the more urbanized areas, such as Tonopah and Pahrump. Prevailing winds through these urban centers do not likely influence air quality in Range 71 because mountains surrounding the range block local wind patterns. Nye County meets the national standards for CO and 8-hour O_3 and is in attainment for all pollutants. Portions of the county periodically exceed attainment standards for PM_{10}, and, as a result, the Pahrump Valley is being

managed under a Memorandum of Understanding to reduce PM_{10} levels (NDEP 2013).

Local Setting. Air quality in the vicinity of the study area is generally good. On-range emissions include emissions typical of military operations, such as convoy training vehicles along roads, weapons testing in designated ranges, aircraft, and operation of maintenance shops and equipment. Strong winds can produce vagrant dust on Range 71 from unpaved roads and soft soils. Emission sources near Range 71 are limited to on-range sources, due to the range's distance from heavily used roadways and urban areas. Periodic maintenance and construction activities can temporarily affect air quality due to diesel emissions and dust from ground disturbance.

In 2009, an air emissions inventory was completed for the Tonopah and Tolicha Peak areas on the Tonopah Training Range (TTR), located adjacent to the east of Range 71 (NTTR 2010). Table 3-2 summarizes the estimated emissions in the Tonopah and Tolicha Peak areas in Nye County as well as Nye County as a whole. Nye County baseline emissions were not available for 2013; therefore, baseline emissions from 2005 (the most recent data available) are reported. Air Force activities at the TTR contribute minimal emissions compared with overall county emissions (less than 0.15 percent in Nye County).

Table 3-2. Baseline Air Emissions (tons/year)

	CO	**VOCs**	**NO_x**	**SO_x**	**PM_{10}**
Tonopah and Tolicha Peak	0.0085	1.76	0.039	0.0026	0.0041
Nye County*	8,987	1,523	1,048	134	7,157
Contribution of Tonopah and Tolicha Peak to Nye County emissions	0.00 percent	0.12 percent	0.00 percent	0.00 percent	0.00 percent

Sources: NTTR 2010

*Baseline emissions are for 2005; a more recent inventory for the county was not available.

Children, the elderly, and other people who have increased sensitivity to air pollution are considered to be sensitive receptors. Land uses that may attract sensitive receptors are considered sensitive uses. Highways and recreational areas that could have sensitive receptors are fairly distant (more than 10 miles to the west) from the study area. The study area is located on withdrawn lands, and public access is prohibited.

Environmental Consequences

Proposed Action. The proposed action would contribute to increased air pollutants at Range 71 as a result of temporary construction activities and longer term operational emissions from construction equipment, increased vehicle use along roadways, and potential use of generating units during training.

Construction activities would involve equipment and vehicle use that would emit pollutants into the air (CO, NO_x, SO_x) and ground disturbance that would result in fugitive dust (PM_{10} and $PM_{2.5}$). Ground disturbance and construction activities would result in temporary emissions of GHG from construction equipment and could contribute to regional GHG emissions.

Construction activities associated with the new road infrastructure, new target area infrastructure, and increased vehicle travel to Range 71 would elevate air emissions in Nye County, which is currently in attainment for criteria pollutants. However, emissions and dust at Range 71 would be confined to the NTTR due to surrounding mountain ranges and would not affect regional air quality (NTTR 2010). Pollutants would likely readily disperse, reducing the concentration of localized pollutants. Range 71 activities would not affect sensitive receptors because of the range's distance from public facilities, highways, and recreational areas.

Emissions from construction vehicle exhaust and fugitive dust in the study area would be temporary and localized. These emissions represent negligible ground-level releases with little initial dispersion or buoyancy, so their effects would remain in the immediate vicinity (less than 1 mile) (NTTR 2010). Visibility impacts within Class I areas more than 50 miles from the study area are not expected. Construction activities would be monitored to ensure no visible dust plumes exit the construction area or extend over 100 feet within the area.

To further decrease the potential for air quality impacts, BMPs would be implemented during construction. In addition, all construction activities would comply with the NTTR Surface Area Disturbance Permit and Facility Wide Fugitive Dust Control Plan (Permit number 9711-1233). Specific construction mitigation measures would include watering disturbed areas to minimize dust, using a dust palliative, using low-emission equipment, and minimizing construction during high winds.

Construction activities at Range 71 would conform to all applicable laws and regulations. An Operating Permit to Construct (OPTC) application would be submitted to ensure that emissions from the Range 71 construction activities are covered under the NTTR Title V permit.

Operational impacts on air quality would be similar to those from current training activities, attributed to dust and exhaust vehicle emissions from personnel travelling to and from the proposed Range 71 Desert Training Operations Area expansion and from training activities. Power to operate the proposed Range 71 Desert Training Operations Area target warehouses and groundwater well may come from generators. If a generator is permanently installed, the contractor would supply a detailed generator

inventory (make, model, serial number, fuel type, kilowatt [kW] rating, engine horsepower, air pollution control devices, etc.) and the unit(s) would be included in the Title V air permit prior to installation. The proposed action would increase GHG emissions if diesel powered non-emergency generators are used to provide power to the training area. EO 13514 compliance would require that other less pollutant generating sources such as propane generators (non-diesel) be utilized as non-emergency power sources at the proposed Range 71 Desert Training Operations Area expansion in achieving GHG reduction goals.

Although operation of the proposed Range 71 Desert Training Operations Area expansion would cause an increase in vehicle emissions, such impacts already occur during training elsewhere within Range 71 and would not differ greatly from existing conditions. Long-term impacts would be less than significant.

Based on analysis for range improvement projects of similar size and scope (North State Resources, Inc. 2010), construction and operations related emissions would not contribute substantially to air quality emissions in Nye County. Once complete project details are known, including information regarding the generator(s) (make, model, serial number, fuel type, kW rating, engine horsepower, air pollution control devices, etc.), requirements necessary for compliance with all federal, state, and local regulations would be confirmed.

No-Action Alternative. Under the no-action alternative, no improvements would be made to Range 71, and MOUT and HDMT training would continue using existing resources on the NTTR. Ongoing operations at Range 71 would continue to generate emissions, but no new emission sources would be created. Air quality would be similar to baseline conditions described under the affected environment section.

3.3 BIOLOGICAL RESOURCES

Biological resources consist of living, native, or naturalized plant and animal species and the habitats within which they occur. Plant and animal life are typically referred to as vegetation and wildlife, respectively. The Region of Influence (ROI) for biological resources is the area within which the proposed action has the potential to affect biological resources. This includes all lands affected by the proposed project.

Regulatory Requirements

The federal Endangered Species Act (ESA) protects federally-listed, threatened, and endangered plant and animal species. Species of concern are not protected by the ESA; however, these species could become listed and protected at any time.

Wetlands are considered special category sensitive habitats and are subject to regulatory authority under

Section 404 of the Clean Water Act (CWA) and EO 11990 (*Protection of Wetlands*). They include jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those defined by the United States Army Corps of Engineers (USACE) and USEPA as those areas that meet all the criteria defined in the USACE's 1987 Wetlands Delineation Manual and under the jurisdiction of the USACE (USACE 1987). Wetlands are generally associated with drainages, stream channels, and water discharge areas.

The Air Force must comply with the Migratory Bird Treaty Act (MBTA) and applicable Nevada Revised Statutes (NRS) (i.e., NRS 501, 527, 555) that apply to wildlife; timbered lands, trees, and flora; and insects, pests, and noxious weeds, respectively. The Integrated Natural Resources Management Plan (INRMP) provides guidance on Air Force actions at the NTTR to sustain military readiness while maintaining ecosystem integrity and dynamics (Nellis AFB 2010b).

Affected Environment

Regional Setting. The study area is located in the Great Basin Desert. This desert complex region is bordered by the southern Sierra Nevada on the west, the Columbia Plateau to the north, the Rocky Mountains to the east, and the Mojave Desert to the south. The Sierra Nevada forms a massive mountain barrier that markedly influences the climate of the state.

Local Setting – Vegetation. Mixed salt desert scrub habitat dominates the landscape of Range 71. Sagebrush semi-desert land cover is common on the southern and eastern borders of the range, and on the northwest portion of the range. Small portions of blackbrush–hopsage desert occur on the southern end of the range. Mud Lake is classified as a playa lake. Vegetative species on Range 71 include blackbrush (*Coleogyne ramosissima*), shadscale (*Atriplex confertifolia*), and greasewood (*Sarcobatus vermiculatus*) and may include winter fat (*Krascheninnikovia lanata*), ephedra (*Eriogonum ephedroides*), Joshua tree (*Yucca brevifolia*), and hopsage (*Grayia spinosa*). Decades of military activity have resulted in onsite disturbance, but vast expanses of undisturbed vegetation surround the study area. Several dry washes are located throughout the range, particularly on the western portion. Figure 3-1 depicts vegetative communities occurring on Range 71.

Red brome (*Bromus rubens*) and cheatgrass (*B. tectorum*) are the two most common invasive plant species occurring in the study area. Both species of grass flourish rapidly on disturbed soil and can persist, becoming dominant annuals of the landscape. Tamarisk (*Tamarix ramosissima*) is intermittently present along major wash channels.

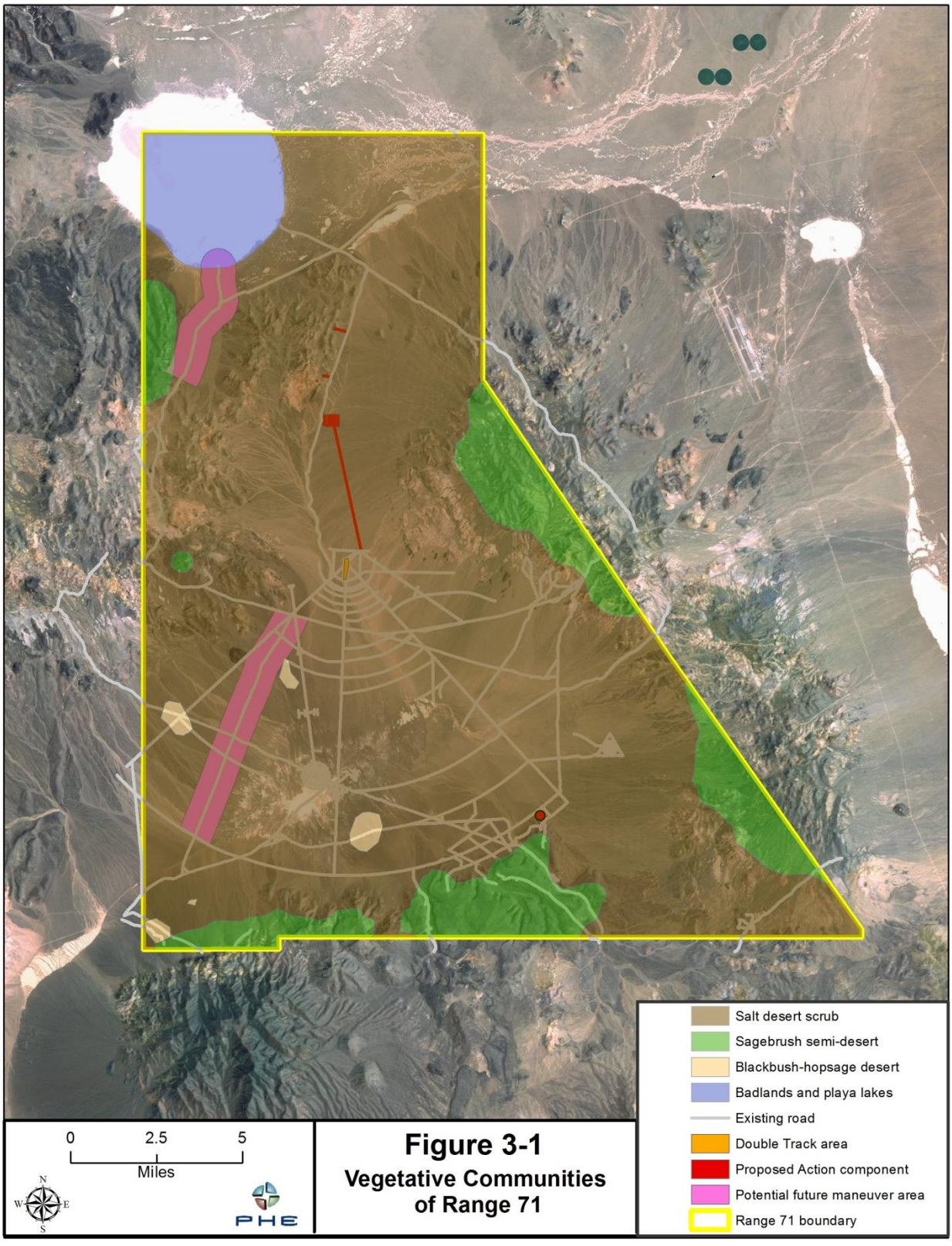

Figure 3-1
Vegetative Communities of Range 71

Wildlife. Wildlife on Range 71 includes species primarily associated with the corresponding vegetation habitats described above, specifically mixed salt desert scrub and sagebrush semi-desert land cover.

Wildlife common to desert scrub habitat includes rodents such as the pale kangaroo mouse (*Microdipodops pallidus*), dark kangaroo mouse (*M. megacephalus*), sagebrush vole (*Lagarus curtatus*), and chisel-toothed kangaroo rat (*Dipodomys microps*) (Nellis AFB 2006). Pale kangaroo mice, as well as several species of songbirds and rabbit, were observed during field surveys on Range 71 (NTTR 2010). Reptile species known to occur in the Great Basin, and could therefore inhabit Range 71, include side-blotched lizard (*Uta stansburiana*), multiple species of whiptail lizards (*Cnemidophorus* spp.), sagebrush lizard (*Scloperous graciosus*), leopard lizard (*Gambelia wislizenii*), and the Great Basin rattlesnake (*Crotalus viridis lutosis*). Amphibians are restricted to rare areas near water but could include the Great Basin spadefoot toad (*Scaphiopus hammondi*). Common large mammals that may occur within or nearby the study area include pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), and bighorn sheep (*Ovis canadensis nelisoni)* (Nellis AFB 2010b). Native fishes are not known or expected to occur because of the lack of perennial pools of water, of sufficient extent, to sustain populations during drought (Nellis AFB 2006).

A recent survey documented six bat species within the NTTR, including long-legged myotis (*Myotis volans*), fringe-tailed myotis (*M. thysanodes pahasapensis*), California myotis (*M. californicus*), pipistrelle (*Pipistrellus hesperus*), Townsend's big-eared bat (*Plecotus townsendii*), and pallid bat (*Antrozous pallidus*). The California myotis was the most widespread and commonly observed species in the report and was found in all habitats that were sampled. Pallid bats were observed only in desert scrub communities, and fringe-tailed and Townsend's big-eared bats were found in a range of habitats from desert scrub to pinyon-juniper woodland. All of the bats observed on NTTR primarily used caves, abandoned mines, trees, and abandoned buildings for roosts. Preferred foraging and roosting habitat was usually located near open water or desert springs (Nellis AFB 2010b).

Protected Species and Habitat. NAFB maintains a list of protected species listed under the federal ESA, Bureau of Land Management (BLM) special species list, and the Nevada state species list in the INRMP (Nellis AFB 2010b). Federal species in Nye County and state-protected species known to occur near Range 71 are discussed below.

One federally-endangered plant species and six federally-threatened plant species have been documented in, or have the potential to occur in, Nye County. These include the federally-endangered Amargosa niterwort (*Nitrophila mohavensis),* and the federally-threatened Ash Meadows blazing star (*Mentzelia leucophylla),* Ash Meadows gumplant (*Grindelia fraxinopratensis),* Ash Meadows ivesia (mousetail) (*Ivesia eremica*), Ash Meadows milkvetch (*Astragalus phoenix),* Ash Meadows sunray (*Enceliopsis nudicaulis var. corrugate)*, and spring-loving centaury (*Centaurium namophilum)* (USFWS 2013). These species have not been observed within Range 71. The State of Nevada also protects all cactus and yucca species. The redspined fishhook cactus (*Sclerocactus polynancistrus*) has

been observed on eleven occasions on Range 71.

The Mojave Desert population of the desert tortoise (*Gopherus agassizii)* is listed as a federally-threatened species in Nye County. The species' range in the NTTR vicinity lies primarily within the Mojave desert scrub habitat at elevations below 4,000 feet amsl (Nellis AFB 2010b). Range 71 is not located within this habitat area and is not classified as suitable habitat for the desert tortoise.

Federally-endangered bird species in Nye County include the southwestern willow flycatcher (*Empidonax traillii extimus*) (USFWS 2013). State-protected bird species that have been observed on Range 71 include black-chinned sparrow (*Spizella atrogularis),* Brewer's sparrow (*Spizella breweri),* golden eagle (*Aquila chryseatos),* pinyon jay (*Gymnorhinus cyanocephalus),* and western burrowing owl (*Athene cunicularia hypugaea).* The prairie falcon (*Falco mexicanus)* and sage thrasher, state designated stewardship species, have also been observed. A Nevada stewardship species means that Nevada supports more than 20 percent of the global population of that species.

Birds protected under the MBTA that have been observed in the study area include the cactus wren (*Campylorhynchus brunneicapillus)* and loggerhead shrike (*Lanius ludovicianus)*. Other migratory birds not specifically observed likely utilize the area and would also be subject to protection under the MBTA. Migratory birds may nest in Joshua trees, shrubs, and other vegetation in and around the site. Dry bed lakes are also important habitat for migratory birds since they provide food sources such as brine shrimp, insects, and other invertebrates.

Five endangered fish species and two threatened fish species occur within Nye County; however, due to the limited presence of water and the drainage of surface water features into dry lakes; these fish species are not likely present near Range 71.

Federally-threatened invertebrate species in Nye County include the Ash Meadows naucorid (*Ambrysus amargosus*) (USFWS 2013); however, this species has not been observed in the study area.

Two areas of Range 71 are classified as wetlands per the National Wetland Inventory (see Figure 3-2); however, these are not anticipated to be jurisdictional wetlands protected under Section 404 of the CWA (See Section 3.6, Water Resources).

The western burrowing owl is a species native to southern Nevada that adapts well to urban environments. It is a former federal species of concern and is a state-protected species in Nevada (NAC 503.050). Western burrowing owls in southern Nevada may be summer residents, winter visitors, or year-round residents (Nellis AFB 2010b). Burrowing owls typically nest in abandoned rodent or other small mammal burrows. The majority of documented owl sightings at the NTTR are not in the immediate vicinity of the study area. Small mammal burrows (necessary to support western burrowing owls) are sparse within Range 71; however, the Sonora-Mojave-Baja creosotebush-white bursage desert

scrub habitat, found nearby, provides suitable habitat for burrowing owls. It is unlikely that burrowing owls would breed within Range 71 due to a lack of small mammal burrows; however, it is possible that burrowing owls could occur and forage nearby.

Environmental Consequences

Proposed Action - Vegetation. Construction of the proposed targets, target warehouse area, and access roads could result in long term and permanent, but negligible amounts of vegetation loss. The proposed project components would occur entirely within the mixed salt desert scrub community. This landscape and associated vegetation has a considerable disturbance history as an active range.

During construction, impacts could occur to vegetation during grading and land clearing of the approximately 115.25 acres required by the proposed action. Placement of targets, structures, and access roads would require the permanent removal of vegetation in these areas. During operation, training activities would likely result in surface disturbances from gunfire and trampling during maneuver operations that could have a direct effect on vegetative resources. Range maintenance would include vegetation management within firing lanes to maintain the line-of-sight from firing points to targetry. However, this area is heavily disturbed and mostly barren, and overall impacts to vegetation are expected to be negligible.

The vegetation communities present on Range 71 are not anticipated to be highly susceptible to wildfires, and impacts from wildfires are not anticipated from construction or operations of the proposed action.

Wildlife. Negligible adverse effects to wildlife would occur as the result of the proposed action. Clearing for construction and grading activities would require the removal of vegetation; however, this would represent a negligible habitat loss for terrestrial wildlife currently utilizing the area. Little wildlife is expected to be present in the valley floor region of Range 71 due to the disturbance history of the range. Some individuals could be displaced; however, this impact would be temporary, because wildlife are mobile and would acclimate to other suitable habitat areas in the surrounding region. The movement and use of construction equipment and operation of access roads could cause accidental mortality of relatively smaller, less mobile species via collisions. Any incidental losses during construction or operations would not seriously affect regional wildlife population levels.

The placement of Target Area 3 would remove a portion of an ephemeral stream; however, this area has not been mapped as sensitive habitat for any species and would not represent a significant loss of habitat. No impacts to aquatic species are expected.

Protected Species. Unless specified below, no protected species or associated habitat, or sensitive habitat (i.e., wetlands), would be impacted by the proposed action.

Protected Plant Species. Ground disturbance associated with installation of targets, building construction, and training operations in habitat suitable for special-status plants could remove individuals or render the habitat unsuitable. Special-status plants (excluding cacti and yucca) have a low potential to occur on the site. Cacti and yuccas are known to occur in the study area and would need to be removed and transplanted/relocated to accommodate the new training facilities if they could be impacted by the proposed action. Cactus and yucca sightings have primarily occurred in the higher elevations of Range 71 away from the valley floor where the proposed action would occur. Based on the current design of the proposed action, impacts to cactus and yucca are not anticipated; however, sites would be surveyed prior to construction and managed in accordance with the following provisions:

- Locate any rare plant populations that could be potentially affected by the action.
- If rare plant populations are identified and could be affected by the action, the action would be modified to avoid or minimize impacts to the rare plants where practical.
- If impacts to rare populations cannot be avoided, methods of mitigation would be developed, which may include transplanting the plant population to another suitable habitat.
- If plants are transplanted to a new location, the location would be selected such that it can be avoided by future impacts if practical (North State Resources, Inc. 2010).

Desert Tortoise. No desert tortoises or their burrows have been identified in the study area. Range 71 is not classified as suitable habitat for the desert tortoise. No impacts to the desert tortoise are expected as a result of the proposed action.

Protected Bird Species. Range 71 provides suitable nesting habitat and may support nesting migratory bird species protected by the State and under the MBTA. Removal of trees, shrubs, or other vegetation during the nesting season can cause direct impacts to nesting birds. Construction noise, vibration, and increased human activity can cause indirect impacts (e.g., nest abandonment, mortality of chicks, etc.). The following measures are recommended to avoid or minimize adverse impacts on nesting migratory birds:

- If practicable, construction activities (e.g., removal of woody vegetation, land clearing, surface disturbance) would be conducted outside of the nesting season (i.e., conduct construction from August to February). If construction activities are conducted outside of the nesting season, no further measures are necessary.
- If construction activities are scheduled during the nesting season, pre-construction surveys for active migratory bird nests within the construction area and a 300-foot buffer would be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. If active nests (more than half completed) or evidence of nesting (mating or nesting activity) are identified within the surveyed area, appropriate conservation measures (as determined by a qualified biologist and in coordination with the USFWS) would be implemented. These measures may include, but are not limited to the following: establishing a construction-free

buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the buffer zone around the active nest site until the young have fledged.

The majority of bird sightings have occurred outside of the valley floor of Range 71 where the proposed action would be constructed and primarily occurred in the higher elevations on the range. Impacts to protected bird species are expected to be negligible to minor.

Western Burrowing Owl. No western burrowing owls have been identified in the study area, and small mammal burrows typically used by this species are generally lacking. However, potential habitat for this species is located near Range 71, and if western burrowing owls are identified in the study area, the species would be managed in accordance to procedures detailed within the INRMP.

No-Action Alternative. Under the no-action alternative, the Air Force would not construct new targets, facilities, or access roads. Ongoing operations at Range 71 would continue to have potential to affect special-status cactus species and other vegetation and wildlife, but they would comply with applicable regulations, plans, and existing permits.

3.4 CULTURAL RESOURCES

Cultural resources include prehistoric, historic, and traditional cultural resources or properties. A cultural resources inventory is currently underway for the study area.

Regulatory Requirements

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies take into account the effects of their undertakings on historic properties (i.e., locations, features, and objects older than 50 years and determined eligible for nomination to the National Register of Historic Places). 36 CFR 800, Protection of Historic Properties, outlines procedures to comply with Section 106 of the NHPA. Section 110 of NHPA directs Federal agencies to assume responsibility for stewardship and protection of historic properties under Federal ownership or control, and establishes procedures to comply with these requirements. EO 13287 (*Preserve America*) supports the principles established in Section 110 of the NHPA. Overall, cultural resources include cultural items as defined in the Native American Graves Protection and Repatriation Act; archaeological resources as defined in the Archaeological Resources Protection Act; sacred sites as defined in EO 13007 (*Indian Sacred Sites*) to which access is provided under the American Indian Religious Freedom Act; and collections as defined in 36 CFR 79, *Curation of Federally Owned and Administered Collections*. Locations with significant importance to a group are traditional properties.

Resources and locations are recorded and evaluated by archaeologists and historians. Those that meet one or more criteria in 36 CFR 60.4 are determined by the Air Force as eligible for nomination to the National Register of Historic Places. If the federal action has potential for adverse effects to eligible

sites, the Air Force makes a determination of adverse effect; if no eligible properties are present, the determination is either no historic properties present or no adverse effects. The Area of Potential Effect (APE) for this action is defined as the ROI, or affected environment.

Methods for inventory and evaluation are described in the NTTR ICRMP (Nellis AFB 2010a). In addition, a Programmatic Agreement between the 99th Air Base Wing and the Nevada SHPO was signed on 30 May 2013 to define how SHPO and the 99th Air Base Wing will interact and cooperate with regard to implementing provisions of the NHPA.

Affected Environment

Regional Setting. Human use of the Great Basin dates back approximately 12,000 years (NTTR 2010). During the earlier periods, Native Americans relied heavily on hunting large game for subsistence. As the region became increasingly more arid, they broadened their resource base and began to exploit more plants and other kinds of game. Approximately 9,000 years ago, Native Americans began to cluster around permanent water sources. The main tribe in southern Nevada was the Southern Paiute, whose territory encompassed the Las Vegas and Pahrump Valleys and extended into part of Amargosa Valley. Primarily foragers, with varying degrees of dependence on horticulture, the Paiutes would congregate near bodies of water at different times of the year to collect pine nuts and agave and to hunt mountain sheep, deer, and small game. Few records exist of these nomadic peoples, most likely due to violent interactions with neighboring tribes and territorial loss from Spanish and Mexican settlers who invaded in the area in the 16th century.

During the mid-1800s, southern Nevada became home to Mormon settlers intent on expanding their religious territory and bringing their doctrine to the local native populations (NTTR 2010). Expansion of settlers to the area brought the formation of the Old Spanish Trail, which served as a popular trading route between Santa Fe, New Mexico and Los Angeles, California. By the late 1850s, the small Las Vegas Valley community focused on ranching and farming to supply regional mining interests. In the Las Vegas, Moapa, and Virgin Valleys, farming communities continued to develop from the 1850s until the early 1900s. Mining ventures in southern Nevada were typically short-lived, and most of the areas survived as transportation hubs or ranching centers.

Railroad development began in the Las Vegas Valley in the early 1900s. Tent towns sporting saloons, stores, and boarding houses, were developed to entertain and accommodate men working on the railroads. The Los Angeles, San Pedro, and Salt Lake Railroads were completed in 1905, all later absorbed by the Union Pacific Railroad (NTTR 2010).

Local Setting. A cultural resources survey of the proposed construction area was completed in August 2013 The survey resulted in the recordation of a few isolated finds within the APE which included four flakes; one biface; a crushed historic can; and military unexploded ordnance that appeared to be historic/aged. In addition, two low-density lithic scatters were identified adjacent to the APE. Artifacts

picked up for observation or photography were returned to their original location. No artifacts were collected. These items are not associated with any particular context and stand as noncontributing factors to the understanding of prehistoric and historic activities of the region.

Environmental Consequences

Proposed Action. Construction and ground-disturbing activities associated with the proposed action have the potential to expose or damage buried cultural resources or human remains. However, construction activities would primarily occur on previously disturbed lands, reducing the potential for impacts on cultural resources. Based on the low potential for eligible resources at Range 71, no eligible resources are expected to be adversely impacted by the proposed action.

To protect cultural resources, the Air Force would comply with Section 106 of the NHPA and laws applicable to protecting cultural resources and human remains, and would consult with the SHPO and the ACHP as required. Compliance with these laws may require implementation of mitigation measures, such as use of tribal representatives and archaeologists for construction monitoring, data recordation or recovery, or preservation of historic properties. If cultural resources or human remains are identified during ground-disturbing activities, these activities would be halted, and a qualified archaeologist or tribal representative would be contacted to assess the find. Should construction activities expand beyond the proposed footprint, portions of the study area that have not been previously surveyed would be examined by a qualified archaeologist prior to any ground-disturbing activities in accordance with the ICRMP and the Programmatic Agreement between the SHPO and the 99th Air Base Wing. Any mitigation measures identified through the consultation process or further studies would be implemented prior to activities that could affect the resources. The lithic scatter sites and other known sites found during cultural resources surveys would be avoided.

No-Action Alternative. Under the no-action alternative, no improvements would be made to Range 71, and MOUT and HDMT training would continue using existing resources on the NTTR. Ongoing operations at Range 71 would continue. All future actions would comply with applicable laws and regulations, including the ICRMP (Nellis AFB 2010a) and the Programmatic Agreement. Impacts on eligible cultural resources are not anticipated, and any new projects in previously undisturbed areas would require a cultural resources inventory.

3.5 GEOLOGY AND SOILS

The geology of an area influences its ability to support structures and defines the underlying material that makes up the earth and that may cause seismic or other hazards. Soil, in general, refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability of the ground to support structures and facilities. Paleontological resources may be found in underlying geologic formations and are considered a sensitive resource.

Regulatory Requirements

The Paleontological Resources Preservation Act was proposed in the 110th Congress (H.R. 554), but did not become law until the Omnibus Public Land Management Act (PL 111-11) was passed in 2009. The act provides for the protection of Fossils of National Significance on federal lands and prohibits the excavation, removal, exchange, transport, or any such activity that would result in damage to paleontological resources before first securing a permit from the Secretary of the Interior.

The Uniform Building Code (UBC) contains provisions that pertain to the seismic design of both structural components and nonstructural components. The UBC requires building components to be built to resist moderate earthquakes without significant structural damage and to resist severe earthquakes without collapse. Furthermore, additional regulatory guidance related to soils is provided indirectly through the management and protection of air quality and water resources. These include the CAA and CWA (see Sections 3.2 and 3.6 for further details).

Affected Environment

Regional Setting. The study area lies in the Great Basin Desert, which is part of the Basin and Range physiographic province (NTTR 2010). This province is characterized by interspersed north-south trending, rugged mountain ranges and flat valley floors. Elevations throughout the province vary substantially from approximately 1,900 feet amsl in the valleys to over 8,500 feet amsl in the surrounding mountain ranges. Topographic features in the north appear less pronounced, and valleys appear broader than those in the south. This is a result of the province's active volcanic past. Heavy accumulations of volcanic material have buried the dramatic features of the Basin and Range that are more evident in the south. Several active and inactive faults occur in southern Nevada; however, the Yucca fault in the south-central portion of the NTTR (approximately 100 miles to the south-southeast of Range 71) is the only active fault in the vicinity of the study area. Other nearby faults include the Carpetbag fault and Pahranagat fault.

Tertiary and quaternary materials, like those found in the study area, have high fossil-containing potential for algae, echinoderm, and fusilinid (NTTR 2010). Quaternary materials also have the potential to contain common types of fossils, such as mollusks, corals, barnacles, algae, and other invertebrates. Spring, playa (dry lake), and lake deposits have high paleontological potential for mollusk shells. Range 71 is in an alluvium-filled valley derived from carbonate parent material. Paleozoic carbonate rocks mixed with smaller amounts of quartzite, sandstone, and shale comprise the ranges that surround the area.

Local Setting. Range 71 is on the eastern portion of Stonewall Flat, an alluvial deposition extending from Stonewall Mountain. This area is surrounded by Stonewall Mountain to the south, the Cactus Ranges to the east, Ralston Valley to the north, and Goldfield Hills to the west. Elevations in the study area range from approximately 1,400 feet amsl to 2,200 feet amsl. Geologic features around Range 71 include playas and small outcroppings of limestone. Unsel and Cirac soil associations underlie Range

71. These are very deep and well-drained silty soils characteristic of those that develop from alluvial processes. Unsel soils are typically present along fan remnants and fan skirts on slopes ranging from 0 to 30 percent. Cirac soils are present along alluvial flats, lake plains, lagoons, and fan skirts, and on 0 to 4 percent slopes.

Five designated mining districts (i.e., Goldfield, Cactus Springs, Antelope Springs, Wellington, and Jamestown) are located partially or entirely on Range 71. In addition, new mining stakes are being made on Mud Lake and along the western and northern NTTR boundaries

There are no known records of paleontological resources in or near the study area.

Environmental Consequences

Proposed Action. Construction and ground-disturbing activities would occur in the study area and could involve vegetation removal and grading activities. Construction activities would primarily occur on previously disturbed lands with little vegetation present. Where vegetation removal and grading are necessary, soils would be temporarily exposed to water and wind erosion, which could result in fugitive dust, soil erosion, and sediment in runoff. Soils found in the study area have a moderate potential for water erosion, and sandier soils have a high potential for wind erosion and dust generation. Operation of construction equipment on unpaved roads would also disturb soils and could create fugitive dust. However, as described under Section 3.2, Air Quality, all construction activities would comply with the NTTR Facility Wide Fugitive Dust Control Plan. Furthermore, implementation of BMPs such as proper grading, stabilization, straw bales and other devices to channel storm water runoff, and watering construction sites to limit fugitive dust would minimize adverse effects on soils.

Tertiary and quaternary materials, which have high fossil-containing potential, underlie Range 71. Although no paleontological resources have been documented in or near the study area, paleontological resources could be exposed or disturbed during ground-disturbing activities. Most construction activities would require little ground disturbance, although some digging may be required that could affect paleontological resources, if present. If paleontological resources are discovered during construction, all activities in the immediate vicinity would be halted, and a qualified paleontologist would be consulted to assess the resources and to determine whether consultation with the Secretary of the Interior is warranted. Construction activities would comply with the ICRMP (Nellis AFB 2010a).

Range 71 is located in an area of low seismic activity, but in the event of seismic activity from nearby faults, new buildings or structures could be moderately to severely damaged. To prevent against seismic damage, all buildings and structures would be designed to comply with the seismic stability requirements of the area, as identified in the UBC. The UBC requires buildings to be built to resist moderate earthquakes without significant structural damage and to resist severe earthquakes without collapse.

No-Action Alternative. Under the no-action alternative no improvements would be made to Range 71,

and MOUT and HDMT training would continue using existing resources on the NTTR. Ongoing operations at Range 71 would continue. The potential for a geologic hazard to affect training facilities would remain low, and paleontological resources would have potential to be discovered during training activities that disturb the ground.

3.6 WATER RESOURCES

Water resources include surface and groundwater hydrology and water quality. Lakes, rivers, and streams constitute surface water resources that are important for economic, ecological, recreational, and human health reasons. In addition, numerous springs are located around the perimeter of Range 71 North and are important for biological resources, cultural resources, and local economics (see Figure 3-2). Groundwater is used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition. Attributes of water resources considered in this EA include hydrologic setting, availability, use, flood hazard, and adjudicated claims to water rights for both surface and groundwater.

Regulatory Requirements

The CWA is the primary federal law that protects the nation's waters, including lakes, rivers, and aquifers. The Act aims to restore and maintain the integrity of the nation's waters. Jurisdictional waters of the US are regulated resources and therefore subject to federal authority under Section 404 of the CWA. The broad definition of this term includes navigable waters (including intermittent streams), impoundments, tributary streams, and wetlands.

The NAC 445A.119 contains the criteria for water quality within the State of Nevada; these criteria apply to existing and designated beneficial uses of surface water bodies. The beneficial use of a specific water body (e.g., agriculture, aquatic life, recreation, municipal or domestic supply, industrial supply, and wildlife propagation) determines the applicable water quality standards.

All surface waters within Range 71 are regulated and protected under the generic standards applicable to all waters of the state.

The NRS assigns the Nevada State Engineer's Office the jurisdiction over surface and groundwater rights and appropriations. NRS 533 governs appropriation of all surface water and groundwater. NRS 534 also governs groundwater use as it relates to wells. Specific standards for well drilling are further detailed in NAC 534.

EO 11988 (*Floodplain Management*), Air Force Instruction 32-7064 and Air Force Order 780.1 direct the management of floodplains on NTTR. EO 11988 directs federal agencies to avoid, to the

extent possible, adverse impacts associated with the modification of floodplains and to avoid support of floodplain development when there is a practicable alternative.

Affected Environment

Regional Setting. The climate of Nye County is arid because of minimal precipitation and high evaporation rates. Surface waters in the region primarily consist of runoff from precipitation and springs at higher elevations. Most precipitation occurs during summer and winter storms and forms ephemeral streams that flow for varying amounts of time, from hours to weeks. Most of these ephemeral streams drain internally into playas found throughout the region. The study area lies in portions of both the Stonewall Flat and Ralston Valley Basin. These watersheds are both closed basins, limited to internal drainage only (i.e., not entering the ocean) (Nellis AFB 2010b).

The study area receives an annual average of 6.5 inches of precipitation. During summer, short-duration, high-intensity summer convective storms overwhelm soil infiltration capacity, resulting in excess runoff and rapid (i.e., flash) flooding events. During winter, long-duration, low-intensity frontal (regional) storms saturate the soils over a period of time and in turn result increased runoff and flooding. Flooding typically occurs in valleys and other low-lying regions, such as playas found near Range 71. Surface drainage at NTTR generally collects in playas of the major valleys. While groundwater recharge could occur at locations such as the base of alluvial fans, it generally does not occur on playas and valley floors. Due to the considerable relief of NTTR, depth to groundwater is highly variable. Shallower groundwater can exist near dry lake beds; however, the high clay content and high evaporation rates of the desert generally limit groundwater recharge in these areas (Nellis AFB 2010b).

Groundwater within the carbonate-rock province has been conceptualized as occurring within two interconnected aquifer systems: a regional system that is largely within deeply buried carbonate bedrock, and additional shallow alluvial aquifer systems which are more local in extent and which reside in individual basins or watersheds. Recharge to these aquifer systems comes mainly from the infiltration of winter precipitation that falls on the mountains within the province. Groundwater discharge occurs primarily through evapotranspiration from shallow groundwater associated with the valley floors, as well as from spring discharge (Nellis AFB 2010b).

The State of Nevada manages groundwater rights in Nye County. Groundwater has been withdrawn for municipal, agricultural, mining, and industrial uses. The Stonewall Flat and Ralston Valley Basins underlie Range 71. The Ralston Valley basin has been designated by the state as a basin where permitted groundwater rights approach or exceed the estimated average annual recharge into the basin such that the water resources are being depleted or require additional administration (Nye County Water District 2013).

Local Setting. Surface water features, including playa lakes, ephemeral streams, and springs exist within the study area (see Figure 3-2). Mud Lake, a playa lake, occurs on the northwest corner of the study area. A smaller unnamed ephemeral playa is located on the central portion of Range 71 South. The western portion of Range 71 contains numerous washes; however, these washes have not been mapped (Nellis AFB 2010b). Two ephemeral streams are present on Range 71, and onsite surface waters generally drain in the direction of Stonewall Spring. A total of 16 seeps and springs have been identified on Range 71.

No active groundwater wells exist within the study area; however, an abandoned groundwater well is located on the northern portion of the range.

Playa lakes on Range 71 (i.e., Mud Lake and the unnamed smaller playa) are mapped as lacustrine, littoral wetlands with unconsolidated shores (see Figure 3-2). Because these areas are located within closed basins, they are not anticipated to be jurisdictional wetlands regulated under Section 404 of the CWA. These areas are also mapped as floodplains per a study commissioned by NTTR (Nellis AFB 2010b). In addition, based on aerial imagery and historical use of the site, flooding associated with alluvial fans on the Range does occur; however, these areas have not been officially mapped as floodplains.

Environmental Consequences

Proposed Action. Construction activities would disturb soils and could discharge sediment and other pollutants in runoff, which could be transported into nearby surface water features. Nellis AFB would implement standard BMPs to prevent water quality impacts during construction. To the extent possible, stockpiling or equipment storage within 50 feet of the surface water features would be avoided to prevent the chances of accidental contamination and transport of chemicals such as fuels or fill material. Any activities resulting in soil disturbance or vegetation removal would be managed in accordance with guidelines detailed in the INRMP (Nellis AFB 2010b).

All roads would be constructed with the appropriate drainage in accordance with management guidelines outlined in the INRMP. Culverts associated with road improvements may require the placement of fill material (concrete or similar material) in dry washes. Because these waters are located in a closed basin, any fill material requiring disposal would not be placed in any water of the US and a Section 404 permit would not be anticipated.

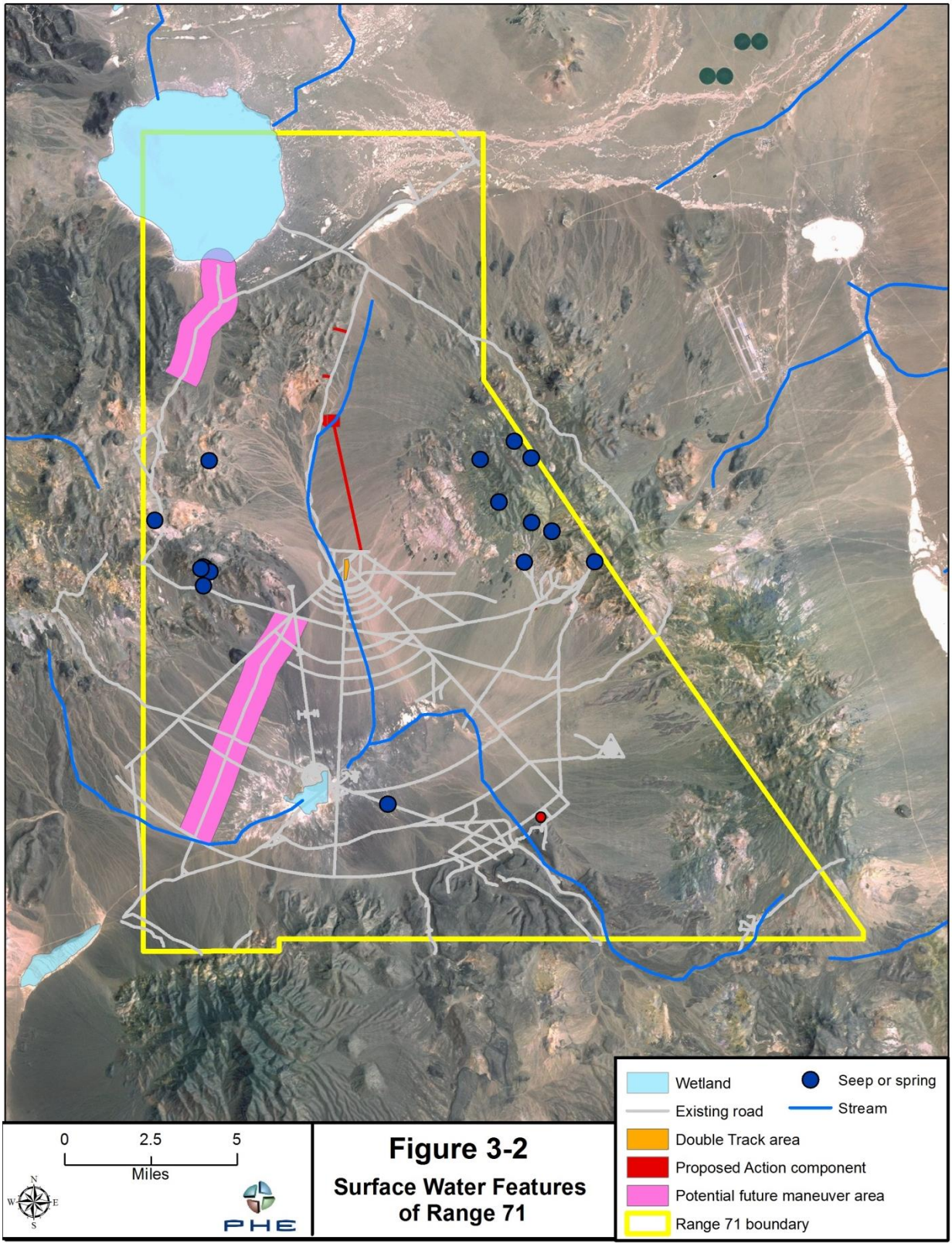

Figure 3-2
Surface Water Features of Range 71

Surface water features within Range 71 would be avoided during construction to the extent practicable; however, Target Area 3 would be placed on top of a mapped ephemeral stream (see Figure 3-2). This stream is not connected to a water of the US and would not require a permit under Section 404 of the CWA. This is a previously disturbed target area and would not result in substantial impacts to water resources. Construction of this site would be managed in accordance with the INRMP and would be graded appropriately to cover the stream bed area. Nellis AFB would implement standard construction BMPs (e.g., hay bales and silt fences) during construction to limit soil erosion and further deposition of sediments (see Table 2-1).

Direct impacts to jurisdictional waters (i.e., placement of fill) are not anticipated during construction activities or training operations at Range 71 under the proposed action. Surface water features within Range 71 are not expected to fall under the jurisdiction of the USACE, based on the descriptions of these areas in the INRMP (Nellis AFB 2010b).

The proposed construction of new structures and access roads would occur near alluvial fans and dry washes subject to significant runoff and seasonal flash flooding. Target debris and munitions residue from live fire operations could be transported laterally by runoff from significant precipitation events. Target debris and munitions migration or runoff would likely migrate to low lying areas (dry washes and the unnamed playa,) but impacts to groundwater would not be anticipated, as groundwater recharge does not commonly occur in such areas. While trace amounts of chemical contaminants could be deposited in surface soils, and moved through the action of wind and precipitation runoff, contaminants would not be expected to exceed any regulatory standards, reach waters of the US, or otherwise result in adverse impacts to human health or the environment.

The proposed action could slightly increase the amount of impermeable surfaces in the study area as a result of the new buildings and pavement. However, groundwater recharge generally does not occur on playas and valley floors, such as where the proposed road would be constructed. In addition, the new target areas would represent an insignificant increase in impermeable area. Therefore, impacts to groundwater recharge would be minimal and localized.

Operation of a new, non-potable groundwater well would withdraw water from the local groundwater aquifer. Water rights for the well would be transferred from the abandoned well in the same aquifer located on the northern portion of the range. No new water rights would need to be requested from the State Water Engineer. The specific design of the well would be based on the projected demand. The NTTR will be required to coordinate these requirements per the 1999 *Memorandum of Agreement Concerning Pre-Filing Notification of Proposed Water Right Applications By Federal Agencies in Southern Nevada*. The transfer of rights (i.e., the transfer of the point of diversion) would be approved by the State Water Engineer prior to construction of the well and would comply with NAC 534.

Groundwater is expected to be used for range maintenance and firefighting activities. The new

groundwater well would withdraw water from the Stonewall Flat Basin portion of Range 71, which is not designated by the state for approaching or exceeding estimated average annual recharge, and is not expected to substantially affect the groundwater aquifer or result in excessive pumping of water that is not authorized.

The proposed northern maneuver area would fall within the mapped wetland and floodplain area of the Mud Lake on the northwest corner Range 71. Because this is wetland is located in a closed basin, it is not considered a jurisdictional wetland. No impacts to this floodplain area are anticipated.

Construction of all three target areas would occur within or adjacent to an alluvial fan area on the Range. Construction debris and soil erosion from ground disturbance and vegetation removal during construction, and debris and munitions deposition during operations could result in a slight increase in channelization of the alluvial fan or overland flow, which could represent a minor increased flood hazard. As erosion and channelization occurs near the target area, maintenance and repairs would be performed, as necessary.

No-Action Alternative. Under the no-action alternative, the Air Force would not construct new targets, facilities, or access roads. Ongoing operations at Range 71 would continue to result in ground disturbance and potential discharges into local surface water features, but all activities would comply with applicable regulations and permits.

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CHAPTER 4
CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.1 CUMULATIVE EFFECTS

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action and alternatives, if they overlap in space and time. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

The reasonably foreseeable future actions identified for Range 71 include its continued use for military ground and air training, with the potential for additional range reconfigurations. Nellis AFB continues to modify training scenarios on Range 71 and throughout the NTTR to meet changing combat situations and training needs. Nellis AFB is currently evaluating establishing one or more areas within Range 71 (see Figure 2-1) for conducting ground vehicle maneuvers, where personnel will have the ability to navigate overland without using established roads. These maneuver areas would likely be sited on the western side of Range 71, in sparsely vegetated areas near washes, rather than on more densely vegetated land.

Continued air and ground training at Range 71, including the establishment of additional maneuver areas, would create similar impacts as those resulting from existing military training activities. These activities would have cumulative impacts on geologic and biological resources through increased ground disturbance, erosion potential, and habitat degradation. However, the impacts would not be significant, and appropriate BMPs and monitoring would be implemented in accordance with NTTR's INRMP. The activities, when evaluated with the proposed action, would not generate additive cumulative effects to the region since these actions would take place on withdrawn land and are consistent with current NTTR activities.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of "…any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects

primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

The continuation of activities on Range 71 of the NTTR as described under the proposed action would, for most resources, neither irreversibly nor irretrievably commit resources. As in the past, activities that have the potential to produce ground disturbance also have the potential to impact water resources, air quality, biological resources, and cultural resources. However, management policies and practices in place and proposed to continue are designed to minimize potential impacts to these resources.

Construction and maintenance of targets, access roads and other facilities on Range 71 under the proposed action would require the consumption of limited quantities of aggregate, steel, concrete, petroleum, oil, and lubricants. The commitment of these resources would not apply under the no-action alternative. Use of training ordnance during operations under either the proposed action or no-action alternative would involve the commitment of certain quantities of resources; however, none of these resources are considered rare and their long-term commitment would not have a substantial effect on their future availability. Both the proposed action and the no-action alternative would involve fuel use by aircraft and ground vehicles.

CHAPTER 5
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Appendix A

Interagency and Public Coordination

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DEPARTMENT OF THE AIR FORCE

NEVADA TEST AND TRAINING RANGE (ACC)
NELLIS AIR FORCE BASE, NEVADA

MEMORANDUM FOR: DISTRIBUTION

FROM: Colonel Stephen Langford
Commander, Nevada Test and Training Range (ACC)
Nellis AFB, NV, 89191

SUBJECT: Intergovernmental and Interagency Coordination of Environmental Planning for the US Air Force (USAF)/Nellis Air Force Base (AFB) Range 71 Desert Operations Training Area Establishment, Nevada Test and Training Range (NTTR), Nye County, Nevada.

In Reply Refer to: Range 71 Desert Operations Training Area Establishment Environmental Assessment; Air Force Form 813 # 2013-0000041.

To Whom It May Concern,

Nellis AFB has initiated the preparation of an Environmental Assessment (EA) for proposed range improvements at Range 71 of the Nevada Test and Training Range (NTTR). The EA will evaluate proposed upgrades of the Range 71 Desert Training Operations Area to allow for the development of tactics, techniques, and procedures based on lessons-learned in overseas combat theaters. Our goal is to create a system of scalable targets that can be rapidly assembled and are geographically separated to address rapidly changing military scenarios.

Specifically, NAFB proposes to integrate existing target arrays and road infrastructure with three new proposed target areas that would be located within Range 71. **Attachment 1** shows the location of the components of the proposal, including three new target pads, a new access road, a new ground water well, and three new target storage buildings. **Attachment 1** also identifies two potential areas for future off-road ground maneuvers at Range 71, but these maneuver areas are not part of this specific proposal, and would be evaluated in a separate EA should Nellis AFB elect to implement them. The proposed ground water well would use existing water rights that would be transferred from an existing but currently inactive well within the same basin. The existing well would be closed.

Attachment 2 illustrates the location of Range 71 on a broader regional basis. Range 71 provides ample space for safely conducting live-fire ground maneuvers, air-to-ground ordnance deliveries, and surface-to-air operations. Any and all live-fire training event safety footprints would be confined within the NTTR withdrawn land boundary.

In accordance with 32 Code of Federal Regulations (CFR) Part 989, the Air Force *Environmental Impact Analysis Process (EIAP)*, and 40 CFR Parts 1500-1508, Council on Environmental Quality (CEQ) guidelines, pursuant to the National Environmental Policy Act (NEPA), as amended, we request your agency identify any issues or concerns you may have regarding the Proposed Action that should be evaluated in this EA. **In particular, please identify any special status species, sensitive habitats, or other significant biological resource issues that your agency believes should be addressed as part of our NEPA process**. A list of other agencies to which this letter was sent is included at **Attachment 4.**

DEPARTMENT OF THE AIR FORCE

NEVADA TEST AND TRAINING RANGE (ACC)
NELLIS AIR FORCE BASE, NEVADA

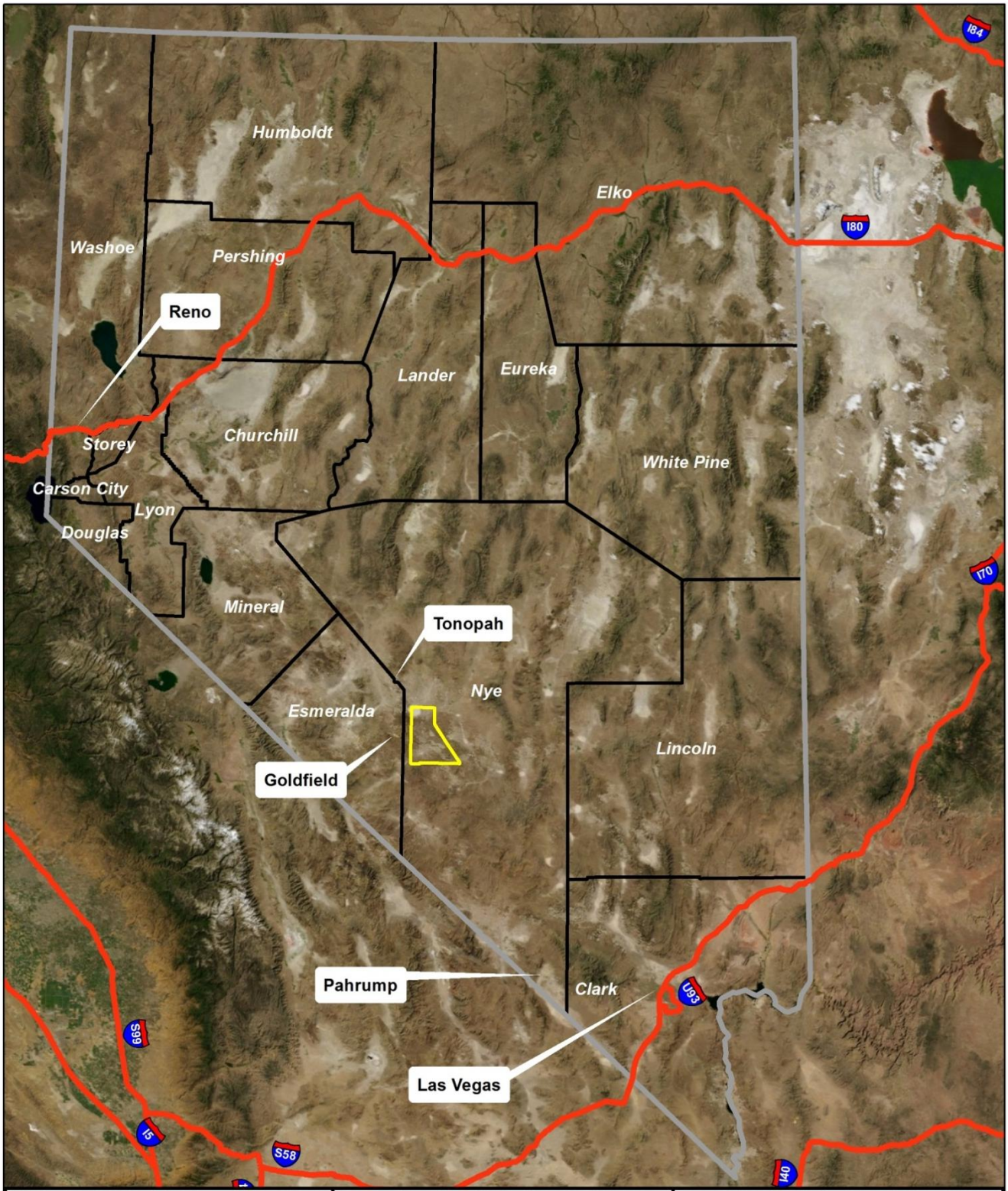
Please forward any identified issues or concerns by August 26, 2013 to Mr. Roger Christensen by e-mail at roger.christensen@nellis.af.mil, or send correspondence to 3770 Duffer Drive, Nellis AFB, NV, 89191. Thank you for your assistance.

Sincerely,

STEPHEN A LANGFORD
Colonel, USAF
Commander

Attachments:
1. Regional View of Proposed Action
2. Schematic of Proposed Action
3. Aerial View of Proposed Action
4. List of Agencies Contacted

Distribution:
US Fish and Wildlife Service - Nevada Fish and Wildlife Office
US Geological Survey - Las Vegas Field Station
Southern Nevada Regional Planning Coalition
BLM - Pahrump Field Office
Nevada Department of Wildlife - Headquarters
Nye County Board of County Commissioners


Humboldt
Elko
Washoe
Pershing
Reno
Lander
Eureka
Churchill
Storey
White Pine
Carson City
Lyon
Douglas
Mineral
Tonopah
Nye
Esmeralda
Goldfield
Lincoln
Pahrump
Clark
Las Vegas
I84
I80
I70
U93
S95
I5
S58
I40
0
25
50
100
Miles
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W
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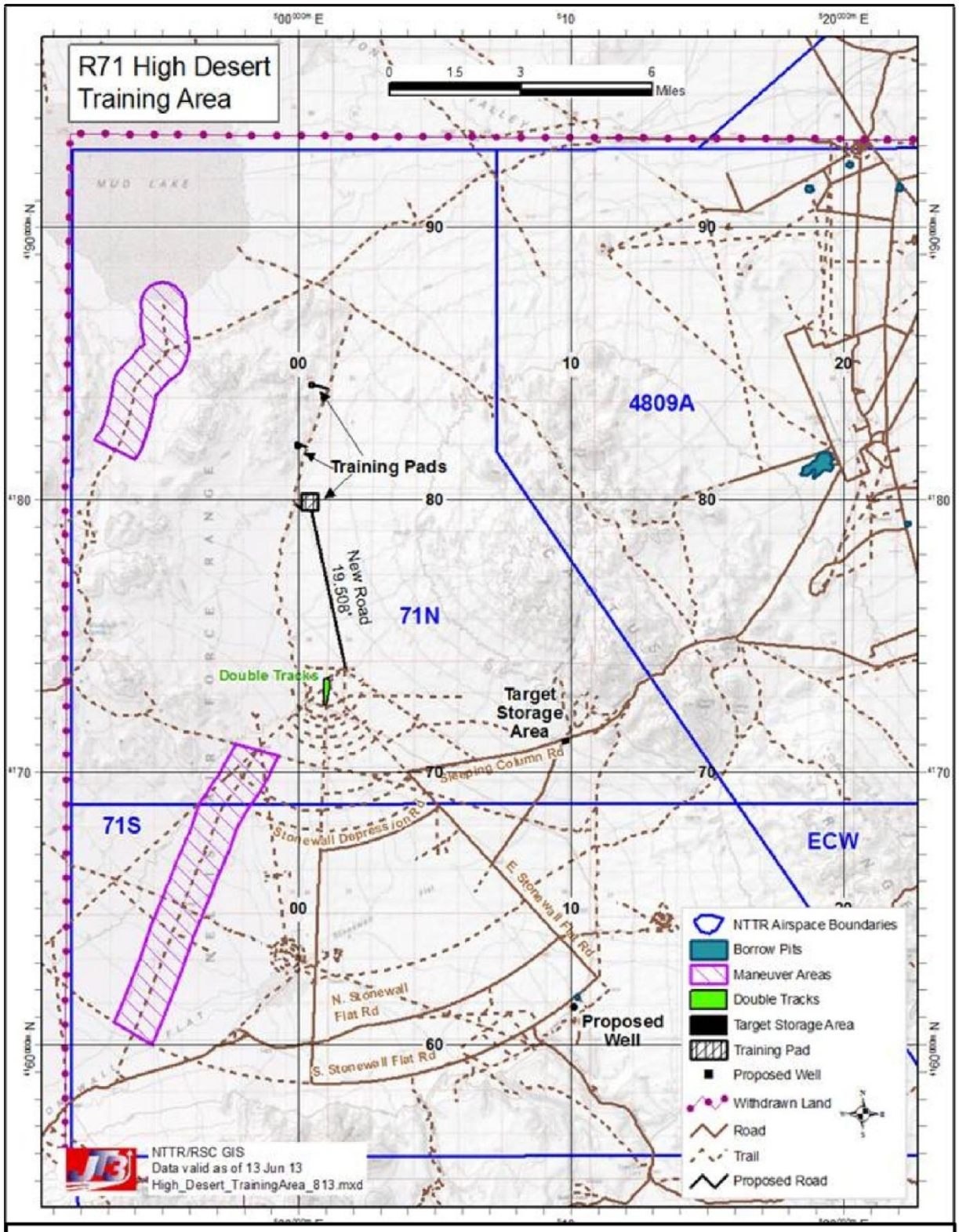
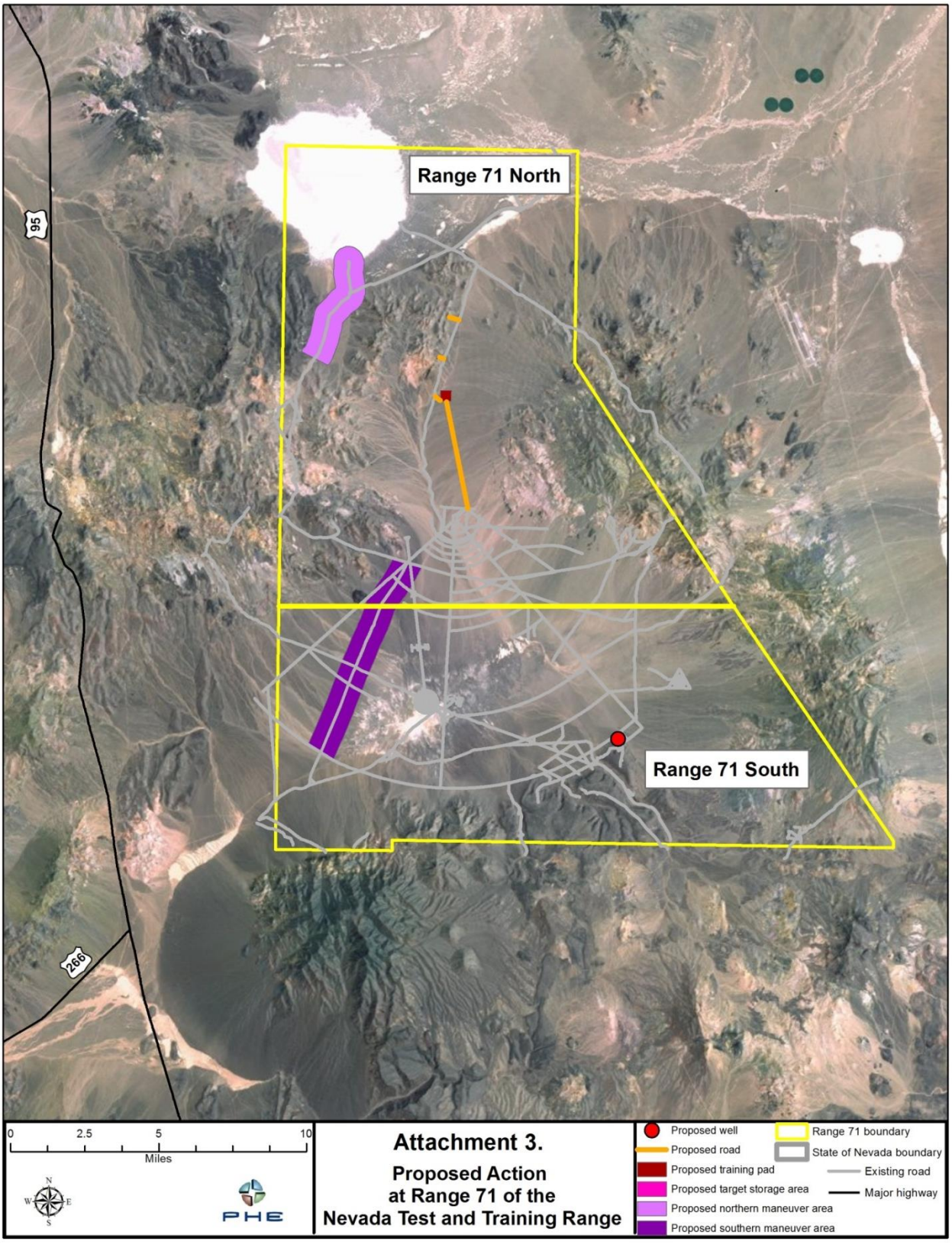
S
PHE
Attachment 1.
Regional View of the Proposed Action
Range 71, Nevada Test and Training Range, Nevada
Interstate highway
Range 71 boundary
County boundary
State of Nevada boundary



Attachment 2.
Proposed Action
at Range 71 of the
Nevada Test and Training Range

PHE


Range 71 North
Range 71 South
95
266
0
2.5
5
10
Miles
N
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PHE
Attachment 3.
Proposed Action
at Range 71 of the
Nevada Test and Training Range
Proposed well
Proposed road
Proposed training pad
Proposed target storage area
Proposed northern maneuver area
Proposed southern maneuver area
Range 71 boundary
State of Nevada boundary
Existing road
Major highway

Attachment 4
List of Agencies

US Fish and Wildlife Service -
Nevada Fish and Wildlife Office
1340 Financial Boulevard
Suite 234
Reno, NV 89502
Phone: (775) 861-6300

BLM - Pahrump Field Office
Ms. Deborah MacNeill
Field Manager
4701 North Torrey Pines Drive
Las Vegas, NV 89130
Phone: (702) 515-5000

US Geological Survey
Las Vegas Field Station
Field Station Manager
160 N. Stephanie
Henderson, NV 89074
Phone: (702) 564-4560

Nevada Department of Wildlife
Headquarters
Mr. George Tsukamoto
Interim Director
1100 Valley Road
Reno, NV 89512
Phone: (775) 688-1500

Southern Nevada Regional Planning
Coalition
Ms. Jennifer Olsen
240 Water Street
Mail Stop 115
Henderson, NV 89009
Phone: (702) 267-1530

Nye County Board of County Commissioners
Commissioner Andrew Borasky
Chairman
2100 W. Walt Williams Drive
Suite 100
Pahrump, NV 89048
Phone: (775) 751-7075

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
Ph: (702) 515-5230 ~ Fax: (702) 515-5231

Date: August 5, 2013
File Nos. 84320-2013-TA-0298

Mr. Stephen Langford
Department of the Air Force
Nevada Test and Training range
3770 Duffer Drive
Nellis Air Force Base, Nevada 89191

Dear Mr. Langford,

Subject: Range 71 Desert Operations Training Area Establishment Environmental Assessment; Air Force Form 813 # 2013-0000041

This responds to your letter dated July 25, 2013, requesting information on special status species, sensitive habitats, or other significant biological resource issues that should be addressed as part of your National Environmental Policy Act process. In the future, please request species lists using our electronic system. Beginning in December 2012, the Nevada Fish and Wildlife Office (FWO) began issuing official species lists electronically through the U.S. Fish and Wildlife Service's National Information, Planning, and Conservation System (also known as IPaC). We now encourage requesters to use IPaC to obtain their official species lists more quickly online. You may access IPaC by visiting the website (*http://ecos.fws.gov/ipac*).

Please reference the above file numbers in future correspondence concerning this species list. If you have questions regarding this correspondence or require additional information, please contact James Harter in the Nevada Fish and Wildlife Office in Las Vegas at 702-515-5252.

Sincerely,

Michael J. Senn
Assistant Field Supervisor

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