

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter of the LEIS concisely describes the environmental resources that may be affected by the alternatives, including the Proposed Action, and analyzes the potential impacts to those resources. The analysis in this LEIS is applied in proportion to the importance of the anticipated consequences (e.g., impacts). To ensure the LEIS properly considers substantive issues, the Air Force focused the analysis on important issues commensurate with the importance of anticipated impacts. The Air Force has deemphasized nonsubstantive issues. The affected environment includes all areas and lands that might be affected, to include natural, cultural, and socioeconomic resources they contain or support.

As stated in Sections 2.3.2 and 2.3.3, the analysis in this LEIS uses a projected 30 percent increase in test and training activities to provide a reference point for analytical comparisons. Therefore, aircraft operations, munitions expenditures, and motorized vehicular activity were analyzed for Alternatives 2 and 3 at operational tempos 30 percent greater than those levels stated for Alternative 1.

The land boundary under Alternative 3 would include the current NTTR boundary as outlined in Section 2.3.1, plus various options for additional lands needed for the operational and safety requirements described in Sections 1.4.1 through 1.4.3. Each of the subalternatives associated with Alternative 3 would require fencing but only on the proposed boundaries that do not abut the current NTTR boundary. The fencing would be constructed to meet BLM fencing requirements, dependent on the topography and wildlife present, as outlined in BLM's H-1741-1 Fencing Manual, and the objective of the fencing would be to provide a physical barrier to prevent public access while allowing wildlife passage. For example, if the topography in an area supports bighorn sheep predominantly, fencing would be constructed using BLM's H-1741-1 Fencing Manual, conducive to bighorn sheep passage.

However, to conduct programmatic analysis for the affected resources discussed in this chapter, the following fencing specifications were used. The fencing would consist of four strands of wire. The bottom strand would be smooth while the three upper wires would be barbed. The maximum fence height would 40 inches. Wire spacing from the ground up would be 16 inches, and then spacing between wires would be 6 inches, 6 inches, and 12 inches (i.e., 16 inches, 22 inches, 28 inches, and 40 inches above ground level), which is the standard for BLM antelope fencing.

The Air Force used the scoping process to identify substantive issues to be carried forward for analysis, deemphasize nonsubstantive issues, and assist in narrowing the scope of the LEIS. The LEIS reflects the focused analysis that scoping indicated was appropriate and beneficial to support the legislative proposal. The scope of the LEIS includes consideration of 14 resource areas. This chapter focuses on data reflecting the affected environment and environmental consequences associated with the existing withdrawal and proposed expansion areas.

3.1 AIRSPACE

3.1.1 Affected Environment

Although additional airspace is not a requirement at this time, the current airspace is not used to its full potential, and more efficient use of the airspace is critical. Therefore, this section is provided to help clarify and provide context for the NTTR and the overall use of the affected environment. Military airspace is generally established for national defense, national security, and national welfare. Special Activity Airspace (SAA) is the term often used to describe military airspace. For purposes of this document, SAA is considered any airspace having defined dimensions within the National Airspace System wherein limitations may be imposed on aircraft operations, such as Restricted Areas, Prohibited Areas, Military Operations Areas (MOAs), Air Traffic Control Assigned Airspace (i.e., ATCAA), and any other designated airspace areas. SAA consists of two common types of airspace: SUA (i.e., Special Use Airspace) and Airspace for Special Use (ASU).

3.1.1.1 Description of Resource

SUA is airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed on aircraft operations that are not part of those activities. SUA includes the following types of charted airspace: MOAs, Restricted Areas, Warning Areas, Alert Areas, Prohibited Areas, and National Security Areas. Controlled Firing Areas (CFAs) are uncharted. With the exception of CFAs, SUA is depicted on aeronautical charts. Additional information on SUA may be found in the following publications: 14 CFR 73, Special Use Airspace; FAA Joint Order (JO) 7400.2, Procedures for Handling Airspace Matters (FAA, 2014); FAA JO 7400.8, Special Use Airspace; FAA JO 7610.4, Special Operations (FAA, n.d.); Flight Information Publications (FLIP): General Planning (Chapter 2), AP/1A, AP/2A, AP/3A, and AP/4A.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.1.1.1.1.

ASU is used to collectively identify non-SUA assets. Establishing certain types of ASU may not require coordination with the FAA. ASU includes the following types of airspace: Aerial Refueling (AR) tracks/anchors, ATCAA, Altitude Reservation, Low-Altitude Tactical Navigation (LATN) areas, Temporary Flight Restrictions, Cruise Missile Routes, Orbit Areas, Local Flying Areas, Military Training Routes (MTRs) (Instrument Routes and Visual Routes), and Slow Routes. Establishing these ASUs does not require a rule making process, and some (designated solely in military documents) do not require coordination with the FAA for establishment. Additional information on ASU may be found in the FAA JO 7610.4, Special Operations (FAA, n.d.), command or local military publications, and FLIP: General Planning, and AP/1B, Military Training Routes North and South America (DoD, undated).

3.1.1.2 Region of Influence

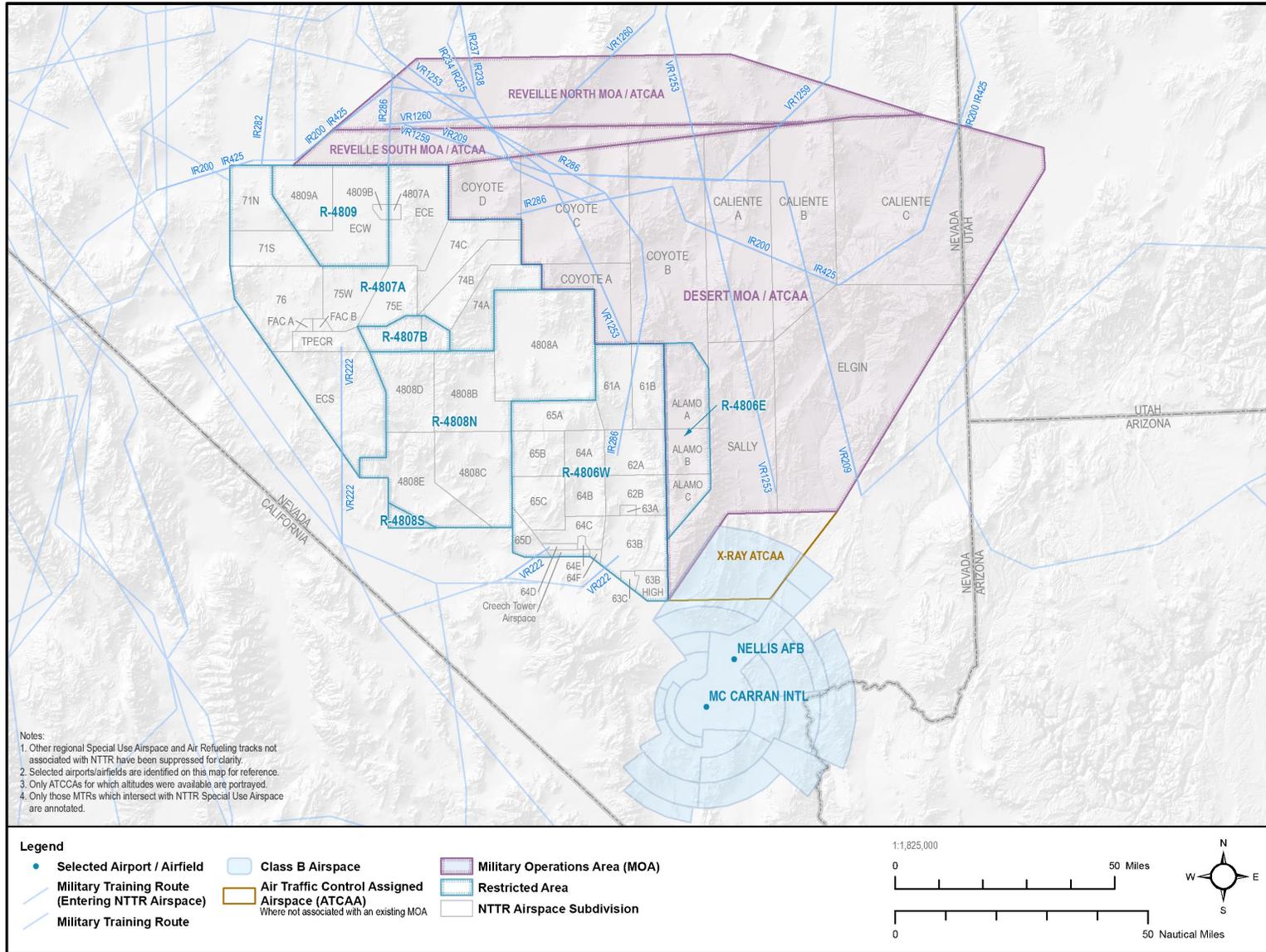
Adding or eliminating SAA controlled by the Nellis Air Traffic Control Facility (NATCF) is not within the scope of any of the proposed alternatives analyzed in this LEIS; however, SAA is discussed to better define the context of the affected environment in which the NTTR is used. The FAA has designated SAA around Nellis AFB, including the NTTR, for the U.S. Air Force. The NATCF is staffed by military and DoD civilian air traffic controllers and is available, upon request, to provide traffic advisories and assist aircraft in remaining clear of SAA areas. With regard to the proposed land withdrawal, it should be noted that the NTTR ground space boundaries may differ from the air space boundaries in some areas. Specific airspace areas controlled by the NATCF are shown on Figure 3-1; below the map, the designated airspaces are listed by type.

3.1.1.3 Restricted Areas

Within or adjacent to the NTTR, there are eight Restricted Areas: R-4806E, R-4806W, R-4807A, R-4807B, R-4808N, R-4808S, R-4809A, and R-4809B. All of these areas contain operations that are hazardous to nonparticipating aircraft. During certain time periods, R-4806E, R-4806W, R-4807A, R-4807B, and R-4809 are authorized for transit with certain restrictions. The NATCF is the controlling agency for these areas. R-4808N and R-4808S are adjacent to the NTTR and are controlled by the DOE. Specific boundary points (latitude and longitude), as well as designated altitudes and times of use, can be found in FAA Order 7400.8Y, Special Use Airspace (FAA, 2016). While the outer boundary is published, it should be noted that internal subdivisions also exist to maximize effective utilization of the airspace.

3.1.1.4 Military Operations Areas

The Desert and Reveille North and South MOAs (and their associated ATCAAs) are located north of Nellis AFB and are available for transit by civil VFR aircraft. Although no VFR restrictions exist for transiting these areas, military aircraft are exempted from the provisions of 14 CFR 91.71 concerning acrobatic flight within federal airways and control zones. The training conducted within the Desert and Reveille North and South MOAs consists of high-speed operations, including supersonic flight at or above 5,000 feet above ground level (AGL) and abrupt aircraft maneuvers. The Desert MOA is subdivided into an Air Traffic Control transition corridor (Sally) and three training areas: Elgin, Caliente (Alpha, Bravo, and Charlie), and Coyote (Alpha, Bravo, Charlie, and Delta). There are two Reveille MOAs, Reveille North and Reveille South. ATCAA overlies the Desert MOA from Flight Level (FL) 180 to unlimited. Reveille North and South ATCAA extend from FL180 to FL600. For the Reveille North MOA/ATCAA, airspace requirements above FL300 must be requested/scheduled 30 days in advance.



1
2

Figure 3-1. Airspace Map in the Vicinity of the NTTR

1 The NATCF is available to provide current status on activities and radar traffic
2 advisories to VFR aircraft transiting the Desert and Reveille MOAs. Desert and Reveille
3 North and South MOAs are depicted on the Las Vegas VFR Sectional and Low Altitude
4 Enroute Charts. Specific boundary points (latitude and longitude) as well as designated
5 altitudes and times of use can be found in FAA Order 7400.8Y, Special Use Airspace
6 (FAA, 2016). Like the Restricted Areas, the outer boundary may be published, but
7 internal subdivisions exist to maximize effective utilization of the airspace.

8 **3.1.1.5 Alert Area 481 (A-481)**

9 The Alert Area extends from Nellis AFB westward, 7,000 to 17,000 feet mean sea level
10 (MSL). Military arrival and departure traffic transit this area, normally from 7,000 MSL to
11 FL230. Although, the Alert Area begins at 7,000 MSL, military VFR departures may still
12 occasionally pass through the VFR training area that lies beneath the Alert Area.
13 Specific boundary points (latitude and longitude) as well as designated altitudes and
14 times of use can be found in FAA Order 7400.8Y, Special Use Airspace (FAA, 2016).

15 **3.1.1.6 Low-Altitude Tactical Navigation Area**

16 Although LATN airspace is not charted, it is included in the flight planning process.
17 LATN areas allow A-10, C-130, and helicopter aircraft to practice random tactical
18 navigation and formations between 50 and 1,500 AGL. Airspeeds will be at or below
19 250 knots. There is a LATN area to the west of the Restricted Areas, south of the NTTR
20 and east of the MOAs. These areas are normally used when no airspace is available
21 within the NTTR.

22 **3.1.1.7 Air Refueling Routes**

23 There are two low-altitude VFR helicopter air refueling routes adjacent to the NTTR.
24 AR-230V is west of Mesquite, Nevada, and extends from the LAS 025046 to the LAS
25 025081. Refueling altitudes are 6,000 to 8,000 MSL. Several types of helicopters and
26 HC-130 refueling aircraft use AR-230V. All aircraft using AR-230V must remain under
27 VFR. AR-231V is southeast of Beatty, Nevada, and extends from the BTY 124005 to
28 the BTY 124042. Refueling altitudes are 6,000 to 8,000 MSL. Several types of
29 helicopters and HC-130 refueling aircraft use AR-231V. All aircraft using AR-231V must
30 remain under VFR. Additional refueling routes include AR-624, AR-625, and AR-635.

31 **3.1.1.8 Military Training Routes**

32 The MTR program was established by the FAA and the DoD for the purpose of
33 conducting low-altitude and/or high-speed training. Generally, MTRs are established
34 below 10,000 MSL for operations at speeds in excess of 250 knots. Each segment of an
35 MTR is allocated a floor and ceiling altitude and lateral boundaries, described in nautical
36 miles left and right of centerline. MTRs are established according to the criteria in FAA
37 JO 7610.4, Special Operations (FAA, n.d.). Routes are established as either Instrument

1 Routes or Visual Routes. Instrument Routes are used by the DoD and associated Air
 2 Force Reserve and Air Guard units for the purpose of conducting low-altitude navigation
 3 and tactical training in both IFR and VFR weather conditions at airspeeds in excess of
 4 250 knots below 10,000 MSL. Visual routes are used by the DoD and associated Air
 5 Force Reserve and Air Guard units for the purpose of conducting low-altitude navigation
 6 and tactical training under VFR weather conditions at airspeeds in excess of 250 knots
 7 below 10,000 MSL. The DoD has a speed exemption to 14 CFR 91.117 (see FAA JO
 8 7610.4). The FAA has approval authority over Instrument Route establishment, and the
 9 appropriate DoD Major Command (MAJCOM) approves establishment of Visual Routes.
 10 Environmental documentation in accordance with 32 CFR 989 is required to establish
 11 MTRs. Visual Routes are processed through the FAA via an Air Force Representative,
 12 who assigns all route numbers. Ultimately, MTRs are published in FLIP AP/1B (DoD,
 13 undated) and charted on the FLIP AP/1B Area Planning Chart and FAA sectional
 14 charts. Some MTRs are included on DoD low-altitude IFR en route charts.

15 Table 3-1 lists the MTRs in and around the NTTR airspace. For specific route
 16 descriptions (latitude/longitude, altitudes, route width, hours of operation, and specific
 17 operating procedures) refer to FLIP AP/1B, Military Training Routes North and South
 18 America.

Table 3-1. Military Training Routes Within or Adjacent to the NTTR

MTR	Scheduling Agency	NTTR Airspace Accessed
IR 286	Nellis AFB	Segments in Reveille North MOA, Reveille South MOA, Desert MOA, R-4806E, and R-4806W
IR 234	Edwards AFB	Final segment exits Reveille MOA
IR 235	Edwards AFB	Last segment enters Reveille MOA (reverse of IR 234)
IR 237	Edwards AFB	Last segment enters Reveille MOA
IR 238	Edwards AFB	First segment exits Reveille MOA (reverse of IR 237)
IR 425	Edwards AFB	Traverses Reveille and Desert MOAs
IR 200	NAS Point Mugu	Traverses Reveille and Desert MOAs (reverse of IR 425)
IR 206	NAS Point Mugu	None
IR 285	Offutt AFB	First segment exits North Desert MOA
IR 310	Offutt AFB	Last segment enters North Desert MOA (reverse of IR 285)
VR 1252	NAS Lemoore	None
VR 1253	NAS Lemoore	Traverses Desert MOA
VR 1259	NAS Lemoore	Traverses Reveille and Desert MOAs
VR 1260	NAS Lemoore	First and last segments in Reveille MOA
VR 208	NAS Lemoore	None
VR 209	NAS Lemoore	Traverses Reveille and Desert MOAs
VR 222	Nellis AFB	Final segments in R-4806W and R-4807A

AFB = Air Force Base; IR = Instrument Route; MOA = Military Operations Area; NAS = Naval Air Station; VR = Visual Route

19 3.1.2 Environmental Consequences

20 3.1.2.1 Analysis Methodology

21 As previously mentioned in Section 3.1.1.2, Region of Influence, none of the proposed
 22 alternatives would involve physical changes (external boundaries, dimensions, altitudes,

1 etc.) to any airspace currently controlled by NATCF. As such, any changes will be
2 limited to how the airspace is used. Although additional airspace is not required, certain
3 airspace may be utilized more extensively, while use of other airspace units may
4 decrease. Therefore, the utilization of the current airspace would likely be modified. The
5 result could potentially change noise levels, patterns, and dispersal due to changes in
6 aircraft operation. See the noise analysis in Section 3.2.2 for more details on potential
7 noise impacts due to aircraft operation. Activities such as munitions use (bombs, small
8 arms, blanks), ground disturbance (construction or troop movement), or emitter
9 operations would not affect airspace under any of the alternatives and are not discussed
10 further in this section.

11 **3.1.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of the** 12 **NTTR (North and South Range) – Status Quo**

13 Under Alternative 1, congestion, range constraints, and the inability to properly test and
14 train would continue across the NTTR.

15 **3.1.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready** 16 **Access in the North and South Ranges**

17 Alternative 2 would provide ready access in the North and South Ranges through a
18 Congressionally directed change in land management in the South Range that would
19 effectively eliminate the need to manage the areas that were proposed for wilderness
20 within the withdrawn lands as if they were wilderness, as well as reallocate primary
21 jurisdiction between the USFWS and the Air Force for portions of the DNWR that
22 overlap with the NTTR. This alternative would allow the NTTR to provide equal
23 capabilities for MCO training and MCO T&E in the North Range and South Range,
24 relieving scheduling challenges and increasing throughput. Threat emitters would be
25 used to create a realistic IADS to maximize and enhance pilot training opportunities.
26 There would be increased utilization of the airspace that overlies the South Range due
27 to an anticipated 30 percent increase in operations but ready access would allow better
28 utilization of the airspace.

29 **3.1.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

30 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 31 • Alternative 3A – Range 77 – EC South Withdrawal
- 32 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 33 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
34 Incorporation
- 35 • Alternative 3C – Alamo Withdrawal

36 Alternatives 3A, 3A-1, and 3B would add land to create a safety buffer for the
37 redesignated Range 77 and for the South Range, respectively. There would be no
38 changes to airspace, but implementation of these alternatives could result in increased

1 use and scheduling of the airspace in and around the proposed Range 77 and the
2 South Range, respectively.

3 Alternative 3C would allow a two-axis front MCO concept and expand potential
4 weapons safety footprints associated with the target area located on Range 62A. As
5 with Alternative 2, there is anticipated to be a 30 percent increase in operations;
6 however, this increase would not result in any changes to the existing airspace
7 boundaries. While no changes would be made to the airspace boundaries, the future
8 construction of two runways would likely result in increased use and scheduling within
9 the South Range. However, it should be noted, as indicated in Section 2.3.3.4, any
10 Alternative 3C future construction would require a site-specific NEPA analysis at that
11 time.

12 **3.1.2.5 Alternative 4 – Establish the Period of Withdrawal**

13 The proposed withdrawal periods associated with Alternative 4—Alternative 4A (20-year
14 withdrawal period), Alternative 4B (50-year withdrawal period), and Alternative 4C
15 (indefinite)—must be implemented in conjunction with one or more of the other
16 alternatives or subalternatives. Because Alternative 4 reflects periods of time, which do
17 not in and of themselves affect airspace, there are no specific impacts associated with
18 Alternative 4, and it is not anticipated that any of the subalternatives (4A, 4B, or 4C)
19 would impact how the airspace is used.

20 **3.1.2.6 No Action Alternative**

21 Under the No Action Alternative, existing airspace would not be affected by not
22 extending the land withdrawal. However, without control of ground areas, the restricted
23 airspace could not be used for its intended purpose of primarily supporting live-fire
24 exercises and related military high-hazard activities. Nonhazardous airspace activities
25 would continue to occur.

26 **3.2 NOISE**

27 **3.2.1 Affected Environment**

28 **3.2.1.1 Description of Resource**

29 Noise is defined as unwanted sound. Potential noise
30 impacts are dependent on characteristics of the noise such
31 as sound level, pitch, and duration. Noise impacts are also
32 strongly influenced by characteristics of the noise receiver
33 (i.e., persons, animals, or objects that hear or are affected
34 by noise). Noise analysis considers potential impacts that could result in annoyance,
35 speech interference, sleep disturbance, human health effects (auditory and
36 nonauditory), wildlife impacts, and structural damage. Additional discussion of specific
37 noise effects on other affected resources can be found in Section 3.6, Socioeconomics;

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.2.1.1.1.

1 and Section 3.7, Environmental Justice; Section 3.8, Biological Resources; and Section
2 3.9, Cultural Resources. Appendix C, Noise, presents information on noise metrics and
3 describes methods used to model aircraft and munitions noise levels.

4 Because both the duration and frequency of noise events also play a role in determining
5 overall noise impact, several metrics are used that account for these factors. Each
6 metric discussed below is used in the assessment of noise impacts in this LEIS. A
7 more thorough explanation of these metrics can be found in Appendix C, Noise.

- 8 • A-weighted decibel (dBA) sound level measurements reflect the frequencies to
9 which human hearing is most sensitive. Noise levels in this LEIS can be
10 assumed to be A-weighted unless a different weighting is specified.
- 11 • Day-night average sound level (DNL [symbol - L_{dn}]) represents aircraft noise level
12 averaged over a 24-hour period with a 10-decibel (dB) penalty to flights occurring
13 between 10:00 PM and 7:00 AM to account for the added intrusiveness of noise
14 during these hours.
- 15 • Sound exposure level (SEL) accounts for both the maximum sound level and the
16 length of time a sound lasts.
- 17 • Maximum sound level (L_{max}) is the highest sound level measured (using time
18 integration of either 1/8 second or 1 second) during a noise event. L_{max}
19 decreases as altitude or distance from the observer increases and varies
20 according to the type of aircraft, airspeed, and power setting.
- 21 • Peak Noise Exceeded by 15 Percent of Firing Events, or PK₁₅(met), accounts for
22 weather-influenced statistical variation in received single-event peak noise levels,
23 such as with munitions use. This metric is not frequency-weighted.
- 24 • C-weighted day-night average sound level (CDNL [symbol - L_{cdn}]) is the 24-hour
25 day-night averaged C-weighted sound level computed for areas subjected to
26 sonic booms and blasts from high explosives.
- 27 • Onset-rate adjusted monthly day-night average sound level (L_{dnmr}) is the
28 measure used for subsonic aircraft noise in military airspace (ranges, MTRs, or
29 MOAs).

30 **3.2.1.2 Region of Influence**

31 The region of influence (ROI) for noise includes the lands under and near NTTR
32 airspace and airspace above the proposed expansion areas. This includes land under
33 the SUAs, MOAs, and MTRs. For Nellis AFB, installation aircraft operations, such as
34 takeoffs, landing, and touch-and-goes are not included in this analysis since these are
35 already included in the installation noise analyses. However, this information was
36 included for the analysis associated with Creech AFB since it is included within the
37 NTTR boundary. The same airspace units would be utilized under all of the
38 alternatives; however, the frequency of operations in some airspace units would
39 increase under some alternatives. Noise environments in the vicinity of the NTTR are
40 dominated by aircraft noise and munitions activities. Other noise sources include
41 ground vehicles and other machinery.

1 **3.2.1.3 Laws and Regulations**

2 There are no specific legal limits that apply to military noise. In 1972, Congress passed
3 the *Noise Control Act*, which imposed limitations on source noise levels of several types
4 of equipment. However, because noise controls could, in some cases, reduce the
5 combat effectiveness of military equipment, military equipment was exempted from
6 these requirements. For the same reason, FAA limitations on civilian aircraft noise do
7 not apply to military aircraft. The Air Force participated in the Federal Interagency
8 Committee on Urban Noise, which developed guidelines for compatibility of land uses
9 with elevated noise levels. Noise impacts are defined based on published guidelines on
10 the compatibility of various land uses with noise and published scientific documents on
11 noise effects.

12 **3.2.1.4 Noise Modeling**

13 The NOISEFILE database is used to represent noise data for each aircraft. NOISEFILE
14 is used by the noise modeling software MR_NMAP and NOISEMAP to predict noise
15 levels. Operational data were collected from pilots, air traffic controllers, aircraft
16 maintainers, range operators, and other sources in accordance with standard data
17 collection procedures.

18 The data were put into computerized noise models to generate estimates of noise
19 levels. The following noise models were applied as appropriate for each type of noise.

20 ***Subsonic Noise***

21 The MOA and Range NOISEMAP (MR_NMAP) suite of computer programs is used for
22 computing subsonic aircraft noise underneath SUAs. Noise levels from aircraft
23 operations beneath military airspace units were calculated using the L_{dnmr} metric.

24 The NOISEMAP suite of computer programs was used for computing subsonic aircraft
25 noise in the vicinity of Creech AFB. Aircraft noise levels in the vicinity of Creech AFB
26 were calculated and are presented using the DNL metric.

27 ***Supersonic Noise***

28 The BOOMAP modeling software was used to model supersonic noise. BOOMAP
29 accounts for the statistical variations in air combat maneuvers when computing CDNL
30 levels and the number of sonic booms per month expected to reach the ground under
31 an SUA. CDNL values are measured in C-weighted decibels and are denoted dBC.

32 ***Large-Caliber Weapon Noise***

33 Noise from detonation of large-caliber weapons (20 millimeter or greater) is computed
34 using DoD's Blast Noise (BNOISE) program. BNOISE is a collection of computer
35 programs which together can produce CDNL contours for impulsive sources such as
36 guns, artillery, mortars, demolitions, bombs, etc.

1 **Construction Noise**

2 Construction noise was evaluated using Roadway Construction Noise Model version
 3 1.1, the Federal Highway Administration’s standard model for the prediction of
 4 construction noise (U.S. Department of Transportation [USDOT], 2016). The Roadway
 5 Construction Noise Model has the capability to model types of construction equipment
 6 that would be expected to be the dominant construction-related noise sources
 7 associated with this aspect of the Proposed Action. All construction noise analyses
 8 assumed that a standard set of construction equipment would be used. Construction
 9 noise is expected to be limited to normal working hours (7:00 AM to 5:00 PM).
 10 Construction noise impacts are quantified using the metrics L_{max} and L_{10} (loudest
 11 10 percent noise level) as calculated based on distance from a given receptor.

12 **3.2.1.5 Baseline Noise Levels**

13 Baseline aircraft noise levels for the NTTR were calculated using the models discussed
 14 above based on operations conducted in the NTTR airspace for calendar year 2015. As
 15 mentioned, these data were obtained from NTTR operators, pilots, schedulers, air traffic
 16 controllers, etc., using standard data collection methods.

17 **Subsonic Noise**

18 Table 3-2 presents the resulting noise levels for Restricted Areas, MOAs/ATCAAs and
 19 MTRs. The baseline L_{dnmr} values for Restricted Areas, MOAs/ATCAAs, and MTRs were
 20 calculated to vary from less than 45 dB to 69 dB. The baseline noise levels are also
 21 illustrated in Figure 3-2.

22 **Table 3-2. Summary of L_{dnmr} Values for Special Use Airspaces**

SUA Name	Baseline L_{dnmr} (dBA)	SUA Name	Baseline L_{dnmr} (dBA)
R-4806	60	Coyote	67
R-4807	66	Elgin	60
R-4808	<45	Reveille	61
R-4809	69	Sally	<45
Caliente	67	VR-209	<45
		VR-222	<45

< = less than; dBA = A-weighted decibels; L_{dnmr} = Onset-rate adjusted monthly day-night average sound level; SUA = Special Use Airspace

23 **Creech AFB**

24 The analysis of Creech AFB operations results in DNL contours of 65 to 85 dB plotted in
 25 increments of 5 dB for an average annual day condition (Figure 3-2 [Inset]). The 65-dB
 26 contour extends approximately 2 NM to the southwest and southeast mostly due to
 27 transient military and RQ-170 operation.

28 Under baseline conditions, a total of approximately 4,159 people live within areas
 29 affected by 65 to 69 dB DNL. Approximately 12 to 21 percent of the population in an
 30 area exposed to 65 to 70 dB DNL is highly annoyed by noise (see Section 3.7,
 31 Environmental Justice, for more on populations affected by noise).

1 **Supersonic Aircraft Noise**

2 Aircraft flight in excess of the speed of sound (Mach 1) generates a sonic boom. The
3 BOOMAP software was used to analyze the operational data for supersonic flights and
4 generate the CDNL values associated with these operations.

5 Table 3-3 and Figure 3-3 show the CDNL values associated with baseline supersonic
6 operations. For example, Table 3-3 shows that the CDNL values for the baseline
7 condition vary from 51 dBC to 61 dBC. The number of sonic booms expected to reach
8 the ground per day varies from one to five. Under baseline conditions, there are
9 minimally populated areas outside of the NTTR boundary that are exposed to 62 dB
10 CDNL or greater due to supersonic booms (see Section 3.7, Environmental Justice, for
11 more on populations affected by noise).

12 **Table 3-3. Baseline Sonic Boom CDNL Values Within the NTTR**

SUA Name	Baseline		SUA Name	Baseline	
	CDNL (dBC)	Booms per Day		CDNL (dBC)	Booms per Day
R-4806	58	1	Caliente	61	5
R-4807	51	2	Coyote	60	2
R-4808	54	1	Elgin	54	1
R-4809	60	1	Reveille	56	1
			Sally	57	1

dBC = C-weighted decibels; CDNL = C-weighted day-night average sound level; SUA = Special Use Airspace

13 **Large-Caliber Weapon Noise**

14 The BNOISE computer program was used to analyze the operational data for large-
15 caliber weapons and to calculate the overall blast noise exposure in CDNL. The
16 resulting noise levels are presented in Figure 3-4.

17 The CDNL contours for baseline conditions in Figure 3-4 are generally centered around
18 the most active target complexes. The 57-dBC contours extend approximately 2 to
19 3 NM from active target areas.

20 Only a small area outside the NTTR boundary is exposed to 62 dB CDNL or greater due
21 to large caliber weapons. However, review of satellite imagery shows there are no
22 populations residing within these areas (see Section 3.7, Environmental Justice, for
23 more on populations affected by noise).

24 **Ground Disturbance**

25 Ground-disturbing activities such as construction and maintenance operations and
26 vehicle or troop movements do not generate sufficient noise to leave the NTTR
27 boundary or affect members of the public. In general, the NTTR is remote and noise
28 levels from construction equipment or vehicle noise from NTTR operations remain
29 below the existing noise levels from vehicles and other sources associated with
30 populated areas. Additionally, these activities are short in duration, and the noise
31 environment returns to ambient levels following any construction, maintenance, or troop
32 transport activities.

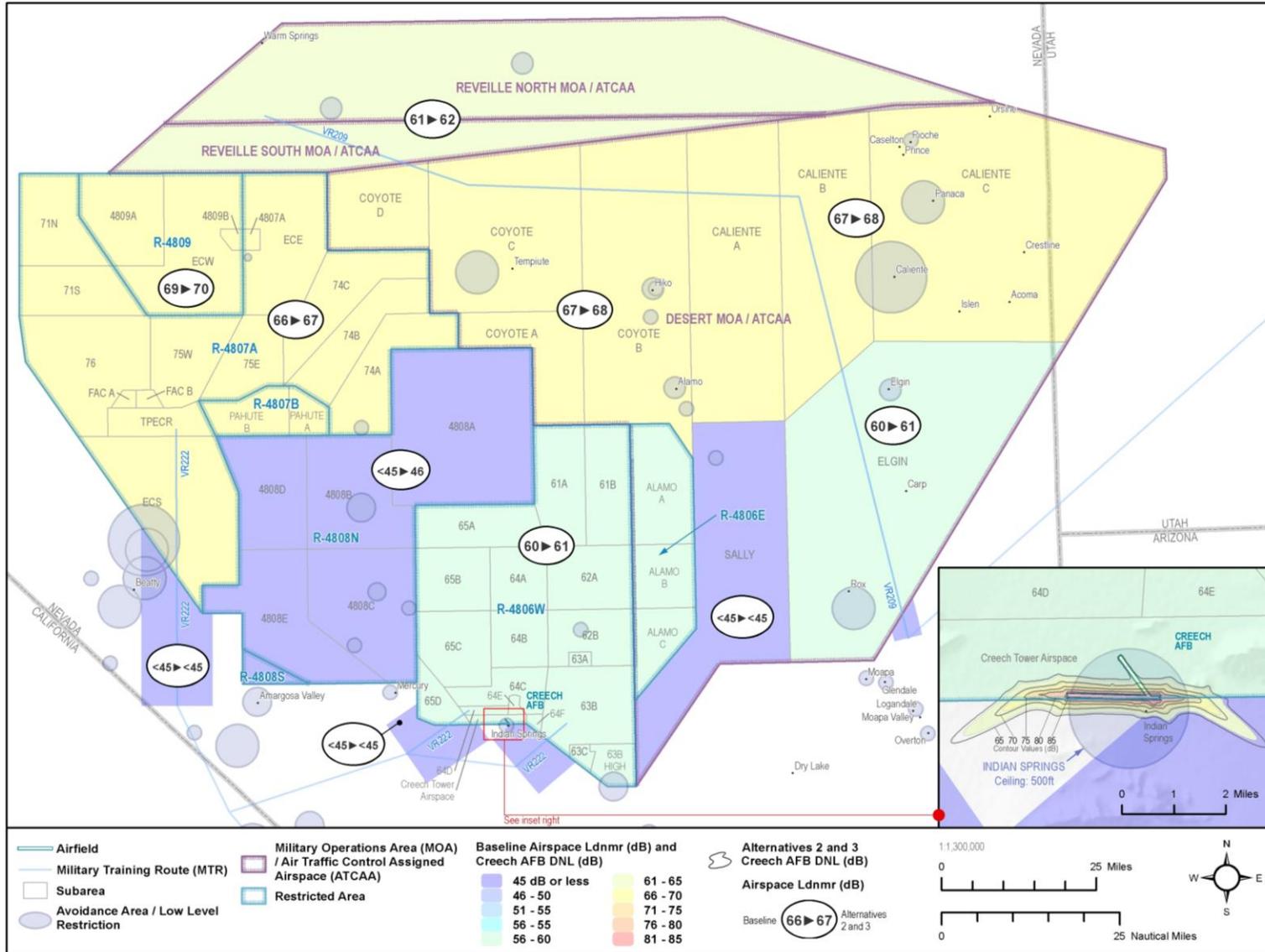


Figure 3-2. Subsonic Noise Exposure Within the NTRR

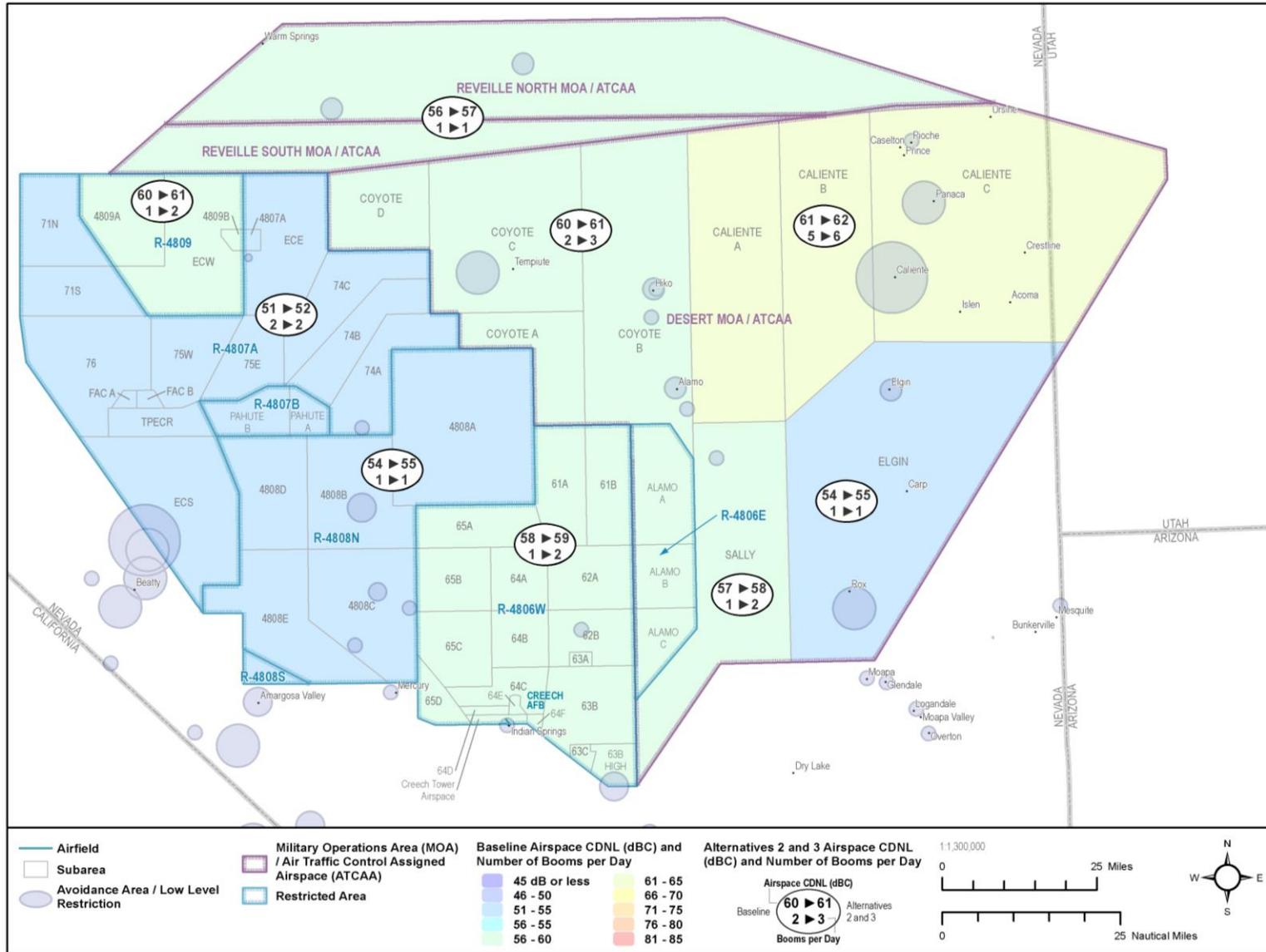


Figure 3-3. Supersonic Noise Exposure Within the NTTR

1 **Emitter Operations**

2 Conceptual emitter operation involves the running of a generator to power the emitter.
 3 Standard generator noise levels were used from the USDOT's Federal Highway
 4 Administration's extensive construction equipment noise database, with data obtained
 5 from numerous predicted and actual noise data sampling. Resulting noise levels at
 6 various receptor distances from the emitter operation sites are listed in Table 3-4. The
 7 noise associated with emitters is similar to running a large engine in a vehicle. This
 8 level of noise is unlikely to leave the NTTR boundaries and reach any members of the
 9 public.

10 **Table 3-4. Noise Level Expected from Each Operating Emitter (Generator) Site**

Distance to Receptor (feet)	L _{max} (dBA)	L ₁₀ (dBA)
1,100	74.6	74.6
200	68.6	68.6
300	65.1	65.1
400	62.6	62.6
500	60.6	60.5
600	59.0	59.0

dBA = A-weighted decibels; L₁₀ = loudest 10% noise level; L_{max} = maximum noise level

11 **3.2.2 Environmental Consequences**

12 **3.2.2.1 Analysis Methodology**

13 AFI 32-7070, Air Force Noise Program, provides the overall framework for computing
 14 noise levels associated with aircraft operations within SUAs and in the vicinity of military
 15 airfields (U.S. Air Force, 2016a).

16 The primary effect of aircraft noise on exposed communities is one of annoyance,
 17 including activity interference, which includes speech interference and sleep
 18 disturbance. Noise annoyance is defined by the EPA as any negative subjective
 19 reaction on the part of an individual or group (EPA, 1974). The best available method
 20 for predicting community annoyance response to aircraft noise is the updated Schultz
 21 curve (sometimes called the "Air Force Curve") (Table 3-5). The Schultz curve was
 22 validated by the Federal Interagency Committee on Noise (FICON) (1992) based on the
 23 additional data points collected by the Air Force, for use by Federal agencies in aircraft
 24 noise-related environmental impact analysis and by the American National Standards
 25 Institute as a standard on community responses to environmental noise (U.S. Air Force,
 26 2016a).

27 **Table 3-5. Relationship Between Annoyance and DNL**

Noise Exposure (DNL)	Percent of Population Highly Annoyed
<65	<12.29
65–70	12.29–22.10
70–75	22.10–36.47
75–80	36.47–53.74

< = less than; DNL = day-night average sound level

1 There are several commonly recognized average noise level thresholds that are based
 2 on expected community reaction. The first is DNL of 65 dB. This is a level most
 3 commonly used for noise planning purposes and represents a compromise between
 4 community impact and the need for activities like aviation, which unavoidably result in
 5 noise. Areas exposed to DNL above 65 dB generally are not considered suitable for
 6 residential use. The second is DNL of 55 dB, which was identified by the EPA as a level
 7 "...requisite to protect public health and welfare with an adequate margin of safety,"
 8 (EPA, 1974). From a noise exposure perspective, that would be an ideal selection.
 9 However, financial and technical resources are generally not available to achieve that
 10 goal. Most agencies have identified DNL of 65 dB as a criterion that protects those most
 11 impacted by noise, and that often can be achieved on a practical basis (FICON, 1992).
 12 This corresponds to about 12 percent of the exposed population being highly annoyed.
 13 The third is DNL of 75 dB. This is the lowest level at which adverse health effects could
 14 be credible (EPA, 1974). For all practical purposes, DNL and L_{dnmr} are equivalent with
 15 the major differences being that DNL is based on the number of average annual day
 16 operations while L_{dnmr} is based on the month with the largest number of operations.
 17 Also, L_{dnmr} accounts for the startle effect of humans and/or animals from high speed jet
 18 aircraft overflying the terrain, which is not necessary when analyzing noise in the normal
 19 airdrome environment.

20 Community annoyance from sonic booms, firing of heavy weaponry, and other
 21 impulsive noises is predicted using CDNL. The correlation between CDNL and
 22 annoyance has been estimated based on community reaction to impulsive sounds over
 23 several years (CHABA, 1981). Values of the C-weighted equivalent to the Schultz curve
 24 are different than that of the Schultz curve itself. Table 3-6 shows the relationship
 25 between percentage of the population highly annoyed, DNL, and CDNL. If both
 26 continuous and impulsive noise occurs in the same area, impacts are assessed
 27 separately for each.

28

Table 3-6. Relationship Between Annoyance, DNL, and CDNL

CDNL	Percent Highly Annoyed	DNL
48	2	50
52	4	55
57	8	60
61	14	65
65	23	70
69	35	75

Source: (CHABA, 1981)

CDNL = C-weighted day-night average sound level; DNL = day-night average sound level

29 In a similar way, U.S. Army Regulation 200-1 (AR 200-1) (U.S. Army, 2007) provides
 30 the overall framework for modeling noise levels associated with large-caliber weapons
 31 noise on air-to-ground and ground-to-ground training ranges. Consistent with AR 200-1,
 32 munitions noise level results at 57, 62, and 70 dBC are reported to the Army
 33 Construction Engineering Research Laboratory as a quality assurance and verification
 34 of the large caliber noise modeling. AR 200-1 recommends the utilization of a Land Use
 35 Planning Zone (57 to 62 dBC) and a Noise Zone I (less than 62 dBC) where noise-
 36 sensitive land uses such as housing, schools, and medical facilities need to be carefully

1 managed; a Noise Zone II (62 to 70 dBC) where noise-sensitive land uses are normally
2 not recommended; and a Noise Zone III (greater than 70 dBC) where noise-sensitive
3 land uses are not recommended.

4 For all types of noise impacts, significance is determined based on the extent, context,
5 and intensity of the impact in relation to relevant regulations, guidelines, and scientific
6 documentation. Additional detail on noise analysis methodology can be found in
7 Appendix C, Noise. Noise impacts on specific resources can be found in the respective
8 resource's Environmental Consequences section, such as biological resources (Section
9 3.8.2), cultural resources (Section 3.9.2), land use (Section 3.4.2), and socioeconomics
10 (Section 3.6.2).

11 **3.2.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 12 **NTTR (North and South Range) – Status Quo**

13 ***Aircraft Operations***

14 For Alternative 1, aircraft operations would remain at the baseline levels discussed
15 above. As listed in Table 3-2 and depicted in Figure 3-2, noise levels in the SUAs
16 located in the southern portion of the NTTR, nearest populated areas, would remain at
17 their existing levels, which are generally below an L_{dnmr} value of 45 dB except for
18 R-4806W and Elgin, which are at an L_{dnmr} value of 60 dB, still well below the L_{dnmr}
19 value of 65 dB level at which noise levels become a concern. Likewise, those SUAs in the
20 northernmost portions of the NTTR would remain at the baseline 61-dB level, which is
21 well below levels that result in land use compatibility concerns. Therefore, there would
22 be no impact based on an increase in aircraft noise above the existing baseline noise
23 environment.

24 Similarly, on-installation noise levels at Creech AFB would remain at the baseline levels
25 discussed above, and the surrounding communities, wildlife on the NTTR, and potential
26 cultural sites would not experience any additional noise beyond what has been already
27 ongoing for years. As shown, noise levels above an L_{dnmr} value of 65 dB only extend
28 off-installation in a small, remote area.

29 Supersonic noise levels would also remain at the existing baseline levels discussed
30 above. Generally, sonic booms may or may not reach the ground depending on
31 environmental and flight conditions. Several factors influence the trajectory of a sonic
32 boom and its magnitude on the ground (e.g., aircraft altitude, temperature gradients).
33 Furthermore, only one to five sonic booms would be generated in a given airspace
34 region per day. Due to the large size of each airspace unit, booms within neighboring
35 airspace regions would most often be separated geographically such that wildlife,
36 structures, or neighboring communities would not typically experience numerous
37 supersonic events on any given day.

38 However, the Air Force could provide information regarding noise sensitive areas and
39 impacts on wildlife to military personnel, specifically pilots, prior to conducting training or
40 testing activities. This would assist pilots in avoiding the creation of noise-related
41 impacts. This action could minimize any impacts across all alternatives.

1 **Munitions Use**

2 For Alternative 1, munitions use would remain at the baseline levels discussed in
3 Section 3.2.1.5, Baseline Noise Levels. Therefore, there would be no noise-related
4 impact from munitions use with Alternative 1.

5 **Ground Disturbance**

6 Ground-disturbing activities such as construction and maintenance operations and
7 vehicle or troop movements would remain at baseline levels and would not generate
8 sufficient noise to leave the NTTR boundary or affect members of the public. Generally,
9 noise levels from construction equipment or vehicle noise from NTTR operations would
10 remain less than the existing noise levels from vehicles and other sources associated
11 with populated areas. Additionally, these activities would continue to be short in
12 duration, and the noise environment would return to ambient levels following any
13 construction, maintenance, or troop transport activities. There would be no significant
14 adverse impacts from noise associated with ground-disturbing activities with
15 Alternative 1.

16 **Emitter Operations**

17 Noise associated with emitters would remain at the baseline levels discussed above.
18 These would continue to be similar to running a large engine in a vehicle, and this level
19 of noise would be unlikely to leave the NTTR boundaries and reach any members of the
20 public or disturb wildlife or cultural sites. (See Table 3-4 for noise levels at various
21 distances from emitter locations.) Therefore, there would be no significant adverse
22 impacts from noise associated with emitter operations for Alternative 1, and noise levels
23 would remain at or very near baseline levels.

24 **3.2.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready** 25 **Access in the North and South Ranges**

26 **Aircraft Operations**

27 Table 3-7 and Figure 3-2 present the noise modeling results for Alternatives 2 and 3
28 (which are the same for aircraft noise). With a 30 percent increase in operations, the
29 L_{dnmr} values for Restricted Areas, MOAs/ATCAAs, and MTRs would be expected to vary
30 from less than 45 dB L_{dnmr} to 70 dB L_{dnmr} , with an average 1-dB L_{dnmr} increase in each
31 individual airspace unit associated with the NTTR airspace complex.

Table 3-7. Summary of L_{dnmr} Values for SUAs

SUA Name	Baseline	Alternative 2	Alternative 3
	L_{dnmr} (dBA)	L_{dnmr} (dBA) (Change)	L_{dnmr} (dBA) (Change)
R-4806	60	61 (+1)	61 (+1)
R-4807	66	67 (+1)	67 (+1)
R-4808	<45	46 (+1)	46 (+1)
R-4809	69	70 (+1)	70 (+1)
Caliente	67	68 (+1)	68 (+1)
Coyote	67	68 (+1)	68 (+1)
Elgin	60	61 (+1)	61 (+1)

Table 3-7. Summary of L_{dnmr} Values for SUAs

SUA Name	Baseline	Alternative 2	Alternative 3
	L_{dnmr} (dBA)	L_{dnmr} (dBA) (Change)	L_{dnmr} (dBA) (Change)
Reveille	61	62 (+1)	62 (+1)
Sally	<45	<45 (+0)	<45 (+0)
VR-209	<45	<45 (+0)	<45 (+0)
VR-222	<45	<45 (+0)	<45 (+0)

< = less than; dBA = A-weighted decibels; L_{dnmr} = onset-rate adjusted monthly day-night average sound level; SUA = Special Use Airspace

1 For example, the L_{dnmr} value within R-4806 would be expected to increase from 60 dB
 2 L_{dnmr} (baseline conditions) to 61 dB L_{dnmr} for Alternative 2, an increase of only 1 dB
 3 L_{dnmr} . Again, the airspace units in the South Range would tend to remain below the
 4 65 dB L_{dnmr} threshold, and all airspace units would remain below the 75 dB L_{dnmr}
 5 threshold. Therefore, there would not be any expected significant adverse impacts
 6 related to noise with Alternative 2.

7 At Creech AFB and the surrounding areas, the 65-dB contour would be expected to
 8 extend slightly over 2 NM to the southwest and southeast due to transient military and
 9 RQ-170 operations and the overall increase in the number of operations. The 65-dB
 10 contour only overlaps the Indian Springs census-designated place boundary in one
 11 small area, which would expand approximately 150 feet south over a non-populated
 12 area. However, the adjacent community of Indian Springs has experienced a similar
 13 level of aircraft noise for decades, so while the residents may notice a gradual increase
 14 in the number of operations, compatibility issues would not be expected. Beyond that,
 15 the area surrounding Creech AFB is very remote, with the next nearest communities
 16 over 15 miles away (Mercury, Nevada, to the west and Pahrump and Las Vegas over
 17 25 miles to the southwest and southeast, respectively). Therefore, it is unlikely that any
 18 surrounding communities would be impacted. Consequently, it is not likely that the
 19 increase in installation aircraft noise in the vicinity of Creech AFB under Alternative 2
 20 would lead to any significant adverse impacts.

21 Table 3-8 and Figure 3-3 show the CDNL values associated with Alternatives 2 and 3.
 22 With a 30 percent increase in operations, the CDNL values would be expected to range
 23 from 52 dB to 62dB, with an average 1-dB increase over baseline noise levels for each
 24 airspace unit. The number of sonic booms per day would be expected to increase by
 25 one sonic boom over the baseline levels. However, these increases would be minimal
 26 and would not be anticipated to have any significant adverse impacts related to noise
 27 from the implementation of Alternative 2.

Table 3-8. Summary of Sonic Boom CDNL Values for SUA

SUA Name	Baseline		Alternative 2		Alternative 3	
	CDNL (dBC)	Booms per Day	CDNL (dBC) (Change)	Booms per Day (Change)	CDNL (dBC) (Change)	Booms per Day (Change)
R-4806	58	1	59 (+1)	2 (+1)	59 (+1)	2 (+1)
R-4807	51	2	52 (+1)	2 (+0)	52 (+1)	2 (+0)
R-4808	54	1	55 (+1)	1 (+0)	55 (+1)	1 (+0)

Table 3-8. Summary of Sonic Boom CDNL Values for SUA

SUA Name	Baseline		Alternative 2		Alternative 3	
	CDNL (dBC)	Booms per Day	CDNL (dBC) (Change)	Booms per Day (Change)	CDNL (dBC) (Change)	Booms per Day (Change)
R-4809	60	1	61 (+1)	2 (+1)	61 (+1)	2 (+1)
Caliente	61	5	62 (+1)	6 (+1)	62 (+1)	6 (+1)
Coyote	60	2	61 (+1)	3 (+1)	61 (+1)	3 (+1)
Elgin	54	1	55 (+1)	1 (+0)	55 (+1)	1 (+0)
Reveille	56	1	57 (+1)	1 (+0)	57 (+1)	1 (+0)
Sally	57	1	58 (+1)	2 (+1)	58 (+1)	2 (+1)

CDNL = C-weighted day-night average sound level; dBC = C-weighted decibels; SUA = Special Use Airspace

1 **Munitions Use**

2 With an increase of 30 percent in large-caliber munitions expenditure, the CDNL
3 contours for Alternative 2 would be expected to show a slight increase relative to
4 baseline conditions by approximately 1 dBC. The 57-dBC contours would be expected
5 to continue to extend approximately 2 to 3 NM from active target areas (Figure 3-4).
6 Only the lowest level (45 to 50 dB) noise contours would extend off of the NTTR, and
7 only in very small areas in the westernmost region of R-4807A and in the southernmost
8 area south of Creech Tower Airspace, Range 64F, 63B, and 63C, where the noise
9 contour is already extended off-installation under baseline conditions with no adverse
10 impacts. No Land Use Planning Zone or Zone I/II/III areas would extend off of the
11 NTTR itself. These increases would be minimal and would not be anticipated to have
12 any adverse impacts related to noise from the implementation of Alternative 2.

13 **Ground Disturbance**

14 Ground-disturbing activities such as construction and maintenance operations and
15 vehicle or troop movements would not generate sufficient noise to leave the NTTR
16 boundary or affect members of the public. In general, the NTTR is remote, and noise
17 levels from construction equipment or vehicle noise from NTTR operations would be
18 less than the existing noise levels from vehicles and other sources associated with
19 populated areas. Additionally, these activities would be short in duration, and the noise
20 environment would return to ambient levels following any construction, maintenance, or
21 troop transport activities. There would be no adverse impacts from noise associated
22 with ground-disturbing activities from implementation of Alternative 2.

23 **Emitter Operations**

24 Emitter operation involves running a generator to power the emitter. The noise levels
25 associated with emitters for Alternative 2 would be the same as discussed for
26 Alternative 1. Therefore, there would be minor, less than significant, projected impacts
27 from noise associated with emitter operations for Alternative 2.

28 **3.2.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

29 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 1 • Alternative 3A – Range 77 – EC South Withdrawal
- 2 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 3 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
- 4 Incorporation
- 5 • Alternative 3C – Alamo Withdrawal

6 ***Aircraft Operations***

7 Noise associated with Alternatives 3A, 3A-1, 3B, and 3C from aircraft operations
 8 associated with the NTTR and at Creech AFB would be the same as those discussed
 9 above for Alternative 2 (Table 3-7 and Table 3-8). There would be minimal to no
 10 adverse impacts due to aircraft operations anticipated with the implementation of
 11 Alternatives 3A, 3A-1, 3B, and 3C.

12 ***Munitions Use***

13 Noise associated with Alternatives 3A, 3A-1, 3B, and 3C from munitions use on the
 14 NTTR would be the same as those discussed above for Alternative 2 (Table 3-8). There
 15 would be no adverse impacts anticipated with the implementation of Alternatives 3A,
 16 3A-1, 3B, and 3C.

17 ***Ground Disturbance***

18 There would be no troop movement or construction (with exception of fencing
 19 installation) within the expansion areas proposed for Alternative 3A, 3A-1, or 3B.
 20 Therefore, there would be no adverse impacts from noise associated with ground-
 21 disturbing activities associated with implementation of Alternative 3A, 3A-1, or 3B.

22 Under Alternative 3C, conceptually, there would be construction of additional concrete
 23 or aggregate pads to place threat emitters within the newly withdrawn areas in order to
 24 create a more realistic training scenario. Construction noise was evaluated for the
 25 proposed construction of emitter pads, including clearing, grading, compacting, and
 26 paving activities. The analysis assumed that a standard set of construction equipment
 27 would be used in all construction projects and would run for approximately 40 percent of
 28 the workday. Resulting noise levels at various receptor distances from the construction
 29 site are listed in Table 3-9.

30 **Table 3-9. Construction Noise Level Expected from Each Emitter Pad Construction Site**

Distance to Receptor (feet)	L _{max} (dBA)	L ₁₀ (dBA)
100	79.0	82.6
200	73.0	76.6
300	69.4	73.0
400	66.9	70.5
500	65.0	68.6
600	63.4	67.0

dBA = A-weighted decibels; L₁₀ = loudest 10% noise level; L_{max} = maximum noise level

31 Other ground-disturbing activities such as vehicle or troop movements would be
 32 minimal. For Alternative 3C, military vehicle use to transit to and from emitter sites for
 33 routine maintenance would be minimal and would occur in an area geographically

1 separated from the public. Additionally, these activities would be short in duration, and
2 the noise environment would return to ambient levels following any construction,
3 maintenance, or troop transport activities. Personal vehicle use by recreational users is
4 already ongoing in the proposed expansion area, and military vehicle use to transit to
5 and from emitter sites for routine maintenance would produce similar or potentially less
6 noise than from recreational use. Therefore, there would be no adverse impacts from
7 noise due to ground-disturbing activities under Alternative 3C.

8 ***Emitter Operations***

9 Emitter operations in the Alternatives 3A, 3A-1, and 3B expansion areas are not
10 proposed under this withdrawal effort; therefore, there would be no adverse impacts
11 from noise associated with emitter operations for Alternative 3A, 3A-1, or 3B.

12 The noise associated with emitters for Alternative 3C would also be the same as
13 discussed for Alternative 1. Although the exact location of the emitters and associated
14 noise are unknown at this time, the noise levels estimated are minimal at safe distances
15 from the emitters. The proposed expansion area for Alternative 3C is remote and very
16 few individuals are likely to be impacted at any given time. However, people engaging in
17 recreation in the area likely desire its wilderness characteristics, including natural sound
18 levels. Such recreationalists may feel more highly annoyed by relatively low noise levels
19 associated with emitter operations than they would by the same noise level in a
20 populated area. Because the emitters would likely be placed in the interior areas of the
21 proposed Alamo expansion area and protected by fences or other access-prohibiting
22 measures, this level of noise would be unlikely to leave the NTTR boundaries and reach
23 any members of the public. Therefore, there would be minor, less than significantly
24 projected impacts from noise associated with emitter operations for Alternative 3C.

25 **3.2.2.5 Alternative 4 – Establish the Period of Withdrawal**

26 The proposed withdrawal periods associated with Alternative 4—Alternative 4A (20-year
27 withdrawal period), Alternative 4B (50-year withdrawal period), and Alternative 4C
28 (indefinite)—must be implemented in conjunction with one or more of the other
29 alternatives or subalternatives. Because Alternative 4 reflects periods of time, which do
30 not in and of themselves affect noise, there are no specific noise impacts associated
31 with any subalternatives of Alternative 4, except to provide a point in time at which
32 impacts from other chosen alternatives may end.

33 **3.2.2.6 No Action Alternative**

34 Under the No Action Alternative, the land withdrawal for the NTTR would not be
35 extended. In this case, the land would be returned to the public and would require
36 numerous management activities under FLPMA. Noise associated with military activities
37 such as aircraft operations, munitions, and training operations would decrease greatly
38 initially, and noise would decrease overall. However, in the long term, industrial
39 activities such as mining could be associated with increased noise and potentially in
40 areas that would affect the public to a greater degree than military operations do

1 currently. Prohibitions previously placed in effect by the MLWA on appropriations under
2 the public land laws would expire. Expiration of these prohibitions means that
3 appropriative land uses such as mining, mineral leasing, or livestock grazing could
4 potentially be reintroduced. Cleanup of contaminated or duded areas would be
5 required. This would involve the use of heavy machinery and vehicles. Noise from
6 these activities would likely be greater than what is currently ongoing for military
7 vehicular or troop movements and maintenance activities. Further, public use in these
8 areas could also contribute to noise through vehicle operation, firearms use, and other
9 recreational activities. While it is not possible to determine the overall impacts of the No
10 Action Alternative at this time, noise impacts may occur but the level of significance
11 cannot be determined at this time.

12 3.3 AIR QUALITY

13 3.3.1 Affected Environment

14 Air quality within the NTTR, the proposed expansion areas, and surrounding region
15 would be affected by emissions from the Proposed Action and alternatives. The
16 following sections describe the existing conditions related to air quality, including a
17 description of the resource, applicable rules and regulations, the ROI, and baseline air
18 quality and emissions.

19 3.3.1.1 Description of Resource

20 Air quality is affected by the type and amount of pollutants
21 emitted into the atmosphere, the size and topography of
22 the air basin, and the prevailing meteorological conditions.
23 The levels of pollutants are generally expressed on a
24 concentration basis in units of parts per million or micrograms per cubic meter.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.3.1.1.1.

25 The baseline standards for pollutant concentrations are the NAAQS and state air quality
26 standards established under the CAA. These standards represent the maximum
27 allowable atmospheric concentrations that can occur and still protect public health and
28 welfare. The NAAQS provide both short- and long-term standards for the following
29 criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter
30 equal to or less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively),
31 ozone, and lead.

32 Under the CAA, it is the responsibility of the individual states to achieve and maintain
33 the NAAQS. To accomplish this, states use the EPA-required State Implementation
34 Plan. A State Implementation Plan identifies goals, strategies, schedules, and
35 enforcement actions designed to achieve and maintain compliance with the NAAQS.

36 All areas of the United States are designated as having air quality better than
37 (attainment) or worse than (nonattainment) the NAAQS. Areas where there are
38 insufficient air quality data for EPA to form a basis for attainment status are

1 unclassifiable; such areas are treated as attainment areas until proven otherwise.
2 “Maintenance areas” are those that were previously classified as nonattainment but
3 where air pollution concentrations have been successfully reduced to levels below the
4 standard. Maintenance areas are subject to special maintenance plans to ensure
5 compliance with the NAAQS.

6 The NDEP has adopted the NAAQS to regulate air pollutant levels within the state of
7 Nevada, with the following exceptions and additions: (1) the state annual sulfur dioxide
8 standard is more stringent than the national standard; (2) Nevada has added an 8-hour
9 carbon monoxide standard specific to elevations greater than 5,000 feet above mean
10 sea level; and (3) Nevada has added standards for visibility impairment and 1-hour
11 hydrogen sulfide concentrations. However, in accordance with Nevada Administrative
12 Code (NAC) 445B.22097, Nevada standards are only to be used “in considering
13 whether to issue a permit for a stationary source and shall ensure that the stationary
14 source will not cause the Nevada standards to be exceeded in areas where the general
15 public has access” and further states that the NAAQS are to be used in determinations
16 of attainment or nonattainment. The national and state ambient air quality standards
17 are shown in Appendix D, Air Quality: Table D-1 (Summary of Nevada and National
18 Ambient Air Quality Standards).

19 Hazardous air pollutants are chemicals that are known or suspected of causing cancer
20 or other serious health effects. Unlike the criteria pollutants, there are currently no
21 national ambient standards for hazardous air pollutants. Some volatile organic
22 compounds are classified as hazardous air pollutants. Volatile organic compounds are
23 also ozone precursors and include any organic compound involved in atmospheric
24 photochemical reactions, except those designated by an EPA administrator as having
25 negligible photochemical reactivity. Hazardous air pollutants are not covered by the
26 NAAQS but may present a threat of adverse human health or environmental effects
27 under certain conditions.

28 **Permits**

29 The NTTR operates currently under multiple air quality permits. Portions of the South
30 Range are incorporated into the Creech AFB Title V Part 70 Air Operating Permit for
31 Source 473 issued in accordance with Clark County Air Quality Regulations on May 31,
32 2013. The North Range of the NTTR operates under Class II Air Quality Operating
33 Permit Number 9711-1233.01, issued on November 7, 2014. The Angel Peak Radar
34 Complex operates under a Minor Source Permit for Source 17038 issued by Clark
35 County Department of Air Quality and Environmental Management on February 14,
36 2012.

37 **General Conformity**

38 The EPA General Conformity Rule applies to federal actions occurring in nonattainment
39 or maintenance areas when the total direct and indirect emissions of nonattainment
40 pollutants (or their precursors) exceed specified thresholds. The emissions thresholds
41 that trigger requirements for a conformity analysis are called *de minimis* levels. *De*

1 *minimis* levels (in tons per year) vary by pollutant and also depend on the severity of the
2 nonattainment status for the air quality management area in question.

3 A conformity applicability analysis is the first step of a conformity evaluation and
4 assesses if a federal action must be supported by a conformity determination. This
5 process and requirements are further detailed in Appendix D, Air Quality. However,
6 General Conformity is not applicable to this land withdrawal extension or expansion.

7 ***New Source Review/Prevention of Significant Deterioration***

8 The CAA established New Source Review (NSR) and Prevention of Significant
9 Deterioration (PSD) regulations to protect the air quality in regions that already meet the
10 NAAQS. The major requirement of the PSD regulations is that the air quality impacts
11 from new or modified NSR/PSD sources must not exceed the maximum allowable
12 incremental increases for nitrogen dioxide, PM₁₀, or sulfur dioxide, as identified in Table
13 3-10.

14 **Table 3-10. Maximum Allowable Pollutant Concentration Increases Under PSD**
15 **Regulations**

Pollutant	Averaging Time	PSD Increments ($\mu\text{g}/\text{m}^3$)	
		Class I	Class II
Nitrogen dioxide	Annual	2.5	25
	24-hour	4	17
PM ₁₀	24-hour	8	30
Sulfur dioxide	Annual	2	20
	24-hour	5	91
	3-hour	25	512

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter; PSD = Prevention of Significant Deterioration; PM₁₀ = particulate matter equal to or less than 10 microns in diameter

16 Certain national parks, monuments, and Wilderness Areas have been identified as
17 Class I areas, where any appreciable deterioration in air quality is considered
18 significant. Class II areas are those where moderate, well-controlled growth could be
19 permitted. There are three PSD Class I areas within 50 miles of the NTTR airspace. The
20 Great Basin National Park on the eastern border of Nevada is approximately 45 miles
21 northeast of the eastern corner of the NTTR airspace. The closest Class I area in Utah,
22 Zion National Park, is approximately 37 miles east of the NTTR. The northeast corner of
23 Death Valley National Park, which overlaps the California/Nevada border within
24 50 miles, is located approximately 10 miles from the southwestern portion of the NTTR.
25 In addition, the Grand Canyon National Park Class I area is located approximately
26 55 miles east of the southeastern portion of the NTTR. The Lake Mead National
27 Recreation Area, which is not a Class I area, is located approximately 23 miles from the
28 southeastern corner of the NTTR South Range. The newly designated Basin and Range
29 National Monument is located approximately 15 miles northeast of the NTTR boundary.
30 Another recently designated monument, the Gold Butte National Monument, is located
31 approximately 20 miles southeast of the NTTR boundary. It should be noted that the
32 majority of emissions associated with the Proposed Action and alternatives would be
33 from mobile sources and are not subject to NSR/PSD standards for stationary sources.

1 **3.3.1.2 Region of Influence**

2 The NTTR land and airspace associated with the proposed land withdrawal extension
 3 and expansion areas are located in Clark, Lincoln, and Nye Counties; therefore, these
 4 three counties have been designated as the ROI for the air quality analysis. According
 5 to the EPA, Lincoln and Nye Counties are in attainment for all criteria pollutants. Clark
 6 County has previously been in nonattainment for 8-hour ozone (1997 standard), carbon
 7 monoxide (1971 standard), and PM₁₀ (1987 standard). However, as of November 5,
 8 2014, Clark County has been redesignated as a maintenance area for each of these
 9 pollutants and is currently in attainment for all pollutants (EPA, 2016a). As a result of
 10 each county’s attainment status, a conformity determination would not be required.

11 Emissions that would be generated from conceptual activities described in
 12 Section 2.2.1, Increase MCO Test/Training Capability to Meet the Demands of Strategic
 13 Guidance and Alleviate Competition for Critical MCO Electronic Assets, and
 14 Section 2.2.2, Enhance IW Test/Training Capability, were compared with Clark, Lincoln,
 15 and Nye County emissions (Table 3-11) obtained from EPA’s 2014 National Emissions
 16 Inventory, which provides the latest available data. The county data include emissions
 17 amounts from point sources, area sources, and mobile sources. Point sources are
 18 stationary sources that can be identified by name and location. Area sources are point
 19 sources from which emissions are too low to track individually, such as a home or small
 20 office building, or a diffuse stationary source, such as wildfires or agricultural tilling.
 21 Mobile sources are any kind of vehicle or equipment with gasoline or diesel engine, an
 22 airplane, or a ship. Two types of mobile sources are considered: on-road and nonroad.
 23 On-road sources consist of vehicles such as cars, light trucks, heavy trucks, buses,
 24 engines, and motorcycles. Nonroad sources are aircraft, locomotives, diesel and
 25 gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural
 26 and construction equipment, and recreational vehicles (EPA, 2016b).

27 **Table 3-11. Baseline Criteria Pollutant Emissions Inventory for**
 28 **Clark, Lincoln, and Nye Counties, Nevada**

County	Criteria Pollutant (tons/year)					
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
Clark	305,637	48,711	31,973	11,432	7,165	185,150
Lincoln	36,511	2,269	8,805	1,708	77	127,753
Nye	56,419	2,453	28,927	4,436	175	188,212
Total ROI	398,567	53,433	69,705	17,576	7,417	501,115

Source: (EPA, 2016c)
 CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

29 **3.3.1.3 Greenhouse Gas Emissions/Baseline**

30 Any GHG analysis contained in this document was prepared in accordance with the Air
 31 Force Air Quality EIAP guidance. The six primary GHGs as defined by the EPA under
 32 Section 202(a) of the CAA by rulemaking (see Endangerment and Cause or Contribute

Findings for Greenhouse Gases Under Section 202(a) of the CAA, 74 *Federal Register* 66,495–66,546, December 15, 2009) are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Section 16(e) of EO 13693, *Planning for Federal Sustainability in the Next Decade*, released in March 2015, also includes nitrogen trifluoride. Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the Earth’s surface. The GWP allows GHGs to be compared with each other by converting the GHG quantity into the common unit “carbon dioxide equivalent.” Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are produced in relatively very small quantities and most often by very specific niche industries such as electronic component manufacturing. Additionally, EPA’s National Emissions Inventory database only tracks the most abundant GHGs (carbon dioxide, nitrous oxide, and methane). Therefore, analysis focuses on these three primary GHGs represented as carbon dioxide equivalents (CO₂e) based on their GWP. Baseline GHG emissions for Clark, Lincoln, and Nye Counties, obtained from EPA’s 2014 National Emissions Inventory, are summarized in Table 3-12.

Table 3-12. Baseline Greenhouse Gas Emissions Inventory for Clark, Lincoln, and Nye Counties, Nevada

County	Greenhouse Gas (tons/year)			
	CH ₄	CO ₂	N ₂ O	CO ₂ e
Clark	853	11,402,575	292	11,510,897
Lincoln	346	170,035	1	179,069
Nye	504	474,073	10	489,581
Total ROI	1,703	12,046,684	303	12,179,548

Source: (EPA, 2016c)

CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; CH₄ = methane; N₂O = nitrous oxide; ROI = region of influence

3.3.2 Environmental Consequences

Air quality within the NTTR, the proposed expansion areas, and the immediately surrounding region would be affected by emissions from sources associated with aircraft operations, munitions use, ground disturbance (construction, troop movement, vehicle use, etc.), and emitter operations. The following sections provide a description of air quality impacts that would occur from each alternative. Emissions from any alternative that cause an exceedance of any state or national ambient air quality standard would result in significant environmental impacts.

3.3.2.1 Analysis Methodology

In order to evaluate air emissions and their impact on the overall ROI, the emissions associated with the Proposed Action activities were evaluated in accordance with the tiered approach outlined in the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume I and Volume II – Advanced Assessments*. The first step was to conduct an assessment to determine if the action

1 was exempt for air quality analysis. The Proposed Action was not subject to any
2 categorical exclusions or General Conformity exemptions. Since the Proposed Action is
3 not subject to any exemptions under Tier I, a quantitative assessment (Tier II) was
4 completed. The Tier II assessment requires a formal evaluation of air impacts based on
5 a quantitative net change emissions inventory of the annual net total direct and indirect
6 emissions of pollutants of concern. It should be noted that in the case of the Proposed
7 Action, there were no net emissions realized.

8 Air quality impacts were evaluated quantitatively based on a two-pronged approach.
9 Potential impacts to air quality were first identified as the total emissions of any primary
10 pollutant that equals 250 tons per year for that pollutant based on the federal NSR/PSD
11 major stationary source threshold. In addition to primary pollutants, GHGs were
12 compared to an indicator level of 75,000 tons of GHGs. This established a first-level
13 indicator of potential significance for both primary pollutants and GHGs.

14 However, since the majority of the emissions related to the Proposed Action and
15 alternatives would result from activities associated with mobile sources, a second-level
16 indicator was deemed appropriate. Consequently, if the evaluation showed that the
17 first-level indicators for primary pollutants and GHGs would be exceeded, each pollutant
18 was evaluated and compared with the total ROI emissions (Lincoln, Clarke, and Nye
19 Counties) on a pollutant-by-pollutant basis against the ROI's 2014 National Emissions
20 Inventory data.

21 Potential impacts to air quality are evaluated with respect to the extent, context, and
22 intensity of the impact in relation to relevant regulations, guidelines, and scientific
23 documentation. The CEQ defines significance in terms of context and intensity in
24 40 CFR 1508.27. This requires the significance of the action to be analyzed with respect
25 to the setting of the proposed action and based relative to the severity of the impact.
26 NEPA regulations (40 CFR 1508.27[b]) provide 10 key factors to consider in
27 determining an impact's intensity, which are described in Appendix D, Air Quality.

28 To provide a more conservative analysis, the three counties were selected as the ROI
29 instead of the EPA-designated Air Quality Control Region, which is a much larger area.
30 Air quality impacts would be considered significant if the increases in annual emissions
31 of a pollutant would be anticipated to: (1) cause or contribute to a violation of any
32 national or state ambient air quality standard; (2) expose sensitive receptors to
33 substantially increased pollutant concentrations; (3) exceed any evaluation criteria
34 established by a State Implementation Plan or permit limitations/requirements; or (4) be
35 anticipated to cause an exceedance of the NAAQS or contribute to nonattainment.

36 The Air Conformity Applicability Model (ACAM) Version 5.0.7 was utilized to provide a
37 level of consistency with respect to emissions factors and calculations. The ACAM
38 provides estimated air emissions from proposed federal actions in areas designated as
39 nonattainment and/or maintenance for each specific criteria and precursor pollutant as
40 defined in the NAAQS. The ACAM was utilized to calculate construction emissions.
41 Emission factors for aircraft were also obtained from ACAM. Munitions emission factors
42 were used from EPA's *AP-42, Fifth Edition* (Volume I, Chapter 15: Ordnance
43 Detonation) and calculated based on the net weight of the explosive (or a conversion

1 factor for pounds per item) and the number of times that the munition was used
2 annually. Generator emissions factors were obtained from the *Air Emissions Guide for*
3 *Air Force Mobile Sources* (U.S. Air Force, 2016b) and calculated based on the
4 horsepower and annual hours of operation. Equations and emission factors can be
5 found in Appendix D, Air Quality.

6 The potential effects of GHG emissions from the Proposed Action are, by nature, global.
7 Given the global nature of climate change and the current state of the science, it is not
8 useful at this time to attempt to link the emissions quantified for local actions to any
9 specific climatological change or resulting environmental impact. Nonetheless, the
10 GHG emissions from the No Action Alternative, Proposed Action, and alternatives have
11 been quantified to the extent feasible in this LEIS for information and comparative
12 purposes.

13 GHGs were included in the analysis, and are expressed in the following sections as
14 CO₂e (carbon dioxide equivalents). The primary source of carbon dioxide emissions
15 would be fuel combustion from aircraft emissions during training activities. GHG
16 emissions were compared with the Air Force's recommended *de minimis* significance
17 emissions rate of 75,000 tons per year. Details on GHG calculations are provided in
18 Appendix D, Air Quality.

19 **3.3.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 20 **NTTR (North and South Range) – Status Quo**

21 Under Alternative 1, Air Force testing and training activities on the NTTR would continue
22 at current levels. Activities currently include aircraft operations, ground and vehicle
23 operations, munitions use, and operation of threat emitters. Aircraft operations occurring
24 below the 3,000-foot AGL atmospheric mixing layer in NTTR airspace, as well as
25 Creech AFB total airfield operations and munitions use, were obtained from schedulers,
26 air traffic control, and operators for the 2015 calendar year baseline. Since specific
27 numbers and types of vehicles (i.e., motorized vehicles that are not aircraft) for each
28 base are difficult to obtain, emissions from this category were based on historical
29 installation fuel consumption data. Threat emitter operations were based on a
30 conservative assumption of operating a 1.5-kilovolt-amp (kVA) diesel generator
31 continuously for the entire year. For more detailed information on assumptions,
32 emission factors, and calculations, see Appendix D, Air Quality.

33 Operational activities proposed under Alternative 1 would be the same as activities that
34 presently occur in the ROI. As these activities are currently part of the environment and
35 the area is in attainment/maintenance for all pollutants, aircraft operations associated
36 with the NTTR do not adversely affect the regional air quality. Further, as shown in
37 Table 3-13, the aircraft operations represent a small percentage of the overall annual
38 emissions in the ROI. At less than 5 percent, nitrogen oxide represents the highest
39 percentage of annual emissions in the ROI. Therefore, air quality impacts from aircraft
40 operations associated with Alternative 1 in the ROI would be insignificant.

Table 3-13. Alternative 1 Aircraft Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	CO _{2e}
Aircraft Emissions	702.07	2,418.90	184.40	162.53	120.33	127.83	448,746
Creech Airfield Emissions	44.56	25.97	3.73	3.30	2.06	7.92	6,317
Total Annual Emissions	746.62	2,444.87	188.13	165.84	122.40	135.75	455,063
ROI Baseline Emissions¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percentage of Baseline	0.19%	4.58%	0.27%	0.94%	1.65%	0.03%	3.74%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO_x = sulfur oxides; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

The potential exists for military aircraft to impair visibility within a federal Class I area, defined as (1) a reduction in regional visual range and (2) temporary atmospheric discoloration or plume blight. Criteria to determine significant impacts on visibility within Class I areas usually pertain to stationary emission sources, because mobile sources are generally exempt from permit review by regulatory agencies. Since there are no readily available quantitative techniques to estimate visibility impacts from in-flight aircraft, the assessment is made in a qualitative manner. The nearest Class I area to the NTTR is Death Valley National Park, approximately 10 miles from the western edge of the NTTR. Emissions from aircraft quickly disperse and do not currently affect visual range from a reference point 10 miles away. Additionally, plume blight would occur within an aircraft flight path, but only for a short duration immediately after passage of the aircraft. Therefore, impacts on visibility from the alternative within Class I areas in proximity to the NTTR would be insignificant.

There are emissions associated with munitions detonations occurring during test and training operations on NTTR. Ordnance use numbers for the baseline year (calendar year 2015) were provided by NTTR operators. Annual emissions were calculated and are provided in Table 3-14.

Table 3-14. Alternative 1 Munitions Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	CO _{2e}
Munitions Emissions	10.67	0.50	359.59	346.57	0.14	0.26	441.12
ROI Baseline Emissions	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percentage of Baseline	0.18%	4.53%	0.78%	2.90%	1.62%	0.03%	3.74%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO_x = sulfur oxides; VOC = volatile organic compound

Additional particulate matter emissions may also occur from fugitive dust emitted during the delivery of ordnance from aircraft. However, fugitive dust emissions associated with munitions activities is generally small when nonexplosive ordnance is used. However, use of live ordnance does produce a substantial amount of fugitive dust, depending on the explosive potential of the ordnance and softness of the impacted soil. Fugitive dust emissions from ordnance deliveries may also be exacerbated during periods of high winds. However, these impacts would be localized and short in duration, and there are

1 currently no major impacts from fugitive dust that affect the monitored regional air
 2 quality. The area remains in attainment for both PM₁₀ and PM_{2.5} despite these ongoing
 3 activities. Munitions deployment would remain the same under Alternative 1, and,
 4 therefore, would continue to be unlikely to contribute to any significant impacts to local
 5 or regional air quality within the ROI.

6 Construction, maintenance activities, and troop movements (both via vehicles and on
 7 foot) are expected to occur under Alternative 1 only at current levels. Air quality impacts
 8 associated with activities within the ROI could occur from combustive emissions due to
 9 equipment and vehicle usage and fugitive dust emissions in the form of particulate
 10 matter less than 10 microns in diameter (i.e., PM₁₀) as a result of ground-disturbing
 11 activities and equipment/vehicle operations on dirt roads. Table 3-15 shows a
 12 representative baseline for annual emissions associated with military vehicles and
 13 construction equipment based on annual fuel consumption (U.S. Air Force, 2014b;
 14 2014c). Impacts due to combustive emissions from these sources would be insignificant
 15 because most emission sources would be mobile and intermittent, and pollutant impacts
 16 would not be large enough in a localized area to cause any exceedance of an ambient
 17 air quality standard.

18 Air quality impacts during construction and general maintenance activities would be
 19 short-term and would cease at the end of the required maintenance. Additionally, the
 20 level of maintenance activity proposed under Alternative 1 would not differ substantially
 21 from activities that presently occur in this area. Therefore, air quality impacts from
 22 maintenance activities under Alternative 1 would be insignificant.

23 Although emissions associated with construction activities would be insignificant, the Air
 24 Force should consider employing standard management measures for construction
 25 activities such as watering of graded areas, covering of soil stockpiles, and contour
 26 grading (if necessary), to minimize temporary generation of dust and particulate matter.
 27 This would serve to minimize air emissions associated with elements of the Proposed
 28 Action and across all alternatives.

29

Table 3-15. Alternative 1 Vehicle Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Vehicle Operations	65.76	18.76	0.74	0.70	0.07	6.52	8,485
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.02%	0.04%	0.00%	0.00%	0.00%	0.00%	0.07%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

30 Air quality impacts from Alternative 1 emitter operations within the NTTR would primarily
 31 be caused by generator emissions associated with operation of various threat emitters
 32 across the NTTR. Generator emissions were calculated for a single threat emitter using
 33 a 1.5-kVA generator operating continuously for the entire year (Table 3-16). Actual
 34 emissions would likely be much lower, since emitters would only operate during
 35 necessary test or training exercises, which typically last on the order of days or weeks.
 36 It should be noted that multiple generator-powered emitters would be likely to be

1 operated concurrently. However, typically in practice, these emissions would be
 2 localized and temporary in nature, only lasting for the duration of the test or training
 3 operation during which they are necessary for the mission.

4 **Table 3-16. Alternative 1 Emitter Operation Emissions**

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Emitter Operation Emissions	0.08	0.15	0.01	0.01	0.01	0.02	13.81
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

5 **Alternative 1 Emissions Summary**

6 Table 3-17 lists the annual emissions from all sources under Alternative 1. While
 7 annual emissions for each criteria pollutant exceed the 250-ton NSR/PSD threshold for
 8 carbon monoxide, nitrogen oxides, and particulate matter, it is important to note that
 9 these operations have been ongoing for many years and are already included in the
 10 baseline air environment. Further, Alternative 1 emissions would not exceed 5 percent
 11 of the ROI annual baseline emissions. Therefore, implementation of Alternative 1 would
 12 not be likely to contribute to a significant adverse impact to regional air quality.

13 **Table 3-17. Summary of Alternative 1 Emissions**

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Aircraft Emissions	702.07	2,418.90	184.4	162.53	120.33	127.83	448,746
Creech Airfield Emissions	44.56	25.97	3.73	3.3	2.06	7.92	6,317
Munitions Emissions	10.67	0.5	359.59	346.57	0.14	0.26	441.12
Vehicle Operations	65.76	18.76	0.74	0.7	0.07	6.52	8,485
Emitter Operation Emissions	0.08	0.15	0.01	0.01	0.01	0.02	14
Total Alternative 1 Emissions	823.14	2,464.28	548.47	513.11	122.61	142.55	464,003
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.21%	4.61%	0.79%	2.92%	1.65%	0.03%	3.81%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

14 **3.3.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready**
 15 **Access in the North and South Ranges**

16 Under Alternative 2, Air Force testing and training activities on the NTTR would be
 17 assumed to increase by approximately 30 percent from those levels stated for
 18 Alternative 1, as presented in Section 2.3.2. Aircraft operations, vehicle operations, and
 19 munitions use were all assumed to increase by the estimated 30 percent. It is difficult at

1 this time to estimate the increase in operation of threat emitters, so a range of
 2 operations increases and number of total emitters operated is presented in order to
 3 inform the reader of the impacts of a minimal increase as well as a conservative,
 4 extreme increase. For more detailed information on assumptions, emission factors, and
 5 calculations, see Appendix D, Air Quality.

6 Table 3-18 shows the estimated annual emissions from aircraft operations under
 7 Alternative 2. The highest criteria pollutant emissions would be nitrogen oxides, which
 8 would represent only 1.37 percent of the ROI's annual emissions. Therefore, air quality
 9 impacts associated with Alternative 2 aircraft operations in this area would be less than
 10 significant.

11 **Table 3-18. Alternative 2 Aircraft Emissions**

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	CO ₂ e
Aircraft Emissions	210.62	725.67	55.32	48.76	36.10	38.35	134,624
Creech Airfield Emissions	13.37	7.79	1.12	0.99	0.62	2.38	1,895
Total Annual Emissions	223.99	733.46	56.44	49.75	36.72	40.72	136,519
ROI Baseline Emissions	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percentage of Baseline	0.06%	1.37%	0.08%	0.28%	0.50%	0.01%	1.12%

CO = carbon monoxide; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO_x = sulfur oxides; VOC = volatile organic compound

12 The air quality analysis for munitions use associated with Alternative 2 also assumed an
 13 increase of 30 percent for all munitions/ordnance, as stated in Section 2.3.2. Table 3-19
 14 shows the estimated annual emissions from munitions operations under Alternative 2.
 15 The highest criteria pollutant emissions would be PM_{2.5}, which would represent only
 16 0.59 percent of the ROI's annual emissions. Therefore, operational air quality impacts
 17 associated with Alternative 2 in this area would be insignificant.

18 **Table 3-19. Alternative 2 Munitions Emissions**

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	CO ₂ e
Munitions Emissions	3.20	0.15	107.88	103.97	0.04	0.08	132.33
ROI Baseline Emissions	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percentage of Baseline	0.00%	0.00%	0.15%	0.59%	0.00%	0.00%	0.00%

CO = carbon monoxide; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO_x = sulfur oxides; VOC = volatile organic compound

19 Conceptually, up to fifteen 150-by-150-foot pads would be constructed to allow for
 20 placement and operation of threat emitters within the ready access areas to increase
 21 the operational relevance of MCO operations. Additionally, Alternative 2 would include
 22 approximately 4 acres of road improvements to allow for access to threat emitters and
 23 repeaters for installation, maintenance, and potentially periodic relocation. Construction
 24 activity and worker commute emissions were calculated using ACAM modeling software
 25 and compared with the ROI's baseline annual emissions. Annual vehicular operations
 26 were also assumed to increase by 30 percent for Alternative 2, as stated in Section
 27 2.3.2. Table 3-20 shows the estimated annual emissions from ground-disturbing
 28 activities and vehicular operations with Alternative 2. The highest criteria pollutant

emissions would be PM₁₀, which would represent only 0.09 percent of the ROI's annual emissions. Impacts related to ground-disturbing activities associated with Alternative 2 would amount to no more than 0.09 percent of the total ROI annual emissions for any of the criteria pollutants. Based on air emissions modeling and analysis, ground-disturbing activities with Alternative 2 would not be expected to result in any significant increase in air emissions and no adverse impacts would occur. Therefore, air quality impacts from ground-disturbing activities associated with Alternative 2 in this area would be insignificant.

Table 3-20. Alternative 2 Ground Disturbance Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Emitter Pad and Roadway Construction Emissions	7.04	7.78	60.15	0.35	0.02	1.25	1,707
Vehicle Operations	85.49	24.38	0.96	0.91	0.08	8.47	11,030
Alternative 2 Ground Disturbance Total	92.53	32.16	61.11	1.26	0.10	9.72	12,737
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.02%	0.06%	0.09%	0.01%	0.00%	0.00%	0.10%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

With Alternative 2, providing ready access and allowing for a dual-front MCO would lead conceptually to increased usage of threat emitters. While it has not yet been determined specifically how many emitters would be operated and at what level, a 30 percent increase was assumed to correspond with the increase in test and training activities. Table 3-21 provides the total emissions anticipated from a single emitter and a sampling of what emissions levels would be, assuming various numbers of emitters operated in the same manner (10, 15, 20, and 30 emitters, respectively) and compares these emissions to the ROI's annual baseline. Even assuming 30 emitters operated at a conservatively high frequency and duration, the highest percentage of baseline emissions is nitrogen oxides at less than 0.01 percent of the ROI's total emissions. Therefore, it is not likely that increases in emitter operations under Alternative 2 would adversely impact regional air quality.

Table 3-21. Alternative 2 Emitter Operation Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Single Emitter Emissions	0.08	0.15	0.01	0.01	0.01	0.02	13.81
10 emitters	0.76	1.53	0.15	0.14	0.10	0.20	138.11
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 emitters	1.14	2.30	0.22	0.21	0.14	0.30	207.17
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 emitters	1.52	3.06	0.30	0.28	0.19	0.41	276.23

Table 3-21. Alternative 2 Emitter Operation Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
30 emitters	2.28	4.59	0.44	0.43	0.29	0.61	414.34
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

1 **Alternative 2 Emissions Summary**

2 Table 3-22 lists the annual emissions increase over baseline 2015 levels from all
3 sources under Alternative 2. While annual emissions for carbon monoxide and nitrogen
4 oxides would exceed the 250-ton NSR/PSD threshold, Alternative 2 emissions would be
5 less than 2 percent of the ROI annual baseline emissions. Therefore, implementation of
6 Alternative 2 would not be likely to contribute to a significant adverse impact to regional
7 air quality.

Table 3-22. Summary of Alternative 2 Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Aircraft Emissions	210.62	725.67	55.32	48.76	36.1	38.35	134,624
Creech Airfield Emissions	13.37	7.79	1.12	0.99	0.62	2.38	1,895
Munitions Emissions	3.2	0.15	107.88	103.97	0.04	0.08	132.33
Vehicle Operations	85.49	24.38	0.96	0.91	0.08	8.47	11,030
Emitter Pad and Roadway Construction Emissions	7.04	7.78	60.15	0.35	0.02	1.25	1,707
Emitter Operation Emissions	2.28	4.59	0.44	0.43	0.29	0.61	414
Total Alternative 2 Emissions	322.00	770.36	225.87	155.41	37.15	51.14	149,802
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.08%	1.44%	0.32%	0.88%	0.50%	0.01%	1.23%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

9 **3.3.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

10 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 11 • Alternative 3A – Range 77 – EC South Withdrawal
- 12 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 13 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
14 Incorporation
- 15 • Alternative 3C – Alamo Withdrawal

16 Emissions associated with Alternatives 3A, 3A-1, 3B, and 3C from aircraft operations
17 would be the same as those discussed for Alternative 2 (Table 3-18). As with

1 Alternative 2, there would be no adverse impacts to air quality due to aircraft operations
2 anticipated with the implementation of Alternatives 3A, 3A-1, 3B, and 3C.

3 Emissions associated with Alternatives 3A, 3A-1, 3B, and 3C from munitions use would
4 be the same as those discussed for Alternative 2 (Table 3-19). Munitions use
5 associated with Alternative 3B would remain at the current locations and at the
6 increased levels evaluated for Alternative 2, but no munitions use would occur in the
7 expansion area proposed for Alternative 3B (Range 64C/D and 65D, and the
8 Administrative Incorporation area) nor Alternative 3C (Alamo areas). The Air Force
9 would continue to utilize current target impact areas, so while munitions use would
10 increase as discussed for Alternative 2, those munitions would not be used in newly
11 withdrawn areas. Therefore, there would be no adverse impacts to air quality due to
12 munitions use anticipated with the implementation of Alternatives 3A, 3A-1, 3B, and 3C.

13 While ground-disturbing activities for Alternative 3A or 3A-1 may include a minor
14 increase in maintenance activities, there would be no substantial increase in vehicle or
15 fossil fuel combusting equipment operations as a result of Alternative 3A or 3A-1. For
16 Alternative 3B, construction and troop movement would increase as discussed for
17 Alternative 2, but would not occur within the Range 64C/D and 65D or Administrative
18 Incorporation areas proposed for withdrawal for Alternative 3B. With Alternative 3B,
19 there may be a minor increase in maintenance activities in newly withdrawn areas (such
20 as fencing, road maintenance, etc.), but there would be no substantial increase in
21 vehicle or fossil fuel combusting equipment operations. Therefore, impacts to air quality
22 due to ground-disturbing activities with Alternative 3A, 3A-1, or Alternative 3B would be
23 minimal.

24 For Alternative 3C, while there would be an increase in troop movement associated with
25 additional IW training, the primary increase in air emissions would result from the
26 construction of additional threat emitter pads in the Alamo withdrawal areas.
27 Conceptually, up to fifteen 150-by-150-foot pads would be constructed to allow for
28 placement and operation of threat emitters within the Alamo areas to increase the
29 operational relevance of MCO operations. Additionally, Alternative 3C would include
30 approximately 4 acres of road improvements to allow for access to threat emitters and
31 repeaters for installation, maintenance, and potentially periodic relocation. Some
32 surface improvements, such as grading and leveling using heavy machinery, would also
33 be necessary for preparation of the runway to be used for FAARP activities.
34 Construction activity and worker commute emissions were calculated using ACAM
35 modeling software and compared with the ROI's baseline annual emissions. Likewise,
36 as with Alternative 2, vehicle operations for Alternative 3C were assumed to increase by
37 30 percent to account for additional areas of maintenance and transport. This increase
38 would also account for additional maintenance and installation activities associated with
39 fencing of the expanded area for Alternative 3C (Table 3-23).

Table 3-23. Alternative 3C Ground Disturbance Air Emissions Compared with ROI Emissions (tons per year)

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO _{2e}
Emitter Pad, Roadway, and Runway Construction Emissions	7.88	9.06	127.80	0.40	0.02	1.43	1,983
Vehicle Operations	111.14	31.7	1.25	1.18	0.11	11.01	14,340
Ground Disturbance Total	119.02	40.76	129.05	1.58	0.13	12.44	16,323
ROI emissions¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percentage of Total ROI	0.03%	0.08%	0.19%	0.01%	0.00%	0.00%	0.13%

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹Source: (EPA, 2016c)

Impacts related to ground-disturbing activities associated with Alternative 3C would amount to no more than 0.19 percent of the total ROI annual emissions for any of the criteria pollutants. Based on air emissions modeling and analysis, ground-disturbing activities with Alternative 3C would not be expected to result in any significant increase in air emissions and no adverse impacts would occur.

Emitter operations would not increase as a result of Alternative 3A or 3A-1. For Alternative 3B, emitter use would increase as discussed for Alternative 2, but there would be no increase in emitter operations in the proposed expansion area (Ranges 64C/D and 65D and the Administrative Incorporation area). For Alternative 3C, the operation of threat emitters would likely increase over levels analyzed previously; however, as discussed for Alternative 2 and shown in Table 3-21, even the most conservative estimates show very minor contribution to the ROI's existing criteria pollutant baseline. Therefore, impacts to air quality resulting from emitter operations due to Alternative 3A or 3A-1 would be minimal, and no adverse impacts to regional air quality would be anticipated from implementation of Alternative 3B or Alternative 3C.

Additional particulate matter emissions may also occur from fugitive dust emitted during FAARP training activities such as takeoff and landings from aircraft at an austere unimproved runway location as discussed in Section 2.3.3.4. Fugitive dust emissions associated with these activities could produce a substantial amount of particulate matter and fugitive dust, depending on the type of aircraft and time of year as well as the softness of the impacted soil. Fugitive dust emissions from FAARP training may also be exacerbated during periods of high winds. However, these impacts would be localized and short in duration, and there are currently no major impacts from fugitive dust that affect the monitored regional air quality. The ROI remains in attainment for both PM₁₀ and PM_{2.5}. Since similar activities occur under Alternative 1, these fugitive dust emissions would be unlikely to contribute to any significant impacts to local or regional air quality within the ROI.

Although emissions associated with these training activities would be insignificant, the Air Force should consider employing standard management measures similar to those used for construction activities, such as watering of graded areas, covering of soil stockpiles, and contour grading (if necessary), to minimize temporary generation of dust and particulate matter.

Alternative 3 Emissions Summary

Table 3-24 lists the annual emissions increase over baseline 2015 levels from all sources under Alternative 3C, which is the most conservative alternative since it includes additional emissions for the construction of emitter pads. Emissions produced under Alternatives 3A and 3B would actually be lower than under Alternative 3C. While annual emissions for carbon monoxide and nitrogen oxides would exceed the 250-ton NSR/PSD threshold, Alternative 3 emissions would not exceed 2 percent of the ROI annual baseline emissions under any subalternative. Therefore, implementation of Alternative 3A, 3B, or 3C would not be likely to contribute to a significant adverse impact to regional air quality.

Table 3-24. Summary of Alternative 3 Emissions

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO ₂ e
Aircraft Emissions	210.62	725.67	55.32	48.76	36.10	38.35	134,624
Creech Airfield Emissions	13.37	7.79	1.12	0.99	0.62	2.38	1,895
Munitions Emissions	3.20	0.15	107.88	103.97	0.04	0.08	132
Vehicle Operations	111.14	31.70	1.25	1.18	0.11	11.01	14,340
Emitter Operation Emissions	2.28	4.59	0.44	0.43	0.29	0.61	414
Emitter Pad Construction Emissions	7.88	9.06	127.80	0.40	0.02	1.43	1,983
Total Alternative 3 Emissions	348.49	778.96	293.81	155.73	37.18	53.86	153,388
Total ROI¹	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.09%	1.46%	0.42%	0.89%	0.50%	0.01%	1.26%

CO = carbon monoxide; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound
¹ Source: (EPA, 2016c)

3.3.2.5 Alternative 4 – Establish the Period of Withdrawal

The proposed withdrawal periods associated with Alternative 4—Alternative 4A (20-year withdrawal period), Alternative 4B (50-year withdrawal period), and Alternative 4C (indefinite)—must be implemented in conjunction with one or more of the other alternatives or subalternatives. Because Alternative 4 reflects periods of time, which do not in and of themselves affect air emissions, there would be no impacts specific to the time-related portion of Alternative 4. Emissions are analyzed on an annual basis, and there are no known or anticipated changes to criteria pollutants or GHG emissions affected by the period of withdrawal. Annual emissions would remain at or near the baseline or implemented alternative level throughout the period of withdrawal.

3.3.2.6 No Action Alternative

Under the No Action Alternative, the land withdrawal for the NTTR would not be renewed. In this case, the land would be returned to the public and would require numerous management activities under the FLPMA. Initially, air pollutant emissions associated with military activity would decrease. However, in the longer term, overall emissions may increase, as industrial activities such as mining could be associated with

1 greater levels of emissions of certain criteria pollutants such as particulate matter.
 2 Prohibitions previously placed in effect by the MLWA on appropriations under the public
 3 land laws would expire. Expiration of these prohibitions means that appropriative land
 4 uses such as mining, mineral leasing, or livestock grazing could potentially be
 5 reintroduced. While it is not possible to estimate emissions from such industrial
 6 activities at this time, the associated emissions could contribute greatly to the regional
 7 air pollutant emissions, potentially adversely impacting air quality. Further, appropriate
 8 decontamination operations may be required and could be extensive in scope and long
 9 in duration. These decontamination activities would include operation of heavy
 10 machinery and associated combustion of fossil fuels, which may lead to increased air
 11 pollutant emissions over the long term, potentially greater than current military
 12 emissions. While it is not possible to determine the overall impacts of the No Action
 13 Alternative at this time, air quality impacts may be significant.

14 3.3.2.7 Air Emissions Alternative Comparison

15 Table 3-25 lists the total net emissions from direct and indirect emissions under each of
 16 the proposed alternatives. It is important to note (1) that Alternative 1 emissions are
 17 ongoing and have been for many years, so these are not new emissions and should
 18 actually be considered part of the ROI baseline, and (2) because the alternatives
 19 involve different geographic regions, more than one alternative could be implemented.
 20 However, aircraft and munitions activities would increase by 30 percent under either
 21 Alternative 2 or 3 or if both were implemented; thus, the emissions from those sources
 22 would not be additive if both were implemented. Conservatively, all emissions were
 23 added in Table 3-25, and total emissions from all alternatives would still contribute to
 24 less than 8 percent of the ROI's annual regional criteria pollutant emissions for each
 25 pollutant. Carbon dioxide emissions would greatly exceed the 75,000-ton per year
 26 relative significance indicator. However, emissions from threat emitters would be the
 27 only emissions from potential stationary sources, and their emissions would be well
 28 below 75,000 tons per year in all cases.

29 **Table 3-25. Alternatives Comparison of Emissions**

Source	Pollutant (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	CO ₂ e
Alternative 1 Emissions	823.14	2,464.28	548.47	513.11	122.61	142.55	464,003
Alternative 2 Emissions	322.00	770.36	225.87	155.41	37.15	51.14	149,802
Alternative 3 Emissions	348.49	778.96	293.81	155.73	37.18	53.86	153,388
Total Alternative 1, 2, and 3 Emissions	1,493.63	4,013.61	1,068.16	824.26	196.94	247.55	767,193
Total ROI Baseline	398,567	53,433	69,705	17,576	7,417	501,115	12,179,548
Percent of ROI	0.37%	7.51%	1.53%	4.69%	2.66%	0.05%	6.30%

CO = carbon monoxide; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ or PM_{2.5} = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

¹ Source: (EPA, 2016c)

3.4 LAND USE, RECREATION, AND VISUAL RESOURCES

3.4.1 Affected Environment

Lands within the current NTTR boundary have primarily been used for military testing and training since the 1940s. Historical uses included mining and grazing; however, all mineral and grazing rights were eliminated between 1949 and 1965 except in limited areas that were authorized at the time of the 1986 withdrawal. Lands within the proposed expansion areas include BLM and DNWR land, which are primarily used for wildlife management and recreational activities. However, some of the activities that occur on BLM-managed land are different from the DNWR. For example OHV use occurs on BLM land but is not allowed on the DNWR. BLM land also contains areas with grazing allotments and mining claims. The DNWR is protected and managed for wildlife while still providing opportunities for visitors to experience a variety of wildlife-dependent and outdoor activities.

The following sections describe the existing conditions related to NTTR land use and land uses within the proposed expansion areas and summarize applicable material presented from the *Land Use Study of the Nevada Test and Training Range* (U.S. Air Force, 2016c).

The Land Use Study includes a general description of current land uses at the NTTR and the authorization for each land use per the MLWA of 1999; a legal description of the NTTR and changes in withdrawn lands since the 1999 withdrawal; MOUs and rights-of-way, including land uses and agency or government jurisdiction; land users and their primary jurisdictions within the NTTR; areas that qualify for special land status, such as possible Wilderness Areas, cultural resource/protection areas, biological habitat areas, etc.; and land rights and/or uses that have been eliminated or bought out or that need to be acquired by the Air Force. It also provides a resource for integration into the land use portion of the LEIS; describes land management practices within the NTTR; and maps land uses as an overlay to the NTTR.

3.4.1.1 Description of Resource

Land use generally refers to the management and use of land by people, often for residential or economic purposes. Components of land use include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize the types of uses within a particular area. Human land uses typically include residential, commercial, industrial, agricultural (open rangeland livestock grazing), utilities and transportation, recreation, and in the case of the NTTR, military activities. Land use also includes areas set aside for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features, while some natural features are protected under designations such as national parks, national forests, national wildlife refuges, Wilderness Areas, or other designated areas.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.4.1.1.1.

1 Public scoping comments identified recreational concerns as a major issue; therefore,
2 recreation is a focus of land use impacts analysis. Recreational resources, for the
3 purpose of this analysis, include primarily outdoor recreational activities that occur away
4 from an individual's place of residence. This also includes natural resources and man-
5 made facilities that are designed or available for public recreational use in remote areas.
6 The setting, activity, and other resources that influence affected recreation resources
7 enable assessment of potential impacts to this resource. Recreation on public lands is
8 generally only limited by state and federal laws, as well as public use restrictions put
9 into place when an activity may be hazardous to a protected area or a nearby
10 population. Common restrictions are associated with target shooting and OHV usage.

11 **3.4.1.2 Region of Influence**

12 The ROI for Alternative 1 includes all of the existing areas within the North and South
13 Ranges as well as the existing airspace boundaries. The ROI for Alternative 2 would be
14 the same since the existing NTTR boundary would not change. Under Alternative 3, the
15 ROI would include the areas within the current NTTR boundary as outlined in
16 Alternative 1, plus various options for additional land withdrawals as described in
17 Sections 2.3.3.1 through 2.3.3.4. There is no specific ROI associated with Alternative 4
18 because it would need to be implemented with one or more of the other alternatives or
19 subalternatives and only would affect the period of withdrawal.

20 **3.4.1.3 General Land Use, Ownership, and Management Plans**

21 ***Existing NTTR Boundary (Alternatives 1 and 2)***

22 An overview and general description of the NTTR, including the current boundary,
23 primary uses and missions, NTTR airspace, other land users, and primary jurisdictions
24 is presented in Section 1.2 of the LEIS. The NTTR Land Use Study (U.S. Air Force,
25 2016c) includes more detailed information on the general land use, ownership, and
26 management plans for the existing NTTR withdrawal, as described in Section 3.4.1.1.

27 Section 3.10, Earth Resources, contains additional information on the mineral resources
28 within the NTTR and surrounding area. There are no active mining claims or oil and gas
29 leases located within the NTTR. All of the unpatented mining claims and all of the oil
30 and gas leases have either expired or were acquired by the United States. Existing
31 rights-of-way within the NTTR occur in two principal areas/locations. The first includes
32 three power transmission lines and a telephone line associated with Creech AFB. The
33 second is existing grazing rights in the Groom Mountain area, known as the Bald
34 Mountain Allotment. Owners of these grazing rights are able to access this allotment in
35 order to graze cattle between March 1 and February 28 (U.S. Air Force, 2016c).

36 With the exception of a few private land uses, public lands adjacent to the NTTR fall
37 within the jurisdiction of the DOE, the USFWS, or the BLM. Aside from the Las Vegas
38 metropolitan area, these private land uses include the cities of Beatty and Tonopah and
39 the unincorporated communities of Amargosa Valley, Goldfield, and Indian Springs.

1 The BLM maintains the primary jurisdiction of the NTTR lands and has responsibility for
2 the Nevada Wild Horse Range located on the NTTR. The USFWS maintains primary
3 jurisdiction of the majority of the South Range that overlays the DNWR.

4 The DOE and the NNSA Nevada Field Office have several land uses within the NTTR.
5 These include the Pahute Mesa area, the Tonopah Test Range, and Yucca Mountain
6 area. In 1952, land was withdrawn between the NTTR North and South Ranges for the
7 Nevada Test Site. Formerly known as the Nevada Proving Grounds, the site was
8 established for the testing of nuclear devices. Now known as the Nevada National
9 Security Site (i.e., the NNS), it safely conducts high-hazard operations, testing, and
10 training in support of the NNSA, DoD, and other agencies.

11 The USFWS is responsible for the administration and management of the DNWR.
12 Primary jurisdiction of the DNWR, including the joint-use area shared with the Air Force,
13 also rests with the USFWS, while the Air Force has secondary jurisdiction, with the
14 exception of the impact areas associated with the 60-series ranges in which the Air
15 Force has primary jurisdiction and USFWS has secondary. Within those impact areas,
16 the military conducts several training activities, including bombing and targeting areas
17 (see Section 1.2.2, South Range). The way in which the Air Force can use this area is
18 defined in both the MOU between the Air Force and the USFWS (updated December
19 1997) and within the MLWA of 1999 (U.S. Air Force, 2016c).

20 ***Alternative 3A – Range 77 – EC South Withdrawal (and Amended Alternative 3A-1)***

21 The proposed Range 77 – EC South withdrawal areas associated with Alternatives 3A
22 and 3A-1 are located adjacent to the southwest portion of the NTTR North Range, north
23 of the town of Beatty (see Figure 2-11, Alternative 3A, 3B, and 3C Locations and
24 Acreages and Figure 2-12, Alternative 3A-1 Location and Acreage). The existing EC
25 South area was previously used for live-fire exercises but now is an electronic range.
26 Currently EC South contains a limited number of electronic threat simulators, which
27 provide a separate area for tactics threats. The use of live ordnance on this range was
28 terminated when the range was re-designated as an electronic warfare range. The area
29 proposed for withdrawal is public land managed by the BLM's Tonopah Field Office,
30 Battle Mountain District.

31 One active mining claim is located within the proposed withdrawal area (U.S. Air Force,
32 2016c) for Alternatives 3A and 3A-1. This claim is for lode mining, as opposed to placer
33 mining. There are no mineral leases or oil and gas leases in the proposed withdrawal
34 areas.

35 Portions of two BLM grazing allotments (Figure 3-5) are located within the proposed
36 withdrawal area for Alternatives 3A and 3A-1, one of which is unallocated or closed to
37 grazing and the other is active (Razorback).

38 ***Alternative 3B – 64C/D and 65D Withdrawal and Administrative Incorporation***

39 The proposed withdrawal area associated with Alternative 3B consists of two areas (see
40 Figure 2-11). The larger portion is located along the southwest edge of the NTTR South
41 Range (areas designated as Range 64C/D and Range 65D). The western and southern

1 portions of the area are managed by BLM's Southern Nevada District and the rest is
2 DNWR land managed by the USFWS. The other smaller area is parallel to the current
3 NTTR boundary and U.S. Route 95. The portion immediately adjacent to U.S. Route 95
4 is Nevada Department of Transportation right-of-way while the remainder is BLM-
5 managed land.

6 Creech AFB is located adjacent to the larger part of the proposed withdrawal area near
7 the town of Indian Springs along U.S. Route 95. Air Force facilities are found on both
8 sides of the highway, with the majority of assets located to the north (e.g., runways;
9 hangars; and maintenance, administrative, and operational facilities). The Point Bravo
10 and Silver Flag Alpha Range Complex areas are located just east of Creech AFB along
11 the highway and adjacent to southern portion of the proposed withdrawal area. South of
12 U.S. Route 95 and Point Bravo are two State of Nevada Department of Corrections
13 facilities: Southern Desert Correctional Center and the adjacent High Desert State
14 Prison.

15 There are no mining claims, mineral leases, or other oil and gas leases or grazing
16 allotments in the proposed withdrawal area for Alternative 3B.

17 **Alternative 3C – Alamo Withdrawal**

18 The proposed withdrawal area for Alternative 3C is located within the DNWR to the east
19 of the shared use area (see Figure 2-11). Restricted airspace exists above the three
20 Alamo areas even though the areas have not been withdrawn.

21 The public mineral estate within the proposed withdrawal area was withdrawn from
22 location and entry under the U.S. mining laws by Public Land Order (PLO) 7070. PLO
23 7828 extended PLO 7070 through August 3, 2034. Even though the lands remain open
24 to mineral leasing, including oil and gas, there are no active mining claims, mineral
25 leases, or other oil and gas leases in the proposed
26 withdrawal area.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.4.1.4.1.

27 **3.4.1.4 Recreation and Special Use Areas**

28 **Existing NTTR Boundary (Alternatives 1 and 2)**

29 Access restrictions on the NTTR preclude all unrestricted recreational opportunities in
30 the area, including hunting (U.S. Air Force, 2016c). This restriction is established
31 through NAC 504.340, which prohibits all hunting and trapping within the NTTR, except
32 that hunting bighorn sheep is authorized in certain portions of the DNWR and NTTR. A
33 controlled hunt for bighorn sheep is conducted each year between December 17 and
34 January 1 in these portions of the DNWR. The shared use area of the DNWR is
35 contained with NDOW-designated hunting units 280, 281, and 282. Bighorn sheep
36 hunting is permitted within the Stonewall Mountain area of the NTTR and is included as
37 a part of Unit 252. These hunting units are only open to permit holders. Anyone wishing
38 to hunt on the NTTR must pass a background check and attend a mandatory safety
39 briefing. In addition, party size is limited to a maximum of five people within the NTTR
40 portion of Unit 252 at any given time. No other recreational activities are allowed within
41 the boundaries of the NTTR.

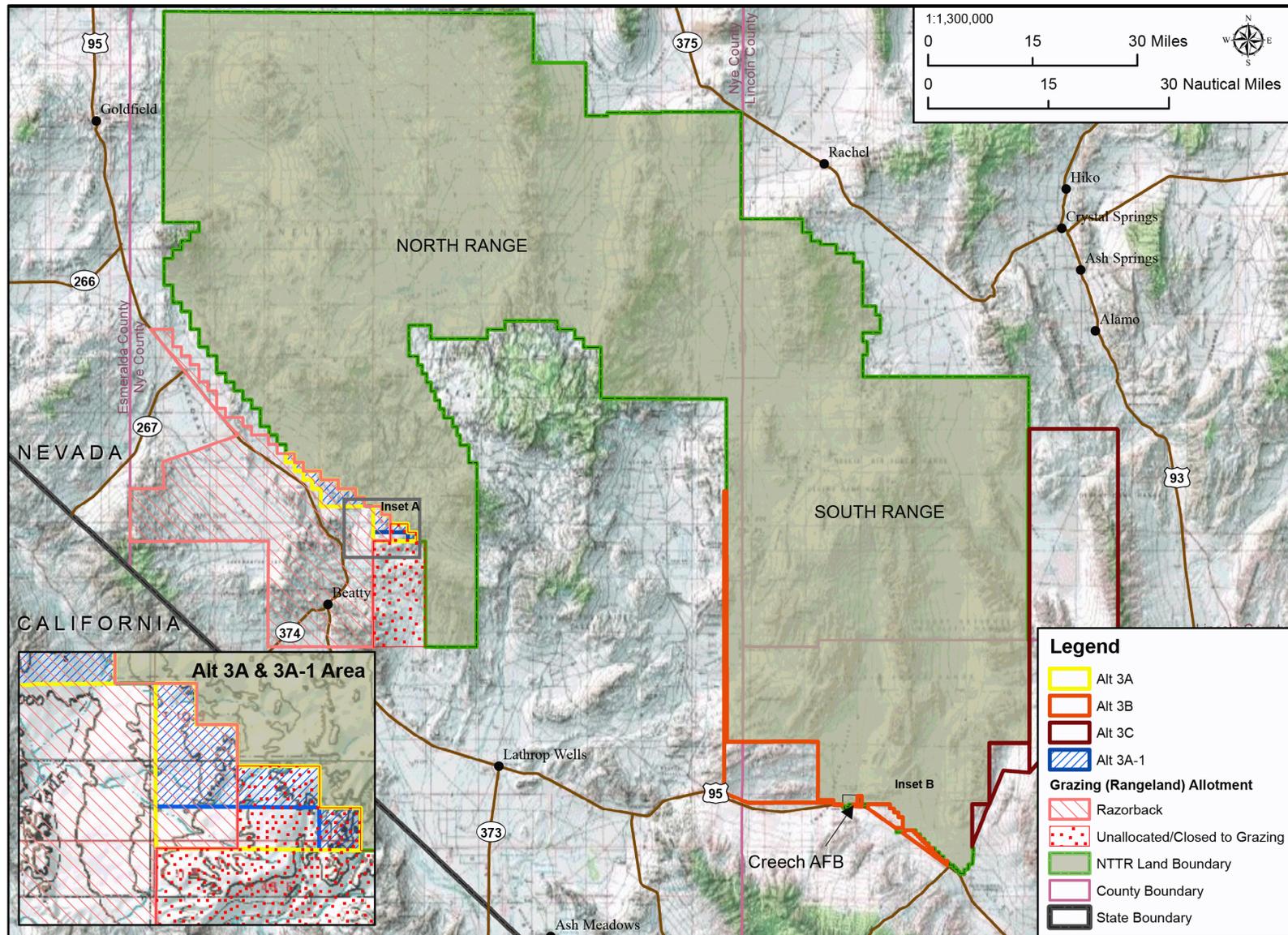


Figure 3-5. BLM Grazing Allotments Within the Range 77 – EC South Withdrawal Area

1 The DNWR (see Figure 1-5, South Range Overlap with DNWR) was established in
2 1936 for the conservation and development of natural wildlife resources, especially the
3 protection and preservation of desert bighorn sheep. The refuge currently includes
4 1,614,554 acres, with 845,787 acres concurrently withdrawn by the Air Force. Of this
5 withdrawn area, the MLWA of 1999 transferred primary jurisdiction of 112,000 acres of
6 bombing impact areas from the USFWS to the Air Force, though the USFWS retains
7 secondary jurisdiction over these lands. The DNWR/NTTR shared use area is currently
8 being administered under a joint-use MOU (U.S. Air Force, 2016c).

9 The Nevada Wild Horse Range is a special management area located within the North
10 Range of the NTTR (Figure 3-6). The Southern Nevada District of the BLM has
11 administrative responsibilities for all land and management activities within the Nevada
12 Wild Horse Range. The 2008 Nevada Wild Horse Range Herd Management Area Plan
13 and the 1974 Wild Horse Management Area MOU provide management guidance for
14 the wild horse population on the NTTR.

15 ***Alternative 3A – Range 77 – EC South Withdrawal (and Amended Alternative 3A-1)***

16 Recreational activities within the proposed withdrawal area for Alternatives 3A and 3A-1
17 include but are not limited to hunting, hiking, camping, bird-watching, target shooting,
18 and OHV activities. There are currently no restrictions on target shooting, with the
19 exception of the standard guidelines (no glass targets, 1,000 feet from roads and
20 houses, etc.).

21 Public lands not closed to OHV usage are commonly limited to existing roads, trails and
22 dry washes, with the exception of dry lakes, which are open to all OHV activities (U.S.
23 Air Force, 2016c). The Oasis Valley and Oasis Mountain areas northeast of Beatty and
24 directly adjacent to the NTTR are popular areas for hiking, mountain biking, and OHV
25 activities and have recently experienced an increase in outdoor recreation users and
26 events (Figure 3-7). A few of the primary users and events include:

- 27 • Trails-Oasis Valley (Trails-OV) (www.trails-ov.org), which helps to develop,
28 promote and maintain a series of trail systems for mountain biking, trail running,
29 equestrian use and rock climbing including the Spicer Ranch Trail System and
30 Transvaal Flats Trail System.
- 31 • Beatty Veterans of Foreign Wars (VFW) (www.beattyvfw.com), which holds
32 Jeep/4-wheel drive vehicle events like the “Run Through the Desert” Fun Day
33 and the Annual Bullfrog Historical Mining District Poker Run.
- 34 • Best in the Desert Racing Association (www.bitd.com), which hosts the annual
35 “Vegas to Reno” off-road race.

36 The proposed withdrawal areas for Alternatives 3A and 3A-1 overlap with the Bullfrog
37 HMA (Figure 3-6), managed by the BLM. This HMA provides suitable habitat for wild
38 burros, but not for wild horses. The overlap area is 2,877 acres (U.S. Air Force, 2016c).

39 The proposed withdrawal area for Alternative 3A includes portions of NDOW-designated
40 hunting units 252 and 253. These units allow for the hunting of mule deer and desert
41 bighorn sheep (U.S. Air Force, 2016c). (A smaller portion of the Bullfrog HMA and
42 hunting unit 253 would be impacted by Alternative 3A-1.)

Alternative 3B – 64C/D and 65D Withdrawal and Administrative Incorporation

Recreational activities within the portion of the proposed Alternative 3B withdrawal area that is managed by the BLM Southern Nevada District include but are not limited to hunting, hiking, camping, bird watching, target shooting, and OHV activities.

There are currently no restrictions on target shooting, with the exception of the standard guidelines (no glass targets, 1,000 feet from roads and houses, etc.). Public lands not closed to OHV usage are commonly limited to existing roads, trails, and dry washes, with the exception of dry lakes, which are open to all OHV activities (U.S. Air Force, 2016c).

Public access in the approximately 33,000 acres of the proposed withdrawal area for Alternative 3B within the DNWR is restricted for safety and security. No recreational activities occur in this area except for limited hunting of desert bighorn sheep.

Within the administrative incorporation area (eastern edge of range areas 63B and 63C) no off-road vehicle use is allowed per the BLM Southern Nevada District. The portion of the proposed withdrawal area that overlaps the DNWR is shown as a restricted area by the USFWS due to the close proximity to the NTTR.

A very small portion (114 acres) of the proposed withdrawal area for Alternative 3B overlaps with the Wheeler Pass HMA (Figure 3-6), which is managed by the BLM for wild horses and wild burros. However, the HMA dataset has an undefined and potentially low level of precision that could create the impression of an overlap of this size, where one may not exist (U.S. Air Force, 2016c).

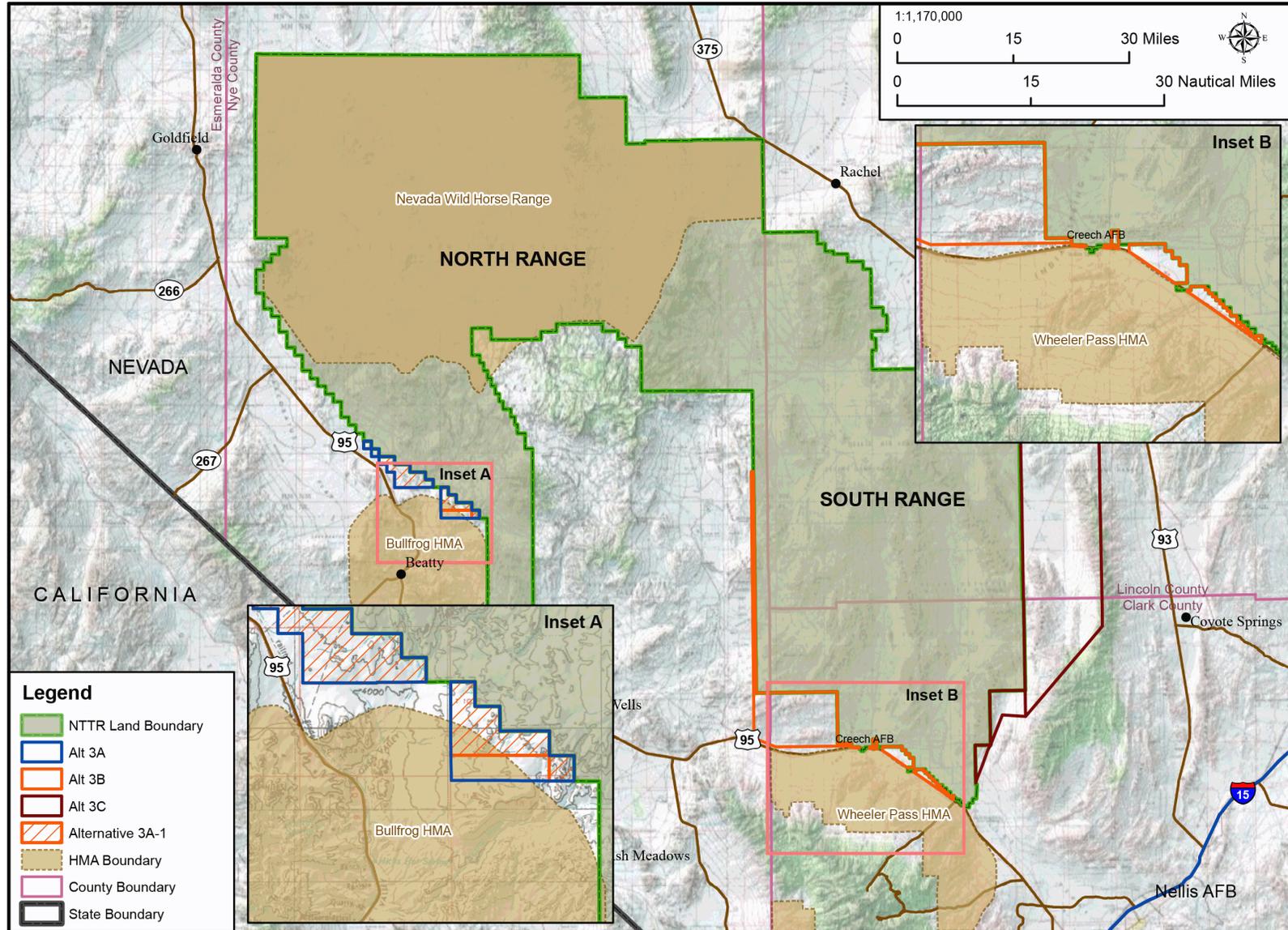
The proposed withdrawal area for Alternative 3B includes portions of NDOW-designated hunting units 280, 281, and 282 (U.S. Air Force, 2016c). These units only allow for the hunting of desert bighorn sheep.

Alternative 3C – Alamo Withdrawal

The proposed withdrawal area associated with Alternative 3C is entirely within the DNWR. Recreational activities allowed within the proposed withdrawal portion of the DNWR include camping, hunting, backpacking, hiking, horseback riding, wildlife viewing/photography, and traveling on primitive scenic byways.

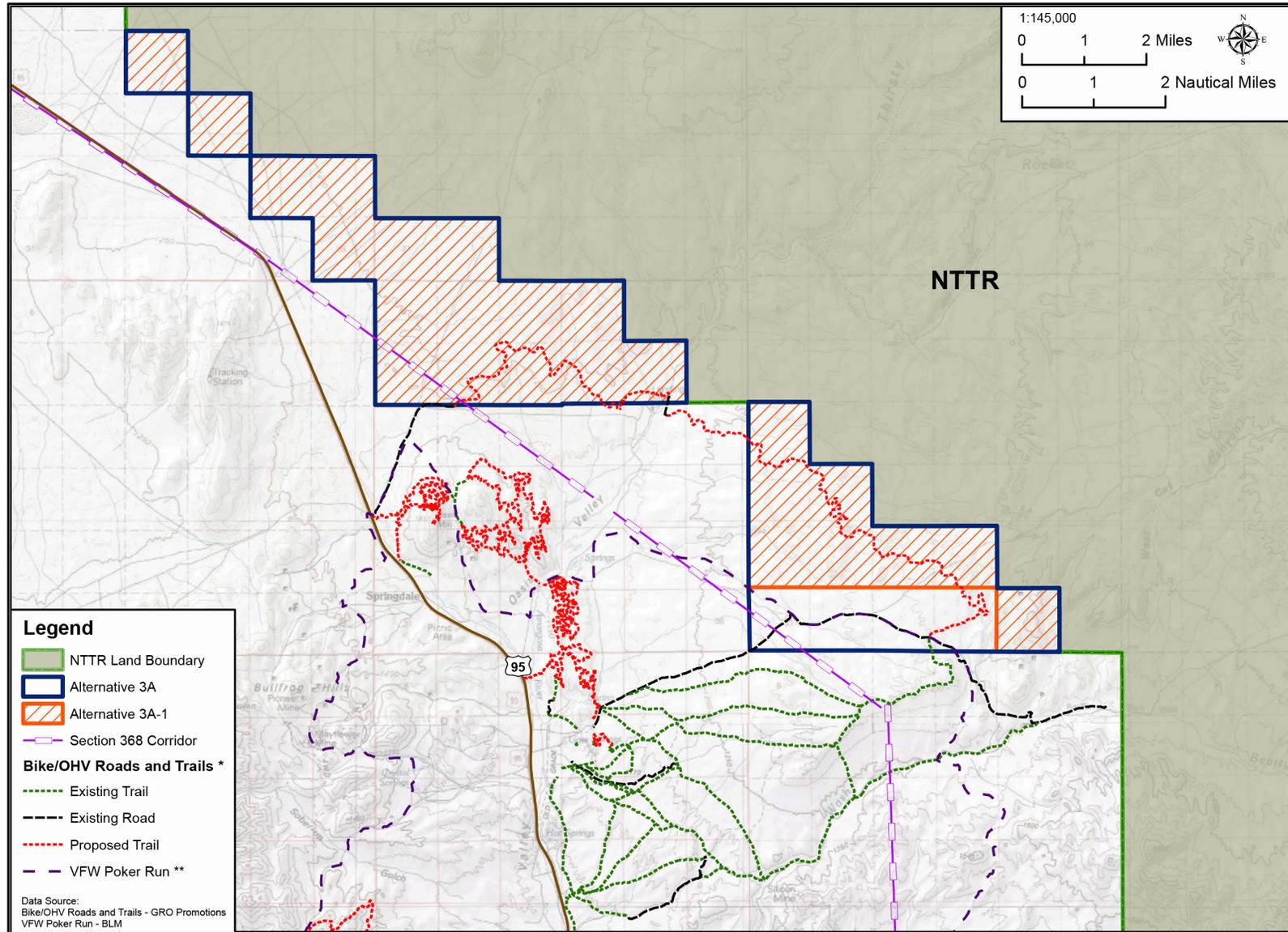
Operation of OHVs, including but not limited to all-terrain cycles and quads, is not permitted on the DNWR and only street legal vehicles are allowed. There are several roads, parking areas, and trails within the proposed Alternative 3C boundary (Figure 3-8). These include Alamo Road north of Hidden Forest Road, Pine Canyon Road and Pine Canyon Trail, White Rock Road (White Rock Canyon), Dead Horse Road and Dead Horse Trailhead, Saddle Mountain, Sheep Pass, Cabin Springs Road, Desert Lake, and Old Corn Creek Road.

In unrestricted areas (i.e., outside of the NTTR South Range portion of the DNWR), car campers are allowed to set up campsites anywhere that falls within 50 feet of a road. Backcountry camping is also allowed throughout the unrestricted portion of the refuge, but must be at least a quarter mile away from water development or springs (U.S. Air Force, 2016c).



1
2

Figure 3-6. Nevada Wild Horse Range and Herd Management Areas



1
2

Figure 3-7. Range 77 – EC South Withdrawal Area Bike and OHV Roads and Trails

1 The proposed withdrawal area for Alternative 3C contains portions of NDOW-
2 designated hunting units 282, 283, and 284. These units only allow for the hunting of
3 desert bighorn sheep.

4 **3.4.1.5 Visual Resources**

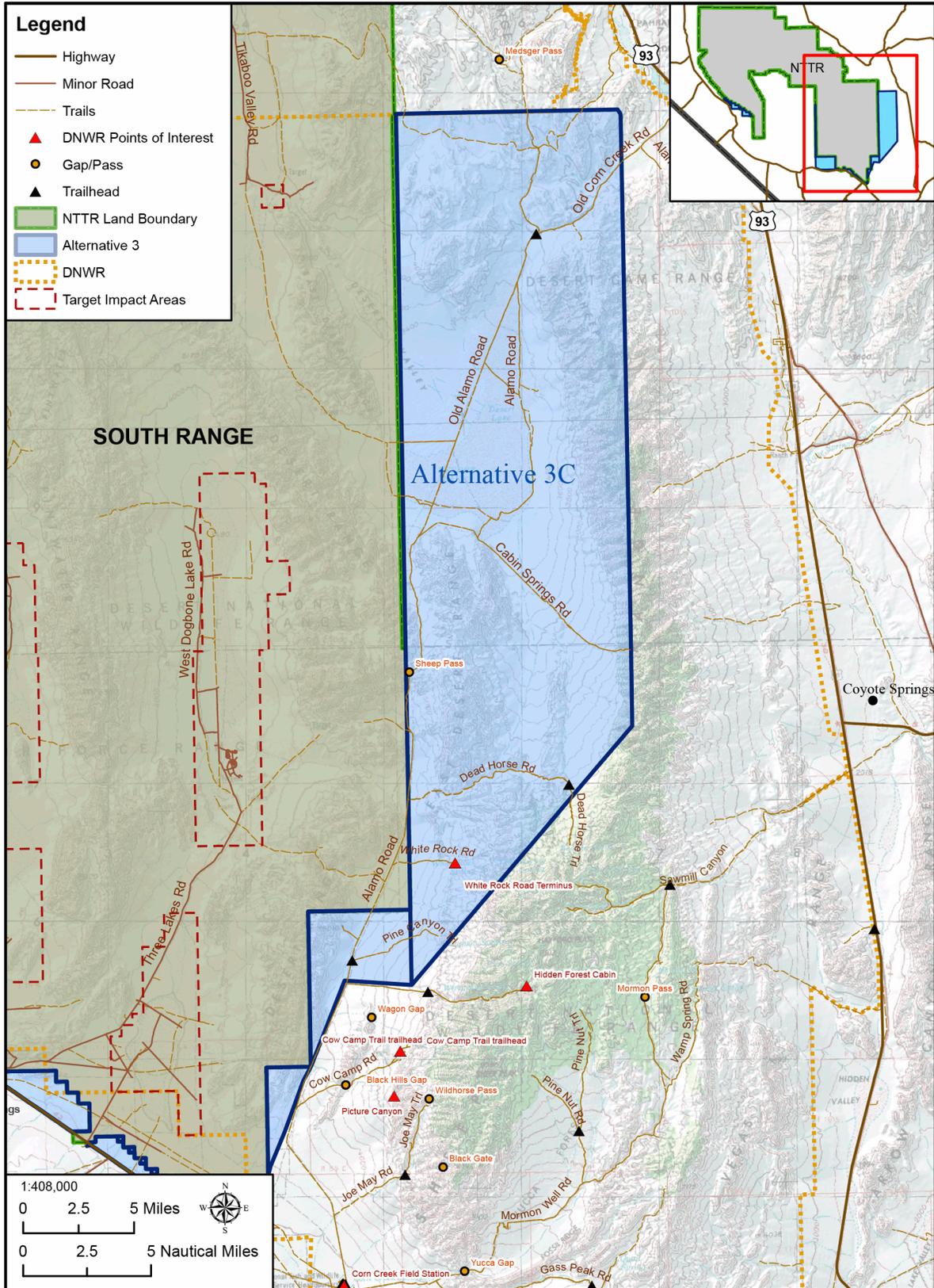
For the Native American perspective on information in this section, please see Appendix K, paragraph 3.4.1.5.1.

5 Visual resources include both natural and man-made
6 features of the landscape visible from public viewpoints.
7 Topography, water, vegetation, man-made features, as
8 well as the degree of panoramic views available are
9 examples of visual characteristics. Public concern over adverse visual impacts can be a
10 major source of opposition to a project. The level of public concern depends on both
11 viewer exposure and viewer sensitivity. The combination of exposure and sensitivity
12 helps predict how the public might react to visual changes brought about by an action.

13 *Viewer exposure* refers to the number of people experiencing potential changes in their
14 visual environment. Exposure also includes the duration of view, the speed at which the
15 viewer is traveling, and the resulting perspective of the viewer relative to proposed
16 changes.

17 *Viewer sensitivity* is defined as both the viewers' concern for scenic quality and their
18 response to change in the visual quality. The public is generally concerned about areas
19 possessing a high degree of visual character or quality, and these views typically
20 contain highly visible or memorable landscape elements. Often people specifically seek
21 out publicly accessible views from or within recreational areas. Urbanized locations are
22 usually considered to have less visual sensitivity than recreational areas, since the use
23 of urban locations is primary and their view is not integral to their purpose.

24 The mission of the National Wildlife Refuge System, per the *National Wildlife Refuge*
25 *System Improvement Act of 1997*, is to administer a national network of lands and
26 waters for the conservation, management, and where appropriate, restoration of the
27 fish, wildlife, and plant resources and their habitats within the United States for the
28 benefit of present and future generations of Americans (105th Congress, 1997). The
29 foundation of USFWS policy and management for Congressionally designated
30 wilderness and areas proposed for wilderness is defined in the USFWS's *Part 610:*
31 *General Overview of Wilderness Stewardship Policy* (USFWS, 2008a). Part 610
32 describes "wilderness character" as the natural, scenic condition of the land; natural
33 night skies; and the untrammelled, primeval character of and influence on the land. In
34 the *Wilderness Act of 1964*, the term "untrammelled" refers to the freedom of a
35 landscape from the human intent to permanently intervene, alter, control, or manipulate
36 natural conditions or processes (USFWS, 2008a). These elements of wilderness
37 character are also part of the visual quality of an area.



1
2

Figure 3-8. Roads, Parking Areas, and Trails Within Alternative 3C Boundary

1 The BLM manages lands to achieve some level of visual or scenic quality. The BLM
 2 uses a visual resource management (VRM) system to identify and manage scenic
 3 values on federal lands administered by that agency. BLM Handbook H-8410-1, *Visual*
 4 *Resource Inventory*, explains how the four Visual Resource Inventory (VRI)
 5 classifications are determined. BLM VRM classes are determined through the land use
 6 planning process. The VRI classes are different from the VRM classes. The VRI assigns
 7 a visual value, while VRM directs management through the designation of objectives.
 8 VRM classes and their objectives are summarized in Table 3-26.

Table 3-26. BLM Visual Resource Management Classes

Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. New projects can be approved that are not large scale, dominating features (i.e., geothermal power plant or major mining operation would not be approved).
Class IV	The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Source: (BLM, 1986)

9 Natural darkness (darkness undiminished by artificial light) is recognized as an
 10 important and increasingly rare natural resource. While there is light pollution from all
 11 developed areas in Nevada, most famously Las Vegas, the state retains some of the
 12 darkest night skies left in the nation (Pesek, 2012).

13 Federal land management agencies promote the retention of natural night skies though
 14 participation in the “Dark Skies Initiative.” The BLM has specific guidance related to the
 15 mitigation of light pollution, such as its “Best Management Practices for Reducing Visual
 16 Impacts of Renewable Energy Facilities on BLM-Administered Lands.” Based on the
 17 USFWS’s 2008 Stewardship Policy as well as legislative language of the *Wilderness*
 18 *Act*, the USFWS manages wilderness areas in its jurisdiction (including areas they
 19 proposed for wilderness on the DNWR) to ensure natural night skies. Further
 20 information on natural darkness and light pollution can be found in Appendix E, Visual
 21 Resources.

1 **Existing NTTR Boundary (Alternatives 1 and 2)**

2 While the NTTR is a tapestry of lands maintained by various federal agencies, over half
3 of the current military withdrawal area is managed by the BLM, which has provided
4 management guidance to NTTR personnel in the *Record of Decision for the Approved*
5 *Nevada Test and Training Range Resource Management Plan and Final Environmental*
6 *Impact Statement* (BLM, 2004). The BLM maintains primary jurisdiction over the NTTR
7 lands in the North Range, whereas the USFWS manages a majority of the South Range
8 because the NTTR overlaps with the DNWR (which is managed by the USFWS).
9 Pursuant to P.L. 106-65, the Secretary of the Interior is required to manage the lands
10 during the withdrawal pursuant to FLPMA. This does not apply to areas under the
11 National Wildlife Refuge System, i.e., the DNWR. Lands within the DNWR, such as
12 those in the South Range, shall be managed pursuant to the *National Wildlife Refuge*
13 *System Improvement Act of 1997*. The USFWS's 2008 Stewardship Policy, as well as
14 legislative language of the *Wilderness Act*, also guides the USFWS to manage areas
15 proposed for wilderness to ensure natural night skies.

16 The BLM has established two primary visual resource management objectives at the
17 NTTR: (1) to maintain the integrity of visual resources in natural areas by directing that
18 all actions initiated or authorized by the BLM comply with VRM guidelines; (2) to protect
19 the visual resources in the planning area by managing the Groom Mountain Range
20 addition for VRM Class III and IV values, the Timber Mountain Caldera National Natural
21 Landmark as VRM Interim Class II, and the remainder of the planning area as VRM
22 Interim Class IV. The established VRM categories allow the Air Force to develop
23 infrastructure in the planning area and to conduct its training and testing mission,
24 without violating management guidelines (BLM, 2003). A review of the 2016 Land Use
25 Study (U.S. Air Force, 2016c) indicates that no changes to the baseline visual resource
26 conditions have occurred since the previous LEIS or the *Record of Decision for the*
27 *Approved Nevada Test and Training Range Resource Management Plan and Final*
28 *Environmental Impact Statement* (BLM, 2004).

29 Figure 3-9 depicts the persistent sources of light pollution on the NTTR, primarily from
30 runways and towers (National Oceanic and Atmospheric Administration [NOAA], 2013).
31 Some sky glow persists around these sources, while towns in the vicinity (such as
32 Beatty), Creech AFB, and High Desert Prison contribute to sky glow in the southern
33 portion of the NTTR (Falchi et al., 2016). Sky glow from Las Vegas affects the southeast
34 region.

35 **Alternative 3A – Range 77 – EC South Withdrawal (and Amended Alternative 3A-1)**

36 The areas proposed for withdrawal under Alternatives 3A and 3A-1 are within the BLM
37 Tonopah Field Office, Battle Mountain District Office. Objectives for this District Office
38 planning area were established in the 1997 *Tonopah Resource Management Plan*,
39 which established VRM Class IV values for the land within these parcels. The area is of
40 moderate sensitivity, due to viewer traffic along U.S. Route 95, ranching and recreation
41 use, and proximity to the town of Beatty.

1 The areas proposed for withdrawal are north of Sarcobatus Flat, which is a long, wide
2 valley that runs from Slate Ridge south to the Bullfrog Mountains. In profile, the valley
3 appears flat, sloping upward to the Amargosa Range (locally known as the Grapevine
4 Mountains) to the west. The adjacent mountains have a minor influence on the visual
5 quality. Human uses, such as OHV roads, and developments are present in this area at
6 Springdale and U.S. Route 95. The westernmost parcel is on the flat slope of the valley,
7 with small shrubs clustered on the valley floor in the foreground and midground. In the
8 background, Tolicha Peak, Quartz Mountain, and Black Mountain are notable
9 geographic features.

10 The mouth of Thirsty Canyon, which empties southward into Oasis Valley, runs between
11 the two areas proposed for withdrawal. The eastern areas proposed for withdrawal
12 includes features such as abandoned mines and OHV roads. Low-profile, rolling hills of
13 low contrast, which are common in this region, display indistinct vegetation in the
14 foreground and midground of this area proposed for withdrawal. Timber Mountain is
15 visible to the east in the background (BLM, 2011).

16 NOAA satellite data of average annual night-time radiance from persistent lighting
17 exhibits no sources of light pollution within the areas proposed for withdrawal (Figure
18 3-9), and the naturally dark skies are only subjected to low amounts of sky glow from
19 the town of Beatty.

20 ***Alternative 3B – 64C/D and 65D Withdrawal and Administrative Incorporation***

21 The USFWS-managed DNWR land that is part of the proposed withdrawal expansion
22 area for Alternative 3B is a portion of the Spotted Range Proposed Wilderness Unit and
23 is currently restricted access (USFWS, 2009). Parts of the northern and eastern borders
24 of the area considered for withdrawal abut to DoD impact areas.

25 The BLM-managed land in the proposed withdrawal for Alternative 3B offers public
26 access and has been designated VRM Class III by the BLM Pahrump and Las Vegas
27 Field Offices (BLM, 2014). Scenic quality in the area is classified as nearly equally
28 medium and low.

29 The region is composed of four small mountain ranges that vary from common
30 landforms of foothills, to higher and more complex areas with pyramidal peaks, color
31 contrast in rock banding, bold blocks, and escarpments. Smaller enclosed valleys are
32 not remarkable, characterized by flat bajada-type desert country with creosote bush
33 communities (BLM, 2014).

34 The South Ridge of the Spotted Range runs east-west in the mid-ground northern view
35 from U.S. Route 95 in the westernmost area proposed for withdrawal. The broad valley
36 between the highway and the South Ridge is dotted uniformly by small shrubs. Where
37 Niavi Wash bisects the valley, some larger vegetation and erosional features add
38 variety to the landforms.

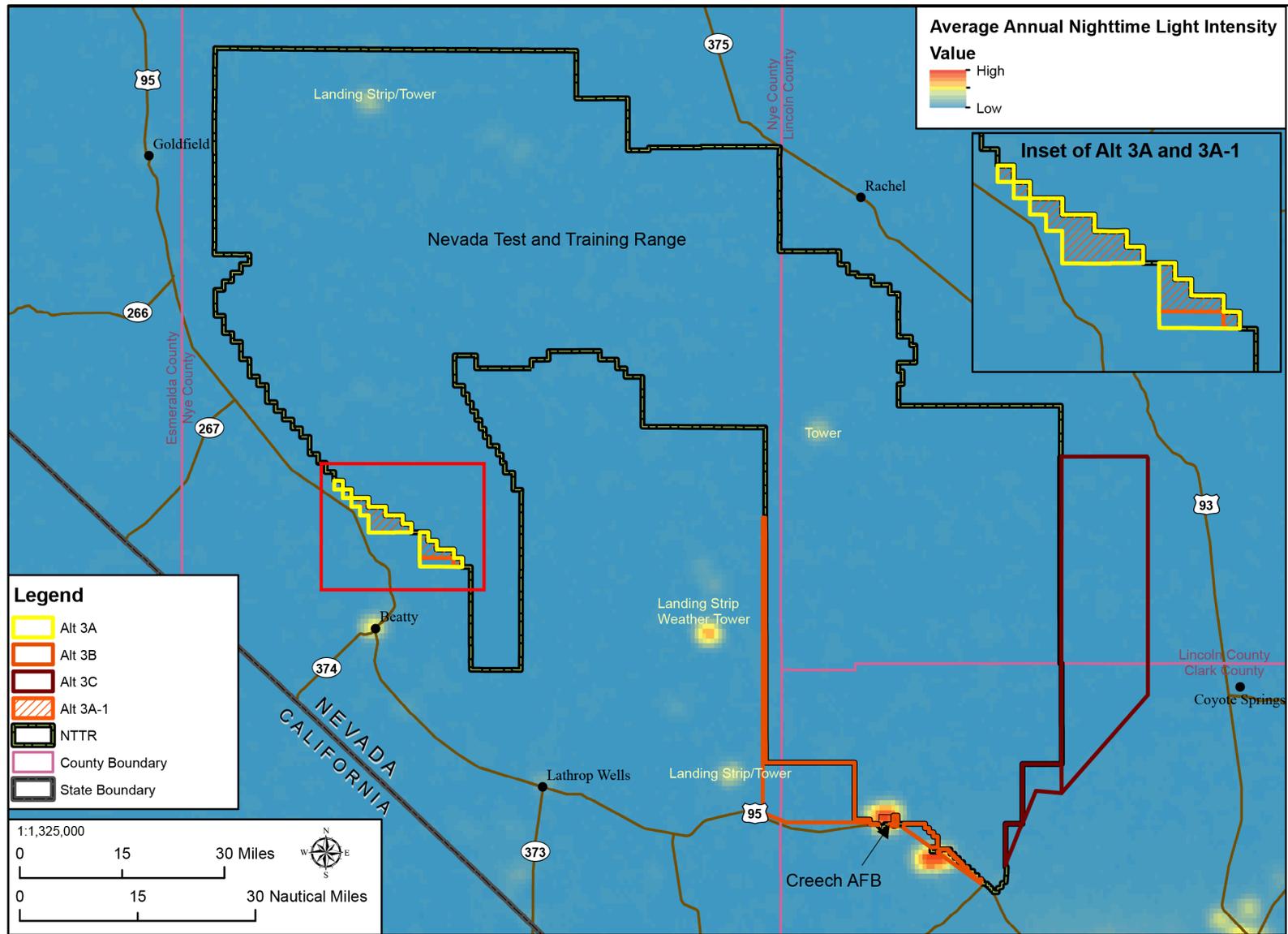


Figure 3-9. Average Annual Night-time Light Intensity

1 The smallest area proposed for withdrawal associated with Alternative 3B is adjacent to
2 the town of Indian Springs and Creech AFB. Infrastructure such as transmissions lines,
3 ground clearing, and a variety of facilities dominate the midground and foreground
4 views. This parcel lies within the Three Lakes Valley, and extends northward into the
5 background view. The valley is bordered on the west by the Spotted Range and on the
6 east by the Pintwater Range, which are distantly visible in the background.

7 The eastern two areas proposed for withdrawal lie within the Three Lakes Valley, and
8 the areas themselves are in the unconsolidated fill of the alluvial fan, regularly dotted by
9 smaller shrubs and occasionally punctuated by larger Joshua trees or agaves. In the
10 midground, the hard white pan of the valley floor is of limited visibility, while the Desert
11 Range mountains are in the background.

12 Cultural modifications to the area landscape include the mines, OHV routes, power
13 lines, transmission lines, fence, an abandoned railroad grade, and a man-made water
14 catchment. U.S. Route 95 runs along the southern edge of these parcels. The towns of
15 Cactus Springs and Indian Springs, Creech AFB, and High Desert State Prison are
16 major features adjacent to the parcels.

17 Sensitivity in the areas proposed for withdrawal is moderate, due to OHV recreation and
18 scenic values, presence of small rural communities, major transportation and
19 infrastructure corridors with infrastructure along the length, sightseers, private mines,
20 adjacent NNSS, and the NTTR.

21 NOAA satellite data exhibits no sources of light pollution within the parcels
22 (Figure 3-9); however, high levels of sky glow are present due to proximity to Creech
23 AFB, High Desert State Prison, and the city of Las Vegas. The presence of skyglow in
24 these areas proposed for withdrawal is substantially greater than the light pollution in
25 parcels considered under other alternatives.

26 ***Alternative 3C – Alamo Withdrawal***

27 The Desert National Wildlife Refuge is located immediately north of the city boundaries
28 of North Las Vegas and Las Vegas and encompasses 1.6 million acres of rugged
29 mountain ranges and panoramic valleys in Clark and Lincoln Counties. It is the largest
30 refuge in the continental United States and the largest protected area in Nevada. Over
31 80 percent of the land area was proposed for wilderness designation in 1971, and while
32 Congress has yet to act on the proposal, the area is managed to protect its wilderness
33 values. As indicated in Chapter 1, the Desert National Wildlife Refuge Complex is
34 made up of three geographically separated refuges and the Desert National Wildlife
35 Range (i.e., the DNWR). The three separated refuges are Ash Meadows NWR, Moapa
36 Valley NWR, and Pahranaagat NWR. About half of the DNWR (approximately
37 826,000 acres) is overlapped by the lands withdrawn for military purposes on the South
38 Range of the NTTR.

39 Based on the USFWS's 2008 Stewardship Policy as well as legislative language of the
40 *Wilderness Act*, development and uses such as motor vehicles, motorized equipment,
41 mechanical transport, structures, and installations are generally prohibited uses for
42 protected wilderness areas. Visitors and visitor use structures are not excluded, but

1 their presence is managed to maintain the biological integrity and provide high-quality
2 wildlife-dependent recreational uses (USFWS, 2009). It is important to note that the
3 DNWR is an area that was proposed for wilderness designation and is currently
4 managed in a manner similar to designated wilderness as a matter of agency policy.
5 The DNWR is substantively different than parcels considered under other alternatives
6 because, as a whole, it has a high scenic quality due to a wide swath of largely
7 undisturbed terrain, impressive natural vistas, and a high sensitivity due to a large
8 volume of visitors attracted to recreational opportunities and the diversity of wildlife and
9 vegetation.

10 The rugged and rapidly varying topography in the areas proposed for withdrawal for
11 Alternative 3C contributes to diverse vegetation types, as barren playas give way to
12 scrub covered bajadas that are bounded by color-banded mountains with high jagged
13 peaks.

14 Alamo Road runs north-south through the area proposed for withdrawal, with several
15 other public access roads and trails branching throughout. The rugged western foothills
16 of Sheep Range form the east border, where barren cliffs and outcrops gradually give
17 way to conifer woodlands near the upper elevations. The peaks of Sheep Range form
18 the midground view, averaging 5,000 feet elevation in the northern range to over
19 9,000 feet elevation in the southern range, and over 4,000 feet above Tikaboo Valley to
20 the west. A large closed-basin playa named Desert Lake, in Desert Valley, is in the
21 north of the area proposed for withdrawal, and sand dunes are located nearby. Tikaboo
22 Valley widens to over 8 miles across, offering panoramic views of the Sheep Range, the
23 Desert Range to the west on the NTTR, and the East Desert Range south of Desert
24 Lake. East Desert Range is barren on the exposed faces on the west side, but
25 otherwise mixed desert scrub with an overstory of Joshua trees and Mojave yucca
26 predominate. Some pinyon-juniper woodlands are found here, particularly on the east
27 side of Saddle Mountain.

28 Natural springs, including Sheep Spring and White Rock Spring, can be found in this
29 area, along with several man-made water catchments constructed to provide valuable
30 water to sheep and other wildlife (see Section 3.11, Water Resources). Human uses
31 and development in the area are restricted to the backcountry roads and trails, as well
32 as the water catchments. Due to the limited development and infrastructure, there are
33 few sources of light pollution in the areas proposed for withdrawal; however, sky glow
34 from the Las Vegas urban area is especially present towards the south of the proposed
35 withdrawal area and affects the night sky over nearly all of the area.

36 **3.4.2 Environmental Consequences**

37 **3.4.2.1 Analysis Methodology**

38 The methodology to assess impacts on individual land uses requires identifying the
39 uses and determining the degree to which they would be affected by each alternative.
40 Potential impacts on land use can result from actions that (1) change the suitability of a
41 location for its current or planned use (e.g., noise exposure in residential areas);

1 (2) cause conditions that are unsafe for the public welfare; (3) conflict with the current
2 and planned use of the area based on current zoning, amendments, agreements,
3 regulatory restrictions, management, and land use plans; or (4) displace a current use
4 with a use that does not meet the goals, objectives, and desired use for an area based
5 on public plans or resolutions. The degree of land use effects (negligible, minor,
6 moderate, or significant) is based on the level of land use sensitivity in areas affected by
7 the alternatives, the magnitude of change, and the compatibility of a proposed action
8 with existing or planned land uses. The assessment considers multiple contextual
9 factors that are both quantitative and qualitative.

10 Evaluation of recreational resources considers whether proposed changes would
11 preclude, displace, or alter the suitability of an area or facility for ongoing or planned
12 recreational uses. This could be triggered by changes in noise, access, visual context,
13 availability of recreational sites, or change in desired qualities of an area that contribute
14 to recreational opportunity. The analysis also considers the relative importance of the
15 affected resource. This is a qualitative assessment of its value based on
16 popularity/visitation, management goals, and availability of similar recreational
17 opportunities.

18 The analysis of visual resources is largely subjective and depends upon the visual
19 character of the surroundings, the individual viewer's perception and experiences, the
20 public value or role of the affected landscape, as well as a variety of other contextual
21 factors (such as angle of observation, distance, time of day, cloud cover, etc.). Land
22 management agencies (such as the BLM) use a systematic process to evaluate
23 landscapes and to describe and estimate visual impacts of proposed projects. The basic
24 principle of the process is to assess the visual contrast created between a proposed
25 project and the existing landscape (BLM, 1986). The basic design elements of form,
26 line, color, and texture are used to make the comparison and to describe the visual
27 contrast created by the project (BLM, 1986). Other key physical factors include the
28 distance of the changes from viewers, frequency of viewing (such as viewers on
29 roadways commuting to work), unobstructed line of sight to the site from specific
30 locations (visual access), and the value of the altered landscape or viewshed.

31 The methodology to assess impacts on visual resources requires identifying the
32 affected resources and determining the degree to which they would be affected by each
33 alternative. The analysis:

- 34 • Assesses the noticeability (degree of change) of these elements at the selected
35 locations based on contrast with the existing visual context (considering size,
36 forms, color, texture of the new feature and the surrounding visual resources
37 and/or visual character in the study area).
- 38 • Considers and identifies applicable state and local regulations, policies, and
39 zoning ordinances that protect against light and visual annoyances.
- 40 • Identifies areas with designated or locally recognized visual resource value
41 (based on public input) and the overlap with the visually impacted areas.

- 1 • Determines the significance of visual effects based on the degree of change and
2 the value of the affected visual resource. *Visual value* considers the sensitivity of
3 representative viewsheds based on the visual character of the area, including the
4 importance, uniqueness, and aesthetic value of the affected visual resources;
5 ecological and cultural sensitivity; regulatory directive and management plans
6 (such as ordinances, special land designations, and resource management
7 goals); agency-designated visual resource values; and agency and public input
8 expressed during scoping and comment periods.
- 9 • Evaluates the effect of light emissions from the project on “dark skies” and sky
10 glow in the affected region. This evaluation focuses on current conditions of dark
11 skies in the surrounding region. It identifies any specific dark sky initiatives, and
12 management policies and objectives of federal, state, and local agencies to
13 manage and maintain dark skies in the region.

14 If an impact is identified by the analysis, the assessment considers the level of
15 significance using a subjective scale based on the value of the resource and degree of
16 change and degree of interference with current activities and management standards.

17 Analysis considers the extent to which a proposed action may affect visual character
18 based on importance, uniqueness, and value, as well as contrast with the existing visual
19 character or resources. Input from agencies and the public during scoping is considered
20 in evaluating the value of visual resources and light impact. Loss of wilderness
21 characteristics due to permanent development was the primary issue of concern for the
22 public. Both the BLM and NPS noted the potential effect of light pollution associated
23 with new development in areas with natural dark skies.

24 **3.4.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 25 **NTTR (North and South Range) – Status Quo**

26 Land use, land status, and existing land management plans would remain unchanged
27 under Alternative 1, and existing military activities would continue on the withdrawn
28 lands. Overlapping withdrawals of the NTTR and DNWR lands would remain, and
29 special use areas would continue to be managed under the appropriate land
30 management plan. Access to the NTTR would also continue at or near current levels.

31 The BLM visual resource management designations would remain unchanged. The
32 established VRM categories allow the Air Force to develop infrastructure in the planning
33 area and conduct its training and testing mission (including munitions uses and ground-
34 disturbance from construction, troop movement, or threat emitter use) without violating
35 management guidelines. These activities align with the expectations of viewers and with
36 the existing landscape character, and, therefore, are of low sensitivity and impact.
37 Aircraft operations, projectile firings, and rocket launches are transient visual intrusions,
38 and consequently cause no permanent visual impacts. Any infrastructure development
39 has the potential to introduce new lighting sources that could create lasting light
40 pollution and contribute to sky glow.

1 **3.4.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready** 2 **Access in the North and South Ranges**

3 Land use under Alternative 2 would remain relatively unchanged in the North Range,
4 but would change significantly in the South Range as the Air Force would have ready
5 access. Ready access in the South Range would mean that the areas proposed for
6 wilderness may no longer be managed as wilderness per Congressionally directed
7 changes in land management and the Air Force may have primary jurisdiction as a
8 result of reallocation (see Section 2.3.2).

9 Ready access in the South Range would provide greater flexibility for placement of
10 potential IADS locations. For example, this could include the movement of threat
11 emitters into previously unavailable areas as well as the placement of new threat emitter
12 locations to enhance MCO operations. It could also include enhanced IW test/training
13 capabilities such as new landing zones and IW objectives (see Figure 2-10, Composite
14 of the Urban Operations Complex and the Conceptual Insertion Sites). Due to the
15 existing DNWR MOU, the MLWA of 1999 and NDOW regulations, desert bighorn sheep
16 hunting is the only recreational use allowed within the DNWR/NTTR shared use area in
17 the South Range (see Section 3.4.1.4, Recreation and Special Use Areas). The Air
18 Force plans to continue to allow limited bighorn sheep hunting within the affected units
19 280, 281, and 282 during the currently designated hunting season (December 17
20 through January 1).

21 Ready access in the North Range would not impact existing grazing rights within the
22 Bald Mountain Allotment (see Section 3.4.1.3, General Land Use, Ownership, and
23 Management Plans).

24 Changing land management in the South Range under Alternative 2 to provide ready
25 access would mean that the South Range may no longer be managed to provide an
26 “untrammeled landscape,” and that human development could occur in such a way to
27 attract attention and alter the existing natural character of the landscape. The ready
28 access provided under this alternative has the potential to introduce the movement of
29 threat emitters into previously unavailable areas and the placement of new threat
30 emitter locations to enhance MCO operations and enhanced IW test/training capabilities
31 such as new landing zones and IW objectives. Depending on the scope of any
32 infrastructure development, munitions use, or ground disturbance associated with
33 construction or troop movement, these activities may significantly depart from the
34 existing visual context of an “untrammeled” natural environment free of human
35 modification, as well as introduce new lighting sources that could permanently affect the
36 natural night skies through the creation of light pollution and sky glow.

37 **3.4.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

38 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 39 • Alternative 3A – Range 77 – EC South Withdrawal
- 40 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal

- 1 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
2 Incorporation
- 3 • Alternative 3C – Alamo Withdrawal

4 Potential land use impacts associated with Alternatives 3A, 3A-1, 3B, and 3C include
5 those discussed under Alternative 2 associated with ready access in the North and
6 South Ranges and additional impacts specific to the proposed Range 77 – EC South
7 expansion area, Range 64C/D and 65D expansion area, and the Alamo expansion
8 area, respectively.

9 Specific land use impacts associated with Alternative 3A or 3A-1 would result from the
10 need to restrict access in order to provide an additional safety buffer for live weapons
11 deployment on the interior of Range 77 and to enhance operational security and safety
12 buffers for Range 64C/D and Range 65D. With the exception of installation of fencing,
13 there would be no construction disturbance in the proposed expansion area for
14 Alternatives 3A, 3A-1, and 3B, and no munitions use in the proposed expansion areas
15 for Alternatives 3A, 3A-1, or 3B.

16 Specific land use impacts associated with Alternative 3C could be considered to be
17 significant because of the major changes that would occur within the proposed
18 expansion area. The primary change to the existing land use would be that the area
19 would go from an area used by the visiting public to a military training area and
20 jurisdiction would pass from the USFWS to the Air Force. The areas proposed for
21 wilderness may also no longer be managed as wilderness (see Section 2.3.2,
22 Alternative 2). Additional safety buffers would be created for the target areas in the
23 South Range (Range 62A), but no new target impact areas are proposed for the
24 proposed expansion area for Alternative 3C under this withdrawal proposal. Potential
25 future uses also include the establishment of radar emitter sites, unimproved runways,
26 and use of the area for ground training to enhance and support additional MCO and IW
27 activities within the NTTR. Perimeter fencing would also be constructed under
28 Alternative 3C.

29 Limited access to the proposed Alternative 3 withdrawal areas would continue. Access
30 would include but not be limited to service personnel (e.g., BLM, USFWS, and NDOW)
31 for the purpose of wildlife inventory, law enforcement, cultural resource inventory and
32 management, water development, and facility maintenance; individuals or
33 representatives of associations for any purpose related to the protection, management,
34 and control of wild free-roaming horses and burros; hunters, researchers, and Native
35 American visits to cultural resources (i.e., religious and sacred sites). The process for
36 requesting, granting, and controlling access would be addressed within current MOUs
37 and interagency agreements. However, this does not preclude that there may be a
38 need to modify the current agreement or develop new agreements as needed.

39 ***Mining and Grazing***

40 For Alternatives 3A and 3A-1, there is one active mining claim (see Section 3.4.1.3,
41 General Land Use, Ownership, and Management Plans). To address access to the
42 mining claim, the Air Force would develop an agreement with the claimant to allow

1 continued access. No mineral leases or oil and gas leases are located within the
2 proposed expansion areas for Alternative 3A or 3A-1.

3 For Alternative 3A, two BLM grazing allotments would be affected by the proposed
4 expansion area, one of which is unallocated or closed to grazing, and the other is
5 active. The unallocated grazing unit is 49,356 acres in size, and 3,244 acres would be
6 affected by the proposed expansion area (approximately 7 percent). The active grazing
7 allotment (Razorback) is 266,329 acres in size, and only 14,650 acres (approximately
8 6 percent) are within the proposed expansion area (U.S. Air Force, 2016c).

9 The affected acreage of the unallocated grazing area and Razorback grazing allotment
10 would be reduced by a total of approximately 2,600 acres with Alternative 3A-1.

11 ***Recreational Use***

12 The proposed withdrawal for Alternative 3A would eliminate existing recreational uses
13 within the proposed expansion area (see Section 3.4.1.4, Recreation and Special Use
14 Areas) due to the need to restrict access because of Range 77 safety issues. This
15 would be a minor adverse impact on dispersed recreational uses such as hiking since it
16 would only restrict a relatively small portion of the surrounding BLM land, which would
17 remain open.

18 The Oasis Valley area northeast of Beatty is heavily used for OHV and mountain biking
19 activities. The proposed expansion area for Alternative 3A would restrict access to a
20 4.2-mile section of the Trails-OV Transvaal Flats Trail system (Windmill Road),
21 0.24-mile of the Ridgeline Trail, and about 4 miles of the road/trail system that is used
22 for the Beatty VFW Bullfrog Poker Run, Best in the Desert Vegas to Reno off-road race,
23 and other OHV activities. Trails-OV has also proposed a future section of the Transvaal
24 Trail System, a 14.7-mile section of which is located within the proposed expansion
25 area (Figure 3-7) for Alternative 3A.

26 Alternative 3A-1 would eliminate the impact to the existing 4.2-mile section of the Trails-
27 OV Transvaal Flats Trail System (Windmill Road) and 0.24-mile of the Ridgeline Trail. It
28 would also eliminate the impact to about 4 miles of the road/trail system that is used
29 for the Beatty VFW Bullfrog Poker Run, Best in the Desert Vegas to Reno off-road race,
30 and other OHV events.

31 The proposed expansion area for Alternative 3A also includes approximately
32 17,900 acres located within NDOW hunting units, including 5,700 acres in Unit 252 and
33 12,200 acres in Unit 253. These units allow for hunting of mule deer and desert bighorn
34 sheep (U.S. Air Force, 2016c). For Alternative 3A-1, less acreage would also be
35 affected in the NDOW hunting unit 253. The Air Force plans to continue to allow limited
36 hunting within the affected units during the currently designated hunting season
37 (December 17 through January 1).

38 Although recreational activities are allowed within the BLM-managed portion of the
39 proposed expansion area for Alternative 3B (see Section 3.4.1.4, Recreation and
40 Special Use Areas), use is relatively limited because of the lack of designated roads
41 and trails. Within the administrative incorporation area (eastern edge of range areas
42 63B and 63C) no off-road vehicle use is allowed per the BLM Las Vegas Field Office.

1 The portion of the proposed expansion area for Alternative 3B that overlaps the DNWR
2 is shown as a restricted area by the USFWS and public access is allowed, except for
3 limited bighorn sheep hunting.

4 The proposed expansion area for Alternative 3B includes approximately 54,400 acres
5 located within NDOW hunting units, including 47,200 acres in Unit 280, 200 acres in
6 Unit 281, and 7,000 acres in Unit 282 (U.S. Air Force, 2016c). These units only allow for
7 the hunting of desert bighorn sheep. The Air Force plans to continue to allow limited
8 bighorn sheep hunting within the affected units during the currently designated hunting
9 season (December 17 through January 1). However, the current NDOW MOU would be
10 modified and new language will be incorporated into the MOU to address continued
11 hunting while avoiding potential conflicts with hunting activities during certain military
12 training activities.

13 The proposed expansion area for Alternative 3C is currently within the DNWR; as a
14 result, the greatest adverse impacts would be on the existing recreational activities that
15 occur within the area because it would become closed to the public for safety and
16 security reasons. Existing recreational activities on the DNWR include wildlife
17 observation, photography, hiking, camping, bird-watching, backpacking, horseback
18 riding, hunting, and traveling on primitive scenic byways (see Section 3.4.1.4,
19 Recreation and Special Use Areas). Although the DNWR is closed to OHV activities,
20 there are several roads that lead to undeveloped backcountry campsites and trailheads.
21 Alamo Road is the primary access road within the proposed expansion area for
22 Alternative 3C. Alamo Road is a connector road from Corn Creek in the south to
23 Pahranaagat NWR and the town of Alamo to the north. The road provides access to the
24 west side of the Sheep Range for the length of the refuge. Side roads off of Alamo Road
25 run to the east to various trailheads and provide recreational users and hunters access
26 to additional backcountry areas within the Sheep Range (Figure 3-8).

27 The affected roads and trails within the proposed expansion area for Alternative 3C
28 include:

- 29 • Alamo Road north of Hidden Forest Road
- 30 • Pine Canyon Road
- 31 • White Rock Road (White Rock Canyon)
- 32 • Dead Horse Road and Dead Horse Trailhead
- 33 • Saddle Mountain and Sheep Pass
- 34 • Cabin Springs Road
- 35 • Desert Dry Lake, Dunes South and Dunes North
- 36 • Section of Old Corn Creek Road from intersection with Alamo Road

37 However, many of the recreation areas and trails within the eastern portion of the
38 DNWR would remain open and would not be affected by the proposed Alternative 3C
39 withdrawal area. These include but are not limited to the Corn Creek Field Station area,
40 Cow Camp Road and Wagon Wheel Trail, Joe May Road and trail, Gass Peak Road

1 and trail, Mormon Well Road and Desert Pass Campground, Hidden Forest Road and
2 trail, Sawmill Canyon Trail, and Hayford Peak.

3 Although these areas would not be directly affected, the closure of the proposed
4 Alternative 3C withdrawal area to public access could have indirect impacts. Indirect
5 impacts could occur if closure of roads and trails in the affected area results in greater
6 visitation and use of the unaffected recreation sites than presently occurs. This could
7 negatively affect user experience and satisfaction and result in overuse of certain areas.
8 However, the extent of potential impact on adjacent recreational areas from any shift of
9 recreational activity is indeterminable at this time and would be highly speculative
10 without a thorough understanding of the seasonal usage of the Alamo portion of the
11 DNWR.

12 The proposed expansion area for Alternative 3C is located entirely within the DNWR
13 and also falls entirely within NDOW-designated bighorn sheep hunting units. This
14 includes approximately 11,400 acres in Unit 282, 132,400 acres in Unit 283, and
15 83,100 acres in Unit 284. The Air Force plans to continue to allow limited bighorn sheep
16 hunting within these affected units during the currently designated hunting season.
17 However, the current 30-day hunting season would be reduced by two weeks. As would
18 be the case with Alternative 3B, the current NDOW MOU would be revised and
19 language will be incorporated into a new MOU to address continued hunting while
20 averting potential conflicts between hunting activities and military training activities.

21 ***Herd Management Areas***

22 A small portion of the proposed expansion area (2,877 acres) for Alternative 3A
23 overlaps with the Bullfrog HMA, managed by the BLM. This HMA provides suitable
24 habitat for wild burros, but not for wild horses. A smaller portion of the Bullfrog HMA
25 would be impacted with Alternative 3A-1. With the exception of fencing installation there
26 would be no construction, nor would there be munition use within the area. As a result,
27 no adverse impacts would be expected.

28 For Alternative 3B, there would be no adverse impacts to the Wheeler Pass HMA
29 because only a very small portion (114 acres) overlaps with the proposed expansion
30 area.

31 Because fencing locations are not known at this time the Air Force will need to perform
32 site-specific NEPA in situations where fencing might overlap an HMA for Alternative 3A,
33 3A-1, or 3B to ensure that segmentation issues are addressed.

34 ***Visual Resources***

35 Potential impacts to visual resources associated with Alternatives 3A, 3A-1, 3B, and 3C
36 include those discussed under Alternative 2 associated with ready access in the North
37 and South Ranges and additional impacts specific to the proposed Range 77 – EC
38 South expansion area, Range 64C/D and 65D expansion area, and Alamo expansion
39 areas, respectively.

40 For Alternative 3A or 3A-1, the need to restrict access in order to provide an additional
41 safety buffer for live weapons deployment on the interior of Range 77 may cause

1 additional fencing to be installed (approximately 25 miles). The fence itself uses
2 materials, described in Section 2.3.3, that are designed to create low visual contrast
3 with the surrounding landscape, but would nonetheless add long-term human
4 development in a previously undisturbed area. In the areas managed by the BLM, the
5 fencing is consistent with the established visual resources objectives. There would be
6 no other construction disturbance, munitions use, or emitter use in the proposed
7 expansion area for Alternatives 3A or 3A-1.

8 For Alternative 3B, there would be no munitions use or emitter use in the proposed
9 expansion area. The need to restrict access will cause approximately 30 miles of
10 additional fencing to be installed, which would contribute a minor, weakly-contrasting,
11 but long-term human development on previously undisturbed areas. In the areas
12 managed by the BLM, the fencing is consistent with the established visual resources
13 objectives. Permanent human development already characterizes the area for
14 Alternative 3B, so limited additional disturbance would be consistent with the visual
15 landscape. The introduction of fencing and restriction of munitions and emitter uses
16 would create similar impacts to visual resources as discussed under Alternative 3A.

17 Visual resource impacts associated with Alternative 3C could be considered to be
18 significant because of the major changes that would occur within the proposed
19 expansion area due to changing the land management status (as discussed in Chapter
20 2.3.2) and the subsequent change to military training activities that would be allowed in
21 the area. Permanent alterations such as establishment of radar emitter sites,
22 unimproved runways, and surface disturbance caused by ground training to enhance
23 and support additional MCO and IW activities would modify the natural landscape from
24 untrammeled (as described in the *Wilderness Act of 1964*) with limited development to
25 one with extensive human intervention. The need to restrict access will cause
26 approximately 65 miles of additional fencing to be installed, which would contribute a
27 long-term but visually low-contrast human development on previously undisturbed
28 areas. Infrastructure development associated with military training and support would
29 introduce light sources into an area where none had existed, therefore generating light
30 emissions in an area with natural night skies and very low nighttime radiance. New
31 development would create illuminated surfaces reflecting up into the atmosphere,
32 generating additional sky glow in an area already affected by the Las Vegas urban area.

33 **3.4.2.5 Alternative 4 – Establish the Period of Withdrawal**

34 The proposed withdrawal periods associated with Alternative 4—Alternative 4A (20-year
35 withdrawal period), Alternative 4B (50-year withdrawal period), and Alternative 4C
36 (indefinite)—must be implemented in conjunction with one or more of the other
37 alternatives or subalternatives. Because Alternative 4 reflects periods of time, which do
38 not in and of themselves affect land use, there are no specific impacts associated with
39 Alternative 4, except to provide a point in time at which impacts from other chosen
40 alternatives may end. Thus, there are no specific land use, recreational, or visual
41 impacts associated with Alternative 4.

1 **3.4.2.6 No Action Alternative**

2 Under the No Action Alternative, military activities on the NTTR and prohibitions
3 previously placed in effect by P.L. 106-65 would expire. With the expiration of these
4 prohibitions, land uses such as mining, mineral leasing, or livestock grazing could
5 potentially be reintroduced into previously restricted areas. It is expected that many
6 areas will continue to have restricted access due to the nature of historical activities and
7 for the safety and security of current operations. Management of the former NTTR
8 lands would continue as currently directed until new management planning under
9 FLPMA and NEPA regulations could be completed. Not extending the land withdrawal
10 would not affect the existing airspace; however, without control of ground areas, the
11 airspace could not be used to support live-fire exercises and related military high-hazard
12 activities.

13 BLM-administered public land would be subject to the multiple resource management
14 objectives of the FLPMA. Surface management of the DNWR would continue to reside
15 with the USFWS. Current land use management objectives of BLM lands on the
16 perimeter or the vicinity of the NTTR would continue and no changes in the land status
17 of these adjacent lands would be expected.

18 **Visual Resources**

19 Efforts to remediate potential contamination hazards and minimize the extent of past
20 military activities could result in additional ground disturbance in the affected areas;
21 however, this would be consistent with the visual character of the military activities,
22 resulting in little to no change in the visual character of the affected areas. Remediation
23 could have a positive effect on visual resources if a more “natural” appearance is
24 obtained through the removal of anthropogenic elements such as buildings, the
25 restoration of disturbed ground with native vegetation, or the elimination of light-pollution
26 sources. BLM-administered public land would be subject to the visual resource
27 management objectives of the *Record of Decision for the Approved Nevada Test and*
28 *Training Range Resource Management Plan and Final Environmental Impact Statement*
29 (BLM, 2004). Surface management of the DNWR would continue to reside with the
30 USFWS, and therefore the visual resource management would be consistent with
31 refuge management.

32 **3.5 WILDERNESS AND WILDERNESS STUDY AREAS**

33 This section addresses Wilderness Areas and Wilderness Study Areas (WSAs) that
34 occur in the NTTR study area. The subsections below describe characteristics of these
35 areas, summarize management practices, and analyze potential impacts from the
36 Proposed Action.

3.5.1 Affected Environment

3.5.1.1 Description of Resource

The *Wilderness Act of 1964* (P.L. 88-57) was passed “to assure that an increasing population accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition.” Through this act, the National Wilderness Preservation System (NWPS) was established to be composed of federally owned areas that are identified and potentially designated as Wilderness Areas based on specific criteria. The NWPS also provides guidance on managing and preserving Wilderness Areas. The *Wilderness Act* also mandated that the U.S. Forest Service (USFS), NPS, BLM, and USFWS review their lands against the criteria described below to determine their suitability as wilderness, then manage those areas in accordance with the NWPS guidance. There are currently 762 designated Wilderness Areas in the United States, totaling approximately 109 million acres.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.5.1.1.1.

Wilderness Area is defined in P.L. 88-57 (16 USC 1131–1136) as “an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain” and “an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habituation, which is protected and managed so as to preserve its natural conditions.” Based on this legal definition, five qualities of wilderness character have been identified and defined as:

- Untrammelled – Wilderness is essentially unhindered and free from the actions of modern human control or manipulation.
- Natural – Wilderness ecological systems are substantially free from the effects of modern civilization.
- Undeveloped – Wilderness is essentially without permanent improvements or the sights and sounds of modern human occupation.
- Solitude or primitive and unconfined recreation – Wilderness provides opportunities for people to experience natural sights and sounds, solitude, freedom, risk, and physical and emotional challenges of self-discovery and self-reliance. This quality focuses on the tangible aspects of the setting that affect the opportunity for people to directly experience wilderness.
- Other features of value – This quality captures ecological, geological, or other features of scientific, educational, scenic, or historical value that are not covered by the other four qualities but may not occur in all wilderness areas (Landres et al., 2015).

All five of these qualities are equally important, and none is held in higher or lower regard than the others. Therefore, the following conditions that satisfy these quality criteria must be present for an area to be considered for wilderness designation:

- 1 • The land is under federal ownership and management.
- 2 • The area consists of at least 5,000 acres of land.
- 3 • Human influence is substantially unnoticeable.
- 4 • There are outstanding opportunities for solitude or a primitive and unconfined
5 type of recreation.
- 6 • The area may possess ecological, geological, or other features of scientific,
7 educational, scenic, or historical value. Though these values are not required of
8 any wilderness, if they are present they are considered part of that area's
9 wilderness character and must be protected accordingly.

10 Considering the range of factors identified above, the *Wilderness Act* lends to both a
11 quantitative and qualitative assessment of wilderness characteristics of an area
12 (Dawson & Hendee, 2009). The land area, human influence, and ecological, geological,
13 or other features requirements are features that can be quantified with field surveys and
14 other data-gathering techniques. However, determining whether an area provides
15 outstanding opportunities for solitude or primitive and unconfined recreation relies on a
16 qualitative analysis. The *Wilderness Act* does not provide a definition of key terms, such
17 as “outstanding opportunities” or “unconfined types of recreation,” and agency policies
18 do not provide clear guidance on what conditions are necessary to provide outstanding
19 opportunities for wilderness experiences (Carlson et al., 2010). Therefore, the
20 responsible agency must use its expertise to define criteria and assess these
21 characteristics qualitatively.

22 If a land area meets all requirements based on a quantitative and qualitative analysis,
23 the requesting agency (the USFWS, USFS, or NPS) submits a recommendation to the
24 President for review. The President may then make a recommendation to Congress to
25 designate the area as wilderness. A wilderness designation can only become effective
26 through an act of Congress. Once the Secretary of the Interior transmits the
27 recommendation to the President, the area is considered “proposed for wilderness.”
28 Lands included within areas that are proposed for wilderness are managed as a matter
29 of USFWS policy as de facto wilderness and provided with the same level of protection
30 as Congressionally designated wilderness, until Congress acts on the request.

31 The FLPMA of 1976 (P.L. 94-579) governs the way in which public lands administered
32 by BLM are managed and, among other objectives, mandates that the BLM conduct
33 studies of areas under their jurisdiction to determine suitability for wilderness
34 designation. If the area contains sufficient wilderness characteristics, BLM inventories
35 and classifies these areas as WSAs. These recommendations are submitted to
36 Congress for potential designation as Wilderness Areas. Even though WSAs are not
37 official Wilderness Areas, similar to areas proposed for wilderness, they are managed
38 as de facto wilderness to protect their wilderness values until Congress decides to
39 either designate the area as wilderness or release the area for nonwilderness uses.
40 WSAs that are released for nonwilderness uses are managed in accordance with land
41 management plans adopted under Section 202 of the FLPMA.

1 Management of Wilderness Areas, areas proposed for wilderness, and WSAs within the
2 NTTR study area is discussed in Section 3.5.1.4, Management Practices.

3 3.5.1.2 Region of Influence

4 The ROI includes Wilderness Areas, areas proposed for wilderness, and WSAs that
5 occur within the NTTR airspace boundaries, as shown in Figure 3-10.

6 3.5.1.3 Wilderness and Wilderness Study Areas

7 *Existing NTTR Boundary (Alternatives 1 and 2)*

8 There are 14 Wilderness Areas and four WSAs that underlie the NTTR airspace
9 boundaries. In addition, there are six Wilderness Areas and five WSAs that are located
10 in close proximity to NTTR airspace boundaries. These areas are listed in Table 3-27
11 and Table 3-28. Refer to Appendix F, Wilderness and Wilderness Study Areas, for more
12 detailed information.

13 **Table 3-27. Wilderness Areas and WSAs Within NTTR Airspace Boundaries**

Wilderness Areas	Airspace Unit		Legislation	
Parsnip Peak	Reveille		P.L. 108-424 ^a	
Weepah Springs	Coyote		P.L. 107-282 ^b	
Worthington Mountains	Coyote		P.L. 107-282	
Big Rocks	Coyote		P.L. 108-424	
Mount Irish	Coyote		P.L. 108-424	
South Pahroc Range	Coyote		P.L. 107-282	
Tunnel Springs (Cougar Canyon)	Caliente		P.L. 107-282	
Slaughter Creek	Caliente		P.L. 111-11 ^c	
Docs Pass	Caliente		P.L. 111-11	
Delamar Mountains	Elgin		P.L. 107-282	
Clover Mountains	Elgin		P.L. 107-282	
Meadow Valley Range	Elgin		P.L. 107-282	
Mormon Mountains	Elgin		P.L. 107-282	
Arrow Canyon	Sally		P.L. 107-282	
Wilderness Study Areas ^d	Airspace Unit	Total Acres	Acres Recommended for Wilderness	Acres Recommended for Nonwilderness
The Wall ^e	Reveille	38,000	30,320	7,680
Palisade Mesa ^f	Reveille	99,550	66,110	33,440
Kawich ^g	Reveille	54,320	0	54,320
South Reveille ^h	Reveille	106,200	33,000	73,200

P.L. = Public Law; WSA = Wilderness Study Area

a. *Lincoln County Conservation, Recreation, and Development Act of 2004*

b. P.L. 107-282 = *Clark County Conservation of Public Land and Natural Resources Act of 2002*

c. P.L. 111-11 = *Omnibus Public Land Management Act of 2009*

d. (BLM, 2016a); e. (BLM, 2016b); f. (BLM, 2016c); g. (BLM, 2016d); h. (BLM, 2016e)

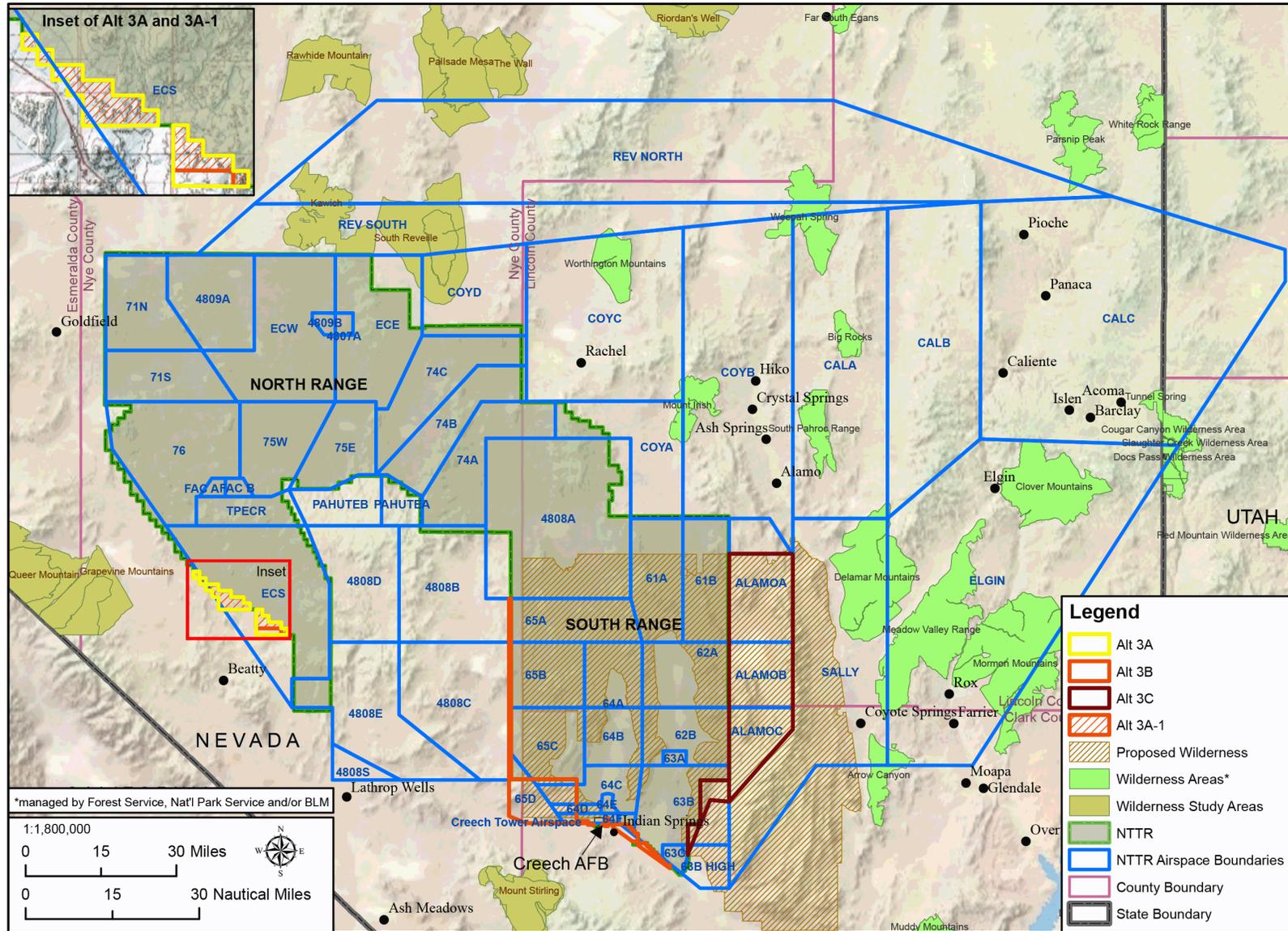


Figure 3-10. Wilderness Areas and Wilderness Study Areas in the Region of Influence

1
2

Table 3-28. Wilderness Areas and WSAs in Close Proximity to NTTR Airspace Boundaries

Wilderness Areas	Legislation		
White Rock Range	P.L. 108-424 ^a		
Red Mountain	P.L. 111-11 ^b		
Beaver Dam Mountain	P.L. 98-406 ^c		
Lime Canyon	P.L. 107-282 ^d		
Muddy Mountain	P.L. 107-282		
La Madre Mountains	P.L. 107-282		
Wilderness Study Areas	Total Acres	Acres Recommended for Wilderness	Acres Recommended for Nonwilderness
Riordan's Well ^e	57,002	Not available	Not available
Rawhide Mountain ^f	64,360	0	64,360
Grapevine Mountains ^g	66,800	23,150	43,650
Mount Stirling ^h	9,650	50,682	19,050
Resting Springs ⁱ	3,850	0	3,850

P.L. = Public Law; WSA = Wilderness Study Area

a. *Lincoln County Conservation, Recreation, and Development Act of 2004*

b. *Omnibus Public Land Management Act of 2009*

c. *Arizona Wilderness Act of 1984*

d. *Clark County Conservation of Public Land and Natural Resources Act of 2002*

e. (BLM, 2016a); f. (BLM, 2016f); g. (BLM, 2016g); h. (BLM, 2016h); i. (BLM, 2016i)

1 The 1991 Nevada BLM *Statewide Wilderness Report* (BLM, 1991) evaluated 110 WSAs
2 identified in Nevada by BLM, provided descriptions of each area, and recommended
3 areas for either wilderness designation or nonwilderness uses. The WSAs listed in this
4 report were presented to Congress for consideration to either be included in the NWPS
5 or released for uses other than wilderness. For example, P.L. 107-282 designated 18
6 Wilderness Areas to be included in the NWPS and released three WSAs and portions of
7 six WSAs for nonwilderness uses. Comparing current WSAs identified by BLM (BLM,
8 2016a) with WSAs identified in the 1991 BLM report and those areas released by
9 legislation passed by Congress, a total of eight WSAs have been released for uses
10 other than wilderness. It is assumed the recommendations in the 1991 BLM report
11 provided Congress with the rationale for not designating these areas as wilderness.
12 Reasons for areas not being recommended for wilderness include the following:

- 13 • Area was less than 5,000 acres
- 14 • Conflicts with ongoing or projected uses of the area such as off-road vehicle use,
15 utility corridors, and rights-of-way
- 16 • Little to no outstanding opportunities for solitude resulting from:
 - 17 ○ Minimal topographic screening
 - 18 ○ Lack of vegetative screening
 - 19 ○ Narrow configuration of the land
 - 20 ○ Proximity to and influence of outside sights and sounds associated with
21 nonwilderness-related activities
- 22 • Lack of unique intrinsic values or focal points of interest for primitive recreation
- 23 • Wilderness values not considered high enough quality in comparison with:

- 1 ○ Wilderness values of other wilderness areas in the vicinity
- 2 ○ Resource values from potential development of future activities, such as
- 3 mining

4 Appendix F, Wilderness and Wilderness Study Areas, contains a list of WSAs released
5 for uses other than wilderness, along with the rationale based on the 1991 Nevada BLM
6 *Statewide Wilderness Report* (BLM, 1991).

7 In addition to Wilderness Areas and WSAs discussed above, about half (826,000 acres)
8 of the DNWR overlaps the South Range of the NTTR. Approximately 90 percent of the
9 DNWR (1.6 million acres) comprise areas proposed for wilderness. Within the total
10 acreage of areas proposed for wilderness in the DNWR, 590,000 acres occur in the
11 South Range. Refer to Figure 1-5 (South Range Overlap with DNWR).

12 As previously stated, an assessment of wilderness characteristics of an area
13 incorporates both a quantitative and qualitative approach. To address the quantitative
14 approach, in accordance with Section 603(a) of the FLPMA, a special study was
15 conducted to identify roadless areas in the existing NTTR withdrawal area and the
16 proposed expansion areas that may support wilderness characteristics consistent with
17 the requirements stated in Section 3.5.1.1 (U.S. Air Force, 2017a). During the study, an
18 inventory of roadless areas was developed based on guidelines provided in BLM
19 Manual 6310, *Conducting Wilderness Characteristic Inventory on BLM Lands* (BLM,
20 2012a). In addition, multiple sources of high-resolution satellite imagery and GIS layers
21 from various databases were used to characterize the existing road networks and
22 determine whether the land areas around the roads would meet the minimum size
23 criteria of 5,000 acres for Wilderness Areas. The study also identified areas with visible
24 human impacts, which were included in the area calculations. Visible evidence of
25 human impacts by definition would not satisfy untrammeled, natural, and undeveloped
26 qualities of wilderness. The results of the study are summarized in Table 3-29.
27 Figure 3-11 shows roadless areas identified in the study.

28 **Table 3-29. Areas of Land Categories Identified in the Roadless Areas Special Study**

Category	Area (acres)	Percent of Mapped Area
Roadless areas greater than 5,000 acres	2,230,191	79.86%
Roadless areas less than 5,000 acres	59,679	2.14%
Areas impacted by humans	491,475	17.60%
Roads or road networks	13,895	0.50%

*Total area of the report study area includes only the area mapped for roads (2,792,681 acres)

Source: (U.S. Air Force, 2017a)

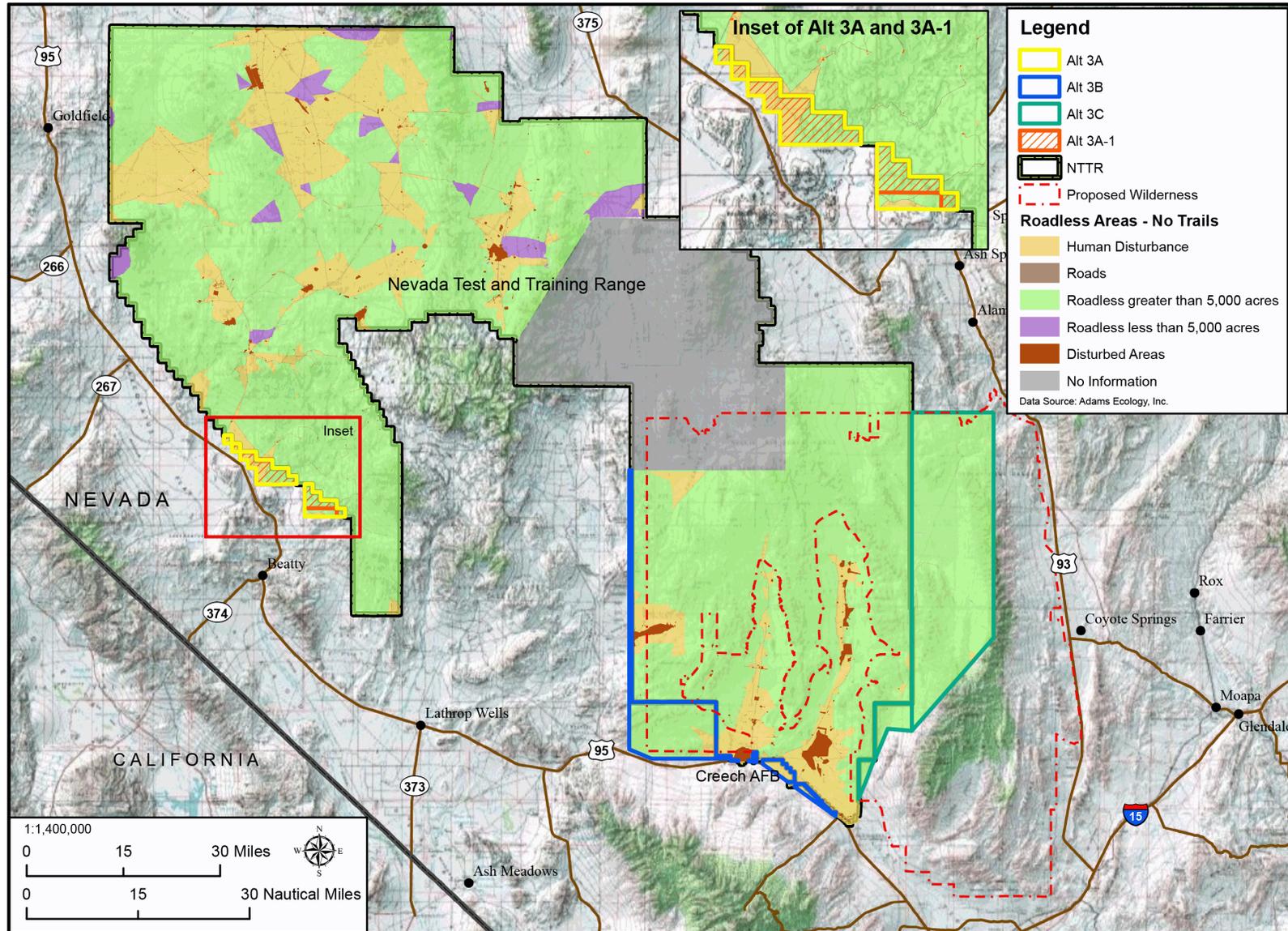
29 While the roadless areas special study identified large contiguous land areas that are
30 absent of roads, road networks, or visible human impacts, it did not fully characterize all
31 wilderness qualities, specifically, outstanding opportunities for solitude or primitive and
32 unconfined types of recreation. For example, Figure 3-11 depicts roadless areas that
33 meet the size requirement within the North Range; however, no Wilderness Areas have
34 been designated in this part of the NTTR land withdrawal. On the other hand, roadless
35 areas identified by the Air Force consistently overlap with areas proposed for wilderness

1 in the South Range (U.S. Air Force, 2017a). For both the North and South Ranges,
2 untrammled, natural, and undeveloped wilderness qualities are inferred in the
3 “roadless areas” category based on the assumptions made in the GIS analysis;
4 however, a more detailed ground-truthing analysis would need to be conducted to
5 confirm this information.

6 Outstanding opportunities for solitude or primitive and unconfined recreation cannot be
7 adequately assessed using GIS and satellite imagery because, as previously indicated,
8 these characteristics require a qualitative assessment. There is no record in the
9 legislative history of the *Wilderness Act* as to what the framers meant by the phrase
10 “outstanding opportunities for solitude or a primitive and unconfined type of recreation”
11 (Landres et al., 2008). Meanings for the term “solitude” range from a lack of seeing
12 other people to freedom from societal constraints and management regulations. Holistic
13 views of “solitude” involve providing inspiration for an awakening of the senses,
14 connection with the beauty of nature, and allowing one to let go of everyday obligations
15 and to go at one’s own pace (Landres et al., 2015). Similarly, meanings for “primitive”
16 and “unconfined” recreation are wide-ranging.

17 The term *primitive recreation* implies traveling by nonmotorized and nonmechanical
18 means and relying on personal skills rather than facilities or outside help (Roggenbuck,
19 2004). “Unconfined” refers to attributes including self-discovery, exploration, and
20 freedom from societal or managerial controls (Dawson & Hendee, 2009). Combined
21 together, this wilderness quality provides opportunities for physical and mental
22 challenges associated with adventure, real consequences of mistakes, and personal
23 growth resulting from encountering and overcoming obstacles (Landres et al., 2015).

24 Agencies do not provide specific policies on how to assess whether opportunities for
25 solitude and primitive and unconfined recreation are considered “outstanding,” nor is
26 there consensus on thresholds between acceptable and unacceptable wilderness
27 experience opportunities (Carlson et al., 2010). Researchers and managers have
28 discussed and debated the meanings of these concepts, however, no national
29 standards for what is an acceptable degree of solitude or primitive and unconfined
30 recreation have been developed, because each wilderness is unique in its legislative,
31 administrative, social, and biophysical setting (Landres et al., 2005). Dawson (2004)
32 suggests that outstanding opportunities for solitude require some degree of separation
33 in sight, sound, and distance between visitors in the wilderness from people and
34 activities occurring outside the wilderness. In fact, one indicator used in monitoring
35 solitude or primitive and unconfined recreation is remoteness of wilderness from sights
36 and sounds of human activities originating from outside the wilderness. Signs of human
37 activity and development outside wilderness include (1) automobile and off-road
38 vehicles, (2) aircraft overflights, (3) development and use of inholdings, (4) air and light
39 pollution, and (5) urbanization from high ridges and peaks (Landres et al., 2015).



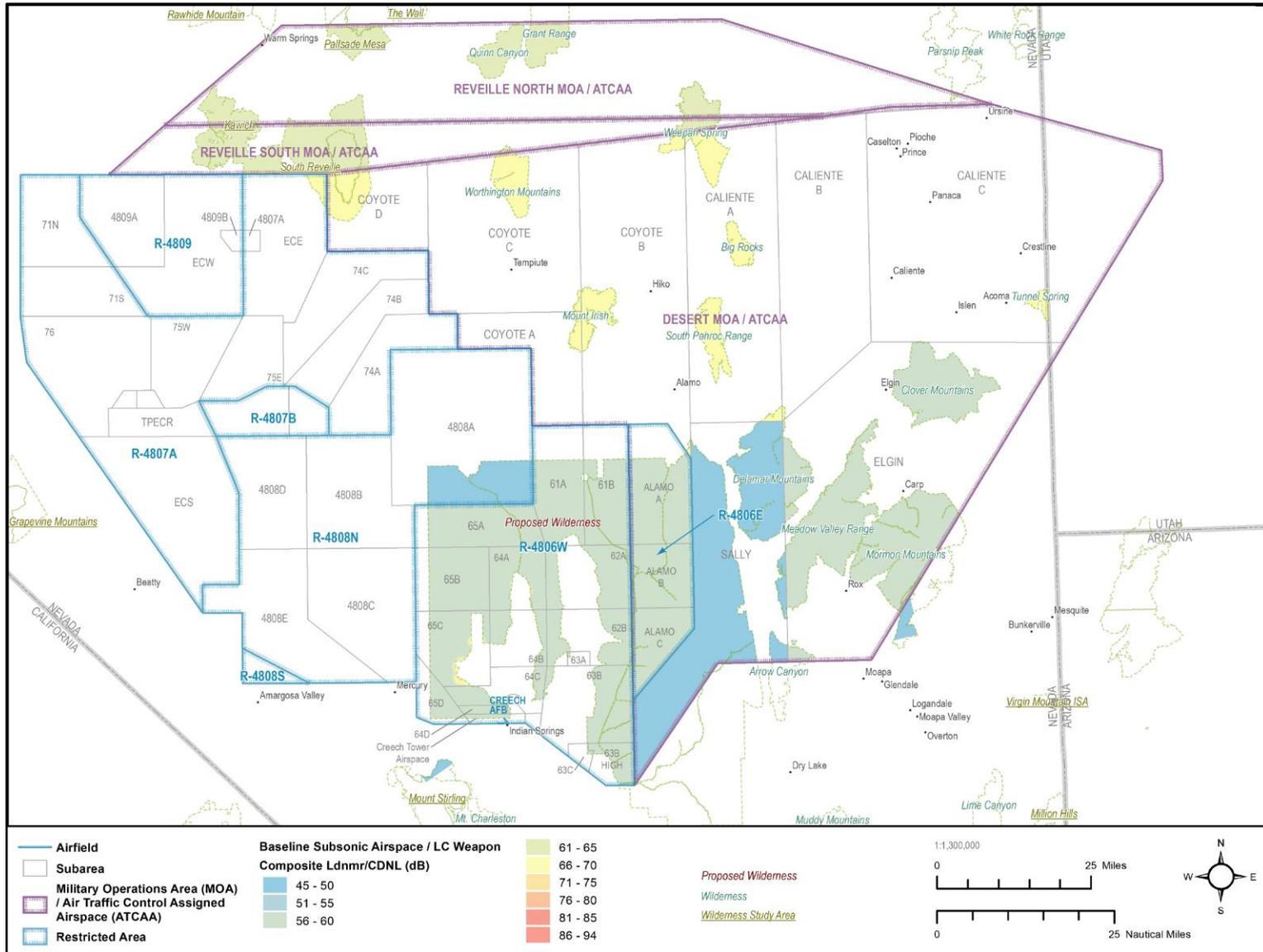
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Figure 3-11. Roadless Areas Identified in the Existing NTTR Land Withdrawal and Proposed Expansion Areas

1 Aircraft overflights have been found to degrade the solitude and primitive recreation
2 aspects of wilderness, based on an examination of wilderness visitor experiences when
3 exposed to aircraft overflights (Tarrant, Haas, & Manfredo, 1995). Kelson and Lilieholm
4 (1997) surveyed wilderness managers representing USFS, the USFWS, NPS, and BLM
5 across 30 states on the perceived impacts of land activities adjacent to wilderness
6 resources. Military overflights received the second-highest impact rating based on
7 manager consensus, preceded by fire management activities (Kelson & Lilieholm,
8 1997). In addition, three WSAs within the NTTR ROI were not recommended for
9 wilderness designation, due in part to the proximity and influence of outside sights and
10 sounds associated with utility corridors, abandoned sand and gravel operations, and
11 Highway 93 (BLM, 1991).

12 Noise produced within the NTTR ROI is primarily dominated by aircraft use and
13 munitions activities. Aircraft are authorized to operate in airspace units above
14 Wilderness Areas, and supersonic flight is authorized above 5,000 feet mean sea level.
15 In 2015, there were a total of 59,347 aircraft operations in the R-4809 and R-4807
16 airspace units that overlie the North Range, and there were 23,109 aircraft operations in
17 the R-4806 airspace that overlies nearly the entire South Range. These would average
18 approximately 162 and 63 operations each day in the North Range and South Range,
19 respectively. As described in Section 3.2, Noise, subsonic noise generated from this
20 level of aircraft operations ranges between 61 dBA (A-weighted decibels) in the South
21 Range up to 69 dBA in the North Range, measured as the onset-rate adjusted monthly
22 day-night average sound level (i.e., L_{dnmr}). Section 3.2 also analyzed supersonic noise
23 generated from sonic booms and blast noise from munitions use in the ROI. For
24 airspace units R-4809, R-4807, and R-4806, baseline numbers of sonic booms per day
25 are 1, 2, and 1, respectively. Noise generated from baseline levels of sonic booms
26 measured as L_{dnmr} ranges between 58 dBC in the South Range and up to 60 dBC in the
27 North Range. As a comparison, noise levels just above 50 dBA would be considered
28 “quiet urban daytime” levels, and noise levels between 60 dBA and 70 dBA would be
29 equivalent to a vacuum cleaner operating 10 feet away or an automobile driving by a
30 person standing 100 feet away (refer to Appendix C, Noise, for more detailed
31 information). Even for indoor noise receptors, if an aircraft noise event’s loudest noise
32 level (expressed as L_{max}) exceeds 50 dB, then disruption to activity/speech is expected.

33 No noise thresholds have been established for wilderness. However, provided that
34 Wilderness Areas should be free from human presence in both sight and sound, it is
35 possible that even “quiet urban daytime” noise levels may be too loud and would detract
36 from solitude. Based on the baseline NTTR operations and associated noise levels, the
37 higher frequency and intensity of military operations in the North Range may contribute
38 to factors preventing the roadless areas from ever becoming wilderness. Similarly,
39 baseline aircraft operations and associated noise in the South Range may impact the
40 solitude quality in areas proposed for wilderness. Figure 3-12 shows the composite
41 baseline noise levels from all noise sources associated with baseline NTTR operations.



1
2

Figure 3-12. Composite Noise Levels in Wilderness Under Baseline Conditions

1 The entire NTTR land area, including areas that were proposed for wilderness in the
2 South Range, is generally closed to the public due to ongoing military operations. The
3 Air Force provides hunting opportunities for bighorn sheep, but these events are limited
4 to certain times of the year. When public access to an area is restricted, the primitive
5 quality of an area is reduced, and these types of controlled activities may not be
6 considered unconfined. This access restriction, combined with baseline military
7 operation considerations mentioned above, adds to the unsuitability of the roadless
8 areas in the North Range as wilderness. Specifically for the DNWR and areas proposed
9 for wilderness in the South Range, the opportunity for a “truly unique desert wilderness
10 experience” was considered to be one of the “very special values of the area,” as stated
11 in the 1971 DNWR Wilderness Proposal (USFWS, 1971). While the public can enjoy
12 this type of wilderness experience in the DNWR outside the NTTR boundaries, public
13 access to areas that were proposed for wilderness within the NTTR boundaries was
14 already restricted when it was proposed for wilderness in 1971 because the area was
15 being used since the 1940s as an aerial bombing and gunnery range for Air Force
16 training activities (USFWS, 1971). Therefore, areas that were proposed for wilderness
17 in the South Range currently provide limited opportunities for primitive recreation, but
18 these opportunities may not qualify as unconfined recreation.

19 ***Alternative 3A – Range 77 – EC South Withdrawal (and Amended Alternative 3A-1)***

20 As shown in Figure 3-10, there are no Wilderness Areas or WSAs in the 18,000 acres
21 or 15,000 acres of the proposed expansion area for Alternative 3A or Alternative 3A-1,
22 respectively.

23 ***Alternative 3B – 64C/D and 65D Withdrawal and Administrative Incorporation***

24 The proposed 64C/D and 65D expansion area is approximately 61,000 acres; areas
25 proposed for wilderness (approximately 33,000 acres) overlap approximately 54 percent
26 of the area, primarily within Ranges 64C/D and 65D. Results from the roadless areas
27 special study confirm that the majority of this portion of the proposed expansion area is
28 categorized as roadless areas greater than 5,000 acres (U.S. Air Force, 2017a).
29 Ranges 64C/D and 65D fall under airspace unit R-4806, where baseline L_{dnmr} noise
30 levels for subsonic and supersonic aircraft operations are measured as 61 dBA and 58
31 dBC, respectively. Wilderness Areas, WSAs, and areas proposed for wilderness do not
32 occur in the 7,000 acres that encompass the area parallel to the current NTTR
33 boundary and U.S. Route 95 right-of-way and the Administrative Incorporation area.

34 ***Alternative 3C – Alamo Withdrawal***

35 Approximately 227,000 acres are included in this proposed expansion for NTTR land
36 withdrawal, with areas that were proposed for wilderness overlapping the entire Alamo
37 area (approximately 99 percent). Aside from the small areas consisting of existing roads
38 (e.g., Alamo Road, Sheep Pass, Cabin Spring Road, Hidden Forrest Road, Cow Camp
39 Road, Joe May Road, and Pine Nut Road) and associated buffer areas, the proposed
40 Alamo expansion areas meet the size requirement and naturalness criterion for
41 wilderness designation (U.S. Air Force, 2017a). However, the proposed Alamo

1 expansion areas also fall under airspace unit R-4806, where baseline L_{dnmr} noise levels
2 for subsonic and supersonic aircraft operations are measured as 61 dBA and 58 dBC,
3 respectively.

4 **3.5.1.4 Management Practices**

5 This section summarizes current management practices and responsible agencies for
6 Wilderness Areas and WSAs within the ROI. There are multiple management
7 considerations to address due to the overlap of NTTR land and airspace boundaries
8 with Wilderness Areas, WSAs, and areas proposed for wilderness within the DNWR.

9 ***Wilderness Areas***

10 Management of Wilderness Areas is implemented through published regulations for
11 Wilderness Preservation and Management (50 CFR 35), agency-specific guides, and
12 national policy for wilderness management (Dawson & Hendee, 2009). There are
13 specific management restrictions associated with all Wilderness Areas. Human activities
14 are limited to nonmotorized recreation, such as backpacking, hunting, fishing,
15 horseback riding, and scientific research. The *Wilderness Act* prohibits commercial
16 activities, mechanized vehicles, including bicycles, road building, aircraft landing and
17 launching, logging, and mining, aside from mining claims and grazing ranges that have
18 been grandfathered into the designation.

19 An interagency strategy was developed to provide a framework that monitors tangible
20 attributes of wilderness qualities, as defined in Section 3.5.1.1, and it provides a
21 foundation for the four federal agencies (BLM, NPS, the USFWS, and USFS) to develop
22 a nationally consistent approach to wilderness character monitoring (Landres et al.,
23 2015; Landres et al., 2008; USFWS, 2012). This framework identifies general guidelines
24 to manage for wilderness quality preservation:

- 25 • Untrammelled – This quality is preserved when actions to intentionally control of
26 manipulate the components or processes of ecological systems inside wilderness
27 are not taken.
- 28 • Natural – This quality is preserved when there are only indigenous species and
29 natural ecological conditions and processes.
- 30 • Undeveloped – This quality is preserved when nonconforming uses are
31 prohibited.
- 32 • Solitude or primitive and unconfined recreation – This is preserved by
33 management actions that reduce visitor encounters, reduce signs of modern
34 civilization inside wilderness, remove agency-provided recreation facilities, or
35 reduce management restrictions on visitor behavior.
- 36 • Other features of value – This quality is preserved when these “other features of
37 value” are preserved.

38 The framework also identifies monitoring questions and indicators for wilderness
39 managers to assess during monitoring activities. Full implementation of the interagency
40 strategy across all agencies for all Wilderness Areas is not known, and the

1 effectiveness of accurately assessing trends in wilderness qualities remains to be seen.
2 However, this approach provides recommendations to resolve issues in quantifying
3 intangible aspects of wilderness character.

4 The following discussion summarizes agency-specific management practices for
5 Wilderness Areas and WSAs in the NTTR ROI that have been in place before the
6 interagency strategy was developed. It is assumed these management activities are
7 being consistently implemented across all Wilderness Areas and WSAs nationwide.

8 **USFWS-Managed Areas**

9 The USFWS manages Wilderness Areas through two levels of planning: refuge
10 Comprehensive Conservation Plans and individual Wilderness Management Plans.
11 Within the NTTR boundaries, USFWS has primary jurisdiction of the areas proposed for
12 wilderness in the South Range (approximately 590,000 acres). The USFWS Service
13 Manual (Part 610) *USFWS Wilderness Stewardship Policy* is the guidance document for
14 managing Wilderness Areas and areas proposed for wilderness within the National
15 Wildlife Refuge System (USFWS, 2008b). As a hierarchy, the USFWS determines the
16 needs to be accomplished to meet refuge purposes first, then ensures the activities
17 comply with the *Wilderness Act*. In other words, National Wildlife Refuge purposes
18 instruct the USFWS on what needs to be accomplished, but the provisions of the
19 *Wilderness Act* may affect how those objectives are accomplished. In some cases, the
20 guidance does allow for some limited activities that would otherwise be prohibited in
21 Wilderness Areas, strictly for refuge management purposes. The process to approve
22 these activities is called a minimum requirement analysis to determine if proposed
23 refuge management activities conducted in Wilderness Areas are necessary to
24 administer that area as wilderness and accomplish the purposes of the refuge. The
25 minimum requirement analysis also analyzes how to minimize resultant impacts.
26 Additionally, area-specific wilderness legislation could authorize uses that the
27 *Wilderness Act* generally prohibits (USFWS, 2008b).

28 In the South Range, the DNWR, with accompanying areas proposed for wilderness, is
29 jointly managed by the Air Force and the USFWS based on an MOU between both
30 agencies. This MOU allows the use of the western portion of the DNWR as part of the
31 military mission and ensures that the INRMP for Nellis AFB is developed to be
32 consistent with management guidelines presented in the USFWS Comprehensive
33 Conservation Plan for the DNWR. Ongoing management activities as part of the natural
34 resources management program on the NTTR promote the preservation of the
35 untrammeled, natural, and other features of value qualities of wilderness, because the
36 goal is to maintain ecosystem integrity by protecting biodiversity while sustaining the
37 mission environment. Restrictions on activities within areas proposed for wilderness—
38 resulting from the requirement to preserve the undeveloped and solitude or primitive
39 and unconfined recreation qualities of wilderness—affect testing and training, range
40 management, and environmental management components of range operations. While
41 low-level overflights, flight testing and evaluation, and designation of special use
42 airspace are allowed over Wilderness Areas, potential operational limitations resulting
43 from land management policies for areas proposed for wilderness that are related to

1 appropriate use and compatibility of uses (as stated in the 2009 NTTR Comprehensive
2 Range Plan) include the following:

- 3 • Placement of new communication sites
- 4 • Establishment of new rights-of-way for aircraft tracking/scoring systems
- 5 • Placement of new mobile threats or targets
- 6 • Emergency response to aircraft crashes
- 7 • Recovery activities related to dropped objects or aircraft crashes

8 **BLM-Managed Areas**

9 BLM Manual 6340, *Management of Designated Wilderness Areas*, provides the general
10 policies and management of BLM Wilderness Areas (BLM, 2012b). Once a Wilderness
11 Area has been designated, the BLM must develop a Wilderness Management Plan to
12 include implementation-level guidance for either each specific Wilderness Area or for
13 areas in close proximity containing similar wilderness characteristics and issues in
14 accordance with provisions outlined in BLM Manual 8561, *Wilderness Management*
15 *Plans*. Appendix F, Wilderness and Wilderness Study Areas, contains a list of
16 Wilderness Management Plans for Wilderness Areas within or in proximity to NTTR
17 airspace boundaries. For new activities that may impact a Wilderness Area, the BLM
18 uses a Minimum Requirements Decision Guide and subsequent NEPA analyses to
19 determine whether the proposed activity is the minimum necessary to preserve the
20 wilderness character of the area.

21 Aircraft are authorized to operate in the airspace above Wilderness Areas at and above
22 100 feet AGL. Supersonic flight is also authorized in these areas at and above
23 30,000 feet mean sea level. While there is no specific prohibition of aircraft overflights of
24 wilderness, low-altitude flights are discouraged, except in emergencies, essential
25 military missions, and wildlife operations. Nonemergency military actions may be
26 approved on a case-by-case basis following Minimum Requirements Decision Guide
27 and NEPA analyses and authorization from the managing BLM Field Office Manager.
28 The BLM does not manage overflights conducted by other agencies, but coordination is
29 recommended to minimize disturbance of visitors and wildlife.

30 **Wilderness Study Areas**

31 WSAs are managed under BLM Manual 6330, *Management of Wilderness Study Areas*
32 (BLM, 2012c). The management of WSAs is pursuant to the FLPMA and mandates that
33 the BLM not impair the suitability of areas identified as having wilderness
34 characteristics. Generally, BLM does not allow actions or impacts that would preclude
35 Congress's prerogatives in either designating the areas as wilderness or releasing them
36 for nonwilderness uses. The Interim Management Policy also outlines the
37 implementation process for evaluating proposed actions within a WSA. If Congress
38 designates a WSA as a Wilderness Area, then it will be managed in accordance with
39 BLM Manual 6340, *Management of Designated Wilderness Areas*. If a WSA is not
40 designated as wilderness, the land will then be managed under general BLM
41 management policies and applicable land use plans.

1 Similar to Wilderness Areas managed by BLM, aircraft are authorized to operate in the
2 airspace above WSAs at and above 100 feet AGL. Supersonic flight is also authorized
3 in these areas at and above 30,000 feet mean sea level. Generally, management of
4 WSAs is less restrictive than Wilderness Areas, in that some activities prohibited in
5 Wilderness Areas may be permitted in a WSA if they are temporary, do not create new
6 surface disturbance, or do not involve placement of permanent structures.

7 **3.5.2 Environmental Consequences**

8 **3.5.2.1 Analysis Methodology**

9 Impacts to Wilderness Areas, areas proposed for wilderness, and WSAs are assessed
10 based on how the proposed action will affect wilderness qualities, specifically
11 untrammelled, natural, undeveloped, solitude or primitive and unconfined recreation, and
12 other features of value. No Wilderness Areas or WSAs occur within the North Range;
13 therefore, the analysis primarily focuses on the areas that were proposed for wilderness
14 in the South Range and proposed expansion areas, as well as Wilderness Areas and
15 WSAs that occur under NTTR airspace boundaries (Table 3-27). Each alternative is
16 analyzed based on categories of activities that would potentially occur in the future and
17 are expected to change across all alternatives. These categories include aircraft
18 operations, munitions use, ground disturbance, and emitter operations. As indicated in
19 Section 2.3.3.4, Alternative 3C – Alamo Withdrawal, details on specific locations and
20 associated activities included in these categories are not ready for decision or fully
21 developed for site-specific NEPA-related environmental analysis. Therefore, the
22 analysis for each alternative discusses potential impacts primarily from a conceptual
23 and qualitative perspective. Site-specific NEPA analyses will be completed in the future
24 for specific locations and routes once a decision on withdrawal has been made and
25 plans have been finalized.

26 Using this approach, categories of activities associated with the Proposed Action would
27 generate four types of impacts, or stressors, to wilderness criteria: noise, physical
28 disturbance of the land, evidence of human activities, and public access restrictions.
29 Noise associated with aircraft operations and munitions use may occur at levels that
30 would harass or annoy potential users of the wilderness and would detract from the
31 solitude or primitive and unconfined recreation quality. Physical disturbance of the land
32 refers to permanent alterations to the landscape resulting primarily from construction
33 activities. Evidence of human activities would be in the form of tracks left from troop and
34 vehicle movements and new construction. Physical disturbance of the land and
35 evidence of human activities would primarily have a negative impact on the
36 undeveloped qualities of an area. Public access restrictions result when areas are
37 closed to the public due to human safety concerns during military operations that
38 involve munitions use or emitter operations. Restricting the public from an area prohibits
39 all recreational opportunities during that time period, which would affect the solitude or
40 primitive and unconfined recreation quality. As stated in Section 3.5.1.4, Management
41 Practices, it is assumed that the untrammelled, natural, and other features of value
42 qualities of wilderness would be maintained through natural resource management

1 actions currently being implemented as part of the NTTR natural resources
2 management program; therefore, these qualities are not discussed further.

3 Aside from the definitions of wilderness qualities provided in Section 3.5.1.4,
4 Management Practices, there is no regulatory consensus on identifying specific
5 thresholds for adverse impacts to each wilderness quality. Interpretation of wilderness
6 terminology has been a subject of debate for many years with no clear resolution.
7 Based on this lack of regulatory guidance, this analysis considers impacts consistent
8 with basic definitions of wilderness qualities.

9 **3.5.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 10 **NTTR (North and South Range) – Status Quo**

11 For Alternative 1, there would be no change to the existing NTTR land boundary.
12 Management responsibilities over areas that were proposed for wilderness in the South
13 Range would remain with the USFWS, aside from the designated target areas where
14 the Air Force maintains primary jurisdiction. If the areas that were proposed for
15 wilderness in the South Range continue to be managed as wilderness during the next
16 land withdrawal period, there would be no change in management responsibilities or
17 activities in these areas.

18 For Alternative 1, aircraft operations over the South Range would remain at the same
19 level as described in Section 3.5.1.3, Wilderness and Wilderness Study Areas. Based
20 on the noise analysis presented for Alternative 1 in Section 3.2.2.2, aircraft operations
21 for Alternative 1 are expected to continue to generate noise levels that may result in
22 annoyance of potential visitors to areas that were proposed for wilderness, Wilderness
23 Areas, and WSAs within and adjacent to the NTTR. This level of noise would preclude
24 solitude or primitive and unconfined recreation qualities of wilderness, because signs of
25 human activities within and outside these areas would be detectable on a regular basis.

26 For Alternative 1, munitions use would not change from baseline conditions. Based on
27 the noise analysis presented for Alternative 1 in Section 3.2.2.2, noise levels associated
28 with munitions use would be concentrated around the target areas in the South Range,
29 with noise exposures primarily occurring within areas that were proposed for wilderness.
30 This level of noise would only be detectable in a small portion of the areas proposed for
31 wilderness adjacent to the South Range of the NTTR, and impacts to solitude or
32 primitive and unconfined recreation qualities would be minimal. Other Wilderness Areas
33 and WSAs occurring outside and not adjacent to the NTTR land boundary would not be
34 impacted by noise from munitions use.

35 There would continue to be public access restrictions associated with munitions use
36 operations, resulting in limited recreational opportunities for the public in areas
37 proposed for wilderness in the South Range. As a result, munitions use for Alternative 1
38 would continue to have an adverse impact on solitude or primitive and unconfined
39 recreation qualities in areas proposed for wilderness, because public access would
40 continue to be restricted during certain times of the year and visitors would not be able
41 to experience unconfined recreation.

1 For Alternative 1, there would be no change in ground disturbance activities from
 2 baseline conditions, and ground disturbance would continue to be restricted in areas
 3 that were proposed for wilderness on the NTTR. As a result, there would be no
 4 significant impacts to the undeveloped quality of wilderness.

5 For Alternative 1, emitter operations would not change from existing conditions. No new
 6 areas would be restricted from public access, however, there would continue to be
 7 limited opportunities for recreational activities.

8 Table 3-30 lists wilderness qualities impacted by each activity and associated stressor
 9 under Alternative 1. Continuation of baseline conditions would not impact untrammelled,
 10 natural, or undeveloped qualities of wilderness, because activities that would affect
 11 these qualities would continue to be unauthorized in areas that were proposed for
 12 wilderness, Wilderness Areas, and WSAs. Adverse impacts to solitude or primitive and
 13 unconfined recreation qualities are anticipated for the areas that were proposed for
 14 wilderness in the South Range; however, these impacts would not increase from the
 15 baseline conditions described in Section 3.5.1.3.

16 **Table 3-30. Impacts to Wilderness Qualities for Alternative 1**

Proposed Activity	Stressor(s)	Wilderness Quality Potentially Impacted			
		Untrammelled	Natural	Undeveloped	Solitude or Primitive & Unconfined Recreation
Aircraft operations	Noise	n/a	n/a	n/a	X
Munitions use	Noise	n/a	n/a	n/a	X
	Public access restrictions	n/a	n/a	n/a	X
Ground disturbance	Physical disturbance of the land	n/a	n/a	n/a	n/a
	Evidence of human activities	n/a	n/a	n/a	n/a
Emitter operations	Public access restrictions	n/a	n/a	n/a	X

17 **3.5.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready**
 18 **Access in the North and South Ranges**

19 Under Alternative 2, ready access may be implemented through Congressionally
 20 directed changes in land management within overlapping portions of the DNWR. These
 21 changes would effectively reduce areas currently managed by USFWS as wilderness.
 22 Therefore, total acreage of areas that were proposed for wilderness would be reduced
 23 by different amounts, depending on the combination of alternatives selected. The areas
 24 that were proposed for wilderness in the current withdrawal boundary of the South
 25 Range total approximately 590,000 acres. Therefore, if Alternative 2 is selected, the
 26 total land of areas proposed for wilderness within the DNWR would be reduced by
 27 590,000 acres. Under this scenario, the total area proposed for wilderness within the
 28 DNWR would be reduced by approximately 42 percent.

29 Based on information presented in Appendix F, Wilderness and Wilderness Study
 30 Areas, and not including the existing areas proposed for wilderness within the DNWR,

1 there are over 1.4 million acres of land that contain wilderness qualities within and
2 surrounding the NTTR ROI, consisting of both Wilderness Areas and WSAs. Combining
3 this acreage with the remaining amounts of areas proposed for wilderness within the
4 DNWR, there would still be over 2.2 million acres of land that possess wilderness
5 qualities within southern Nevada available to the public if the areas that were proposed
6 for wilderness within the existing NTTR withdrawal area were no longer managed as
7 wilderness. Based on the amount of land area containing wilderness qualities remaining
8 in the region, combined with the existing access restrictions to areas that were
9 proposed for wilderness within the current NTTR land area, no longer managing as
10 wilderness those areas proposed for wilderness in the South Range would not
11 significantly reduce the opportunity for people to experience wilderness in southern
12 Nevada.

13 As previously indicated, ready access may be achieved through a Congressionally
14 directed change in the land management practices within the NTTR withdrawal
15 boundary. Impacts to areas proposed for wilderness are typically assessed on the
16 potential effects to wilderness qualities, which are only affected by the conduct of
17 certain actions or activities taking place within or around an area either designated or
18 managed as wilderness. Under ready access conditions, impacts to the land and
19 associated resources within areas that were proposed for wilderness in the South
20 Range would occur because usage restrictions associated with wilderness management
21 practices would be removed. However, impacts to areas that were proposed for
22 wilderness in the South Range are not assessed within the context of potential effects to
23 wilderness qualities because those standards would no longer apply under Alternative
24 2. This section, instead, focuses on potential impacts to areas that were proposed for
25 wilderness that would remain outside the withdrawal area and considers the reduction in
26 the amount of land area within the southern Nevada region that would be managed as
27 wilderness. Potential impacts to the land and other resources that occur within the
28 withdrawal area, including areas that were proposed for wilderness in the South Range,
29 are discussed in other sections throughout this LEIS. Refer to Sections 3.4 (Land Use,
30 Recreation, and Visual Resources), 3.8 (Biological Resources), 3.10 (Earth Resources),
31 and 3.11 (Water Resources). The discussions in those sections include management
32 actions that could be carried forward under ready access, which are expected to result
33 in the conservation and protection of certain resources. Even though preserving
34 wilderness qualities would no longer be the primary objective, other resources would
35 benefit from implementing the new land management practices because there would be
36 less restriction on the land, providing better opportunities to manage the area. For
37 example, managing areas proposed for wilderness as wilderness restricts some access
38 by motorized vehicles, which affects the ability to conduct timely wildlife monitoring and
39 surveys of key plant, animal, and other species by Nellis AFB biologists (Lachman et al.,
40 2016). In addition, the protection of threatened and endangered species may require
41 mechanical manipulation of the area, such as man-made water structures for bighorn
42 sheep. However, implementing these actions in areas managed as wilderness requires
43 managers to use the minimum necessary tools and to justify the potential intrusion on
44 other wilderness values (Hendee & Dawson, 2001). As a result, other resources that
45 occur within areas proposed for wilderness may not be managed in the most efficient

1 and beneficial manner. Therefore, the overall conditions of other resources in the South
2 Range may potentially improve under ready access.

3 Aircraft operations are proposed to increase by 30 percent for Alternative 2. Based on
4 the noise analysis presented for Alternative 2 in Section 3.2.2.3, noise associated with
5 aircraft operations may result in annoyance of potential visitors to Wilderness Areas,
6 WSAs, and remaining areas proposed for wilderness adjacent to the NTTR. Similar to
7 baseline conditions analyzed for Alternative 1, this level of noise would continue to
8 affect solitude or primitive and unconfined recreation qualities of wilderness, because
9 signs of human activities within and outside these areas would be detectable on a
10 regular basis.

11 For Alternative 2, live munitions use would increase by 30 percent on the existing target
12 impact areas within the South Range, and blank firing activities may be conducted
13 outside the impact areas. Therefore, impacts would primarily result from noise. Based
14 on the noise analysis presented for Alternative 2 in Section 3.2.2.3, noise levels
15 resulting from weapon firing activities would be concentrated within the South Range,
16 with noise exposures primarily occurring within and adjacent to the NTTR South Range
17 boundary. This level of noise would be similar to baseline noise levels, and, as
18 discussed for Alternative 1, would only be detectable in a small portion of areas
19 proposed for wilderness outside of the NTTR South Range boundary; therefore, impacts
20 to solitude or primitive and unconfined recreation qualities to this small area would be
21 minimal.

22 Access restrictions associated with munitions use for Alternative 2 would not change
23 over baseline conditions because public access to areas that were proposed for
24 wilderness within the NTTR is currently limited to certain times of year, including bighorn
25 sheep hunts. Under ready access, public access would continue to be restricted during
26 certain times of the year and visitors would not be able to experience unconfined
27 recreation within the NTTR withdrawal boundary. Therefore, opportunities for primitive
28 recreation would not be available year-round, and these controlled activities may not be
29 considered unconfined recreation.

30 Ready access achieved for Alternative 2 would allow new emitters and insertion points
31 to be constructed and developed throughout the South Range. Ground troop
32 movements would also become available throughout the South Range. No ground
33 disturbance activities would occur in the Wilderness Areas, WSAs, and remaining areas
34 proposed for wilderness outside the NTTR land boundaries; therefore, no impacts to
35 wilderness qualities from ground disturbance would occur in these areas.

36 Emitter operations may be expanded in the South Range, which would increase area
37 restrictions in the South Range and result in similar impacts as Alternative 1. None of
38 these area restrictions would occur in the Wilderness Areas, WSAs, or remaining areas
39 proposed for wilderness outside the NTTR land boundaries; therefore no impacts to
40 wilderness qualities in these areas would occur.

41 Table 3-31 lists wilderness qualities impacted by each activity and associated stressor.
42 Direct adverse impacts to the land area are anticipated if usage restrictions associated

1 with the management of areas proposed for wilderness are removed; these potential
 2 impacts as they relate to other affected resources are discussed in other sections
 3 throughout this LEIS. The remaining areas proposed for wilderness within the DNWR
 4 outside the NTTR land boundaries would continue to be affected as described under
 5 Alternative 1. Aircraft operations proposed under Alternative 2 would impact solitude or
 6 primitive and unconfined recreation qualities in Wilderness Areas, WSAs, and remaining
 7 areas proposed for wilderness outside the NTTR land boundary; however, there would
 8 be no impacts to the undeveloped quality of these areas.

Table 3-31. Impacts to Wilderness Qualities for Alternative 2

Proposed Activity	Stressor(s)	Wilderness Quality Potentially Impacted			
		Untrammelled	Natural	Undeveloped	Solitude or Primitive & Unconfined Recreation
Aircraft operations	Noise	n/a	n/a	n/a	X ¹
Munitions use	Noise	n/a	n/a	n/a	X
	Public access restrictions	n/a	n/a	n/a	X
Ground disturbance	Physical disturbance of the land	n/a	n/a	X	n/a
	Evidence of human activities	n/a	n/a	X	n/a
Emitter operations	Public access restrictions	n/a	n/a	n/a	X

1. Also applies to Wilderness Areas and WSAs outside the NTTR land boundaries.

9 **3.5.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

10 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 11 • Alternative 3A – Range 77 – EC South Withdrawal
- 12 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 13 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
14 Incorporation
- 15 • Alternative 3C – Alamo Withdrawal

16 As with Alternative 2, direct adverse impacts to the land area are anticipated if usage
 17 restrictions associated with the management of areas proposed for wilderness are
 18 removed; these potential impacts are discussed in other sections throughout this LEIS.
 19 Therefore, this section focuses on potential impacts to areas proposed for wilderness
 20 that would remain outside the proposed expansion areas.

21 There are no Wilderness Areas or WSAs in or adjacent to the proposed Range 77
 22 expansion area for Alternative 3A or 3A-1; therefore, there would be no impacts to
 23 wilderness for Alternative 3A or 3A-1.

24 Aircraft operations for Alternative 3B would increase by 30 percent in restricted airspace
 25 above the Range 64C/D and 65D areas. Based on the noise analysis presented for
 26 Alternatives 3A, 3A-1, 3B, and 3C in Section 3.2.2.4, noise levels associated with

1 aircraft operations for Alternative 3B may result in annoyance and harassment of
2 potential visitors to areas proposed for wilderness outside the NTTR boundary. Similar
3 to baseline conditions analyzed for Alternative 1, this level of noise would continue to
4 affect solitude and/or primitive and unconfined recreation qualities of wilderness,
5 because signs of human activities within and outside these areas would be detectable
6 on a regular basis.

7 For Alternative 3C, aircraft operations would increase by 30 percent the restricted
8 airspace units above the Alamo areas. Based on the noise analysis presented for
9 Alternative 3 in Section 3.2.2.4, aircraft overflights and associated noise levels
10 generated by NTTR operations proposed for Alternative 3C may result in annoyance
11 and harassment of potential visitors of areas proposed for wilderness within and outside
12 the NTTR land withdrawal boundary. Similar to baseline conditions, this level of noise
13 would continue to affect the solitude quality of Wilderness Areas, WSA, and remaining
14 areas proposed for wilderness outside the NTTR, because signs of human activities
15 within and outside these areas would be detectable on a regular basis.

16 For Alternative 3B, the proposed Range 64C/D and 65D expansion would support
17 increased safety footprints from munitions use within the current NTTR boundary. (No
18 munitions use would occur within the proposed expansion area.) Based on the noise
19 analysis presented for Alternatives 3A, 3A-1, 3B, and 3C in Section 3.2.2.4, noise levels
20 resulting from weapon firing activities would be concentrated within the South Range,
21 with noise exposures primarily occurring within the South Range and to some degree
22 the remaining areas proposed for wilderness bordering the NTTR withdrawal boundary,
23 including the Alamo areas. This level of noise would not be detectable within the
24 proposed Range 64C/D and 65D expansion area. Wilderness Areas and WSAs
25 occurring outside and not adjacent to the NTTR land boundary would not be impacted
26 by noise from munitions use associated with Alternative 3B.

27 Munitions use within the target impact areas associated with the 60-series ranges that
28 exist within the current NTTR boundary would require expanded safety footprints that
29 would overlap with the Alamo areas associated with Alternative 3C. IW training could
30 conceptually include weapon firing activities (blanks) in these areas. Based on the noise
31 analysis presented for Alternative 3A, 3A-1, 3B, and 3C in Section 3.2.2.4, noise levels
32 resulting from use of existing target areas for live firing activities would be concentrated
33 within the existing South Range boundary with noise exposures primarily occurring
34 within the South Range and to a limited extent within the Alamo areas. However, the
35 level of noise associated with Alternative 3C would not be detectable within Wilderness
36 Areas, WSA, and other remaining areas proposed for wilderness areas outside and not
37 adjacent to the NTTR; therefore no impacts to wilderness qualities in these areas would
38 occur.

39 Public access restrictions resulting from larger safety footprints associated with
40 Alternative 3C would be expanded to the Alamo areas, which would prohibit the public
41 from entering these areas and limit recreational opportunities to select times of year.
42 Some recreational opportunities would be provided, consisting of Air Force-approved
43 activities, such as bighorn sheep hunts. As a result, munitions use within the current

1 NTTR boundary would reduce recreation opportunities within the Alamo areas. As
2 shown in Figure 2-14 and Figure 2-15, specific recreational areas impacted by the
3 access restriction include Lower Lake Spring, Sheep Mountain Spring, Holly Spring, Dry
4 Lake Spring, Cabin Spring, Underground Spring, Deadman Spring, and White Rock
5 Spring. In addition, Section 3.4.2.4 lists roads and trails affected under Alternative 3C,
6 which would no longer be readily accessible to the public. It is expected that
7 recreational users would be displaced to other key recreational areas within the
8 remaining areas proposed for wilderness outside the NTTR land boundary containing
9 characteristics similar to those found in the Alamo areas. For example, the public would
10 continue to have access to Hidden Forest Cabin, Corn Creek Field Station, Cow Camp
11 trailhead, and Joe May trailhead, as well as numerous springs, peaks, and other points
12 of interest within the DNWR. These areas could be accessed on foot or horseback.

13 DNWR visitor records are kept via a non-mandatory guest registration at the Corn
14 Creek visitor center. As a result, there is not a clear understanding on the current usage
15 of the Alamo areas for recreational activities. The actual number of people potentially
16 displaced under Alternative 3C is not known and difficult to predict; however, it is
17 assumed the displaced recreational users would be evenly distributed across these
18 other recreational areas in the NTTR region. Without data on current usage of the
19 Alamo areas, impacts to surrounding recreational areas are indeterminable.

20 Ground disturbance activities may occur within the proposed expansion areas for
21 Alternative 3B from 30 miles of fencing around the perimeter. Wilderness Areas and
22 WSAs outside the NTTR land expansion boundaries would not be impacted by
23 Alternative 3B. Impacts to remaining areas proposed for wilderness outside the NTTR
24 boundary would include a reduction in the undeveloped qualities of the area, because
25 there would be increased evidence of modern human occupation with the construction
26 of the perimeter fencing. Results from the roadless areas special study indicate that a
27 portion of the areas that were proposed for wilderness in the proposed 64C/D and 65D
28 expansion area is already disturbed (see Figure 3-11) and would not be considered
29 suitable wilderness (U.S. Air Force, 2017a). Impacts from additional ground disturbance
30 activities in the Alternative 3B proposed expansion area would not be significant
31 compared with baseline conditions.

32 For Alternative 3C, ground disturbance activities may include troop movements, road
33 improvements, and the construction of two runways, emitter sites, and all other
34 supporting infrastructure, such as a refueling station, munitions loading, and equipment
35 storage to facilitate activities, as well as 65 miles of fencing around the perimeter. In
36 addition, training activities would include FAARPs for refueling and munitions loading of
37 aircraft within a dry lake bed area. Potential impacts from ground disturbance activities
38 to the land and other resources that occur within the Alamo areas are discussed in
39 Sections 3.4 (Land Use, Recreation, and Visual Resources), 3.8 (Biological Resources),
40 3.10 (Earth Resources), and 3.11 (Water Resources). Wilderness Areas and WSAs
41 outside the NTTR land expansion boundaries would not be impacted by ground
42 disturbance associated with Alternative 3C. Impacts to the remaining areas proposed
43 for wilderness outside and adjacent to the NTTR boundary would include a reduction in
44 the undeveloped quality of the area, because there would be increased evidence of

1 modern human occupation with the construction of the fencing and all other
2 infrastructure needed to support the runways, emitter sites, refueling, and munitions
3 loading. Therefore, ground disturbance activities for Alternative 3C would have an
4 adverse impact to the undeveloped quality of areas proposed for wilderness bordering
5 the NTTR withdrawal boundary.

6 Emitter operations would occur under Alternative 3C, and would have similar impacts to
7 wilderness qualities as discussed previously under Alternative 2. However, emitter
8 operations would not be expected to impact any Wilderness Areas, WSAs, or areas
9 proposed for wilderness areas outside the NTTR boundary.

10 ***Summary of Wilderness Impacts Associated with Alternatives 3A, 3A-1, 3B, and 3C***

11 Alternative 3A or 3A-1 would have no impact to Wilderness Areas, WSA, or areas
12 proposed for wilderness areas due to the lack of such lands in or adjacent to the land
13 proposed for withdrawal for Alternative 3A or 3A-1. For Alternative 3B, aircraft
14 operations would impact solitude and/or primitive and unconfined recreation in the
15 remaining areas proposed for wilderness outside NTTR, because these activities
16 adversely impact the potential for solitude. Installation of fencing under Alternative 3B
17 would eliminate unconfined recreation opportunities in this area and would impact the
18 undeveloped quality of surrounding areas proposed for wilderness outside the NTTR
19 boundary because these activities would leave evidence of human occupation.
20 However, portions of Alternative 3B's proposed expansion area already have visible
21 human impacts; therefore, impacts to the undeveloped quality of the area would not
22 substantially increase over baseline conditions. Table 3-32 lists wilderness qualities
23 impacted by each activity and associated stressor for Alternative 3B.

24 If Alternative 3B is selected, approximately 33,000 acres of areas proposed for
25 wilderness would be impacted by the expansion. When combined with ready access for
26 the entire South Range, approximately 623,000 acres of areas that were proposed for
27 wilderness would no longer be managed as wilderness, which accounts for nearly
28 45 percent of the entire area that was proposed for wilderness within the DNWR.

29 Based on information presented in Appendix F, Wilderness and Wilderness Study
30 Areas, and not including the existing areas that were proposed for wilderness within the
31 DNWR, there are over 1.4 million acres of land that contain wilderness qualities within
32 and surrounding the NTTR ROI, consisting of both Wilderness Areas and WSAs. In
33 addition, 977,000 acres of areas proposed for wilderness would still remain around the
34 NTTR if Alternative 3B is chosen. As a result, there would be a nearly 2.2 million acres
35 of land containing wilderness qualities the region. Therefore, Alternative 3B would not
36 significantly reduce opportunities to experience wilderness in southern Nevada.

Table 3-32. Impacts to Wilderness Qualities for Alternative 3B

Proposed Activity	Stressor(s)	Wilderness Quality Potentially Impacted			
		Untrammeled	Natural	Undeveloped	Solitude or Primitive & Unconfined Recreation
Aircraft operations	Noise	n/a	n/a	n/a	X
Munitions use	Noise	n/a	n/a	n/a	n/a
	Public access restrictions	n/a	n/a	n/a	X
Ground disturbance	Physical disturbance of the land	n/a	n/a	X	n/a
	Evidence of human activities	n/a	n/a	X	n/a
Emitter operations	Public access restrictions	n/a	n/a	n/a	X

1 For Alternative 3C, aircraft operations would impact the solitude or primitive and
2 unconfined recreation quality in Wilderness Areas, WSAs, and the remaining areas
3 proposed for wilderness outside the NTTR, because these activities adversely impact
4 the potential for solitude. Munitions use and emitter operations associated with
5 Alternative 3C would impose access restrictions within the Alamo areas, reducing
6 recreation opportunities there. In addition, proposed ground disturbance activities
7 associated with Alternative 3C would impact the undeveloped quality of the remaining
8 areas proposed for wilderness that occur along the NTTR withdrawal boundary and
9 within the Alamo areas because construction of a perimeter fence and additional
10 infrastructure associated with activities would leave evidence of human occupation.
11 Table 3-33 lists wilderness qualities impacted by each activity and associated stressor
12 for Alternative 3C.

13 If Alternative 3C is selected, approximately 227,000 acres of areas proposed for
14 wilderness would be impacted by the expansion. When combined with ready access for
15 the entire South Range, approximately 817,000 acres of areas proposed for wilderness
16 would no longer be managed as wilderness, which accounts for approximately
17 58 percent of the total area proposed for wilderness within the DNWR.

18 Based on information presented in Appendix F, Wilderness and Wilderness Study
19 Areas, and not including the existing areas proposed for wilderness within the DNWR,
20 there are over 1.4 million acres of land that contain wilderness qualities within and
21 surrounding the NTTR ROI, consisting of both Wilderness Areas and WSAs. In addition,
22 783,000 acres of areas proposed for wilderness would still remain around the NTTR if
23 Alternative 3C is chosen. As a result, there would be nearly 2 million acres of land
24 containing wilderness qualities remaining in the region. Therefore, Alternative 3C would
25 not significantly reduce opportunities to experience wilderness in southern Nevada.

Table 3-33. Impacts to Wilderness Qualities for Alternative 3C

Proposed Activity	Stressor(s)	Wilderness Quality Potentially Impacted			
		Untrammeled	Natural	Undeveloped	Solitude or Primitive & Unconfined Recreation
Aircraft operations	Noise	n/a	n/a	n/a	X
Munitions use	Noise	n/a	n/a	n/a	n/a
	Public access restrictions	n/a	n/a	n/a	X
Ground disturbance	Physical disturbance of the land	n/a	n/a	X	n/a
	Evidence of human activities	n/a	n/a	X	n/a
Emitter operations	Public access restrictions	n/a	n/a	n/a	X

1 As previously indicated, subalternatives proposed under Alternative 3 may be selected
2 individually, or as a combination of one or more. Alternative 3A or 3A-1 would have no
3 potential impacts to wilderness qualities within Wilderness Areas, WSAs, and areas
4 proposed for wilderness that occur outside the NTTR withdrawal boundary. Potential
5 impacts associated with Alternative 3B and Alternative 3C would be similar regardless
6 of which subalternative or combination thereof that is selected. However, the total
7 acreage of areas proposed for wilderness potentially impacted by expanding the
8 withdrawal boundary would vary depending on the subalternative that is selected. As
9 previously stated, approximately 33,000 acres of areas proposed for wilderness occur in
10 the Alternative 3B expansion area and approximately 227,000 acres of areas proposed
11 for wilderness occur in the Alternative 3C expansion area. If both of these
12 subalternatives are selected, the NTTR withdrawal expansion would impact
13 260,000 acres of areas proposed for wilderness. When combined with ready access for
14 the entire South Range, approximately 850,000 acres of areas proposed for wilderness
15 would no longer be managed as wilderness, which accounts for approximately
16 61 percent of the total areas proposed for wilderness within the DNWR. As a result,
17 there would continue to be nearly 2 million acres of land within the region that would
18 consist of the remaining areas proposed for wilderness, Wilderness Areas, and WSAs.
19 Considering the remaining amounts of land area that contain wilderness qualities
20 surrounding the NTTR, combining Alternatives 3B and 3C would not significantly reduce
21 opportunities to experience wilderness in southern Nevada.

22 **3.5.2.5 Alternative 4 – Establish the Period of Withdrawal**

23 Impacts to wilderness from the withdrawal periods proposed in the following
24 subalternatives are dependent on the combination of the above-mentioned alternatives
25 and subalternatives that are selected. Selection of Alternative 1 would not result in any
26 changes to the management of areas that were proposed for wilderness in the South
27 Range. In this scenario, the length of the withdrawal period may result in an
28 improvement of wilderness characteristics. With respect to wilderness characteristics

1 within the NTTR boundary, selection of Alternative 3A or 3A-1 would not affect
2 wilderness. Selection and implementation of Alternative 2, Alternative 3B, and/or
3 Alternative 3C would reduce the total area managed as wilderness in southern Nevada.
4 Under those alternatives, the length of the withdrawal period is not relevant, because
5 wilderness characteristics within the NTTR land boundary would no longer need to be
6 considered with the implementation of new management practices. As a result, there
7 would be no impacts to wilderness within the NTTR land boundaries for Alternatives 4A,
8 4B, or 4C if Alternative 2, 3A, 3A-1, 3B, or 3C is selected. Potential impacts from the
9 length of the withdrawal period to the land and other resources within the NTTR
10 withdrawal area if Alternative 2, 3A, 3A-1, 3B, or 3C is selected are discussed in
11 Sections 3.4 (Land Use, Recreation, and Visual Resources), 3.8 (Biological Resources),
12 3.10 (Earth Resources), and 3.11 (Water Resources).

13 Wilderness Areas, WSAs, and areas proposed for wilderness outside the NTTR
14 boundaries will continue to be impacted by noise associated with aircraft operations and
15 munitions use. Under Alternative 1, there would be no change in the level of operations.
16 Under Alternatives 2, 3A, 3A-1, 3B, and 3C, a 30 percent increase has been analyzed;
17 however, resulting noise levels would not substantially increase. In addition, the
18 construction of perimeter fencing along the boundaries of the expansion alternatives
19 would impact small areas only around the boundary of the NTTR withdrawal. The
20 subsections below address impacts to wilderness characteristics of areas proposed for
21 wilderness if Alternative 1 is selected and impacts to Wilderness Areas, WSAs, and
22 areas proposed for wilderness surrounding the NTTR land boundaries under all
23 alternatives.

24 ***Alternative 4A – 20-Year Withdrawal Period***

25 Wilderness characteristics of areas that were proposed for wilderness in the South
26 Range are expected to marginally improve under a 20-year withdrawal period if
27 Alternative 1 is selected, because management of the area and activity restrictions
28 would remain the same. It is reasonable to assume that noise levels would increase
29 over time as more testing and training operations are conducted, which may continue to
30 impact solitude qualities of these areas. However, other wilderness characteristics, such
31 as untrammeled, natural, and undeveloped qualities, are not impacted by noise.
32 Wilderness Areas, WSAs, and areas proposed for wilderness outside the NTTR land
33 boundaries would continue to be managed under current practices, which are expected
34 to conserve most wilderness characteristics. Therefore, it is likely that there would be a
35 marginal improvement of wilderness qualities of Wilderness Areas, WSAs, and areas
36 proposed for wilderness outside the NTTR land boundaries over a 20-year withdrawal
37 period.

38 ***Alternative 4B – 50-Year Withdrawal Period***

39 Wilderness characteristics of areas that were proposed for wilderness in the South
40 Range are expected to improve under a 50-year withdrawal period if Alternative 1 is
41 selected because the current land management practices would continue over a longer

1 period of time, providing better opportunities for improvement. It is reasonable to
2 assume that noise levels would increase over time as more testing and training
3 operations are conducted, which may continue to impact solitude qualities of these
4 areas. However, other wilderness characteristics, such as untrammled, natural, and
5 undeveloped qualities, are not impacted by noise. Wilderness Areas, WSAs, and areas
6 proposed for wilderness outside the NTTR land boundaries would continue to be
7 managed under current practices, which are expected to conserve most wilderness
8 characteristics. Therefore, it is likely that wilderness qualities of Wilderness Areas,
9 WSAs, and areas proposed for wilderness outside the NTTR land boundaries would
10 improve over a 50-year withdrawal period.

11 ***Alternative 4C – Indefinite Withdrawal Period***

12 Wilderness characteristics of areas that were proposed for wilderness in the South
13 Range are expected to substantially improve under an indefinite withdrawal period if
14 Alternative 1 is selected because current land management practices would be
15 implemented indefinitely, providing maximum opportunities for improvement. It is
16 reasonable to assume that noise levels would increase over time as more testing and
17 training operations are conducted, which may continue to impact solitude qualities of
18 these areas. However, other wilderness characteristics, such as untrammled, natural,
19 and undeveloped qualities, are not impacted by noise. Wilderness Areas, WSAs, and
20 areas proposed for wilderness outside the NTTR land boundaries would continue to be
21 managed under current practices, which are expected to conserve most wilderness
22 characteristics. Therefore, it is likely that wilderness qualities of Wilderness Areas,
23 WSAs, and areas proposed for wilderness outside the NTTR land boundaries would
24 substantially improve with an indefinite withdrawal period.

25 **3.5.2.6 No Action Alternative**

26 Under the No Action Alternative, Congress would not renew the land withdrawal for the
27 Air Force. The absence of military operations at NTTR would allow for other land uses
28 to be reintroduced to these areas, such as mining, livestock grazing, or mineral leasing.
29 As stated in Section 2.4, without control of ground areas, the airspace could not be used
30 to support live-fire exercises and related military high-hazard activities. Thus, aircraft
31 operations would be decreased and noise impacts that affect solitude or primitive and
32 unconfined recreation would be reduced. While the former NTTR lands could be
33 opened for recreational use, many areas may not be considered safe due to potential
34 contamination hazards associated with past military activities. The land areas would
35 also be subject to BLM and USFWS management objectives, which would likely
36 increase wilderness characteristics of areas proposed for wilderness in the former
37 South Range.

1 **3.6 SOCIOECONOMICS**

2 **3.6.1 Affected Environment**

3 **3.6.1.1 Description of Resource**

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.6.1.1.1.

4 Socioeconomics refers to features or characteristics of the
5 social and economic environment. The socioeconomics
6 assessment typically includes employment, earnings,
7 population, housing, and community and public services
8 and varies according to factors that could be affected by a proposed action or an
9 alternative. Data published by the Bureau of Labor Statistics, the U.S. Census Bureau,
10 the Bureau of Justice, and Nellis AFB, among others, were used to determine the
11 affected environment.

12 **3.6.1.2 Region of Influence**

13 The ROI for socioeconomics comprises Clark, Lincoln, and Nye Counties, where the
14 majority of impacts would be anticipated to occur from the Proposed Action and
15 alternatives.

16 **3.6.1.3 Economics**

17 ***Employment***

18 Full- and part-time employment growth in the State of Nevada has been on par with
19 national levels, while growth in Clark and Lincoln Counties has outpaced both the state
20 and nation. Employment growth in Nye County has consistently remained below both
21 the state and national levels.

22 Total employment in Nevada increased at an average annual growth rate of 1.1 percent
23 from 1,446,547 jobs in 2004 to 1,614,814 jobs in 2014 (11.7 percent total growth) (See
24 Appendix G, Socioeconomics, Figure G-1, Total Employment in Nevada, Clark County,
25 Lincoln County and Nye County, 2004–2014). Sectors with the largest employment
26 growth statewide over this same time frame are: management of companies and
27 enterprises at 7.1 percent average annual growth; mining, oil and gas extraction
28 (5.3 percent); educational services (5.9 percent); and health care and social assistance
29 (3.3 percent). A few sectors experienced considerable declines over the same period.
30 Construction jobs decreased at an average annual rate of 5.3 percent and utilities at
31 2.4 percent. These declines could be attributed to the housing market crash in 2008–
32 2009.

33 Clark County held 69.9 percent of the state's total employment in 2004, 71.3 percent in
34 2009, and 72.2 percent in 2014. From 2004 to 2014, employment in Clark County
35 increased from 1,011,193 to 1,166,051 at an average annual rate of 1.4 percent. Many
36 sectors grew substantially in Clark County from 2004 to 2014 with the most rapid

1 increases seen in: management of companies and enterprises (at an annual average
2 rate of 7.6 percent); mining, oil and gas extraction (7.5 percent); educational services
3 (6.2 percent); and state and local government (6.5 percent). Other industries saw
4 considerable declines over the same period: construction jobs decreased at a
5 5.7 percent average annual rate and utilities at 2.9 percent, primarily attributable to the
6 housing market crash of 2008–2009. There were 15,709 military jobs in Clark County in
7 2014.

8 The economies of both Lincoln and Nye Counties are smaller than Clark County's.
9 Lincoln County is the smallest in both population and employment (see Appendix G,
10 Socioeconomics, Figure G-2, Total Employment in Lincoln County and Nye County,
11 2004–2014). Employment in Lincoln County increased from 1,968 in 2004 to 2,494 in
12 2014, at an average annual rate of 2.4 percent. Between 2009 and 2014, employment
13 increased by 305 jobs to 2,038. There were 14 military jobs in Lincoln County in 2014.

14 The number of jobs in Nye County decreased from 16,048 in 2004 to 15,784 in 2014 at
15 an average annual loss of 0.2 percent over 10 years. Between 2009 and 2014, 42 jobs
16 were added, bringing the number of jobs in the county to 15,784 (an average annual
17 increase of 0.03 percent over those five years). The persons associated with DoD
18 employment in Nye County was estimated at 121 in 2014.

19 In 2014, the accommodation and food services sector contributed 19.6 percent of total
20 employment in Nevada, followed by retail trade at 10.4 percent, state and local
21 government with 8.1 percent, and health care and social assistance at 7.0 percent (see
22 Appendix G, Socioeconomics, Table G-1, Employment by Sector in Nevada, Clark
23 County, Lincoln County, and Nye County, 2014). Military employment accounted for
24 only 1.2 percent of total employment in Nevada. The large combined contributions of
25 the accommodation and food services sector and the retail trade sector (approximately
26 30 percent of the total state workforce in 2014) can be attributed to the gaming industry
27 in Las Vegas, Reno, and other parts of the state.

28 In Clark County, the accommodation and food services sector provided 22.8 percent of
29 the total employment in 2014, followed by retail trade (10.5 percent), state and local
30 government (8.1 percent), and health care and social assistance (7.5 percent). The
31 large combined contributions of the accommodation and food services sector and retail
32 trade sector (just over 33 percent of the total workforce in Clark County) can be
33 attributed to the dominance of Las Vegas on the economy of Clark County and Nevada
34 overall. The military, with 15,709 jobs, accounted for 1.4 percent of the total
35 employment in the county.

36 For Lincoln County, the largest sector in 2014 was government and government
37 enterprises. State (5.7 percent) and local government (17.2 percent), federal
38 (1.6 percent), and 14 military jobs represented 0.56 percent of the 25.0 percent of total
39 government employment in Lincoln County. Professional, scientific, and technical
40 services were 11.2 percent of total county employment.

1 In 2014, in Nye County, the most important sectors in terms of employment were
2 government and government enterprises (11.9 percent), including state and local
3 government jobs (10.4 percent); retail (11.6 percent); professional, scientific, and
4 technical services (10.4 percent); and accommodation and food services (10.2 percent).
5 There were 121 military jobs in Nye County in 2014.

6 Nellis AFB, Creech AFB, and the NTTR are an important contributor to the local
7 economy through employment of military and civilian personnel and expenditures for
8 goods and services. The total economic impact of the bases and the range on the
9 surrounding communities for fiscal year 2015 was more than \$5.5 billion (Nellis AFB,
10 2015). The two bases along with the NTTR employed 9,103 active-duty military,
11 620 Reserve/Air National Guard, and 3,548 civilians with a combined payroll of
12 \$1,134.6 million (Nellis AFB, 2015). Over a thousand temporary-duty (TDY) personnel
13 conduct business at Nellis AFB, Creech AFB, or the NTTR on any given day.
14 Approximately 5,783 indirect jobs are created as a result of activities associated with the
15 base and the NTTR with combined salaries of approximately \$242.6 million (Nellis AFB,
16 2015).

17 *Earnings*

18 Employee compensation in the State of Nevada topped \$71.9 billion in 2014, an
19 increase of \$16.1 billion from 10 years prior in 2004 (\$55.8 billion total). The largest
20 shares of total compensation were found in government and government enterprises
21 (18.7 percent of total; 10.8 percent of which was state government employment);
22 accommodation and food services (17.8 percent); and retail trade (7.0 percent). The
23 U.S. Bureau of Economic Analysis (BEA) reported that on average, annual
24 compensation per job in the state of Nevada in 2014 was \$57,412. Average
25 compensation per job peaked at \$133,431 per year in the utilities sector and \$119,827
26 in the management of companies and enterprises sector (BEA, 2015).

27 For Clark County, compensation totaled over \$52.1 billion in 2014, accounting for
28 approximately 72.6 percent of the state total. The greatest share of this was contributed
29 by the accommodation and food services (21.7 percent of the county total); government
30 and government enterprises (17.4 percent, 13.0 percent of which was state government
31 employment); and retail trade (7.1 percent). On average in 2014, annual compensation
32 per job was \$56,981, on par with the state average of \$57,412. Average compensation
33 per job in Clark County saw highs of \$137,712 in the utilities sector and \$120,914 in the
34 management of companies and enterprises sector (BEA, 2015).

35 Total compensation in Lincoln County was just under \$84 million in 2014, which
36 represents only 0.1 percent of compensation in the state. Of the compensation in
37 Lincoln County, approximately 49 percent was contributed by the government and
38 government enterprises sector, and about 32 percent of the total county earnings was in
39 state and local government. Professional, scientific, and technical services contributed
40 approximately 19 percent of the county total. Average compensation for Lincoln County
41 was \$55,024 in 2014, slightly below the state average of \$57,412 per year. Of the

1 values reported by the BEA for Lincoln County (some data was withheld to avoid
2 confidential information disclosure), the highest average compensation is in the federal
3 and civilian government sector at \$83,950 per year (BEA, 2015).

4 In Nye County, the greatest share of total compensation (which stood at \$688.4 million
5 in 2014) was contributed by the professional, scientific, and technical service sector,
6 which represented 19.8 percent of total county earnings, followed by government and
7 government enterprises (18.3 percent, with 14.4 percent contributed by state
8 government employment), and mining, quarrying, and oil and gas extraction with a
9 share of 16.6 percent. Total compensation in Nye County accounted for just under
10 1.0 percent of the total earnings in Nevada. In 2014, average compensation per year
11 was \$59,950, with the highest average accrued to the professional, scientific, and
12 technical services sector (\$136,566) followed by workers in government and
13 government enterprises (\$125,763) (BEA, 2015).

14 ***Agriculture***

15 Agriculture, an important sector in the Nevada economy, significantly contributes to the
16 rural counties' economies. Cattle and calf production is the leading agriculture activity.
17 Irrigation allows for crop growth, with alfalfa hay as the leading cash crop in the state.
18 In 2014, Nevada's food and agricultural sector¹ resulted in an estimated \$4.4 billion in
19 total direct value sales (equivalent to about 1.9 percent of Nevada's total output),
20 generated 14,491 jobs, and paid \$687 million in total income. Food and agriculture
21 production in Nevada, including direct effects and "ripple effects," generated an
22 estimated \$2.7 billion in additional value added, including 6,239 jobs, \$323 million in
23 labor income, and \$1.3 billion in combined industrial output. Industries and activities
24 supporting the food and agricultural sector contributed 2,551 jobs, \$138 million to labor
25 income (wages, salaries, and proprietor income), and \$406 million to industrial output,
26 with \$345 million value added. Annual cash receipts from all agricultural commodities in
27 Nevada in 2012 were \$716 million; 60 percent of which was from livestock and
28 products, and the remaining 40 percent was derived from crops.

29 As of 2012, the date of the most recent comprehensive U.S. Department of Agriculture
30 (USDA) Census of Agriculture for Nevada, there were 4,137 farms² statewide,
31 encompassing a total of 5,913,761 acres, with an average farm size of 1,429 acres. Of
32 these farms, 185 were in Lincoln County, 198 were in Nye County, and 252 were in
33 Clark County (see Appendix G, Socioeconomics, Table G-2, Farm Statistics, State of
34 Nevada and Affected Counties, 2012).

35 Due in part to continuing urbanization and other economic considerations, the general
36 trend for farms in Nevada is a greater number of smaller farms. That is, from 2002 to

¹ Includes farm, food processor, and wholesale and retail levels of the food and agriculture supply chain.

² The U.S. Department of Agriculture defines a "farm" as any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The current definition was first used in the 1974 USDA Census of Agriculture and has been used in each subsequent agriculture census. This definition is consistent with the definition used for current USDA surveys (USDA 2012).

1 2012, farm sizes declined but the total number of farm operations increased. The total
2 number of farmland acres in the state of Nevada dropped from 6,330,622 to 5,913,761
3 and the size of the average farm decreased from 2,118 to 1,429 acres while the total
4 number of farms increased from 2,989 to 4,137 over that same period. The number of
5 farm workers in Nevada increased from 4,810 in 2002 to 5,759 in 2014, an average
6 annual increase of 1.97 percent, and the total number of farm proprietors increased
7 over that period from 2,912 to 3,653, an average annual increase of 2.54 percent.

8 In Clark County from 2002 to 2012, the total number of farmland acres dropped
9 considerably from 68,925 to 15,620, having reached its peak in 2007 of 88,381 acres.
10 The size of the average farm decreased from 272 to 62 acres, while the total number of
11 farms only decreased from 253 to 252 over that same period, dropping to 193 in 2007
12 (USDA, 2004; 2014). The number of farm workers in Clark County increased from 406
13 to 464, an average annual increase of 1.43 percent, and the total number of farm
14 proprietors decreased over that period from 249 to 210, an average annual decrease of
15 1.57 percent (BEA, 2016).

16 Nye County saw a significant drop in total number of farmland acres declining from a
17 total of 97,604 in 2002 to 65,115 in 2012. The majority of this reduction occurred after
18 2007, considering there were 90,868 farmland acres in 2007 in Nye County. The total
19 number of farms increased from 172 to 198 between 2002 and 2012. The number of
20 farm workers in Nye County decreased from 302 in 2002 to 211 in 2014, an average
21 annual decrease of 3.01 percent, and the total number of farm proprietors decreased
22 over that period from 168 to 163, an average annual decrease of 0.3 percent.

23 Data for farmland acres for Lincoln County in 2002 and 2012 was withheld by the USDA
24 to avoid disclosing data for individual farms, but was reported in 2007. In 2007, there
25 were 98 farms encompassing a total of 46,271 acres for an average farm size of
26 472 acres. The number of farm workers in Lincoln County increased from 147 in 2002
27 to 257 in 2014, an average annual increase of 7.48 percent, and the total number of
28 farm proprietors increased over that period from 106 to 166, an average annual
29 increase of 5.66 percent.

30 Property taxes are taxes collected on the possessory interest of property, which is for
31 any reason exempt from taxation, but which is leased to or available for use by the
32 taxpayer. Federally owned grazing lands generally fall into this category. The
33 possessory interest is taxable in the same manner as if the user owned the property.
34 The withdrawal of the additional lands would only be anticipated to have a minor impact
35 on such taxes and therefore, are not further discussed.

36 *Mining*

37 In 2014, there were 110 active mines in Nevada, of which 4 were located in Clark
38 County, 21 in Nye County, and 1 in Lincoln County. In 2004, there were a total of
39 96 mining operations in Nevada; in the period from 2004–2014, the number of mining
40 operations fluctuated from a low of 94 in 2007 to a high of 126 in 2012 (Nevada Mining
41 Association, 2016).

1 Clark County had four actively producing mines in 2014, which employed a total of 455.
2 Primary materials mined included limestone, gypsum, dolomite, and silica sands. In
3 total, 7.3 million metric tons of commodities were mined in 2014, and 5.8 million metric
4 tons of commodities were produced (Nevada Mining Association, 2016).

5 Although Lincoln County has an extensive mining history, in 2014, there was only one
6 mine in active production, with a total of eight direct employees. In 2014, the mine
7 produced 1,981.3 metric tons of perlite, up 22.4 percent from 2013 production of
8 1,618.4 metric tons (Nevada Mining Association, 2016).

9 In 2014, Nye County had 21 mines actively producing, which, in total, employed 1,202.
10 Nye County had the greatest number of active mines in Nevada (Churchill County was
11 second with 14 mines). Primary mining products include clays (smectite, bentonite,
12 saponite, and sepiolite), gold, silver, and magnesium. In total, 519.9 thousand metric
13 tons of commodities were mined in Nye County with 119.8 metric tons produced
14 (Nevada Mining Association, 2016). Of note, 10.0 metric tons of gold were produced in
15 2013 and 10.5 metric tons in 2014, with approximate market values of \$453.7 million
16 and \$427.5 million, respectively, based on year-end gold prices.

17 Currently, there are no active mining claims nor oil and gas leases located within the
18 NTTR. All of the unpatented mining claims and all of the oil and gas leases have either
19 expired or were acquired by the United States. Section 3.10, Earth Resources, contains
20 additional information on the mineral resources within the NTTR and surrounding area.

21 **Recreation**

22 Because the lands on the NTTR are withdrawn from public use by the MLWA
23 (P.L. 106-65), public recreational activities are prohibited with some exception for
24 certain limited hunting activities, the majority of the NTTR has not been developed for
25 residences or recreation, and other human uses and are strictly controlled, with the
26 exception of some mining and ranching activities that were in place prior to the initial
27 land withdrawal.

28 Recreational activities on BLM-administered lands are generally divided into “quiet” and
29 “non-quiet” categories. Quiet recreation would include those activities not involving
30 significant use of motorized equipment other than transportation to and from the
31 recreation site (e.g., hiking, camping, hunting, or wildlife viewing). Non-quiet recreation
32 would include those activities that primarily involve the use of motorized equipment
33 (e.g., boating, OHV riding, or snowmobiling).

34 Appendix G, Socioeconomics, outlines the most popular recreational uses of BLM-
35 administered lands. On all of the BLM-administered lands in the United States, quiet
36 recreation users spent approximately \$1.8 billion within 50 miles of recreation sites in
37 2014, resulting in overall economic contributions of \$800 million in personal income,
38 \$1.5 billion in value added, economic output of over \$2.8 billion, and approximately
39 25,000 jobs.

1 In 2014, there were 7,219,759 total visits to BLM-administered areas in Nevada,
2 3,909,908 of which were considered quiet recreation visits. The total visits resulted in
3 5,188,722 visitor days, 2,724,866 of which were spent in quiet recreation activities.
4 Direct spending within 50 miles of BLM recreation sites in Nevada in 2014 was
5 estimated at \$168.8 million. Overall economic contribution from quiet recreation visits on
6 BLM-administered lands in Nevada included \$58.8 million in labor income,
7 \$106.2 million in value added, \$171.5 million in output, and the addition of 1,611 jobs³
8 (ECONorthwest, 2016).

9 Identified recreational activities on BLM-administered lands adjacent to the NTTR
10 include motorcycle and OHV riding, horseback riding and backpack trips, mountain
11 bicycling, camping, driving for pleasure, hiking, hunting, photography, rock climbing,
12 rock collecting, nature study, wildlife/wild horse/burro viewing, picnicking, cross country
13 skiing, snowmobiling, and four-wheel driving.

14 Mountain biking activities continue to be developed north and west of Beatty, Nevada,
15 which lies to the southwest of the NTTR. Figure G-4, Land Impacts on Bike Trails from
16 Alternative 3A, in Appendix G, Socioeconomics, displays some of the existing (shown
17 as green lines) and proposed trails (red lines). A non-profit corporation, Saving Toads
18 thru Off-Road Racing, Ranching and Mining in Oasis Valley (STORM-OV) was formed
19 to create 300 to 500 miles of off-road, multi-use trails for mountain biking, hiking,
20 running, and horseback riding. Its plans are for the trails to eventually link Beatty to
21 Death Valley, Rhyolite, and other regional trails. The trails would run through federal
22 lands and private lands whose owners are willing to grant permission for its use for the
23 trails. According to the Regional Director of the International Mountain Biking
24 Association, the trails could bring \$25 million to \$42 million to the Beatty area (Pahrump
25 Valley Times, 2015).

26 Portions of some NDOW Boundary Hunt Units are located within the NTTR; hunters are
27 allowed in these areas only after complying with NTTR safety and security
28 requirements, including a background check and a hunter safety briefing (NDOW,
29 2016a). Big game animal species hunted in Nevada include antelope, bear, bighorn
30 sheep (desert Rocky Mountain and California), mule deer, pronghorn antelope,
31 mountain goats, and elk. In the Wildlife Boundary Units that are adjacent to (and cross
32 into) the NTTR, only pronghorn Antelope, mule deer, and desert bighorn sheep hunting
33 is allowed (NDOW, 2016b).

34 On the portions of the DNWR managed only by the USFWS, non-wildlife-dependent
35 recreational opportunities include primitive camping, picnicking, backpacking, and

³ **Labor income**, equivalent to employee compensation, is a subset of output, and includes workers' wages and salary, benefits (health, disability, and life insurance, retirement payments, and non-cash payments). **Value added** is output minus intermediate consumption and is a measure of the contribution to gross domestic product made by and individual producer, industry, or sector. **Output** is the value of goods and services produced; the broadest measure of economic activity. **Jobs** are measured in terms of full-year equivalents and equals 12 months of work in a given industry (ECONorthwest, 2016).

1 hiking. Wildlife-dependent recreational opportunities include wildlife watching,
2 photography, and hunting (USFWS, 2009).

3 The *USFWS National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*
4 *for Nevada* indicates that approximately 734,000 Nevada residents and non-residents
5 over the age of 16 fished, hunted, or watched wildlife in 2011, resulting in an overall
6 spending of \$1.2 billion. Of this total, expenditures related to trips were \$284 million,
7 equipment expenditures were \$512 million, and \$387 million were spent on licenses,
8 contributions, and land ownership and leasing. Anglers spent \$139 million in Nevada in
9 2011, hunters spent \$205 million, and wildlife watchers spent \$682 million (USFWS,
10 2013).

11 **Grazing**

12 In 2014, the cattle and calf production in Nevada was valued at \$298 million (Nevada
13 Department of Agriculture, 2016). BLM estimated that the socioeconomic impact of
14 grazing in Nevada from the management of its public lands amounted to \$127.5 million
15 in 2014 (BLM, 2015).

16 **Energy Corridor**

17 Complying with Section 368(a) of the *Energy Policy Act of 2005*, the DOE, DOI, and the
18 USFS identified energy corridors for oil, gas, and hydrogen pipelines and electricity
19 transmission and distribution facilities. In 2009, BLM and the USFS designated
20 600 miles of Section 368 corridors on federal lands. As a result of a lawsuit, a Corridor
21 Study was completed. An interagency MOU was then reached to explain how the
22 agencies will review the Section 368 corridors on a regional basis to assess the need
23 for corridor revisions, deletions, or additions. The corridor study for Region 1, which
24 included public lands managed by the BLM's Southern Nevada District, was completed
25 in May 2016 and defined the corridors (Argonne National Laboratory, 2016). This
26 included the segment of the Section 368 corridor that is adjacent to Alternative 3B,
27 corridor segment 223-224. A portion of corridor segment 18-224 within the Southern
28 Nevada District was reviewed, but this area is not in the vicinity of the NTTR. The
29 segment of corridor 18-224 that is in the area managed by the BLM's Tonopah Field
30 Office that is impacted by Alternative 3A and 3A-1 will be reviewed starting in November
31 2018, with a final recommendation to be completed by April 2019. This section of
32 corridor 18-224 was first established by the Tonopah Resource Management Plan and
33 Record of Decision in 1997.

34 **3.6.1.4 Land Use and Ownership**

35 Public scoping comments identified recreational concerns as a major issue; therefore,
36 recreation is a focus for land use and is discussed above in Section 3.6.1.3. Federal
37 entitlement lands include lands within the National Forests and National Parks systems,
38 lands managed by BLM, those affected by the USACE and the Bureau of Reclamation,
39 and other federal lands. Federal land ownership in Clark, Lincoln, and Nye Counties

1 total approximately 23.6 million acres (see Appendix G, Socioeconomics, Table G-4,
2 Land Ownership Clark County, Lincoln County, Nye County, and Nevada 2012).

3 **3.6.1.5 Population**

4 Clark County is the largest county in Nevada. Several major cities are within the county
5 including Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite. The
6 total population in Clark County is estimated at 2,114,801 (USCB, 2016). The county
7 has experienced an annual growth rate of 2.9 percent since the 2000 census. Las
8 Vegas, the most populous city in the county and the state of Nevada, is the county seat.
9 The total population in Las Vegas is estimated at 623,747 (USCB, 2016).

10 The population in Lincoln County is currently estimated at 5,036 (USCB, 2016). The
11 county has experienced an annual growth rate of 1.3 percent since the 2000 census;
12 however, the population has declined by 4.1 percent since 2010 according to population
13 estimates. The county seat of Lincoln County is Pioche. Pioche is an unincorporated
14 community and census-designated place with a recent population estimate of 909
15 (USCB, 2014a).

16 The most recent population estimate for Nye County is 47,319 (Nye County Planning
17 Department, 2015). There are no incorporated areas in Nye County; however, there are
18 four census-designated places including Beatty, Gabbs, Pahrump, and Tonopah, the
19 county seat. The largest census-designated place in the county in terms of population
20 is Pahrump with a recent population estimate of 39,312. The total population in Nye
21 County has experienced an annual growth rate of 2.5 percent since 2000 (see Appendix
22 G, Socioeconomics, Table G-5, Population in the ROI).

23 Approximately 36,669 people residing in the area are associated with Nellis AFB,
24 Creech AFB, and the NTTR which includes 9,103 active-duty military and
25 23,398 dependents. In addition, there are approximately 28,375 military retirees among
26 the residents in the Las Vegas metropolitan area (Nellis AFB, 2015).

27 **3.6.1.6 Housing**

28 There are almost 876,000 housing units throughout the three-county ROI, with the
29 majority (over 97 percent) of homes in Clark County. High costs for land and limited
30 availability in the Las Vegas Valley often result in developers looking outside of Clark
31 County and provide a basis for growth in southern Lincoln County. While the recession
32 in 2008 caused housing prices to drop in the Las Vegas area, housing prices have
33 recovered a good portion of their loss over the last several years, which has helped to
34 improve housing demand in Lincoln County. Table G-6, Housing in the ROI, in
35 Appendix G, Socioeconomics, presents census-derived housing data for Clark County,
36 Lincoln County, and Nye County and the state of Nevada.

37 Approximately 84 percent of the total appropriated-fund military members associated
38 with Nellis AFB, Creech AFB, and the NTTR live off-base (Nellis AFB, 2015).

3.6.1.7 Public Services and Facilities

Health Care

There are approximately 17 hospitals throughout the ROI including 14 in Clark County, 2 in Lincoln County, and 1 in Nye County. The majority of hospitals in Clark County are located in Las Vegas, while in Lincoln County the two hospitals are located in Caliente. The one hospital in Nye County, the Desert View Hospital, is located in the Town of Pahrump. The number of people per every one physician in Clark County, Lincoln County, and Nye County was 1,830, 2,620, and 2,350, respectively. All three counties in the ROI had a greater number of persons per physician than the state, which had a person-to-physician ratio of 1,750 to 1 (County Health Rankings, 2015).

Public Schools

Each county in the three-county ROI has one public school district. During the 2015-2016 school year, the Clark County School District had a total of 319,713 students enrolled throughout its 357 schools, with an average student-teacher ratio of approximately 22 students per teacher. During the same year, the Lincoln County School District had a total of 996 students enrolled throughout its nine schools with an average student-teacher ratio of 16.5 students per teacher. Nye County had a total of 5,071 students enrolled throughout its 22 schools. The student-to-teacher ratio in each county in the ROI is shown in Appendix G, Socioeconomics, Table G-7, Public School District Information for the ROI, 2015-2016.

Law Enforcement

Several law enforcement agencies exist throughout the ROI, including the Clark County Sheriff's Department, the Las-Vegas Metropolitan Police Department, the Lincoln County Sheriff's Department, and the Nye County Sheriff's Department. According to the most recent U.S. Department of Justice Census of State and Local Law Enforcement Agencies, there were 10,097 personnel and 6,643 sworn officers throughout the 76 state and local law enforcement agencies in the state of Nevada (see Appendix G, Socioeconomics, Table G-8, Law Enforcement in the ROI, 2008). The state had a higher number of state and local law enforcement agency employees per 100,000 residents compared to the national average. The Las Vegas Metropolitan Police ranked 18th in the 50 largest state and local law enforcement agencies by number of full-time sworn personnel. The Las Vegas Metropolitan Police had 2,942 full-time sworn personnel for an average of 216 per 100,000 residents (Bureau of Justice Statistics, 2011).

Fire Protection

There are approximately 59 fire stations with 729 full-time employee firefighters, 325 volunteer fire fighters, and 59 support staff throughout the ROI. The Clark County Fire Department is the largest fire department in Nevada, providing fire protection and emergency medical services to the unincorporated areas of Clark County. There are

1 fire departments located in Las Vegas, Boulder City, North Las Vegas, Henderson, and
2 Mesquite, which serve the cities they are located in. There are five fire departments in
3 Lincoln County including one in Caliente, Alamo, Panaca, and two in Pioche. There are
4 12 fire stations throughout Nye County. The Nevada Test Site Fire Department is the
5 only career-type fire department in the county with three stations, 59 career firefighters,
6 and 4 support personnel (Fire Department.net, 2016). (See Appendix G,
7 Socioeconomics, Table G-9, Fire Protection in the ROI.)

8 **3.6.1.8 Public Finance**

9 An important source of funding to counties that have a large proportion of their land
10 managed by the federal government is the Payment in Lieu of Taxes (i.e., PILT) funding
11 allocated to the counties by Congress. The PILT program began in 1976 following the
12 enactment of P.L. 94-565. Federal PILT payments were designed to supplement other
13 federal land receipt sharing payments and are made to local government units who are
14 allowed to spend it for any governmental purpose. The DOI's Office of the Secretary has
15 administrative authority over the PILT program. There are three sections in P.L. 94-565
16 that prescribe the distribution of money to the states: Section 6902, Section 6904, and
17 Section 6905.

18 The PILT payment amount is based on the number of acres of federal land within the
19 county, the population of the county, and the Congressionally allocated funding for
20 payments to the local government and for the administration of the program under
21 Section 6902 of the *Payments in Lieu of Taxes Act*.

22 The PILT payment is important to the counties, particularly those with only a relatively
23 small population and a high proportion of federal land for which no property taxes are
24 paid. The funds are used to provide important community services by the local
25 governments such as fire and police protection, hospital and public school facilities,
26 road construction, and search and rescue operations.

27 Section 6902 payments are calculated using one of two formulas based on "entitlement
28 lands" within the respective county. Entitlement lands refer to lands owned by the
29 United States Government and include lands in the National Park System, the National
30 Forest System, lands administered by the BLM, or lands involved in Government water
31 resource development projects. Other lands included are: semi-active Army installations
32 used for non-industrial purposes, dredge disposal areas under the jurisdiction of the
33 Secretary of the Army, National Wildlife Reserve areas withdrawn from the public
34 domain, and some lands donated to the United States Government by state and local
35 governments.

36 Formula A multiplies a legislatively established value per acre by the entitlement land
37 acreage in the county and then subtracts the payment made last year (University of
38 Nevada, 1995). A University of Nevada (1995) report clarifies that: "only the amount of
39 Federal land payments actually received by units of government in the prior fiscal year
40 are deducted. If a unit of government receives a Federal land payment, but is required

1 by State law to pass all or part of this payment to financially and politically independent
2 school districts, or other single or special purpose district, such redistributed payments
3 are considered to have not been received by the unit of local government and are not
4 deducted from the in-lieu payment. The amounts to be deducted are reported to the
5 Bureau of Land Management each year by the Governor of each State or his delegate.”

6 The formula value is restricted by a population payment ceiling figured by multiplying
7 the county’s population by the appropriate figure. Populations are based on the most
8 recent census figures. A government may not be credited with a population greater than
9 50,000 and populations between 5,000 and 50,000 are rounded to the nearest 1,000.

10 If the calculated value established by Congressional funding multiplied by the number of
11 entitlement acres exceeds the ceiling, the ceiling value minus last year’s payment is the
12 result of Formula A. Formula B is much simpler and is figured by taking an established
13 legislatively established value and multiplying it by the number of entitlement acres. As
14 with Formula A, the population payment ceiling is binding.

15 Section 6902 payments are computed using one of two computation methodologies.
16 For 2016, the legislative established value is \$2.64 per acre of federal land (DOI, 2016).
17 Therefore, each of the counties using Formula A multiplies the number of qualified
18 acres by \$2.64, then subtracts the amount of funds received by the county⁴ in the prior
19 fiscal year under certain federal programs. The second computation methodology
20 (Formula B) uses a flat \$0.37 per acre of qualified federal land in the county.

21 The number of acres of entitlement land and the amount of payment in 2016 for Clark,
22 Lincoln, and Nye Counties are presented in Appendix G, Socioeconomics, Table G-10,
23 Payments in Lieu of Taxes to Clark, Lincoln, and Nye Counties, 2016. It should be
24 noted that the maximum payment made to each county is limited based on the
25 population in the county. The payment is prorated depending on the amount of
26 appropriated funding for the year. The Unit Population is used to determine the
27 population funding limit.

28 **3.6.2 Environmental Consequences**

29 **3.6.2.1 Analysis Methodology**

30 The primary goal of the Economic Impact Analysis is to place an economic value on the
31 Proposed Action. A commonly-used technique for conducting Economic Impact
32 Analysis is through the application of input-output (I-O) models. I-O models track the
33 flow of income through the economy to measure the impacts on different industries.
34 The I-O model estimates the change in expenditures and in employment that result from
35 a proposed change in economic activity (such as not extending the NTTR land

⁴ If a unit of government is required by law to pass part of this payment to financially and politically independent districts, such redistributed payments are not deducted from the in-lieu payment (University of Nevada, 1995).

1 withdrawal) and then applies the changes in employment and expenditures to estimate
2 total changes for each industry.

3 The Nellis AFB Economic Impact Analysis model takes into effect that purchases from
4 one industry may result in that industry purchasing services, parts, or other inputs from
5 a different industry. In estimating these ripple effects from the change in NTTR
6 activities on the region, the I-O models incorporate multipliers that reflect the total
7 economic impact changes resulting from the change in the direct purchases and
8 expenditures from the changes in activities at NTTR. The multipliers used in the
9 Economic Impact Analysis model determine the amount that each industrial category
10 spends within each industrial category. This relationship between all industries is
11 referred to as an I-O table, which can then be applied to estimate the impacts on other
12 industries when expenditures have changed within the regional economy.

13 The three types of economic impacts from changes in the utilization of the NTTR can be
14 summarized as:

- 15 • **Direct Impacts.** The economic changes in the impacted industry, i.e., the
16 employment, income (payroll) paid and economic output related to the changes
17 in the use of the NTTR and proposed expansion areas.
- 18 • **Indirect Impacts.** The changes in the local business sector as a result of the
19 changes in demand from the directly affected industry. In this case, indirect
20 impacts relate to the employment, income, and economic output related to the
21 purchases of goods and services by the activities related to the NTTR and
22 adjacent lands.
- 23 • **Induced Impacts.** Changes in employment, income, and economic output
24 related to the changes in spending of the incomes earned through the direct and
25 indirect expenditures.

26 The Economic Impact Analysis for Nellis AFB, Creech AFB, and the NTTR estimates
27 the total impact from its current operations by establishing a baseline that represents
28 the proposed Status Quo alternative (Alternative 1). Using the Status Quo as the
29 baseline allows a comparison of the impact from the changes in economic activity that
30 would potentially result from the proposed action alternatives and the No Action
31 Alternative.

32 **3.6.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 33 **NTTR (North and South Range) – Status Quo**

34 The economic impact of the Nellis AFB, Creech AFB, and NTTR activities is the sum of
35 the total payroll plus the annual base expenditures and the estimated value of the jobs
36 created as a result of the expenditures by the installations as well as those of the
37 military members and civilian employees directly and indirectly employed. Clark County
38 receives the majority of economic impact from NTTR activities, while Lincoln and Nye
39 Counties receive a substantially lesser amount.

1 For 2015 the total economic impact of the Nellis AFB, Creech AFB, and NTTR activities
2 is estimated at \$5.549 billion (see Appendix G, Socioeconomics, Table G-11, Nellis
3 AFB, Creech AFB, and NTTR Total Economic Impact (Baseline), Fiscal Year 2015). For
4 comparison, the Total Gross Regional Product for Nevada, which is the total value of all
5 goods and services produced in Nevada, is \$134.5 billion. The Nellis AFB Economic
6 Impact Assessment model estimates that the number of indirect and induced jobs is
7 5,783 for 2015 with a total indirect/induced payroll of \$242.6 million (Nellis AFB, 2015)
8 (see Appendix G, Socioeconomics, Table G-12, Annual Indirect/Induced Jobs and Pay,
9 Fiscal Year 2015).

10 Continuing the current land withdrawal and training activities (i.e., Alternative 1) would
11 have no further impact on the region than the baseline economic impact because
12 payrolls and expenditures would be expected to continue at typical levels though they
13 may change as new technologies, aircraft, and military strategies are introduced.

14 **3.6.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready** 15 **Access in the North and South Ranges**

16 Alternative 2 would extend the current land withdrawal and require Congressionally
17 directed changes in land management to provide the Air Force with ready access in the
18 South Range so the Air Force would have the lead role in management of withdrawn
19 lands, which gives the Air Force greater flexibility to meet current and future NTTR
20 mission requirements. The intent of the action under this alternative is to provide equal
21 capabilities for training and testing in the North Range and South Range, relieving
22 scheduling challenges and increasing throughput. Alternative 2's economic impacts
23 would likely include increased expenditures associated with the increased use of the
24 NTTR but primarily in Clark County.

25 If Alternative 2 is chosen, it is anticipated that there would be a 30 percent increase in
26 aircraft operations; a significant portion would be associated with TDY activities related
27 to Red Flag exercises. The annual cost of lodging and per diem for TDY personnel
28 ranged from a low of \$118.9 million to a high of \$332.0 million over the period from 2009
29 to 2015. Assuming TDY activities would increase by 30 percent over the median of
30 2009–2015, which is \$225 million, the estimated economic increase would be
31 \$67 million, predominantly in Clark County.

32 **3.6.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

33 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 34 • Alternative 3A – Range 77 – EC South Withdrawal
- 35 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 36 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
37 Incorporation
- 38 • Alternative 3C – Alamo Withdrawal

1 Under Alternative 3A or 3A-1, the EC South area would be re-designated as “Range 77”
2 to allow full air-to-ground operations. Alternative 3A or 3A-1 would be used to add
3 buffer to the safety footprint of Range 77 – EC South. There would be no construction
4 disturbance (except for fencing installation) or munitions use in this area. It would only
5 serve as a safety buffer for live weapons deployment on the interior of Range 77. The
6 current agricultural activities such as grazing that may be taking place on those lands
7 would likely be eliminated or available to the public on a limited basis or through specific
8 agreements.

9 Alternative 3B would withdraw areas designated as 64C/D and 65D and the
10 Administrative Incorporation area. Withdrawing these areas would support the NTTR
11 with operational security and safety buffers. These areas must be controlled for safety
12 purposes and would not be used for target impact areas.

13 For Alternative 3C, the proposed land withdrawal would provide the opportunity to alter
14 the configuration of the training missions on the South Range. The current recreational
15 uses of the land that may be taking place on those lands would likely be eliminated or
16 available to the public on a limited basis or through specific agreements. Additional
17 expenditures from the new training configurations potentially could offset some of the
18 resulting economic losses as well as the 30 percent increase in aircraft operations
19 associated with Alternative 3 as was discussed in Section 2.3.3.

20 The land withdrawal under Alternatives 3A, 3A-1, 3B, and 3C (a total of 301,507 acres)
21 would include about 227,027 acres currently managed by the USFWS as part of the
22 DNWR and more than 35,361 acres managed by BLM, some of which is grazing land.

23 *Impacts on Payment in Lieu of Taxes*

24 The withdrawal of the additional acreage may have a potential impact on the PILT for
25 each county. This is particularly case with Nye County since all of Alternative 3A (and
26 Alternative 3A-1) is located in Nye County. Nye County’s total PILT for 2016 (Appendix
27 G, Socioeconomics, Table G-10, Payments in Lieu of Taxes to Clark, Lincoln, and Nye
28 Counties, 2016) provides revenue of \$3,108,497 based on 8,546,257 acres (a value of
29 about \$0.36 per acre was funded in 2016). The withdrawal of the additional land from
30 Nye County under Alternative 3A and Alternative 3B (estimated at about 28,000 acres)
31 may reduce its annual PILT allocation by about \$10,000, which amounts to about
32 0.3 percent of the county’s total allocation for 2016. Alternative 3A accounts for \$6,400,
33 while the remaining \$3,600 is associated with Alternative 3B. No acres in Nye County
34 are affected by Alternative 3C, and so no PILT reduction would occur for that
35 subalternative. Since less land area would be withdrawn (2,592 acres) under Alternative
36 3A-1, the estimated reduction in PILT would be \$933.12 when compared to Alternative
37 3A. Therefore, impacts to PILT allocation would be less for Nye County with Alternative
38 3A-1. The impact for Alternative 3A-1 would be approximately \$5,500.

39 The allocations to both Clark and Lincoln County are currently based on population
40 limitation such that the reduction in federal entitlement acres should not have a
41 significant impact, if any, on their PILT allocation regardless of any subalternative.

1 **Impacts on Recreational Activities**

2 Recreational activities in the area include OHV riding, camping, hunting, viewing wildlife,
3 hiking, and mountain biking. Some access points to wildlife areas, such as trails or
4 parts of trails, may be closed as a result of the proposed expansion of the NTTR. The
5 impact on the local economy would depend on the availability of alternative trails of
6 similar categories or alternative access points to trails that are cut off by the expansions.

7 A value of \$8.77 per acre was extrapolated using BLM's estimated economic impact of
8 recreation activities on BLM lands throughout Nevada (roughly 47.5 million acres),
9 valued at \$416.6 million for 2014 (BLM, 2015). This factor was used to evaluate the
10 impact to BLM lands. Because there are no formal procedures to identify the number of
11 guests that visit the DNWR or to quantify the amount of revenue generated by the use
12 of these particular federal lands for recreational use, the BLM factor was applied to
13 USFWS lands already available to public access.

14 **Biking Trails**

15 Mountain biking trails are being developed in the Beatty, Nevada, area. The NTTR
16 expansion proposed under Alternative 3A would impact 4.88 miles of existing bike trails
17 on the western side of the NTTR near Beatty (Appendix G, Socioeconomics, Table
18 G-12, Annual Indirect/Induced Jobs and Pay, Fiscal Year 2015) without impacting the
19 rest of the trails in the immediate area.

20 Bike trails have been developed on the Spicer Ranch and connect with trails to the east
21 on BLM land in the Transvaal region. Biking events are held on the ranch. Current trail
22 use estimates are at about 100 or more user days during the months of September to
23 June. A proposal to expand the bike trails in the Beatty area would incorporate some
24 36 miles of existing roads, 23 miles of existing trails for horseback riding and biking, and
25 32 miles of new single tract trails for biking and other activities. The new routes would
26 not be impacted by the proposed expansion under Alternative 3A. While existing bike
27 trails would not be impacted under Alternative 3A-1, one of the new proposed bike trails
28 would be impacted by the proposed expansion for Alternative 3A-1.

29 **Hiking Trails**

30 There are approximately 26,000 acres of BLM lands that are included in Alternative 3B
31 that could be used for hiking and recreational activities. Using the factor of \$8.77 per
32 acre described previously, the impact to BLM lands would be \$228,020.

33 The DNWR has a number of trails on its eastern portion that is currently outside of the
34 NTTR. Alternative 3C proposes to extend the NTTR boundary by about 227,000 acres
35 along its eastern border, which potentially blocks access to several hiking trails. The
36 extension would close portions of Alamo Road and block access to Dunes North and
37 South hiking trails (see Appendix G, Socioeconomics, Figure G-5, Land Impacts on
38 Hiking Trails from Alternative 3C).

1 The economic impacts associated with reduced utilization of these hiking trails has been
2 difficult to estimate since the USFWS does not maintain census information regarding
3 the usage of the DNWR. Limited data is associated with the visitors' registration
4 process at the Corn Creek Visitors' Center. Because data was not available specifically
5 for the DNWR a value of \$8.77 per acre was extrapolated from BLM estimates and used
6 to approximate the economic value for recreational use of acres that are associated with
7 the proposed expansion under Alternative 3C. The estimated recreational-use economic
8 impact based on these extrapolated estimates would be \$1,990,790 for Alternative 3C
9 (227,000 acres).

10 **Off-Road Racing**

11 Off-road car and all terrain races, such as the "Best in The Desert" race between Las
12 Vegas and Reno, the "Pahrump Nugget 250," and the Beatty VFW Poker Run are held
13 each year in Nye county and are economic driver for the Beatty community. The Best in
14 the Desert and the Pahrump Nugget 250 are competitive events while the Beatty VFW
15 Poker Run is a non-competitive race. The competitive events have a considerable fan
16 following with large sponsorships comparable to professional stock car events in the
17 southeastern United States.

18 Previously published race routes for the Pahrump Nugget 250 appear to be sufficiently
19 south of the NTTR such that the proposed land expansion associated with Alternative
20 3A or 3A-1 will not impact the race route. In 2016, the Best in the Desert race was
21 approximately 650 miles long, starting from Alamo, Nevada, and finishing at Reno,
22 Nevada. The race lasts about 10 to 12 hours, with visitors staying one to two days.
23 Total related spending is estimated between \$714,000 to \$2,142,000 over the entire
24 race course with larger proportions being spent near the beginning and the end of the
25 course.

26 Portions of the race routes such as the Best in The Desert's Beatty-to-Dayton route are
27 close to the NTTR boundary and may be impacted by the additional land withdrawal for
28 Alternative 3A but not for Alternative 3A-1 (BLM, 2016j). The 2016 route would not have
29 been impacted by any of the proposed Alternative 3 actions. In any event, the race
30 routes may vary between years, so it is likely that the routes could be altered as needed
31 to avoid the expansion areas or the Air Force might be able to adjust mission-related
32 activities to accommodate these races. It is important to note that these races have
33 been occurring for over 20 years in some cases and are an essential element of the
34 local culture and economy of Beatty.

35 **Impact on Grazing**

36 The Alternative 3A proposed expansion area would overlap areas of grazing allotments
37 (see Appendix G, Socioeconomics, Figure G-6, Rangeland Allotments Impacted by
38 Alternative 3A) and reduce grazing in Nye County by about 17,000 acres. The
39 Alternative 3A-1 proposed expansion area would overlap areas of grazing allotments
40 and reduce grazing in Nye County by about 15,000 acres. The permit or lease holders

1 are protected from loss of any improvement that they made to the grazing land. The
2 FLPMA provides that whenever a permit or lease for grazing domestic livestock is
3 cancelled in whole or in part, in order to devote the lands covered to another public
4 purpose, including disposal, the permittee or lessee would receive reasonable
5 compensation for the adjusted value for any improvements that were made to the land.
6 The impact to the grazing activity would also depend on the grazing capacity of the
7 withdrawn land.

8 The BLM Razorback grazing allotment, which is impacted by Alternative 3A, consists of
9 266,329 acres and has an allotment of 1,926 animal unit months (AUM⁵). Currently,
10 there are 386 AUM suspended. Assuming uniform forage production within the
11 allotment and an 18,000-acre reduction in the allotment due to Alternative 3A (or a
12 15,000-acre reduction in the allotment due to Alternative 3A-1), the allotment capacity
13 would be reduced by about 6 percent. With the total active AUM managed by BLM
14 currently at 1,525,738 AUM, this loss of the grazing allotments would represent a
15 potential reduction of economic impact of about \$128,000 for the BLM managed lands
16 for Alternative 3A or 3A-1. However, it should be noted that this would be an 83 percent
17 reduction in available grazing area to the rancher leasing the AUM and would be a
18 significant impact. The Air Force plans to work directly with the rancher to address this
19 impact. In addition, to minimize potential conflicts between NTTR operations and
20 population, housing, and economic activity in the region (to include grazing and mining),
21 the Air Force would continue coordination between the military, other adjacent federal
22 land management agencies as well as local and regional planning departments.

23 ***Impact on Section 368 Energy Corridor***

24 Corridor 18-224 is of concern under Alternative 3A. That corridor extends northwest to
25 southeast from east of Carson City, Nevada, to the northwest of Pahrump in southern
26 Nye County (see Appendix G, Socioeconomics, Figure G-7, Section 368 Energy
27 Corridors). U.S. Route 95 lies within the corridor along portions of the NTTR. The land
28 withdrawal proposed by Alternative 3A is in conflict with sections of the corridor near
29 milepost 193 and between milepost 195 to 197 and milepost 204 to 205, each
30 approximately 2 miles in length. The additional rights-of-way proposed under Alternative
31 3A that cross into the corridor may impact its use. The September 2016 Regional
32 Review of Region 1 Corridors indicated that this was a jurisdictional concern and
33 recommended moving the corridor south of U.S. Route 95 (DOE, 2016a). Shifting of
34 the corridor out of the impacted area may be possible but would have to be assessed
35 for its environmental aspects. It should be noted that the BLM is currently in the process
36 of revising their resource management plan, which is proposing corridor revisions.
37 Plans call for the corridor to be reviewed in its entirety in 2018.

⁵ The AUM provides sufficient forage for one cow and calf for a month.

1 As previously mentioned, the corridor runs south near U.S. Route 95, where it follows a
2 utility corridor in the Beatty area originally established in the Tonopah Resource
3 Management Plan and Record of Decision (1997), passing through two small areas in
4 Alternative 3A and one small area in Alternative 3A-1, then onward to the Southern
5 Nevada District in the Crater Flat area, ending at a node along U.S. Route 95 near the
6 intersection of State Route (S.R.) 160, north of Pahrump. The corridor then continues
7 on to Las Vegas as segment 223-224.

8 As a result of the unknowns associated with the proposed corridor revisions, a level of
9 economic impact cannot be determined at this time; however, if the corridor was to
10 maintain its current proposed route, there would be an impact with Alternative 3A, but it
11 would be anticipated that if the current route was maintained, energy transmission lines
12 could be placed underground for the limited distance of overlap with the proposed
13 expansion area. If the corridor was to maintain its current proposed route, there would
14 not be an impact with Alternative 3A-1.

15 **3.6.2.5 Alternative 4 – Establish the Period of Withdrawal**

16 Alternative 4 establishes the period of withdrawal. This alternative will be paired with
17 one or more of the other alternatives. Alternatives 4A, 4B, and 4C propose a 20-year,
18 50-year, and an indefinite withdrawal period, respectively.

19 With each alternative, there is the assumption that economic indicators would increase
20 at the national average of 2.2 percent annually, which has been the national average
21 based on the last 17 years.

22 **3.6.2.6 No Action Alternative**

23 With the land withdrawal not extended, prohibitions placed in effect under the public law
24 would expire. Appropriative land uses such as mining, mineral leasing, and livestock
25 grazing could potentially be reintroduced after the Secretary of Interior opens the land to
26 such uses. Facilities on the NTTR may need to be removed and Creech AFB closed.
27 Decontamination of the land where it is practicable and economically feasible would be
28 undertaken if funded by Congress. Detailed evaluations and characterization are not
29 included in this analysis since the full scope of the No Action Alternative would be
30 determined in coordination with the Secretary of the Interior. Further NEPA analyses
31 would be conducted, as appropriate, at that time.

32 The No Action Alternative would result in the removal of Air Force and DOE/NNSA
33 activities from the NTTR. The initial impact would be a \$500.8 million reduction in
34 economic impact including a \$138 million reduction in payroll, a \$340 million reduction
35 in expenditures, and a \$21 million reduction due to the loss of jobs (see Appendix G,
36 Socioeconomics, Table G-14, Reduction in Economic Impact from Not Extending the
37 NTTR Land Withdrawal, based on Fiscal Year 2015).

1 While there would be a reduction in the annual economic impact for the closing of the
2 NTTR, the cost to return the NTTR to public use may be significant. The removal of all
3 facilities and buildings from the NTTR and Creech AFB is estimated to cost
4 \$213 million. Secondly, the cost for full decontamination of the NTTR is estimated at
5 about \$2.5 billion. These actions would delay opening some of the NTTR land to public
6 use by up to 18 years, particularly land where decontamination is necessary.

7 No alternative location has been identified for a training range of sufficient size,
8 topography, and airspace access to meet the need for testing and training new
9 generations of equipment and technologies. A range meeting the Air Force criteria
10 would be costly if such land could be located and acquired. The replacement costs of
11 facilities on the NTTR are estimated at \$122 million and \$1.1 billion at Creech AFB. A
12 new range location may also require moving the aggressor squadrons and facilities from
13 Nellis AFB to the new location.

14 If the land withdrawal is not extended and the control of the land is returned to its
15 originating federal agency, the land may again become part of the entitlement acres
16 considered in determining the PILT for Clark, Lincoln, and Nye Counties. The
17 1,808,244 acres in Nye County and 1,141,359 acres total in Clark and Lincoln Counties
18 are managed by the Air Force in the NTTR. The acres in Nye County eligible for PILT
19 payments would add, at 2016 rates, an estimated \$682,000 to the Nye County PILT
20 payments. Clark and Lincoln County payments are estimated with population limitations
21 and would not necessarily experience such direct impacts on the magnitude of their
22 PILT payments.

23 3.7 ENVIRONMENTAL JUSTICE

24 3.7.1 Affected Environment

25 3.7.1.1 Description of Resource

26 *Environmental Justice* is defined by the EPA and reported
27 in the Air Force EIAP guidelines (2014d) as, “the fair
28 treatment and meaningful involvement of all people
29 regardless of race, color, national origin, or income with
30 respect to the development, implementation, and
31 enforcement of environmental laws, regulations, and policies” (U.S. Air Force, 2014d).
32 EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations
33 and Low-Income Populations*, is designed to ensure that disproportionately high and
34 adverse human health or environmental effects on citizens in either of these categories
35 are identified and addressed, as appropriate.

*For the Native American
perspective on information in
this section, please see
Appendix K, paragraph
3.7.1.1.1.*

36 For purposes of this analysis, the terms “minority” and “low income” are defined below:

- 1 • *Minority*: Those individuals who have identified themselves as having one of the
2 following origins: “Hispanic,” “Asian-American,” “Native Hawaiian and other
3 Pacific Islander,” “Black or African-American,” “American Indian or Alaskan
4 Native,” or “Some Other Race” (which does not include “White,” “Black or
5 African-American,” “American Indian or Alaska Native,” “Asian,” and “Native
6 Hawaiian or Other Pacific Islander” race categories) (U.S. Air Force, 2014d).
- 7 • *Low-Income*: A family and each individual in the family is considered in poverty if
8 the total family income is less than the family’s threshold or the dollar amount
9 calculated by the U.S. Census to determine poverty status.

10 Although children and elderly are not specifically included as environmental justice
11 populations, they are identified as sensitive receptors in the most recent Air Force EIAP
12 guidelines (2014d). Children are vulnerable to environmental exposure, and potential
13 health and safety effects to children are considered in this LEIS under the guidelines
14 established by EO 13045, *Protection of Children from Environmental Health Risks and*
15 *Safety Risks*. For purposes of this analysis, the term “children” refers to any person
16 under 18 years of age. The EPA and the Air Force EIAP guidelines identify the
17 importance of considering an elderly person as a sensitive receptor to potential
18 environmental impacts. The term “elderly” refers to any person age 65 and older.

19 3.7.1.2 Region of Influence

20 Clark, Lincoln, and Nye Counties in Nevada and Washington County and Iron County in
21 Utah represent the community of comparison (COC) for evaluating disproportionate
22 effects on populations of concern for environmental justice since noise associated with
23 activities on the NTTR extend into portions of these counties. These counties also
24 represent the COC for children and elderly populations. Estimates of the populations
25 were developed using the most recent census tract level data from the American
26 Community Survey (ACS) five-year estimates (2010–2014) and are displayed in Table
27 3-34 and Table 3-35.

28 **Table 3-34. Youth and Elderly Populations**

Geographic Unit	Youth (Under 18 years)		Elderly (65 Years and Older)	
	Number	Percent	Number	Percent
Clark County, NV	487,714	24.3%	247,087	12.3%
Lincoln County, NV	1,399	26.5%	929	17.5%
Nye County, NV	8,232	19.2%	11,214	26.1%
Iron County, UT	13,916	29.8%	4,966	10.6%
Washington County, UT	42,378	29.2%	26,611	18.4%
Utah	888,945	31.1%	271,671	9.5%
Nevada	661,100	23.9%	362,183	13.1%
United States	73,777,658	23.5%	43,177,961	13.7%

Source: (USCB, 2014a)

Table 3-35. Environmental Justice Populations

Geographic Unit	Total Population	Minority Populations										Low-Income Populations*	
		Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Two or More Races	Some other Race	Hispanic and Latino (of any race)	White alone, Not Hispanic or Latino	Total Minority	% Total Minority	Total Low-Income	% Low-Income
Clark County, NV	2,003,613	206,624	8,301	177,047	13,406	66,639	3,313	596,587	931,696	1,071,917	53.5	314,567	15.7
Lincoln County, NV	5,282	128	209	2	0	52	16	472	4,403	879	16.6	856	16.2
Nye County, NV	42,938	1,127	870	719	129	537	61	6,026	33,469	9,469	22.1	7,986	18.6
Iron County, UT	46,725	283	917	230	259	710	25	3,719	40,582	6,143	13.1	10,422	22.8
Washington County, UT	144,844	659	1,587	983	1,286	2,255	81	14,272	123,721	21,123	14.6	22,131	15.5
Nevada	2,761,584	220,503	24,304	203,924	16,552	84,950	4,110	752,049	1,455,192	1,306,392	47.3	430,807	15.6
Utah	2,858,111	28,719	28,134	59,852	25,754	51,766	4,531	379,454	2,279,901	578,210	20.2	358,682	12.8
United States	314,107,084	38,460,598	2,082,768	15,536,209	493,155	6,692,885	611,881	53,070,096	197,159,492	116,947,592	37.2	49,000,705	15.6

Sources: (USCB, 2014a; 2014b)

Note * = population for whom poverty status is determined, which may differ from the total population.

1 Five Native American settlements are in the three counties in Nevada: the Duckwater
 2 Indian Reservation, Ft. Mojave Indian Reservation, Las Vegas Indian Reservation, Las
 3 Vegas Indian Colony, and the Moapa River Indian Reservation. The Paiute Indian Tribe of
 4 Utah (PITU) consists of five bands, including Cedar Band, Indian Peaks Band, Kanosh
 5 Band, Koosharem Band, and the Shivwits Band. Combined, the five bands of the PITU
 6 have 918 tribal members (PITU, 2017). The Cedar Band and the Indian Peaks Band are
 7 located in Cedar City in Iron County and have 288 and 48 tribal members, respectively.
 8 The Shivwits Band of Paiutes is located in Washington County and has approximately
 9 305 tribal members (PITU, 2017). The populations associated with these reservations are
 10 included in the county populations.

11 Under baseline conditions, six census tracts are exposed to 67 dB DNL (see Figure 3-13
 12 and Figure 3-14). Approximately 12 to 22 of the population in an area exposed to 65 to
 13 70 dB DNL is highly annoyed by noise (see Table 3-5) (U.S. Air Force, 2016a). An
 14 estimated 4,159 people live within the affected area. Table 3-36 presents the residential
 15 populations of concern for environmental justice within the affected area. Table 3-37
 16 presents the children and elderly population data comparable to that provided for the
 17 environmental justice populations. Three schools are located within the 65- to 69-dBA or
 18 greater noise contours (see Figure 3-14). No Native American settlements are within the
 19 65-dB DNL or greater noise thresholds associated with subsonic noise (see Figure 3-13).

20 **Table 3-36. Environmental Justice Populations in the Baseline Affected Area**
 21 **(65–69 dB DNL)**

State	Census Tract	Special Use Airspace (SUA)	Total Population in the Affected Area	Total Minority	Percent Minority	Total Low-Income	Percent Low-Income
Nevada	9501	Caliente	1,915	205	10.7%	300	15.7%
Nevada	9502	Caliente	422	79	18.7%	57	13.5%
Nevada	9502	Coyote	453	46	10.2%	65	14.3%
Nevada	9602	Coyote	128	16	12.5%	20	15.6%
Utah	1103	Caliente	787	89	11.3%	158	20.1%
Utah	2702	Caliente	277	18	6.5%	25	9.0%
Utah	2703	Caliente	177	45	25.4%	36	20.3%

dB = decibel; DNL = day-night average sound level; SUA = Special Use Airspace

22 **Table 3-37. Youth and Elderly Populations in the Baseline Affected Area**
 23 **(65–69 dB DNL)**

State	Census Tract	Special Use Airspace (SUA)	Total Population in the Affected Area	Total Youth	Percent Youth	Total Elderly	Percent Elderly
Nevada	9501	Caliente	1,915	431	22.5%	306	16.0%
Nevada	9502	Caliente	422	146	34.6%	75	17.8%
Nevada	9502	Coyote	453	186	41.1%	54	11.9%
Nevada	9602	Coyote	128	29	22.7%	21	16.4%
Utah	1103	Caliente	787	219	27.8%	93	11.8%
Utah	2702	Caliente	277	93	33.6%	40	14.4%
Utah	2703	Caliente	177	51	28.8%	37	20.9%

dB = decibel; DNL = day-night average sound level; SUA = Special Use Airspace

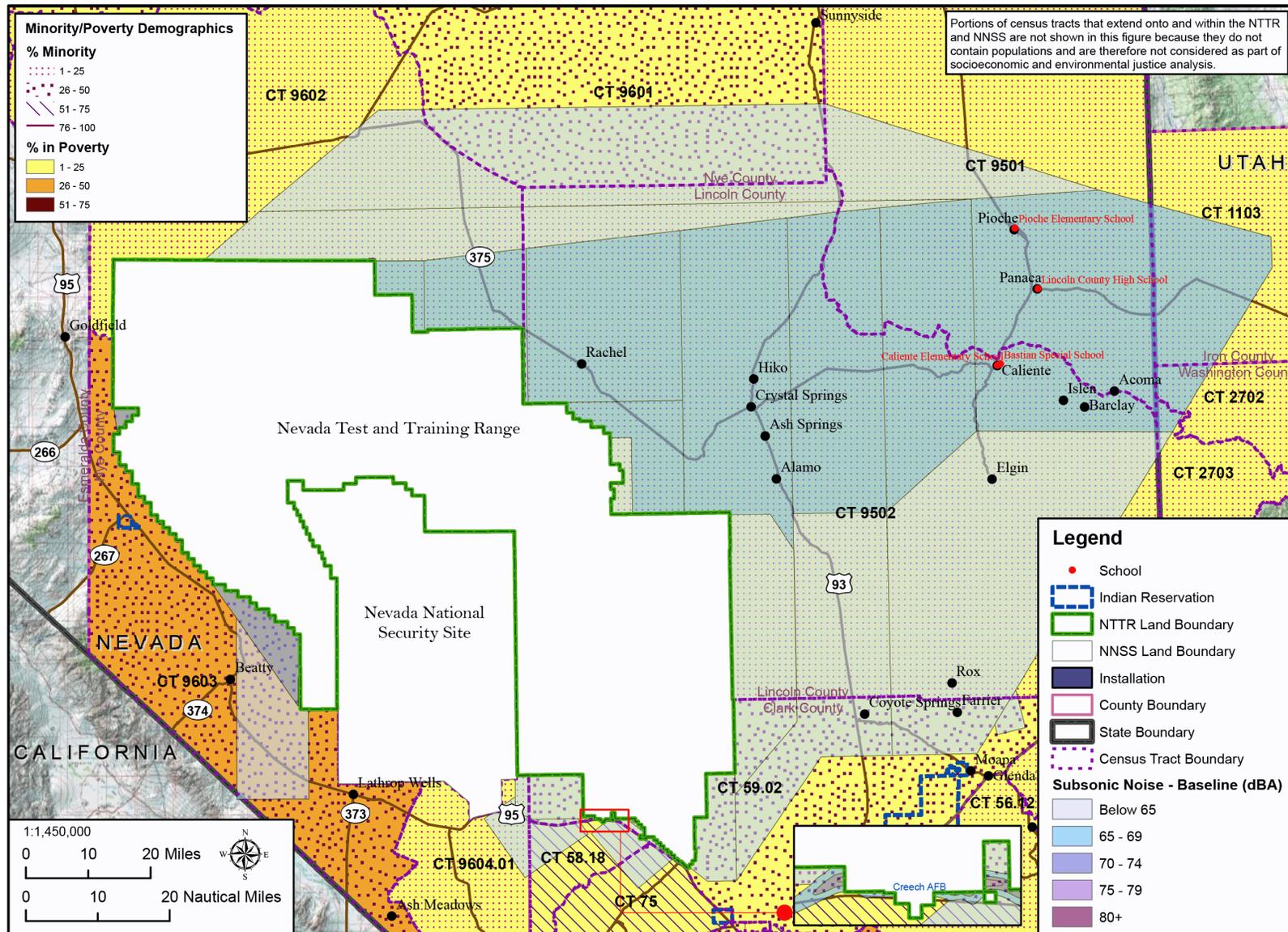


Figure 3-13. Environmental Justice Communities of Concern Exposed to Subsonic Noise

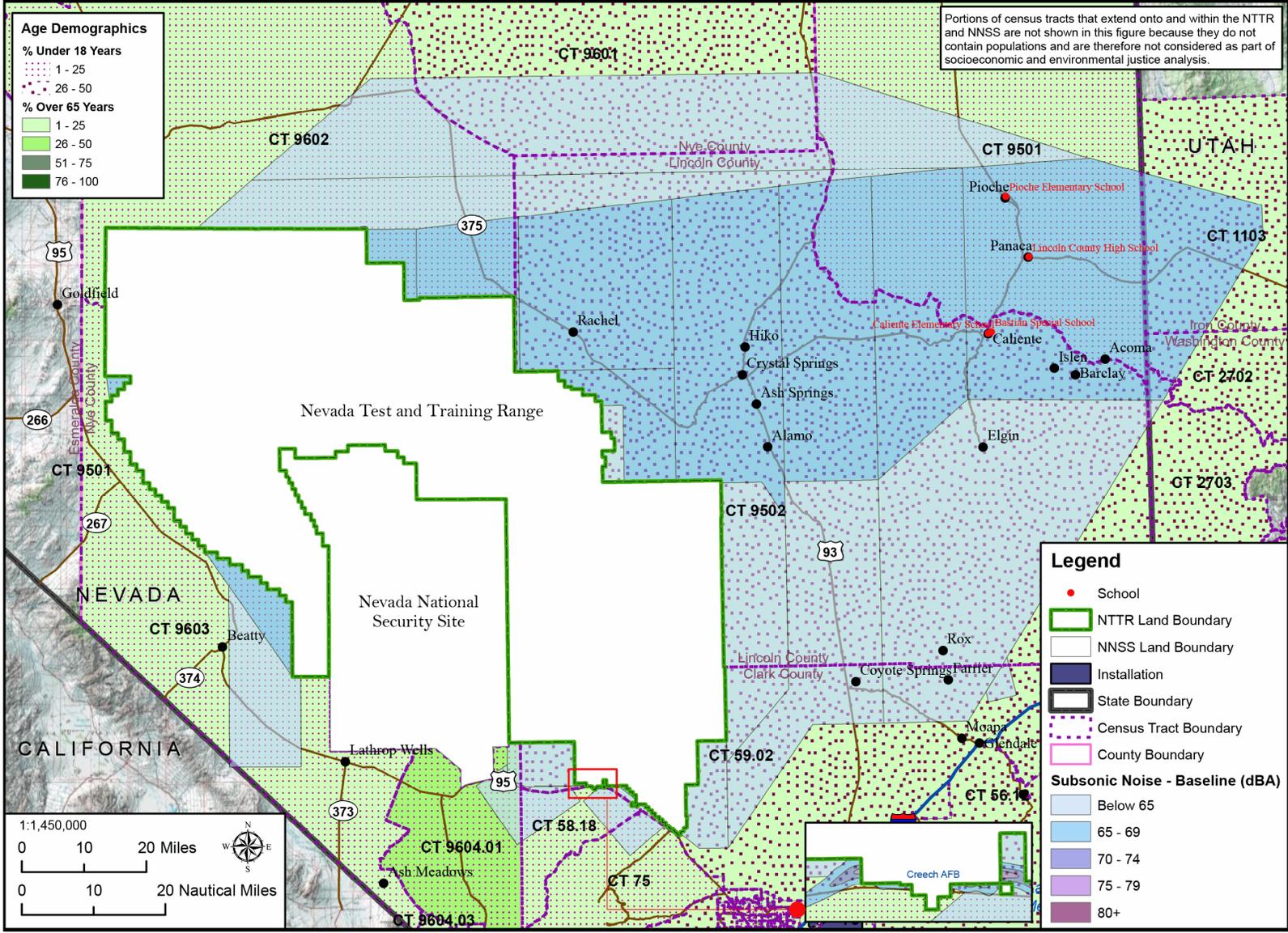


Figure 3-14. Youth and Elderly Populations Exposed to Subsonic Noise

1 Under baseline conditions, there are no census tracts outside of the NTTR boundary
2 that are exposed to 62 CDNL or greater due to supersonic booms (see Section 3.2,
3 Noise, Table 3-8, Summary of CDNL Values for SUA, and Figure 3-15 and Figure 3-16).

4 As shown in Figure 3-17 and Figure 3-18, only a portion of Census Tract 59.02 outside
5 the NTTR boundary is exposed to 62 CDNL or greater. A review of satellite image
6 reveals that there are no populations residing within the areas exposed to 62 CDNL or
7 greater under baseline conditions. There are also no noise-sensitive locations such as
8 schools, hospitals, or Indian Reservations within this area.

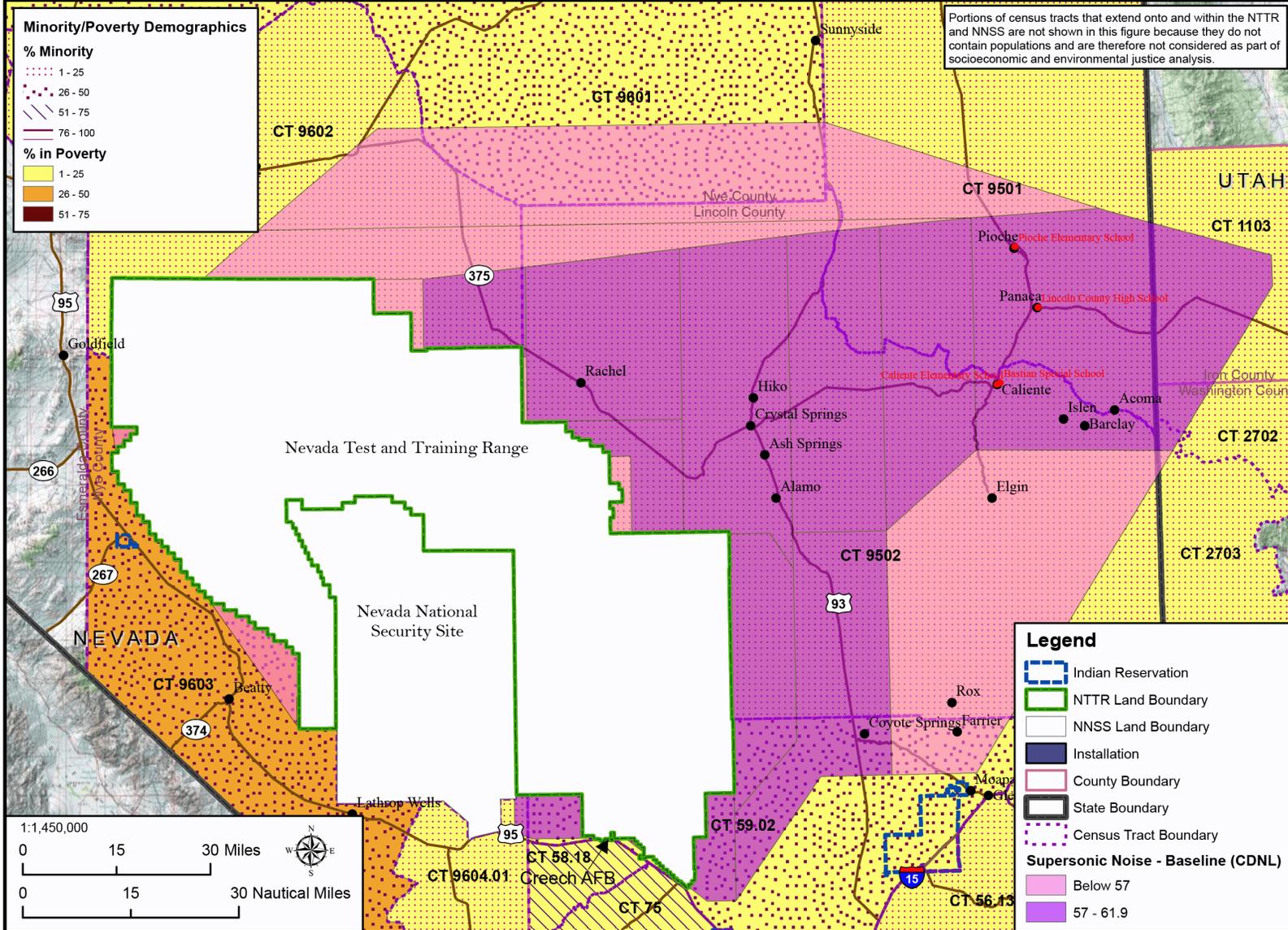
9 **3.7.2 Environmental Consequences**

10 This section discusses the potential impacts to environmental justice populations and
11 youth and elderly populations under each alternative. For each alternative, any new or
12 additional aircraft operations, munition uses, ground disturbance, or emitter placement
13 proposed for the use on the existing NTTR boundary would require separate NEPA
14 analysis to determine whether environmental justice populations would be
15 disproportionately impacted and whether children or elderly are at a high and adverse
16 risk. Future NEPA analysis would be focused on site-specific information and analysis
17 would be more specific to a local population.

18 The tribal communities surrounding the NTTR in Clark, Nye, and Lincoln Counties were
19 identified early in the LEIS process as an environmental justice community of concern.
20 Tribal communities have a unique political and cultural perspective of environmental
21 health impacts that might not be captured in a traditional analysis. In order to gain local
22 tribal perspectives, the Native American tribes will be providing input on the LEIS with
23 regard to the potential impacts to Native Americans and their communities associated
24 with the Proposed Action and alternatives. The Air Force continues to engage with the
25 tribal communities regarding the proposal and the LEIS (see Section 3.9, Cultural
26 Resources).

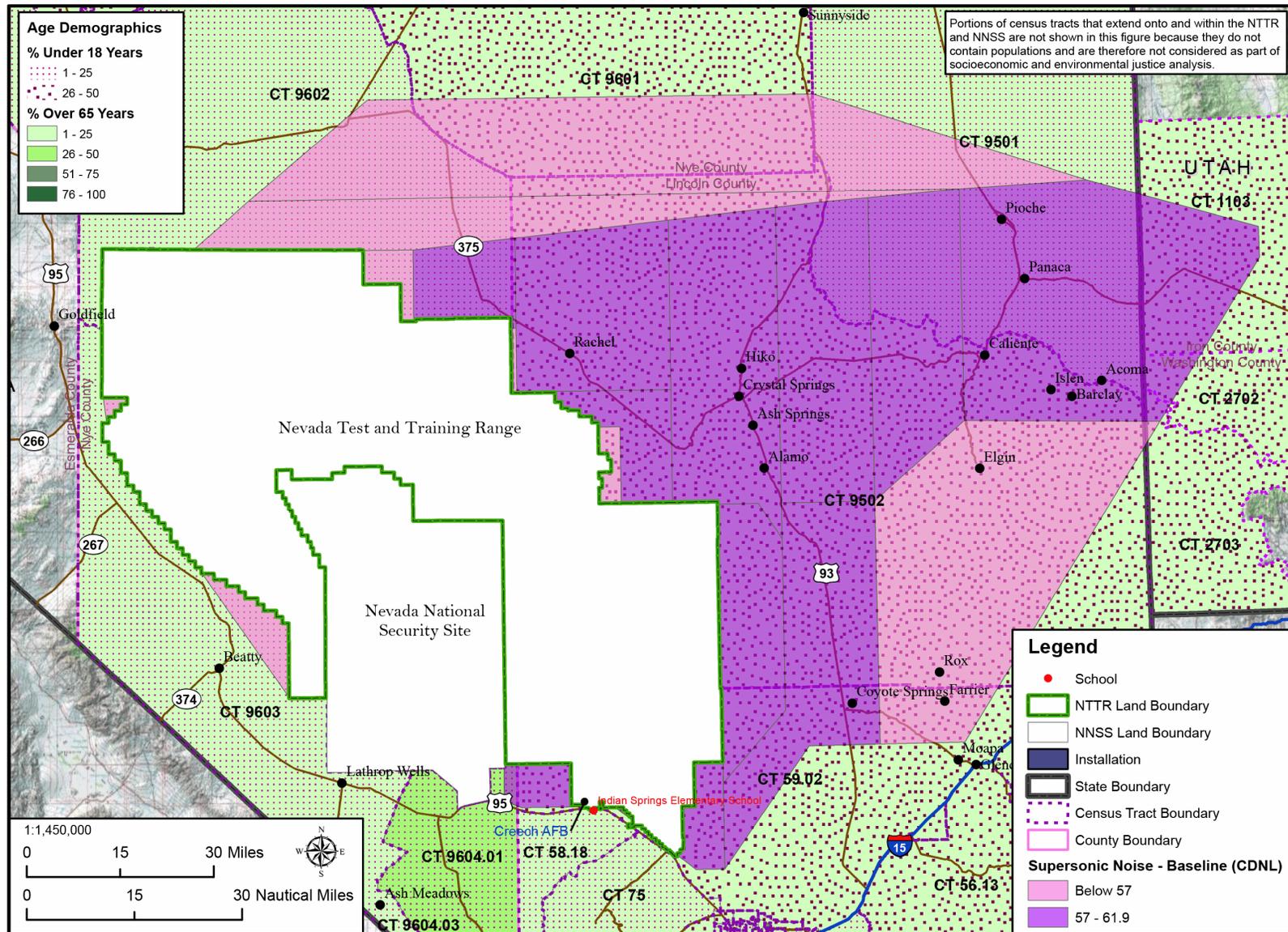
27 **3.7.2.1 Analysis Methodology**

28 Analysis of environmental justice is conducted pursuant to EO 12898, *Federal Actions*
29 *to Address Environmental Justice in Minority Populations and Low-Income Populations*,
30 and EO 13045, *Protection of Children from Environmental Health Risks and Safety*
31 *Risks*, and follows the guidelines outlined in the Air Force EIAP (U.S. Air Force, 2014d).
32 Environmental justice analysis of aircraft operations focuses on the minority and low-
33 income populations in the affected area defined as those areas outside the NTTR
34 boundary that are exposed to noise levels of 65 dB DNL or greater associated with
35 subsonic aircraft noise and noise levels of 62 CDNL or greater associated with
36 supersonic aircraft noise.



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Figure 3-15. Environmental Justice Communities of Concern Exposed to Supersonic Boom Noise



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Figure 3-16. Youth and Elderly Populations Exposed to Supersonic Boom Noise

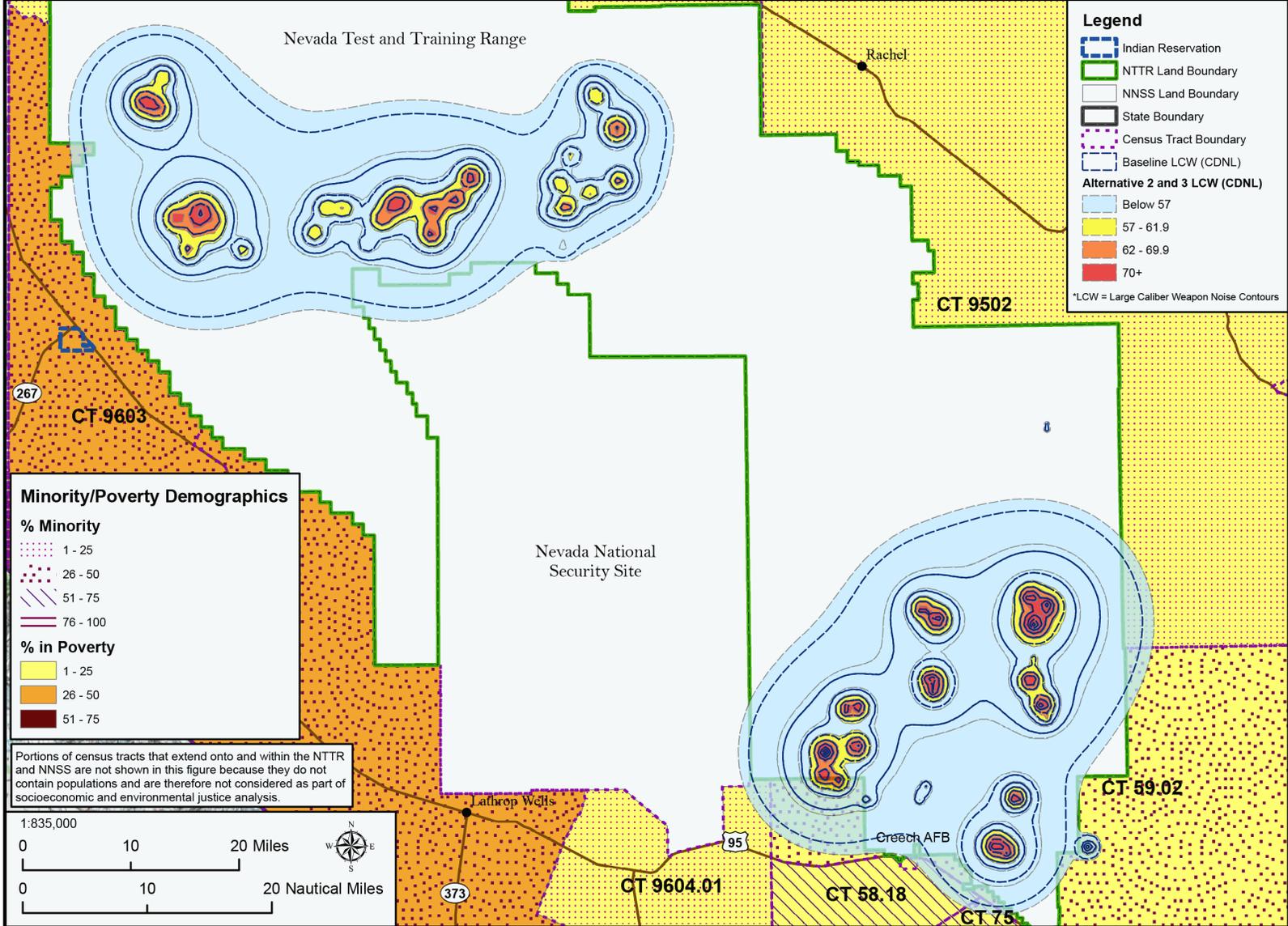


Figure 3-17. Environmental Justice Communities of Concern Exposed to Large-Caliber Weapon Noise

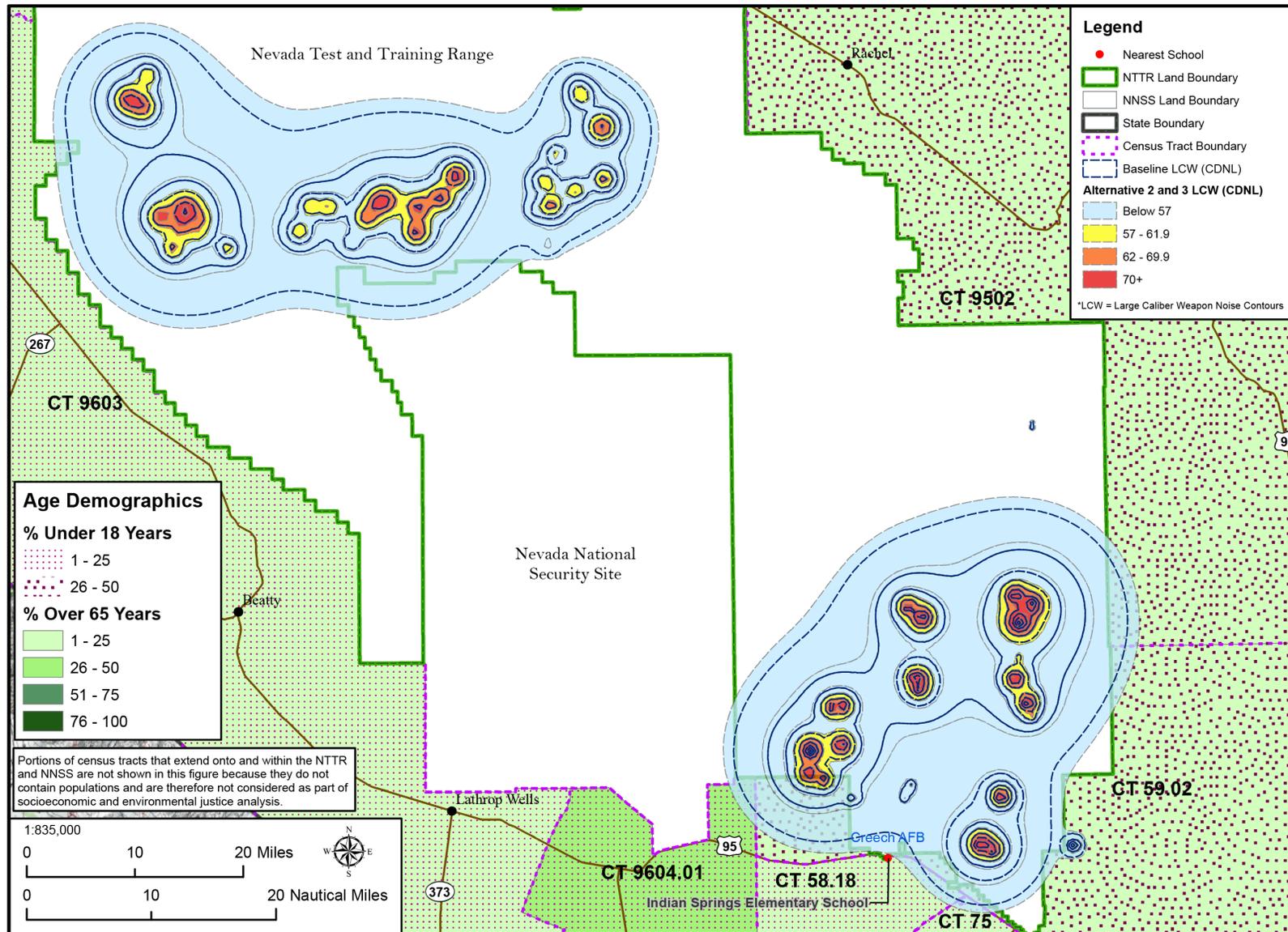


Figure 3-18. Youth and Elderly Populations Exposed to Large-Caliber Weapon Noise

1 For munitions use, environmental justice analysis focuses on the minority and low-
2 income populations in the affected area defined as those areas outside the NTTR
3 boundary that are exposed to noise levels of 62 CDNL or greater. As stated in Section
4 3.2, Noise, munitions-generated noise of 62 dB CDNL consists of sound at different
5 frequencies and, in terms of human annoyance, is equivalent to aircraft noise at 65 dB
6 DNL and is, therefore, used as the threshold for environmental justice analysis for
7 supersonic and munitions use. These thresholds are based on suggested land use
8 compatibility with residential land use (AFI 32-7063). For this analysis, calculated noise
9 contours of these thresholds would be considered adverse and the affected area, or
10 ROI, represents residential areas that experience annual average noise levels of 65 dB
11 DNL or greater for subsonic aircraft noise and 62 CDNL or greater for supersonic
12 aircraft noise and large-caliber weapons.

13 In accordance with Air Force EIAP guidelines, the COC in environmental justice
14 analysis is the “smallest set of Census data encompassing the ROI for each resource
15 and is used to establish appropriate threshold for comparison analysis” (U.S. Air Force,
16 2014d). For minority, low-income, youth, and elderly populations, the most recent ACS
17 2010–2014 data for census tracts was the data used to calculate the ROI, and the
18 county data that encompasses the affected area is the COC. The affected area (or ROI)
19 was calculated by using GIS to overlap the noise contours onto the census tract data.
20 The proportion of the area covered in each census tract was then applied to the total
21 population in the entire tract to determine the population within the affected area. The
22 percentages for minority, low-income, youth, and elderly provided in the ACS 2010–
23 2014 five-year estimate, were then applied to the population in the affected area for
24 each census tract to determine the number of people in each census tract that would
25 comprise those population categories.

26 The potential for disproportionate impacts to occur to minority or low-income
27 populations was first assessed by determining the extent of these populations within the
28 ROI. This is done by comparing the percent of each minority and low-income population
29 in the respective ROI against the percent of each associated population in the
30 respective COC. If the ROI percent is less than the COC percent (i.e., there are fewer
31 minority or low-income populations within the ROI than the COC), then there would be
32 no potential for disproportionate impacts. If, however, the ROI percent of these
33 populations is greater than or equal to the respective COC percent there would be the
34 potential for disproportionate effects that may require mitigation (U.S. Air Force, 2014d).
35 Analysis then focused on the distribution of known impacts within the ROI and the
36 potential to disproportionately impact identified minority and/or low-income populations
37 as compared to other populations within the ROI.

38 **3.7.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of** 39 **NTTR (North and South Range) – Status Quo**

40 With Alternative 1, the NTTR boundary would remain as under baseline conditions.
41 Aircraft, operations, munitions use, ground disturbance, and emitter operations would
42 continue as described under baseline conditions.

1 The noise environment from aircraft operations associated with Alternative 1 would
2 remain similar to existing conditions. No significant noise or safety impacts were
3 identified for Alternative 1 (Section 3.2, Noise, and Section 3.13, Health and Safety),
4 and, therefore, no disproportionately high and adverse impacts to environmental justice
5 communities and no disproportionately high and adverse environmental health and
6 safety impacts to children are anticipated from aircraft operations with this alternative.

7 With Alternative 1, munitions use would continue as under existing conditions, and
8 noise levels of 62 CDNL outside of the NTTR boundary would not extend into populated
9 areas (see Figure 3-17). Therefore, no disproportionately high and adverse impacts to
10 environmental justice communities and no disproportionately high and adverse
11 environmental health and safety impacts to children are anticipated from munitions use
12 with this alternative.

13 Any ground disturbance associated with construction or troop movement would occur
14 within the existing NTTR boundary. No adverse noise or safety impacts associated with
15 ground disturbance have been identified that would impact the public (see Section 3.2,
16 and Section 3.13). There would be no ground disturbance performed on or in close
17 proximity to cultural or historical sites or other noise-sensitive areas. Therefore, no
18 disproportionately high and adverse impacts to environmental justice communities or
19 disproportionately high and adverse environmental health and safety impacts to children
20 would be anticipated from ground disturbance under this alternative.

21 No adverse noise or safety impacts associated with existing emitter operations have
22 been identified that would impact the public (see Section 3.2 and Section 3.13).
23 Therefore, no disproportionately high and adverse impacts to environmental justice
24 communities or disproportionately high and adverse environmental health and safety
25 impacts to children would be anticipated from emitter operations under this alternative.

26 **3.7.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready** 27 **Access in the North and South Ranges**

28 With Alternative 2, the NTTR boundary would be the same as for Alternative 1, but with
29 additional “ready access” in the South Range as well as the North.

30 The six census tracts and the associated environmental justice and youth/elderly
31 populations residing under the Caliente and Coyote SUAs (shown in Table 3-36 and
32 Table 3-37) that are currently exposed to 65 to 69 dB DNL associated with subsonic
33 aircraft noise would continue to be exposed to this range of noise under Alternative 2 as
34 they are under Alternative 1. Therefore, no disproportionately high and adverse impacts
35 to environmental justice communities or disproportionately high and adverse
36 environmental health and safety impacts to children would be anticipated from aircraft
37 operations resulting in subsonic noise over and above current baseline conditions with
38 Alternative 2.

39 The portions of census tracts 9501, 9502, 1103, 2702, and 2703 under the Caliente
40 SUA that are currently exposed to noise levels of 61 CDNL due to the five supersonic

1 booms per day would be exposed to noise levels of 62 CDNL due to an increase of one
 2 supersonic boom per day for a total of six booms per day. Since the noise change
 3 would be experienced across the region equally, there would be no disproportionately
 4 high and adverse impacts to environmental justice communities or disproportionately
 5 high and adverse environmental health and safety impacts to children would be
 6 anticipated from aircraft operations resulting in supersonic noise over and above current
 7 baseline conditions with Alternative 2.

8 A comparison of the census tracts in the affected area from supersonic booms to the
 9 associated county in which they are located indicates that census tract 9502 has a
 10 higher percentage of minority population than Lincoln County (see Table 3-38).
 11 Additionally, there are four schools located in census tracts 9501 and 9502 in Lincoln
 12 County, Nevada, that would be affected by a CDNL of 62.

13 As shown in Table 3-38, census tract 2703 in Washington County, Utah has a higher
 14 percent of minority and low-income than Washington County. However, a satellite
 15 image review of the portion of census tract 2703 within the 62 and greater CDNL
 16 indicates that there are no residential areas located under the 62 and greater CDNL.

17 **Table 3-38. Environmental Justice Populations Under Alternative 2 in the Affected Area**
 18 **(62 or greater CDNL)**

State	County	Geographic Unit	Total Minority	Percent Minority	Disproportionate	Total Low-Income	Percent Low-Income	Disproportionate
Nevada	Lincoln	CT 9501	205	10.7%	N	300	15.7%	N
Nevada	Lincoln	CT 9502	79	18.7%	Y	57	13.5%	N
Nevada	Lincoln	County	879	16.6%	-	856	16.2%	-
Utah	Iron	CT 1103	89	11.3%	N	158	20.1%	N
Utah	Washington	CT 2702	18	6.5%	N	25	9.0%	N
Utah	Washington	CT 2703	45	25.4%	Y	36	20.3%	Y
Utah	Iron	County	6,143	13.1%	-	10,422	22.8%	-
Utah	Washington	County	21,123	14.6%	-	22,131	15.5%	-

CT= census tract; CDNL = C-weighted day-night average sound level; CT= census tract; N = no; Y= yes

19 Census tracts 9501 and 1103 do not have a higher percent of the population minority or
 20 low-income compared to Lincoln and Iron County, respectively, and, therefore, no
 21 disproportionate impacts would be anticipated to these areas. As shown in Figure 3-19,
 22 the Pine Park Campground is located within the 62 CDNL noise range under Alternative
 23 2. The Pine Park Campground is a primitive campsite with several trails for recreational
 24 purposes. Noise associated with supersonic booms (Figure 3-20) would be sporadic
 25 and temporary and would likely be moderately disruptive at times but would not add
 26 measurably to the overall CDNL and, therefore, would not be significant to recreational
 27 users.

28 Table 3-39 shows which census tracts have a higher percent of youth (under 18 years)
 29 and elderly (65 years and older) than the counties they are located within.

**Table 3-39. Youth and Elderly Under Alternative 2 in the Affected Area
(62 or Greater CDNL)**

State	County	Geographic Unit	Total Youth	Percent Youth	ROI>COC	Total Elderly	Percent Elderly	ROI>COC
Nevada	Lincoln	CT 9501	431	22.5%	N	306	16.0%	N
Nevada	Lincoln	CT 9502	146	34.6%	Y	75	17.8%	Y
Nevada	Lincoln	County	1,399	26.5%	-	929	17.5%	-
Utah	Iron	CT 1103	219	27.8%	N	93	11.8%	Y
Utah	Washington	CT 2702	93	33.6%	Y	40	14.4%	N
Utah	Washington	CT 2703	51	28.8%	N	37	20.9%	Y
Utah	Iron	County	13,916	29.8%	-	4,966	10.6%	-
Utah	Washington	County	42,378	29.2%	-	26,611	18.4%	-

> = greater than; CDNL = C-weighted day-night average sound level; COC = community of comparison; CT= census tract; N = no; ROI = region of influence; Y= yes

With Alternative 2, potential impacts to environmental justice communities and youth/elderly populations from munitions use would be similar to those described under Alternative 1. Munitions use would continue as under existing conditions, and noise levels of 62 dB CDNL outside of the NTTR boundary would not extend into populated areas (see Figure 3-17). Therefore, no disproportionately high and adverse environmental health and safety impacts to children would be anticipated from munitions use under this alternative.

Ground disturbance could take place on the South Range with Alternative 2. No adverse noise or safety impacts associated with ground disturbance have been identified that would impact the public (see Section 3.2 and Section 3.13). There would be no ground disturbance performed on or in close proximity to cultural or historical sites or other noise-sensitive areas. Therefore, no disproportionately high and adverse impacts to environmental justice communities or disproportionately high and adverse environmental health and safety impacts to children would be anticipated from ground disturbance with Alternative 2.

Emitter operations could take place on the South Range with Alternative 2. No adverse noise or safety impacts associated with existing emitter operations have been identified that would impact the public (see Section 3.2 and Section 3.13). Therefore, no disproportionately high and adverse impacts to environmental justice communities or disproportionately high and adverse environmental health and safety impacts to children would be anticipated from emitter operations with Alternative 2.

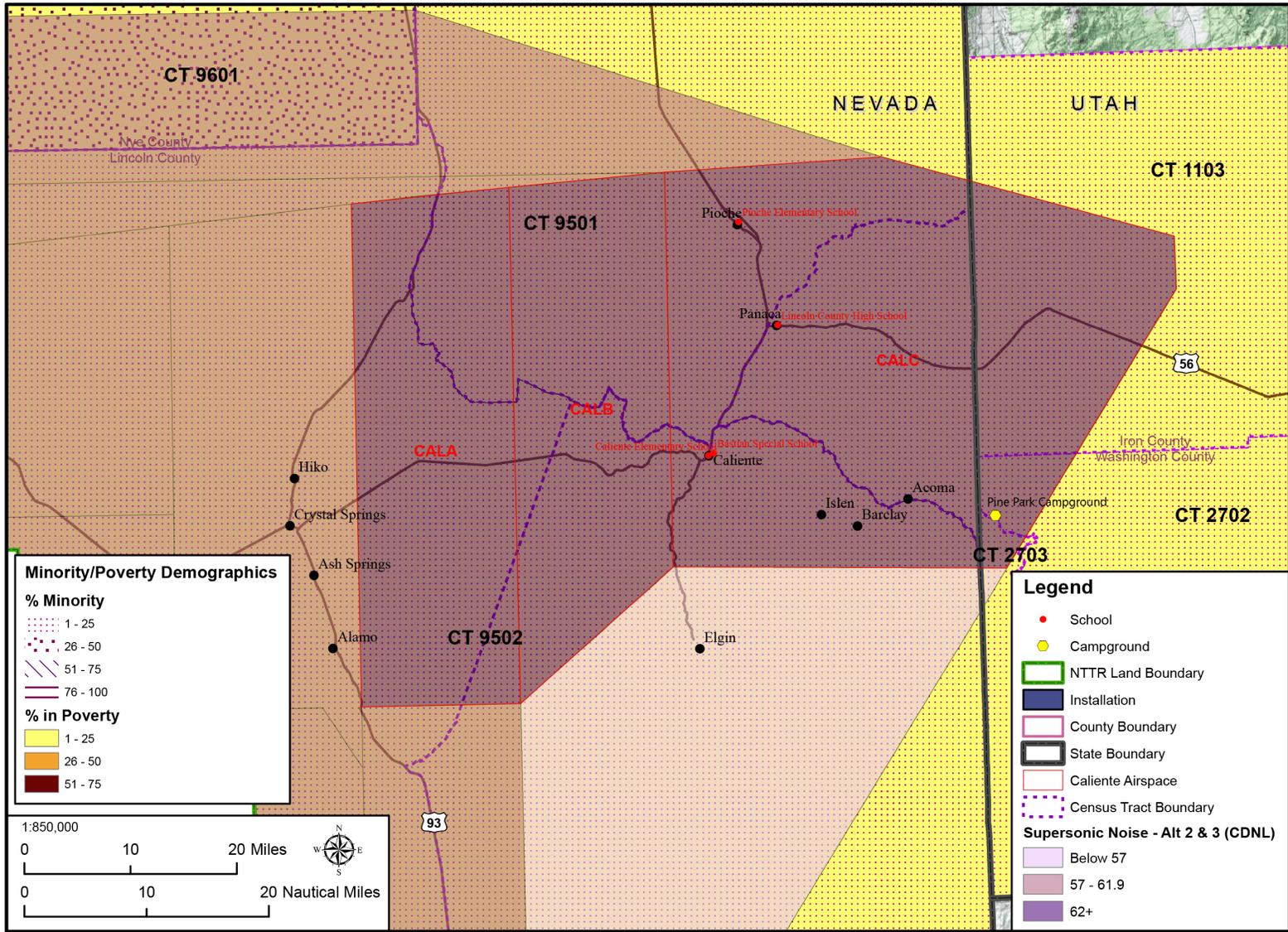


Figure 3-19. Environmental Justice Communities of Concern Exposed to Supersonic Boom Noise Under Alternatives 2 and 3

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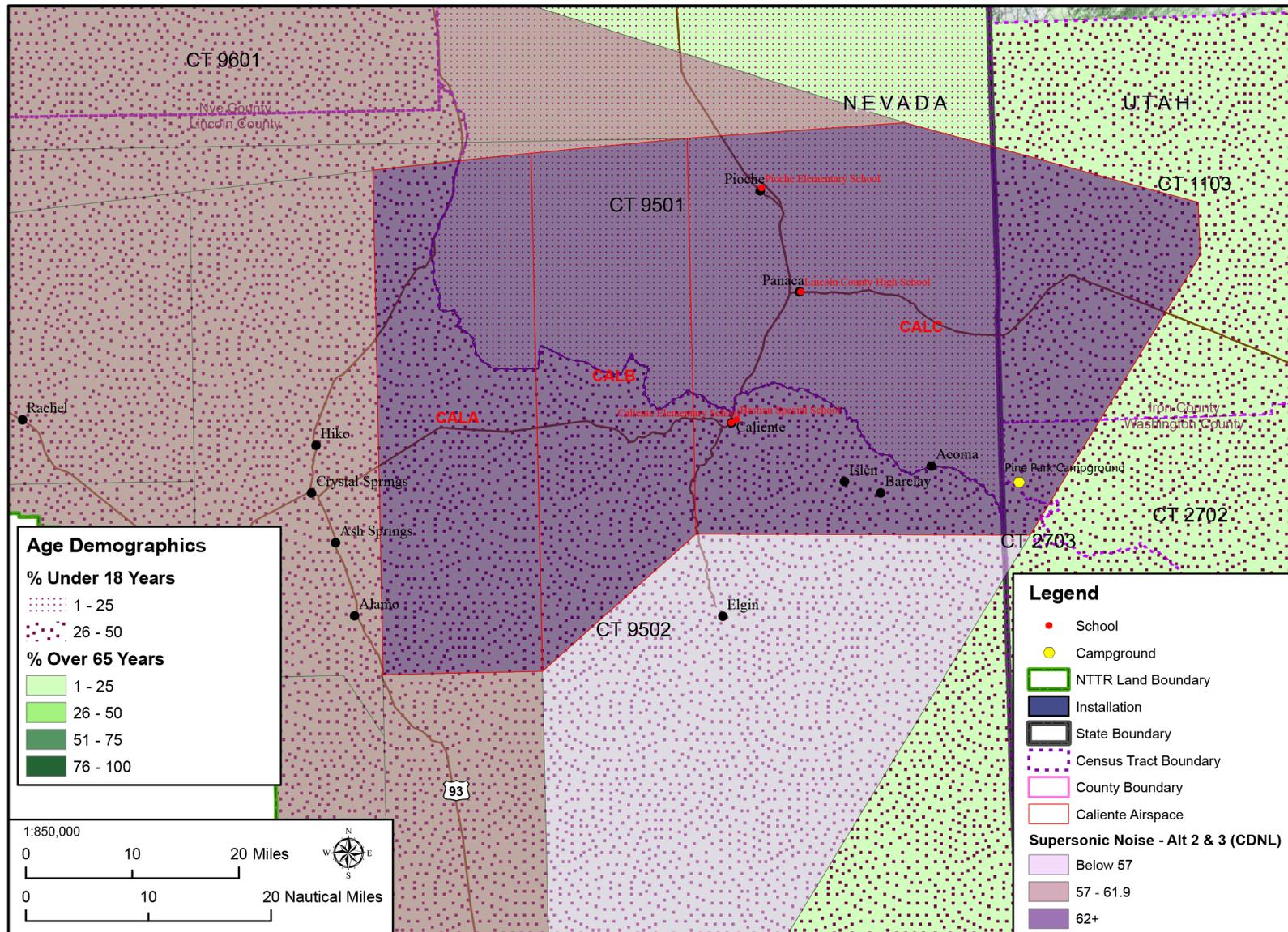


Figure 3-20. Youth and Elderly Populations Exposed to Supersonic Boom Noise Under Alternatives 2 and 3

1 **3.7.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR**

2 Alternative 3 includes subalternatives, as described in Section 2.3.3:

- 3 • Alternative 3A – Range 77 – EC South Withdrawal
- 4 • Alternative 3A-1 – Amended Range 77 – EC South Withdrawal
- 5 • Alternative 3B – Range 64C/D and 65D Withdrawal and Administrative
- 6 Incorporation
- 7 • Alternative 3C – Alamo Withdrawal

8 For Alternatives 3A, 3A-1, 3B, and 3C, the potential impacts to environmental justice
9 and youth and elderly populations resulting from supersonic and subsonic aircraft noise,
10 as well as munitions use, would be similar to those described for Alternative 2. Similar
11 to Alternative 2, the six census tracts and the associated environmental justice and
12 youth/elderly populations residing under the Caliente and Coyote SUAs (shown in Table
13 3-36 and Table 3-37) that are currently exposed to 65 to 69 dB DNL associated with
14 subsonic aircraft noise would continue to be exposed to this range of noise under this
15 alternative. Therefore, no disproportionately high and adverse impacts to environmental
16 justice communities or disproportionately high and adverse environmental health and
17 safety impacts to children would be anticipated from aircraft operations resulting in
18 subsonic noise over and above current baseline conditions with Alternative 3.

19 The portions of census tracts 9501, 9502, 1103, 2702, and 2703 under the Caliente
20 SUA that are currently exposed to noise levels of 61 dB CDNL due to the five
21 supersonic booms per day would be exposed to noise levels of 62 dB CDNL due to an
22 increase of one supersonic boom per day for a total of six booms per day. Since the
23 noise change would be experienced across the region equally, there would be no
24 disproportionately high and adverse impacts to environmental justice communities or
25 disproportionately high and adverse environmental health and safety impacts to children
26 would be anticipated from aircraft operations resulting in supersonic noise over and
27 above current baseline conditions with Alternative 3.

28 Munitions use would continue as under existing conditions, and noise levels of 62 dB
29 CDNL outside of the NTTR boundary would not extend into populated areas (see Figure
30 3-17). Therefore, no disproportionately high and adverse environmental health and
31 safety impacts to children would be anticipated from munitions use under this
32 alternative.

33 Fencing would be the only ground-disturbing activity that would occur within the
34 proposed Alternative 3A, 3A-1, and 3B expansion areas. The fencing would not create
35 annoying noise levels and would be short term in duration. For Alternative 3C, no
36 adverse noise or safety impacts associated with ground disturbance have been
37 identified that would impact the public (see Section 3.2, Noise, and Section 3.13, Health
38 and Safety), and there would be no ground disturbance performed on or in close
39 proximity to cultural or historical sites or other noise-sensitive areas. Therefore, no
40 disproportionately high and adverse impacts to environmental justice communities or

1 disproportionately high and adverse environmental health and safety impacts to children
2 from ground disturbance would be anticipated with Alternatives 3A, 3A-1, 3B, or 3C.

3 No emitter operations would occur within Alternative 3A, 3A-1, or 3B's proposed
4 expansion areas. For Alternative 3C, no adverse noise or safety impacts associated
5 with potential emitter operations have been identified that would impact the public (see
6 Section 3.2 and Section 3.13). Therefore, no disproportionately high and adverse
7 impacts to environmental justice communities or disproportionately high and adverse
8 environmental health and safety impacts to children from emitter operations would be
9 anticipated with Alternatives 3A, 3A-1, 3B, or 3C.

10 Under Alternative 3C, there would be potential for the FAARP to be used during training
11 activities (refueling and munitions loading of aircraft). While the proposed location
12 would likely be in an "austere" area such as a dry lake bed, the details of such locations
13 are not available at this time. The Air Force would conduct a more detailed NEPA
14 analysis once details would be available. To avoid disproportionately high and adverse
15 impacts to environmental justice populations, it would be suggested that the location of
16 the FAARP be within the NTTR boundaries or in an area that does not result in adverse
17 noise or environmental impacts to minority and low-income populations and not be near
18 sensitive areas such as schools or recreational areas to avoid posing special health and
19 safety risks to children and elderly populations.

20 Several recreational areas would be affected under this alternative. Recreational areas
21 affected by Alternative 3C are shown in Figure 2-14 and Figure 2-15. Key recreational
22 areas listed in Section 2.3.3.4 would continue to be accessible to the public.
23 Approximately 57 percent of Nevada residents participate in outdoor recreation each
24 year (Outdoor Industry Association, 2017). Throughout the state of Nevada outdoor
25 recreation generates \$14.9 billion in consumer spending, 148,000 direct jobs, one billion
26 dollars in state and local tax revenue, and \$4.8 billion in wages and salaries (Outdoor
27 Industry Association, 2017). Data on the number of users and demographics of
28 recreational users is not available for each of the different recreational areas affected;
29 however, since the recreational areas are open to the general public, it would be
30 assumed that any impacts associated with closures or restricted access to recreational
31 areas would impact the general public and would not have a disproportionate impact on
32 environmental justice populations.

33 **3.7.2.5 Alternative 4 – Establish the Period of Withdrawal**

34 The proposed withdrawal periods associated with Alternative 4—Alternative 4A (20-year
35 withdrawal period), Alternative 4B (50-year withdrawal period), and Alternative 4C
36 (indefinite)—must be implemented in conjunction with one or more of the other
37 alternatives or subalternatives. Because Alternative 4 reflects periods of time, which do
38 not in and of themselves affect environmental justice communities, there are no specific
39 impacts associated with Alternative 4, except to provide a point in time at which impacts
40 from other chosen alternatives may end.

1 **3.7.2.6 No Action Alternative**

2 With the No Action Alternative, populations currently exposed to noise levels above
3 65 dB DNL associated with current activities on the NTTR would continue to be
4 exposed to these levels because the Air Force does not plan to give up the restricted
5 airspace. However, the ground areas beneath the airspace would no longer be used for
6 test and training associated with live munitions. Activities associated with the NTTR are
7 an important economic contributor and with the No Action Alternative, there would be a
8 loss of employment, income, and expenditures throughout Clark, Lincoln, Nye Counties.
9 Adverse socioeconomic impacts would affect the general public and would not only
10 impact minority, low-income, youth, and elderly populations. Therefore, no
11 disproportionate impacts to environmental justice populations are anticipated with this
12 alternative.

13 **3.8 BIOLOGICAL RESOURCES**

14 **3.8.1 Affected Environment**

15 **3.8.1.1 Description of Resource**

16 Biological resources include vegetation and wildlife species and their associated
17 habitats, aquatic and wetland habitats, special status species and habitats, and
18 federally listed species. These categories are detailed below.

19 **3.8.1.2 Region of Influence**

20 The geographical scope of this analysis includes the land boundary within the existing
21 NTTR as well as the proposed alternative expansion areas. In addition, the overlying
22 airspace (see Figure 1-1) as it applies to biological resources is discussed in Section
23 3.8.2.

24 The NTTR overlaps two biogeographic regions of the Great Basin and is divided into the
25 South Range, which lies in the eastern Mojave Desert, and the North Range, which lies
26 in the southern Great Basin Desert. This zone of transition between the Mojave and
27 Great Basin Deserts has low- to mid-elevation ranges with valleys oriented north to
28 south. The valley bottoms of the South Range vary in elevation from approximately
29 3,000 to 3,600 feet, whereas the valley bottoms of the North Range are approximately
30 4,500 to 5,500 feet. Mountain range elevations exceed 6,000 feet on the South Range
31 and 8,500 feet on the North Range (U.S. Air Force, 1999). Geology varies from
32 limestone/dolomite in the south to volcanic fields in the north. Natural sources of water
33 are scarce across most of the NTTR. Annual precipitation ranges from 3 to 5 inches in
34 the basins to 16 inches in upper elevations of mountains (U.S. Air Force, 1999). Many
35 plant and wildlife species are distinctly associated with either the Mojave Desert or the
36 Great Basin Desert while others occur in both, depending on local climatic or historical
37 conditions.

For the Native American perspective on information in this section, please see Appendix K, paragraph 3.8.1.1.1 and Tables 1 and 2.