NEVADA TEST AND TRAINING RANGE (NTTR) LAND WITHDRAWAL

Legislative Environmental Impact Statement

December 2017 • DRAFT

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PRIVACY ADVISORY

This Draft Legislative Environmental Impact Statement (LEIS) is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 Code of Federal Regulations [CFR] §§1500–1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

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

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 Personal home addresses and phone numbers will not be published in the Final LEIS.

You can submit comments on the web at www.nttrleis.com or via mail:
99th Air Base Wing Public Affairs
4430 Grissom Ave. Suite 107
Nellis AFB, Nevada 89191

Deadline for comments submittal (postmarked):
March 8, 2018

Questions can be directed to Nellis Public Affairs office at 702-652-2750 or e-mail at 99ABW.PAOutreach@us.af.mil.

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COVER SHEET

a. *Responsible Agency*: U.S. Air Force

b. *Cooperating Agencies*: Bureau of Land Management (BLM); the U.S. Department of Energy (DOE) and the National Nuclear Security Administration (NNSA); the U.S. Fish and Wildlife Service (USFWS) – Refuge and Ecological Services divisions; the Nevada Department of Wildlife (NDOW); and the Nevada Association of Counties (NACO).

c. *Proposals and Actions*:

This Draft Legislative Environmental Impact Statement (LEIS) describes the potential consequences to the human environment from the proposed implementation of various alternatives for extending the withdrawal and expanding the boundaries of the Nevada Test and Training Range (NTTR) from the public domain for defense related purposes. The current withdrawal will expire on November 6, 2021, unless Congress enacts legislation to extend it.

d. *Comments and Inquiries*: Written comments on this document should be submitted via the website at www.NTTRLEIS.com or directed to 99th Air Base Wing Public Affairs, 4430 Grissom Ave. Suite 107, Nellis AFB, Nevada 89191. The Nellis Public Affairs office may be reached by telephone at 702-652-2750 or e-mail at 99ABW.PAOutreach@us.af.mil. To ensure the Air Force has sufficient time to include public input in the preparation of the Final LEIS, written comments from the public should be submitted by March 8, 2018.

e. *Designation*: Draft Legislative Environmental Impact Statement

f. *Abstract*: This Draft LEIS has been prepared in accordance with the National Environmental Policy Act (NEPA) to analyze the potential environmental consequences of the NTTR land withdrawal extension and proposed expansion. The Air Force proposes to withdraw and reserve public lands for military use to support the utilization and modernization of the NTTR by enhancing range capability for improved training and testing. The NTTR is the preeminent range for testing and evaluation of weapons systems, tactics development, and advanced combat training; however, the range and its infrastructure are quickly becoming outdated as rates of technological development of new weapons systems and electronic warfare systems accelerate.

The current withdrawal will expire on November 6, 2021, unless Congress enacts legislation to extend it. Congress has reserved the authority for renewing the NTTR land withdrawal for itself, through the *Defense Withdrawal Act of 1958* (43 United States Code Sections 155–158), and will make the final decision through legislation on whether to extend the current withdrawal and/or expand the boundaries of the current NTTR land withdrawal. The LEIS is the detailed environmental statement required by law that will support the legislative proposal and is programmatically evaluating alternatives which would extend the current military land withdrawal or expand the land withdrawal in order to safely execute its missions in a more realistic and operationally relevant manner.

This LEIS analyzes potential impacts associated with airspace, noise, air quality, land use, wilderness, socioeconomics, environmental justice, biological resources, cultural resources, earth resources, water resources, hazardous materials and waste, health and safety, and transportation. The LEIS also identifies potential mitigations and best management practices that the proponent could implement to minimize or offset potential adverse impacts.

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Document Organization

VOLUME I

COVER SHEET (Abstract of the Proposed Action)

TABLE OF CONTENTS (Including lists of Tables and Figures)

ACRONYMS AND ABBREVIATIONS

1 Purpose of and Need for Action

Presents the history and mission of the NTTR and the purpose and need for the proposed action.

2 Description of Alternatives

Describes the screening process and the alternatives that are analyzed in this LEIS for potential environmental impacts.

3 Affected Environment and Environmental Consequences

Presents both the existing conditions of environmental resources that may be affected by the alternatives and the potential impacts to those resources.

4 Cumulative Effects and Other Environmental Considerations

Considers the potential impacts resulting from incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, and addresses short-term uses, long-term productivity, and irretrievable commitment of resources.

5 References

Provides the bibliography entries of cited source materials.

6 List of Preparers and Contributors

Lists the individuals who prepared this LEIS.

7 List of Repositories

Lists the names and addresses where the LEIS is made available to the public.

8 Index

Lists the page numbers where various topics are discussed.

VOLUME II

APPENDICES

Appendix A	Public Involvement
Appendix B	Agency Consultation and Coordination
Appendix C	Noise
Appendix D	Air Quality
Appendix E	Visual Resources
Appendix F	Wilderness and Wilderness Study Areas
Appendix G	Socioeconomics
Appendix H	Biological Resources
Appendix I	Cultural Resources
Appendix J	Water Resources
Appendix K	Native American Perspective

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TABLE OF CONTENTS

1. PURPOSE OF AND NEED FOR ACTION 1-1
1.1 Introduction 1-1
1.2 Background 1-2
1.2.1 North Range 1-7
1.2.2 South Range 1-8
1.3 USAFWC/NTTR Mission 1-9
1.3.1 Range Requirements 1-11
1.3.2 Operationally Relevant Settings 1-12
1.4 Purpose and Need 1-15
1.4.1 Increase MCO Test/Training Capability to Meet the Demands of Strategic Guidance and Alleviate Competition for Critical MCO Electronic Assets 1-17
1.4.2 Enhance Irregular Warfare Test/Training Capability 1-22
1.4.3 Increase NTTR Operational Security and Safety 1-26
1.5 Environmental Impact Analysis Process 1-27
1.5.1 Requirements 1-27
1.5.2 Public and Agency Review 1-28
1.5.2.1 Summary of Public Scoping Process 1-29
1.5.2.2 Summary of Concerns Raised in the Public Scoping Process 1-29

2. DESCRIPTION OF ALTERNATIVES 2-1
2.1 Alternative Development and Screening Process 2-1
2.2 Application of Selection Standards 2-2
2.2.1 Increase MCO Test/Training Capability to Meet the Demands of Strategic Guidance and Alleviate Competition for Critical MCO Electronic Assets 2-5
2.2.1.1 MCO Alternatives Evaluated but Not Carried Forward 2-15
2.2.2 Enhance IW Test/Training Capability 2-18
2.2.2.1 Enhance IW Test/Training Capability – Alternatives Evaluated but Not Carried Forward 2-18
2.2.3 Increase NTTR Operational Security and Safety 2-20
2.2.3.1 Increase NTTR Operational Security and Safety – Alternatives Evaluated but Not Carried Forward 2-20
2.3 Alternatives 2-20
2.3.1 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 2-21
2.3.2 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 2-22
2.3.3 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 2-23
2.3.3.1 Alternative 3A – Range 77 – EC South Withdrawal 2-24
2.3.3.2 Alternative 3A-1 – Amended Range 77 – EC South Withdrawal 2-25
2.3.3.3 Alternative 3B – 64C/D and 65D Withdrawal and Administrative Incorporation 2-25
2.3.3.4 Alternative 3C – Alamo Withdrawal 2-28
2.3.4 Alternative 4 – Establish the Period of Withdrawal 2-32
2.3.4.1 Alternative 4A – 20-Year Withdrawal Period 2-32
2.3.4.2 Alternative 4B – 50-Year Withdrawal Period 2-32
2.3.4.3 Alternative 4C – Indefinite Withdrawal Period 2-32
2.4 No Action Alternative 2-33
2.5 Permit Requirements 2-35
2.6 General Environmental Constraints 2-37
2.7 Environmental Comparison of Alternatives 2-39
2.8 Mitigation 2-44

2.8.1 Defining a Mitigation Measure 2-44
2.8.2 Recommended Resource-Specific Mitigations and Management Actions Proposed to Reduce the Potential for Environmental Impacts 2-45
2.8.3 Unavoidable Impacts 2-52

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 3-1
3.1 Airspace 3-2
3.1.1 Affected Environment 3-2
3.1.1.1 Description of Resource 3-2
3.1.1.2 Region of Influence 3-3
3.1.1.3 Restricted Areas 3-3
3.1.1.4 Military Operations Areas 3-3
3.1.1.5 Alert Area 481 (A-481) 3-5
3.1.1.6 Low-Altitude Tactical Navigation Area 3-5
3.1.1.7 Air Refueling Routes 3-5
3.1.1.8 Military Training Routes 3-5
3.1.2 Environmental Consequences 3-6
3.1.2.1 Analysis Methodology 3-6
3.1.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of the NTTR (North and South Range) – Status Quo 3-7
3.1.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-7
3.1.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-7
3.1.2.5 Alternative 4 – Establish the Period of Withdrawal 3-8
3.1.2.6 No Action Alternative 3-8
3.2 Noise 3-8
3.2.1 Affected Environment 3-8
3.2.1.1 Description of Resource 3-8
3.2.1.2 Region of Influence 3-9
3.2.1.3 Laws and Regulations 3-10
3.2.1.4 Noise Modeling 3-10
3.2.1.5 Baseline Noise Levels 3-11
3.2.2 Environmental Consequences 3-16
3.2.2.1 Analysis Methodology 3-16
3.2.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-18
3.2.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-19
3.2.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-21
3.2.2.5 Alternative 4 – Establish the Period of Withdrawal 3-23
3.2.2.6 No Action Alternative 3-23
3.3 Air Quality 3-24
3.3.1 Affected Environment 3-24
3.3.1.1 Description of Resource 3-24
3.3.1.2 Region of Influence 3-27
3.3.1.3 Greenhouse Gas Emissions/Baseline 3-27
3.3.2 Environmental Consequences 3-28
3.3.2.1 Analysis Methodology 3-28
3.3.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-30
3.3.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-33
3.3.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-36
3.3.2.5 Alternative 4 – Establish the Period of Withdrawal 3-39
3.3.2.6 No Action Alternative 3-39

3.3.2.7 Air Emissions Alternative Comparison 3-40
3.4 Land Use, Recreation, and Visual Resources 3-41
3.4.1 Affected Environment 3-41
3.4.1.1 Description of Resource 3-41
3.4.1.2 Region of Influence 3-42
3.4.1.3 General Land Use, Ownership, and Management Plans 3-42
3.4.1.4 Recreation and Special Use Areas 3-44
3.4.1.5 Visual Resources 3-50
3.4.2 Environmental Consequences 3-57
3.4.2.1 Analysis Methodology 3-57
3.4.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-59
3.4.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-60
3.4.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-60
3.4.2.5 Alternative 4 – Establish the Period of Withdrawal 3-65
3.4.2.6 No Action Alternative 3-66
3.5 Wilderness and Wilderness Study Areas 3-66
3.5.1 Affected Environment 3-67
3.5.1.1 Description of Resource 3-67
3.5.1.2 Region of Influence 3-69
3.5.1.3 Wilderness and Wilderness Study Areas 3-69
3.5.1.4 Management Practices 3-78
3.5.2 Environmental Consequences 3-81
3.5.2.1 Analysis Methodology 3-81
3.5.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-82
3.5.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-83
3.5.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-86
3.5.2.5 Alternative 4 – Establish the Period of Withdrawal 3-91
3.5.2.6 No Action Alternative 3-93
3.6 Socioeconomics 3-94
3.6.1 Affected Environment 3-94
3.6.1.1 Description of Resource 3-94
3.6.1.2 Region of Influence 3-94
3.6.1.3 Economics 3-94
3.6.1.4 Land Use and Ownership 3-101
3.6.1.5 Population 3-102
3.6.1.6 Housing 3-102
3.6.1.7 Public Services and Facilities 3-103
3.6.1.8 Public Finance 3-104
3.6.2 Environmental Consequences 3-105
3.6.2.1 Analysis Methodology 3-105
3.6.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-106
3.6.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-107
3.6.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-107
3.6.2.5 Alternative 4 – Establish the Period of Withdrawal 3-112
3.6.2.6 No Action Alternative 3-112
3.7 Environmental Justice 3-113
3.7.1 Affected Environment 3-113
3.7.1.1 Description of Resource 3-113
3.7.1.2 Region of Influence 3-114
3.7.2 Environmental Consequences 3-119

3.7.2.1 Analysis Methodology....3-119
3.7.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo....3-124
3.7.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges....3-125
3.7.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR....3-130
3.7.2.5 Alternative 4 – Establish the Period of Withdrawal....3-131
3.7.2.6 No Action Alternative....3-132
3.8 Biological Resources....3-132
3.8.1 Affected Environment....3-132
3.8.1.1 Description of Resource....3-132
3.8.1.2 Region of Influence....3-132
3.8.1.3 Vegetation....3-133
3.8.1.4 Wildlife....3-139
3.8.1.5 Aquatic and Wetland Habitats....3-142
3.8.1.6 Special Status Species and Habitats....3-149
3.8.1.7 Current Natural Resources Management Practices....3-163
3.8.2 Environmental Consequences....3-164
3.8.2.1 Analysis Methodology....3-164
3.8.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo....3-165
3.8.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges....3-174
3.8.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR....3-176
3.8.2.5 Alternative 4 – Establish the Period of Withdrawal....3-182
3.8.2.6 No Action Alternative....3-183
3.9 Cultural Resources....3-183
3.9.1 Affected Environment....3-183
3.9.1.1 Description of Resource....3-183
3.9.1.2 Region of Influence....3-184
3.9.1.3 Cultural Resources....3-185
3.9.1.4 Archeological Resources....3-188
3.9.2 Environmental Consequences....3-190
3.9.2.1 Analysis Methodology....3-190
3.9.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo....3-193
3.9.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges....3-196
3.9.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR....3-197
3.9.2.5 Alternative 4 – Establish the Period of Withdrawal....3-199
3.9.2.6 No Action Alternative....3-200
3.10 Earth Resources....3-200
3.10.1 Affected Environment....3-200
3.10.1.1 Description of Resource....3-200
3.10.1.2 Region of Influence....3-200
3.10.1.3 Geology....3-201
3.10.1.4 Soils....3-204
3.10.1.5 Mineral Resources....3-207
3.10.1.6 Paleontological Resources....3-215
3.10.2 Environmental Consequences....3-216
3.10.2.1 Analysis Methodology....3-216
3.10.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo....3-216
3.10.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges....3-219
3.10.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR....3-219

3.10.2.5 Alternative 4 – Establish the Period of Withdrawal 3-222
3.10.2.6 No Action Alternative 3-222
3.11 Water Resources 3-223
3.11.1 Affected Environment 3-223
3.11.1.1 Description of Resource 3-223
3.11.1.2 Region of Influence 3-223
3.11.1.3 Water Quality Standards 3-223
3.11.1.4 Surface Water 3-225
3.11.1.5 Floodplains 3-229
3.11.1.6 Groundwater 3-230
3.11.1.7 Water Rights and Improvements 3-233
3.11.2 Environmental Consequences 3-235
3.11.2.1 Analysis Methodology 3-235
3.11.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-235
3.11.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-239
3.11.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-240
3.11.2.5 Alternative 4 – Establish the Period of Withdrawal 3-242
3.11.2.6 No Action Alternative 3-243
3.12 Hazardous Materials and Solid Wastes 3-243
3.12.1 Affected Environment 3-243
3.12.1.1 Description of Resource 3-243
3.12.1.2 Region of Influence 3-243
3.12.1.3 Hazardous Materials 3-243
3.12.1.4 Hazardous Waste Management 3-244
3.12.1.5 Department of Defense Environmental Monitoring Program 3-246
3.12.1.6 Department of Energy Environmental Restoration Program 3-253
3.12.1.7 Solid Waste Management 3-259
3.12.2 Environmental Consequences 3-260
3.12.2.1 Analysis Methodology 3-260
3.12.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of the NTTR (North and South Range) – Status Quo 3-260
3.12.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-265
3.12.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-267
3.12.2.5 Alternative 4 – Establish the Period of Withdrawal 3-268
3.12.2.6 No Action Alternative 3-268
3.13 Health and Safety 3-270
3.13.1 Affected Environment 3-270
3.13.1.1 Description of Resource 3-270
3.13.1.2 Region of Influence 3-270
3.13.1.3 Wildland Fire Risk and Management/Ground Safety 3-270
3.13.1.4 Flight Risks 3-275
3.13.1.5 Munitions Use and Handling 3-279
3.13.2 Environmental Consequences 3-281
3.13.2.1 Analysis Methodology 3-281
3.13.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-281
3.13.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-283
3.13.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-283
3.13.2.5 Alternative 4 – Establish the Period of Withdrawal 3-285
3.13.2.6 No Action Alternative 3-285
3.14 Transportation 3-286
3.14.1 Affected Environment 3-286

3.14.1.1 Description of Resource 3-286
3.14.1.2 Region of Influence 3-286
3.14.2 Environmental Consequences 3-287
3.14.2.1 Analysis Methodology 3-287
3.14.2.2 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo 3-290
3.14.2.3 Alternative 2 – Extend Existing Land Withdrawal and Provide Ready Access in the North and South Ranges 3-290
3.14.2.4 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR 3-291
3.14.2.5 Alternative 4 – Establish the Period of Withdrawal 3-292
3.14.2.6 No Action Alternative 3-292
3.15 Summary of Impacts 3-292
3.15.1 Summary of Impacts for Potential Alternative Combinations 3-314

4. CUMULATIVE EFFECTS AND OTHER ENVIRONMENTAL CONSIDERATIONS 4-1
4.1 Cumulative Effects 4-1
4.1.1 Introduction 4-1
4.1.2 Relevant Past and Present Actions 4-1
4.1.3 Reasonably Foreseeable Future Actions 4-5
4.1.4 Cumulative Effects Analysis 4-12
4.1.4.1 Airspace Use and Management 4-12
4.1.4.2 Noise 4-12
4.1.4.3 Air Quality 4-13
4.1.4.4 Land Use 4-16
4.1.4.5 Wilderness and Wilderness Study Areas 4-18
4.1.4.6 Socioeconomics 4-19
4.1.4.7 Environmental Justice 4-20
4.1.4.8 Biological Resources 4-22
4.1.4.9 Cultural Resources 4-24
4.1.4.10 Earth Resources 4-26
4.1.4.11 Water Resources 4-27
4.1.4.12 Hazardous Materials and Solid Wastes 4-29
4.1.4.13 Health and Safety 4-30
4.1.4.14 Transportation 4-30
4.2 Other Environmental Considerations 4-31
4.2.1 Relationship Between Short-Term Uses and Long-Term Productivity 4-31
4.2.2 Short-Term Uses 4-31
4.2.3 Long-Term Productivity 4-31
4.2.4 Short-Term Uses Versus Long-Term Productivity 4-31
4.2.5 Irreversible and Irretrievable Commitment of Resources 4-32

5. REFERENCES 5-1
6. LIST OF PREPARERS AND CONTRIBUTORS 6-1
7. LIST OF REPOSITORIES 7-1
8. INDEX 8-1

LIST OF APPENDICES

Appendix A. Public Involvement
Appendix B. Agency Consultation and Coordination
Appendix C. Noise
Appendix D. Air Quality
Appendix E. Visual Resources
Appendix F. Wilderness and Wilderness Study Areas
Appendix G. Socioeconomics
Appendix H. Biological Resources
Appendix I. Cultural Resources
Appendix J. Water Resources
Appendix K. Native American Perspective

LIST OF TABLES

Table 2-1. Current Airspace Utilization 2-21
Table 2-2. Current Munitions Utilization 2-21
Table 2-3. Thirty Percent Increase in Operations 2-23
Table 2-4. Thirty Percent Increase in Munitions 2-23
Table 2-5. Summary of the Degree of Impacts for Potential Alternative Combinations 2-42
Table 3-1. Military Training Routes Within or Adjacent to the NTTR 3-6
Table 3-2. Summary of L_{dnmr} Values for Special Use Airspaces 3-11
Table 3-3. Baseline Sonic Boom CDNL Values Within the NTTR 3-12
Table 3-4. Noise Level Expected from Each Operating Emitter (Generator) Site 3-16
Table 3-5. Relationship Between Annoyance and DNL 3-16
Table 3-6. Relationship Between Annoyance, DNL, and CDNL 3-17
Table 3-7. Summary of L_{dnmr} Values for SUAs 3-19
Table 3-8. Summary of Sonic Boom CDNL Values for SUA 3-20
Table 3-9. Construction Noise Level Expected from Each Emitter Pad Construction Site 3-22
Table 3-10. Maximum Allowable Pollutant Concentration Increases Under PSD Regulations 3-26
Table 3-11. Baseline Criteria Pollutant Emissions Inventory for Clark, Lincoln, and Nye Counties, Nevada 3-27
Table 3-12. Baseline Greenhouse Gas Emissions Inventory for Clark, Lincoln, and Nye Counties, Nevada 3-28
Table 3-13. Alternative 1 Aircraft Emissions 3-31
Table 3-14. Alternative 1 Munitions Emissions 3-31
Table 3-15. Alternative 1 Vehicle Emissions 3-32
Table 3-16. Alternative 1 Emitter Operation Emissions 3-33
Table 3-17. Summary of Alternative 1 Emissions 3-33
Table 3-18. Alternative 2 Aircraft Emissions 3-34
Table 3-19. Alternative 2 Munitions Emissions 3-34
Table 3-20. Alternative 2 Ground Disturbance Air Emissions Compared with ROI Emissions (tons per year) 3-35
Table 3-21. Alternative 2 Emitter Operation Emissions 3-35
Table 3-22. Summary of Alternative 2 Emissions 3-36

Table 3-23. Alternative 3C Ground Disturbance Air Emissions Compared with ROI Emissions (tons per year) 3-38
Table 3-24. Summary of Alternative 3 Emissions 3-39
Table 3-25. Alternatives Comparison 3-40
Table 3-26. BLM Visual Resource Management Classes 3-52
Table 3-27. Wilderness Areas and WSAs Within NTTR Airspace Boundaries 3-69
Table 3-28. Wilderness Areas and WSAs in Close Proximity to NTTR Airspace Boundaries 3-71
Table 3-29. Areas of Land Categories Identified in the Roadless Areas Special Study 3-72
Table 3-30. Impacts to Wilderness Qualities for Alternative 1 3-83
Table 3-31. Impacts to Wilderness Qualities for Alternative 2 3-86
Table 3-32. Impacts to Wilderness Qualities for Alternative 3B 3-90
Table 3-33. Impacts to Wilderness Qualities for Alternative 3C 3-91
Table 3-34. Youth and Elderly Populations 3-114
Table 3-35. Environmental Justice Populations 3-115
Table 3-36. Environmental Justice Populations in the Baseline Affected Area (65–69 dB DNL) 3-116
Table 3-37. Youth and Elderly Populations in the Baseline Affected Area (65–69 dB DNL) 3-116
Table 3-38. Environmental Justice Populations Under Alternative 2 in the Affected Area (62 or greater CDNL) 3-126
Table 3-39. Youth and Elderly Under Alternative 2 in the Affected Area (62 or Greater CDNL) 3-127
Table 3-40. Plant Communities and Associated Acreage on the North and South Ranges 3-133
Table 3-41. Special Status Wildlife Species that Are Known or Have the Potential to Occur on the NTTR 3-153
Table 3-42. Soil Types Within Alternative 3A Range 77 – EC South Withdrawal Area 3-206
Table 3-43. Soil Types Within Alternative 3B 64C/D and 65D Withdrawal Area 3-207
Table 3-44. Soil Types Within Alternative 3C Alamo Withdrawal Area 3-207
Table 3-45. NTTR Total On-Site Chemical Releases from Munitions Use (2011 to 2015) 3-249
Table 3-46. Summary of Study Activities at Plutonium Dispersion Sites 3-254
Table 3-47. Reported Fires at NTTR (1984 to 2010) 3-271
Table 3-48. Historical Mishaps at NTTR (2006–2016) 3-276
Table 3-49. Summary of Impacts 3-293
Table 4-1. Proposed Construction and Demolition Actions for the F-35 Beddown 4-3
Table 4-2. Cumulative Air Emissions 4-14

LIST OF FIGURES

Figure 1-1. Nevada Test and Training Range Land and Airspace Boundary 1-3
Figure 1-2. North and South Range Operations Areas of the Nevada Test and Training Range 1-4
Figure 1-3. Examples of Targets 1-6
Figure 1-4. Examples of Emitters 1-6
Figure 1-5. South Range Overlap with DNWR 1-10
Figure 1-6. Current MCO Scenario 1-14
Figure 1-7. Real World Peer IAD System 1-19
Figure 1-8. Overlay of a Real World Peer IAD System at NTTR 1-20
Figure 1-9. Current Primary Jurisdiction Designation of the DNWR 1-23
Figure 1-10. Current Threat Capability – South 1-24
Figure 2-1. Snapshot of U.S. Commercial Air Traffic 2-3

Figure 2-2. Population Centers, Roadway Infrastructure, and Wilderness/Wilderness Study Areas 2-4
Figure 2-3. Diagram of a Weapons Safety Footprint 2-7
Figure 2-4. Current MCO Scenario 2-8
Figure 2-5. MCO Two-Axis Front Concept 2-9
Figure 2-6. Current Limited Weapons Employment Capabilities at the NTTR 2-10
Figure 2-7. Conceptual Weapons Employment for Operationally Realistic Training 2-11
Figure 2-8. DOE Infrastructure that Cannot be Moved due to National Security Significance 2-12
Figure 2-9. Candidate Alamo Real Estate Alternative with Conceptual Potential Emitter Area on BLM Land (Not Carried Forward) 2-17
Figure 2-10. Composite of the Urban Operations Complex and the Conceptual Insertion Sites 2-19
Figure 2-11. Alternative 3A, 3B, and 3C Locations and Acreages 2-26
Figure 2-12. Alternative 3A-1 Location and Acreage 2-27
Figure 2-13. Alternative 3C – Conceptual Weapons Safety Footprint for 62A on DNWR 2-29
Figure 2-14. Recreational Areas Affected by Alternative 3C – Northern Area 2-30
Figure 2-15. Recreational Areas Affected by Alternative 3C – Southern Area 2-31
Figure 3-1. Airspace Map in the Vicinity of the NTTR 3-4
Figure 3-2. Subsonic Noise Exposure Within the NTTR 3-13
Figure 3-3. Supersonic Noise Exposure Within the NTTR 3-14
Figure 3-4. Large-Caliber Weapons Noise Exposure Within the NTTR 3-15
Figure 3-5. BLM Grazing Allotments Within the Range 77 – EC South Withdrawal Area 3-45
Figure 3-6. Nevada Wild Horse Range and Herd Management Areas 3-48
Figure 3-7. Range 77 – EC South Withdrawal Area Bike and OHV Roads and Trails 3-49
Figure 3-8. Roads, Parking Areas, and Trails Within Alternative 3C Boundary 3-51
Figure 3-9. Average Annual Night-time Light Intensity 3-55
Figure 3-10. Wilderness Areas and Wilderness Study Areas in the Region of Influence 3-70
Figure 3-11. Roadless Areas Identified in the Existing NTTR Land Withdrawal and Proposed Expansion Areas 3-74
Figure 3-12. Composite Noise Levels in Wilderness Under Baseline Conditions 3-76
Figure 3-13. Environmental Justice Communities of Concern Exposed to Subsonic Noise 3-117
Figure 3-14. Youth and Elderly Populations Exposed to Subsonic Noise 3-118
Figure 3-15. Environmental Justice Communities of Concern Exposed to Supersonic Boom Noise 3-120
Figure 3-16. Youth and Elderly Populations Exposed to Supersonic Boom Noise 3-121
Figure 3-17. Environmental Justice Communities of Concern Exposed to Large-Caliber Weapon Noise 3-122
Figure 3-18. Youth and Elderly Populations Exposed to Large-Caliber Weapon Noise 3-123
Figure 3-19. Environmental Justice Communities of Concern Exposed to Supersonic Boom Noise Under Alternatives 2 and 3 3-128
Figure 3-20. Youth and Elderly Populations Exposed to Supersonic Boom Noise Under Alternatives 2 and 3 3-129
Figure 3-21. Plant Communities on the North Range 3-136
Figure 3-22. Plant Communities on the South Range 3-137
Figure 3-23. Aquatic Resources Within the Study Area 3-143
Figure 3-24. Aquatic Resources Within Alternative 3A Proposed Expansion Areas 3-146
Figure 3-25. Aquatic Resources Within Alternative 3B Proposed Expansion Area 3-147
Figure 3-26. Aquatic Resources Within Alternative 3C Proposed Expansion Area 3-148
Figure 3-27. Special Status Species Reported in the Study Area – Gillman's Milkvetch, Inyo Milkvetch, Remote Rabbitbrush, Kingston Mountains Bedstraw, Cliff Needlegrass 3-151

Figure 3-28. Special Status Species – Armored Hedgehog Cactus, Clokey Pincushion, Hermit Cactus....3-152
Figure 3-29. Special Status Wildlife Species, Desert Bighorn Sheep and Golden Eagle....3-155
Figure 3-30. Location of Desert Tortoise on the NTTR....3-160
Figure 3-31. Faults Within the NTTR and Potential Expansion Areas....3-203
Figure 3-32. Soil Types Within the NTTR and Potential Expansion Areas....3-205
Figure 3-33. Mining Districts on the NTTR....3-209
Figure 3-34. Potential for Mineral Deposits on the NTTR....3-210
Figure 3-35. Potential for Construction Material on the NTTR....3-212
Figure 3-36. Water Resources on the Nevada Test and Training Range....3-227
Figure 3-37. NTTR Highway and Road Network....3-288
Figure 3-38. NTTR South Range Road and Trail Network....3-289
Figure 4-1. Existing and Proposed Mountain Bike Trails in the Beatty, Nevada, Area, 2016....4-7
Figure 4-2. Utility Corridor 18-224....4-10

ACRONYMS AND ABBREVIATIONS

99 ABW	99th Air Base Wing
99 CES	99th Civil Engineering Squadron
ACAM	Air Conformity Applicability Model
ACS	American Community Survey
AEC	Atomic Energy Commission
AFA	acre-feet annually
AFB	Air Force Base
AFI	Air Force Instruction
AFY	acre-feet per year
AGL	above ground level
AICUZ	Air Installation Compatible Use Zone
AMU	Aircraft Maintenance Unit
AOCs	areas of concern
APE	area of potential effects
AR-	Aerial Refueling
AR 200-1	U.S. Army Regulation 200-1
ASU	Airspace for Special Use
ATCAA	Air Traffic Control Assigned Airspace
ATIS	Automated Terminal Information System
AUM	animal unit months
BASH	bird/wildlife-aircraft strike hazard
BCAMP	Base Comprehensive Asset Management Plan
BEA	U.S. Bureau of Economic Analysis
BLM	Bureau of Land Management
BMPs	best management practices
BNOISE	Blast Noise
CAA	Clean Air Act
CAP	central accumulation point
CAU	Corrective Action Unit
CDNL	C-weighted day-night average sound level
CEQ	Council on Environmental Quality
CFA	Controlled Firing Area
CFR	Code of Federal Regulations
CGTO	Consolidated Group of Tribes and Organizations
CIG	CAS Integration Group
CIP	Capital Improvements Program
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
COC	community of comparison
CSN	Coyote Springs Nevada LLC
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibels
DNL	day-night average sound level

DNT	2,6-dinitrotolulene
DNWR	Desert National Wildlife Range
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOE/LM	U.S. Department of Energy/Office of Legacy Management
DOI	U.S. Department of the Interior
DU	depleted uranium
EC South	Electronic Combat South Range
ECR	Electronic Combat Range
EIAP	Environmental Impact Analysis Process
EO	Executive Order
EOD	explosive ordnance disposal
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAARP	Forward Area Arming and Refueling Points
FFACO	Federal Facility Agreement and Consent Order
FICON	Federal Interagency Committee on Noise
FIDLER	field instrument for detection of low-energy radiation (gamma emissions)
FL	Flight Level
FLIP	Flight Information Publications
FLPMA	Federal Land Policy and Management Act
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System
GWP	global warming potential
HAZMART	hazardous materials dispensary
HAZMAT	Hazardous Materials Management
HCP	Habitat Conservation Plan
HMA	Herd Management Area
HPGe	high-purity germanium
HQ	Headquarters
I-	Interstate
IADS	integrated air defense systems
IBA	Important Bird Area
ICRMP	Integrated Cultural Resources Management Plan
IFR	Instrument Flight Rules
INRMP	Integrated Natural Resources Management Plan
I-O	input-output
IR	Instrument Route
ISR	Intelligence Surveillance Reconnaissance
ISWM	Integrated Solid Waste Management
IW	Irregular Warfare
JASPER	Joint Actinide Shock Physics Experimental Research
JO	Joint Order
kVA	kilovolt-amp

LATN	Low-Altitude Tactical Navigation
L_{dnmr}	onset-rate adjusted monthly day-night average sound level
LEED®	Leadership in Energy & Environmental Design
LEIS	Legislative Environmental Impact Statement
L_{max}	maximum sound level
LOLA	live ordnance loading area
MAJCOM	Major Command
MANPADS	man-portable air defense system
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MCO	Major Combat Operations
mg/L	milligrams per liter
MILCON	military construction
MLWA	Military Land Withdrawal Act
MOA	Military Operations Area
MOU	Memorandum of Understanding
MP	Milepost
mph	miles per hour
MREs	meals ready-to-eat
mrem/yr	millirems per year
MRTFB	Major Range and Test Facility Base
MSA	Munitions Storage Area
MSL	mean sea level
MTR	Military Training Routes
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NATCF	Nellis Air Traffic Control Facility
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NFA	no further action
NHPA	National Historic Preservation Act
NM	nautical miles
NNSA	National Nuclear Security Administration
NNSA/NFO	National Nuclear Security Administration/Nevada Field Office
NNSS	Nevada National Security Site
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRC/NAS	National Research Council/National Academy of Sciences
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NSR	New Source Review

NTTR	Nevada Test and Training Range
NV	Nevada
NWI	National Wetlands Inventory
NWPS	National Wilderness Preservation System
O&M	operations and maintenance
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administration
PILT	Payment in Lieu of Taxes
PITU	Paiute Indian Tribe of Utah
PK_{15}(met)	Peak Noise Exceeded by 15 Percent of Firing Events
P.L.	Public Law
PLO	Public Land Order
PM_{10}	particulate matter less than or equal to 10 microns in diameter
PSD	Prevention of Significant Deterioration
Pu	plutonium
RCRA	Resource Conservation and Recovery Act
RF	radio frequency
ROI	region of influence
S.R.	State Route
SAA	Special Activity Airspace
SAIC	Science Applications International Corporation
SEL	sound exposure level
SHPO	State Historic Preservation Officer
SNL	Sandia National Laboratories
SUA	Special Use Airspace
SWMU	solid waste management unit
T&E	Test and Evaluation
TASS	Tactical Air Support Squadron
TD&E	Tactics Development and Evaluations
TDY	temporary-duty
Trails-OV	Trails-Oasis Valley
TRI	Toxic Release Inventory
TSPI	Time-Space-Position Information
U.S.	United States
UAS	unmanned aerial system (remotely piloted vehicle or aircraft system)
UAV	unmanned aerial vehicle
UOC	Urban Operations Complex
USACE	U.S. Army Corps of Engineers
USAFWC	U.S. Air Force Warfare Center
USC	United States Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
VFR	Visual Flight Rules

VFW	Veterans of Foreign Wars
VR	Visual Route
VRI	Visual Resource Inventory
VRM	visual resource management
WSA	Wilderness Study Area

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1. PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

The Air Force has met with Native American groups, continues to ask for their input and comments, and has chosen to include their perspective within this LEIS in Appendix K.

For the Native American perspective on this section, please see Appendix K.

The Air Force proposes to withdraw and reserve public lands for military use to support the utilization and modernization of the Nevada Test and Training Range (NTTR) by enhancing range capability for improved training and testing. The NTTR is the preeminent range for testing and evaluation of weapons systems, tactics development, and advanced combat training; however, the range and its infrastructure are quickly becoming outdated as rates of technological development of new weapons systems and electronic warfare systems accelerate. Over the last two decades, enemy technology has become increasingly advanced and complex, requiring more space to replicate their potential threat configurations. The NTTR can no longer replicate this threat environment.

As a result of the evolving mission, this Legislative Environmental Impact Statement (LEIS) is programmatically evaluating alternatives which would extend or expand the current military land withdrawal in order to safely execute its missions in a more realistic and operationally relevant manner.

The NTTR is part of the United States Air Force's Major Range and Test Facility Base (MRTFB) enterprise. The Air Force test and training range enterprise consists of MRTFB ranges and primary training ranges. MRTFB ranges encompass the largest, most fully equipped ranges, designed to test and evaluate capabilities to support Department of Defense (DoD) acquisition system and combat readiness (U.S. Air Force, 2014a).

Located in southeastern Nevada, the NTTR land base consists of approximately 2.9 million acres of federal land that has been withdrawn from public use and reserved for military use, most recently by the *Military Land Withdrawal Act of 1999*, Public Law (P.L.) No. 106-65 (MLWA). The current withdrawal will expire on November 6, 2021, unless Congress enacts legislation to extend it. In accordance with Section 3016 of the MLWA, the Department of the Air Force, in coordination with DoD, has notified Congress of a continuing military need for the NTTR withdrawal. Furthermore, the Air Force will submit the Final LEIS, which will support the development of a legislative proposal for the future NTTR military land withdrawal. Congress has reserved the authority for renewing the NTTR land withdrawal for itself, through the *Defense Withdrawal Act of 1958* (43 United States Code [USC] Sections 155–158), and will make the final decision through legislation on whether to extend the withdrawal and/or expand the boundaries of the current NTTR land withdrawal. The LEIS is the detailed environmental statement required by law that will support the legislative proposal.

The *National Environmental Policy Act of 1969*, 42 USC Sections 4321-4370h (NEPA) requires agencies to include an environmental impact statement (EIS) with any proposal for legislation that may significantly affect the quality of the human environment. In addition to the MLWA, the Air Force is following the applicable procedures set forth in

Bureau of Land Management (BLM) regulations at Title 43 Code of Federal Regulations (CFR) Part 2300 that implement the U.S. Department of the Interior (DOI)'s authority to process federal land withdrawal applications. This LEIS is programmatic in nature.

Programmatic NEPA reviews address the general environmental issues and provide the basis for decisions to approve such broad or high-level decisions such as identifying geographically bounded areas within which future proposed activities can be conducted or identifying broad mitigation and conservation measures that can be applied to subsequent tiered reviews. Programmatic NEPA reviews can effectively frame the scope of subsequent site- and project-specific federal actions. The programmatic analysis in this LEIS focuses mainly on the proposed use of the area from a conceptual and qualitative perspective, and site-specific NEPA analyses will be necessary in the future for specific locations and routes once a decision on withdrawal has been made and information becomes more mature. Details regarding the actions that are currently known are outlined in Section 2.3, Alternatives. These conceptual details were the basis of analysis for the LEIS.

Because a programmatic analysis establishes the broad view of environmental impacts and benefits of a proposed decision, agencies can then rely on that programmatic NEPA review to make decisions such as rulemaking or establishing a policy, program, or plan, as well as decisions based on subsequent, tiered NEPA review. The Air Force is the lead agency for the LEIS, while the BLM; the Department of Energy (DOE), and the National Nuclear Security Administration (NNSA); the U.S. Fish and Wildlife Service (USFWS) – National Wildlife Refuges and Ecological Services programs; the Nevada Department of Wildlife (NDOW); and the Nevada Association of Counties are cooperating agencies. Recognizing other stakeholders may have concerns over potential impacts, the Air Force has initiated and will continue to dialogue with the appropriate Nevada state agencies, as well as local counties and cities that may be impacted by the withdrawal. The Air Force has also begun and will continue conducting government-to-government consultation with federally recognized tribes potentially affected by the NTTR land withdrawal.

In order to distinguish between the two branches of the USFWS, the LEIS specifically refers to the Ecological Services branch if the term USFWS applies to that branch. In all other cases, the term USFWS applies to the agency as a whole or to the Refuge branch associated with the Desert National Wildlife Refuge Complex.

1.2 BACKGROUND

The NTTR is an MRTFB asset operated by the U.S. Air Force Warfare Center's (USAFWC's) Headquarters (HQ) NTTR. The NTTR is located in southeastern Nevada and includes both the land and overlying airspace. The NTTR airspace comprises roughly 12,000 square nautical miles (NM) and is about 150 NM wide at its widest point (west to east) and 110 NM long (north to south). The land associated with the NTTR comprises about 2.9 million acres (approximately 4,954 square miles). Figure 1-1 shows an outline of the NTTR land and airspace and its relationship to the city of Las Vegas to the south, Nellis Air Force Base (AFB), and Creech AFB. Figure 1-2 depicts the North and South Ranges of the NTTR.

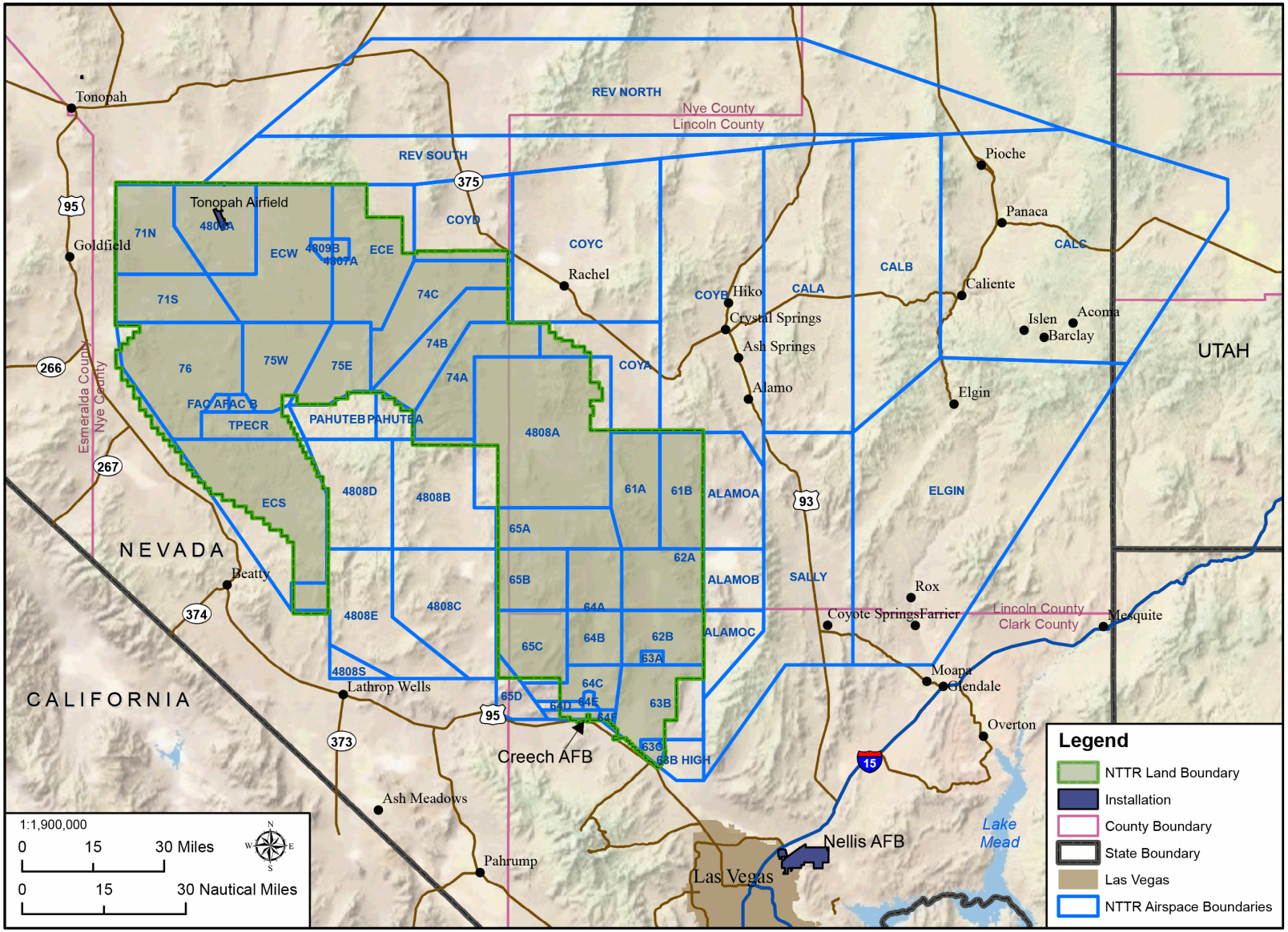

Figure 1-1. Nevada Test and Training Range Land and Airspace Boundary

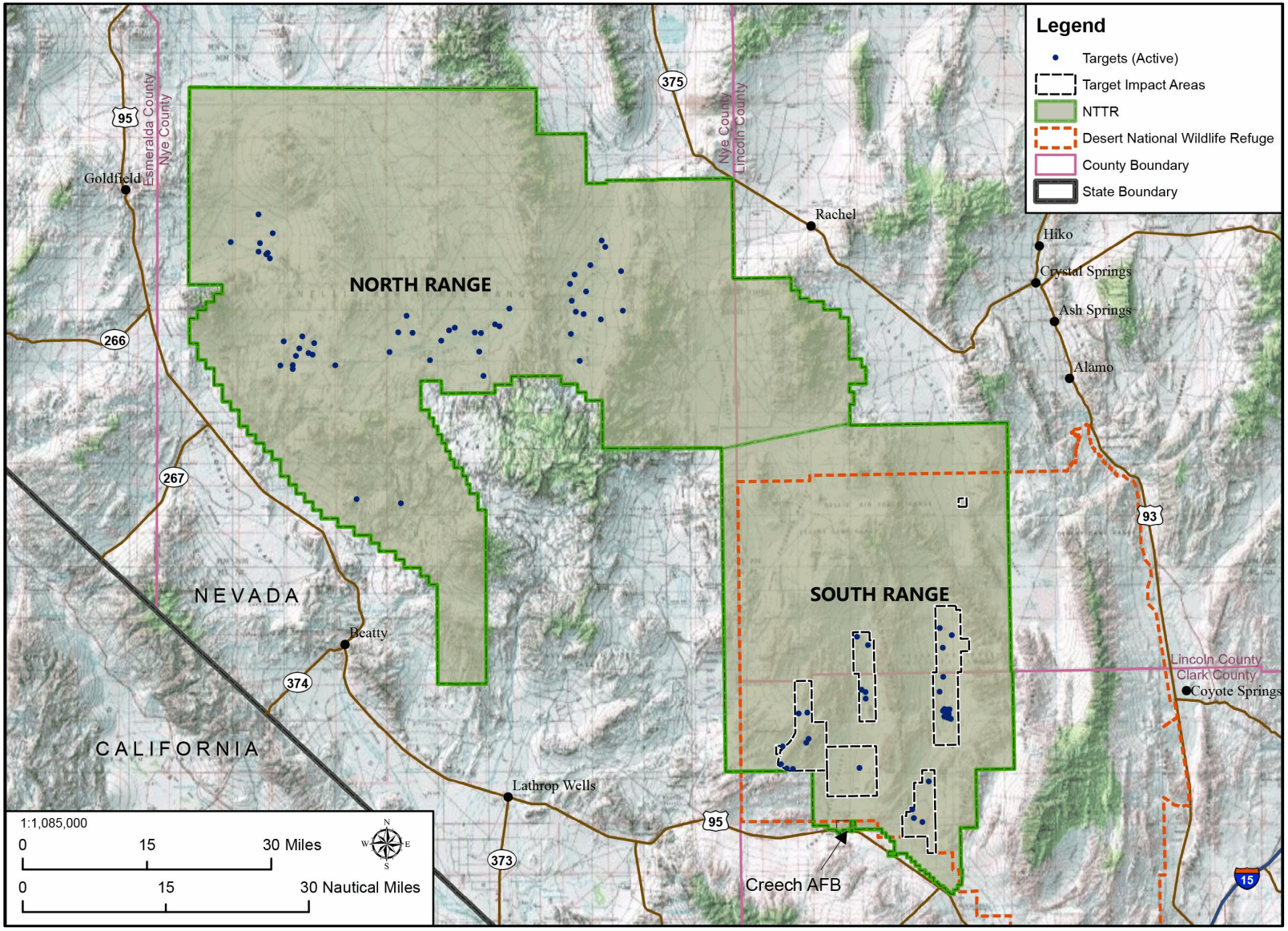

Figure 1-2. North and South Range Operations Areas of the Nevada Test and Training Range

A number of DoD ranges in the western United States provide large areas for military test and/or training activities. However, only one—the NTTR—has the military ranges, terrain, and other factors that provide the safety, security, and capability needed to conduct both testing and training activities with the space and capacity to host large opposing forces.

The combination of these factors also provides the security essential to the most sensitive DoD test and training activities relating to combat tactics and force development. NTTR capabilities are also critically important to DOE for national defense tasks that otherwise could not be accomplished elsewhere as safely and within a secure area. Thus, the NTTR has become a national security infrastructure asset, the management of which is charged to the Air Force but includes activities associated with all DoD entities as well as DOE and Homeland Security.

The NTTR was originally established by Executive Order (EO) 8578 in 1940 as the Las Vegas Bombing and Gunnery Range, a training camp that began operations in 1942 at Indian Springs, Nevada, to facilitate air-to-air gunnery training for aircrews. The camp was designated as Indian Springs Auxiliary Air Field on April 1, 1964. This airfield was renamed Indian Springs Air Force Auxiliary Field and provided support and maintenance for training activities (BLM, 1981). In 2005, the Auxiliary Field was redesignated as Creech AFB and is now the home base for unmanned aerial systems (UAS) (including remotely piloted aircraft), which fly missions across the globe.

A portion of the NTTR overlaps the Desert National Wildlife Range (DNWR) (Figure 1-2), which was established in 1936 for the protection and preservation of Nelson bighorn sheep (also referred to as the desert bighorn sheep).

In 1952, 1958, and 1961, Public Land Orders transferred portions of the NTTR to the Atomic Energy Commission (AEC), which later became the DOE, for the development of the Nevada National Security Site (NNSS) (formerly the Nevada Test Site). Pahute Mesa was delegated to the DOE through a Memorandum of Understanding (MOU) with the Air Force for the testing of nuclear weapons. In addition, the Air Force permitted 336,665 acres in November 1956 to the Albuquerque Operations Office of the DOE, known as the Sandia National Laboratories (SNL) for use as a ballistic test range (BLM, 1981).

From 1940 until 1959, co-use of the NTTR was granted to ranchers and farmers. Air Force requirements to test advanced weapons and tactics eventually necessitated increased security for the range. The Secretary of the Air Force was given authority for military use by enactment of P.L. 99-606 as amended, and the *Military Land Withdrawal Act of 1986*. The *Military Land Withdrawal Act of 1999* (P.L. 106-65) authorized the current period of the NTTR land withdrawal, which began in 2001 and will expire on November 6, 2021. Since the MLWA of 1999, several other Public Laws have modified the NTTR land withdrawal. In this document, all Public Laws associated with the NTTR land withdrawal are being referred to collectively as the *Military Land Withdrawal Act* (i.e., MLWA).

The NTTR currently includes 137 tactical target complexes containing more than 2,600 simulated targets (Figure 1-3). Many of these target complexes are defended by radars, threat simulators, and threat emitters to provide a realistic setting for operational testing of weapons systems, tactics, and combat readiness. Live munitions are delivered on designated portions of the range.

Figure 1-3. Examples of Targets

Threat simulators are electronically and often visually similar to equipment expected to be encountered in actual combat. Radar units simulate early warning, ground control intercept, target acquisition, and surface-to-air and anti-aircraft artillery defenses and guidance. NTTR ground equipment includes multiple radar and electronic jamming equipment designed to test and improve the quality of aircrew combat training. Many of the threat simulators are equipped with instruments to collect data that can be used to evaluate and score surface-to-air engagements. High fidelity threat emitters and repeaters are usually small units that are portable or fixed, and each emitter typically requires a 150-foot by 150-foot area (0.5 acre) located on gravel or fixed pads (Figure 1-4). Each emitter requires an electricity source (a 1.5 kilovolt generator). Depending on the type of threat emitter being utilized, electromagnetic radiation may be produced during operations to detect and track incoming aircraft.

Figure 1-4. Examples of Emitters

The NTTR is split into the North and South Ranges to facilitate overall management of Air Force operations and test and training opportunities on each range. Figure 1-2 illustrates the North and South Ranges. Management responsibilities include personnel safety, the ranges' electromagnetic environment, range equipment operation and maintenance, environmental resource management, and efficient airspace use through effective scheduling. The major facilities are Creech AFB and airfield, Tolicha Peak, and the Tonopah Test Range and airfield. Facilities also include roads, radar sites, other communication systems, and range electronic measuring devices.

The North Range contains mountain ranges oriented to the north and south with wide valleys, where most of the target areas are located. North Range valley bottoms vary

from 4,500 to 5,500 feet mean sea level, and mountain peaks reach over 8,600 feet mean sea level.

Mountain ranges in the South Range are north/south oriented with narrow valleys that contain dry lakebeds. South Range valley bottoms vary from 3,000 to 3,600 feet mean sea level, and the mountains reach over 6,000 feet mean sea level. Sections 1.2.1 and 1.2.2 provide details related to the North and South Ranges, respectively.

1.2.1 North Range

The North Range is approximately 1.8 million acres of withdrawn land, containing approximately 1,263 targets within 63 tactical target complexes. These weapons-delivery areas, or impact areas, are maintained by NTTR personnel to simulate tactical targets representing airfields, surface-to-air missile sites, truck convoys, missile storage sites, artillery batteries and other targets, along with scoring and tracking systems. The type of weapons authorized for delivery depends on the target selected. Figure 1-2 shows the NTTR target complex locations. The North Range also includes multiple and dispersed facilities that support three Electronic Combat Ranges (ECRs), including Tonopah ECR, Tolicha Peak ECR, and EC South Range (hereinafter referred to as "EC South").

Training and testing on the NTTR include operations conducted by DOE/NNSA in an area that lies entirely within the NTTR. The area is operated for the DOE/NNSA by SNL (i.e., Sandia National Laboratories). Because this area is entirely within the NTTR, the Air Force maintains ownership and authorizes SNL activities through a land permit issued by the Air Force to DOE/NNSA.

The initial land-use permit from the Air Force was issued in 1956, and became operational to test new weapon systems in 1957. The facilities were designed and equipped to gather data on aircraft-delivered inert test vehicles for the AEC (now DOE/NNSA). The current land use permit, which reduced the size of the SNL area from approximately 524 square miles to 280 square miles (335,655 acres to approximately 179,200 acres), was issued on April 26, 2002, and expires on October 5, 2019. As a major land user on the North Range, the SNL (operating under the NNSA) and its activities are fully considered as part of the NTTR land withdrawal extension. The Sandia Land Permit will be addressed as part of a separate action.

SNL operations for the Stockpile Stewardship and Management Program include flight-testing of gravity weapons (bombs) and research, development, and evaluation of stockpile nuclear weapons components and delivery systems including arming, fusing, and firing systems testing. No nuclear materials are employed in the area.

Other DOE/NNSA operations include research and development activities as follows:

- Robotics and remotely operated air/ground devices testing and development (handling, application, and recovery of hazardous [chemical] material)
- Smart transportation-related testing (preprogrammed/remote-controlled air and ground vehicles)

- Smoke obscuration operations
- Infrared tests
- Radio frequency testing
- Rocket (guided and unguided) development, testing, and deployment

Some activities are conducted through the DOE/NNSA Strategic Partnership Program for non-DOE entities, which has scheduled work that is not directly funded by DOE/NNSA appropriations.

In December 2008, NNSA released a signed Record of Decision for the *Complex Transformation Supplemental Programmatic Environmental Impact Statement* (73 *Federal Register* 77656) for their continued transformation of the nuclear weapons complex. That decision document implemented the preferred alternative for three mission areas including the SNL mission area, which indicated that SNL will conduct flight testing under a reduced footprint permit and in a "campaign mode." The "campaign mode of operations" would continue operations but reduce permanent staff and conduct tests and experiments by deploying DOE and national laboratory personnel from other locations, as needed. This "campaign mode" footprint was reduced from approximately 280 square miles to 1 square mile, in an area denoted as "Area 3." In 2013, a *Sitewide EIS for the Continued Operation of the Department of Energy/National Nuclear Security Administration Nevada National Security Site and Off-Site Locations in the State of Nevada* was developed (DOE, 2013), and the no action alternative for the area was selected in the Record of Decision for that EIS in 2014. Thus, SNL will operate at a reduced footprint (1 square mile) and in a campaign mode.

1.2.2 South Range

The South Range is approximately 1.2 million acres of withdrawn land located in the southeastern portion of the NTTR. All of the South Range lands were withdrawn for military use by the MLWA. The South Range contains five weapons-delivery areas, which are subdivided into 74 target complexes containing approximately 1,363 targets.

Currently, the Desert National Wildlife Refuge Complex is the largest national wildlife refuge in the contiguous United States, with approximately 1.6 million acres of land. About half of the Desert National Wildlife Refuge Complex (approximately 826,000 acres) overlaps the lands withdrawn for military purposes on the South Range of the NTTR. The DNWR is managed as part of the Desert National Wildlife Refuge Complex, which consists of DNWR and three geographically separated refuges in southern Nevada (Ash Meadows, Moapa Valley, and Pahranagat NWRs). Figure 1-5 illustrates the overlap of the NTTR and DNWR.

Almost 90 percent of the DNWR (about 1.4 million acres) has been proposed as wilderness by the USFWS since 1971, and about 590,000 of those acres are in the South Range. The areas proposed for wilderness on the South Range are managed as de facto wilderness by virtue of USFWS land management policy.

Generally, areas that were proposed for wilderness in the South Range correspond to elevations above 4,000 feet above mean sea level. Existing roads (mountain roads/passages) other than those used below 4,000 feet are off limits, as is troop movement, ground disturbance and the development of new locations such as emitter sites and communication sites. Previously used targets that are located in areas that were proposed as wilderness in 1971 are also off limits.

The MLWA (1999) directs that the Secretary of the Interior is to manage the USFWS portion of the DNWR in coordination with the Secretary of the Air Force through an MOU that was renewed in 1997 and describes how the management responsibilities of each agency will be implemented. The MOU delineates how the Air Force is able to use areas in the South Range below the 4,000-foot contour line, which includes the target impact areas.

The MLWA (1999) transferred primary jurisdiction of these impact areas, also referred to as the "60-series" ranges, (identified in Figure 1-5) to the Air Force, with the Secretary of the Interior (via the USFWS) maintaining secondary jurisdiction for wildlife conservation purposes.

Targets in the South Range are restricted to the playas (dry lakebeds) within the 60-series ranges and accommodate live and inert ordnance. In accordance with the 1999 MLWA, the Air Force appropriated and funded $15 million dollars for the USFWS to mitigate the use of the impact areas associated with the 60-series ranges and to allow acquisition of similar lands, outside the South Range.

1.3 USAFWC/NTTR MISSION

The USAFWC mission is to "develop innovative leaders and full spectrum capabilities through responsive, realistic, and relevant testing, tactics development, and advanced training across all levels of war." The NTTR is the preeminent range for Test and Evaluation (T&E), tactics development, and advanced combat training of DoD personnel.

The Air Force's *Report to Congressional Committees: 2025 Air Test and Training Range Enhancement Plan* (January 2014) states that the Air Force "must focus our investment in live infrastructure at a few select ranges which will become hubs for intermediate to advanced training. The first of these ranges is the Nevada Test and Training Range (NTTR)…Providing a live test and training environment for 5th generation aircraft and advanced sensors requires costly infrastructure and, in some cases, greater area of land and volume of airspace than legacy systems."

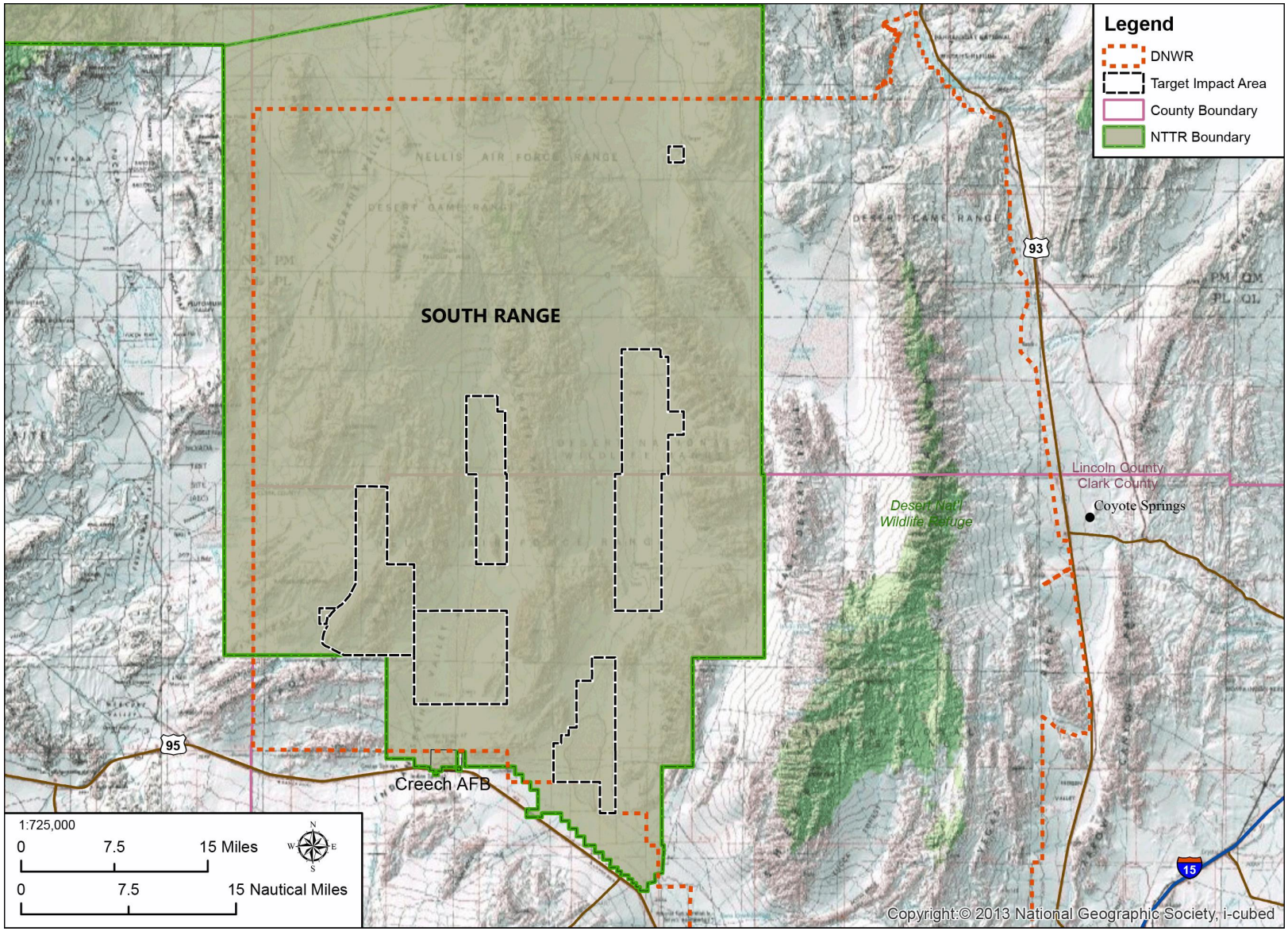

Figure 1-5. South Range Overlap with DNWR

Although the Air Force is the lead agency for the NTTR land withdrawal, there are many other tenants that use the NTTR. The range is considered an essential part of the national test infrastructure. Congress reserved it for use by the Secretary of the Air Force for the following military uses: as an armament and high-hazard testing area; for training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support; for equipment and tactics development and testing; and for other defense-related purposes consistent with the previously specified purposes. Based on availability, the NTTR is accessible to both DoD and non-DoD users who have valid requirements for its capabilities.

One significant non-DoD entity that is adjacent to the NTTR is the NNSS. Although the NNSS is adjacent to the NTTR and includes public withdrawn lands, the NNSS is not included in this withdrawal. The NNSS is a critical test site and "activities at the site include preparations for the disposition of damaged nuclear weapons, subcritical experiments, criticality experiments, emergency response training, and waste management" (DOE, 2015). It contains about 1,360 square miles of desert mountainous terrain similar to the NTTR. It supports national security, homeland security initiatives, waste management, environment restoration, and defense and non-defense research and development for DOE/NNSA, and other government entities (DOE, 2013). The Desert Rock Airfield, which is being considered as a site for State of Nevada-sponsored commercial unmanned aerial vehicle (UAV) testing and development, is located near the southern portion of the NNSS, but is outside the NNSS- and NTTR-controlled airspace. The NNSS can be overflown by military and other aircraft with critical national security interest in range areas but is not part of the NTTR (Low, 2016). When appropriate to NNSS security or safety configurations, this use can include overflight of NNSS lands and/or use as a security or safety range buffer for NTTR activity. The NNSS proximity to the NTTR provides adjacent secure and controlled airspace and lands when required for NTTR activity that exceeds the NTTR capability (DOE, 2013).

1.3.1 Range Requirements

The NTTR is used to accommodate two major national defense necessities: T&E and large-scale training, described below.

Test and Evaluation

The NTTR is a MRTFB national asset. It is sized, operated, and maintained to provide T&E information to DoD component users in support of DoD research, development, T&E, and the acquisition process. The NTTR must provide a broad base of T&E capabilities that are sufficient to support the full spectrum of DoD T&E requirements.

T&E requirements can be separated into two categories: developmental T&E and operational T&E. *Developmental* T&E is related to the test and evaluation of equipment and whether the equipment meets the specifications outlined by government contract. *Operational* T&E determines how the equipment can be used and the environment and tactics best suited for the equipment. Although these two types of T&E are needed for different reasons, the overall strategy of military T&E must consider both types. These T&E capabilities include an electromagnetic environment that is free of interference, test

infrastructure available to measure critical Time-Space-Position Information (TSPI) of weapons and various platforms, and the ability to measure and reproduce T&E environments.

The NTTR's airspace, land area, ability to replicate peer adversary capabilities, and capacity to provide high-quality test data are essential to operationally relevant testing. The NTTR must continue to provide robust capabilities to include a variety of configurations for advanced threat systems and combat-representative inert and live weapon delivery profiles and buffer zones for a variety of aircraft, targets, and landing zones.

Although additional airspace is not being requested as part of this withdrawal proposal, the current airspace is not used to its full potential because of constrictions in the South Range—the inability to move integrated air defense systems (IADS) and threat emitters away from impact areas limits the ability to conduct various operations in the South Range, which results in underutilization of the surrounding airspace.

Additional airspace is not necessary at this time but more efficient use of the airspace is critical. Ready access would allow more efficient use of the airspace, specifically the airspace that overlies the South Range.

Training

The NTTR hosts the U.S. Air Force Weapons School and "Red Flag" exercises, as well as other major training events. Red Flag is a realistic major combat exercise involving large-scale U.S. air forces and allies. Aircraft and personnel deploy to Nellis AFB under the Air Expeditionary Force concept of large-scale exercises, incorporating a full spectrum of air and space operations. The NTTR's airspace and infrastructure is critical for large-scale exercises such as Red Flag. Red Flag is coordinated at Nellis AFB and conducted on ranges of the NTTR. It is one of a series of advanced training programs administered by the USAFWC. Besides training for 5th generation aircraft, the NTTR provides a venue for additional users such as other U.S. government agencies, state, and local governments, allied foreign governments, and commercial entities. Additionally, the NTTR is the Air Combat Command's range of preference for Tactics Development and Evaluations (TD&E). The NTTR's operational test capabilities ensure confidence in the results of the tactics improvements process and provide rigor for the reporting and implementation of new or improved tactics, techniques, and procedures. The majority of Air Combat Command TD&Es occur on the NTTR due to its focus on high-end combat training and operationally relevant testing.

1.3.2 Operationally Relevant Settings

In order to meet the national defense requirements of testing and training as outlined in Section 1.3.1, an operationally relevant setting is critical. DoD assets must be prepared to conduct a wide range of combat operations anywhere in the world. An operationally relevant setting is essential to warfighter readiness and the warfighter's ability to maximize employment of weapons system capabilities.

Major Combat Operations (MCO) and Irregular Warfare (IW) are two Joint Operating Concepts that describe how Joint Forces (i.e., forces from multiple military branches)

will execute combat operations within a specific mission area in accordance with defense strategic guidance. These two Joint Operating Concepts, MCO and IW, which are not mutually exclusive, provide a useful framework for discussing the characteristics of an operationally representative battlefield. Both MCO and IW settings, each described in the following sections, are characterized by their adversary air defense system configuration, target type and configuration, and friendly/enemy ground force posture. The NTTR must provide MCO and IW settings for both T&E and training tenants, including non-DoD users.

Major Combat Operations Setting

The MCO setting is characterized by a wide battlespace that includes a simulated IADS, incorporating early warning radars, strategic and tactical surface-to-air missile systems, fixed military-type targets, and friendly ground forces postured against organized enemy military ground forces. For an example, envision a World War II battle such as "D-Day." Operations Allied Force and Desert Storm are the most recent examples of MCO. "Red Flag" exercises and the U.S. Air Force Weapons School's Advanced Integration phase are two advanced MCO training exercises that occur on the NTTR multiple times each year.

Figure 1-6 shows the current capability of the NTTR to provide an MCO setting. The notional threat system configuration, representing the aerial defense systems of a modern adversary, is depicted as red rings in the North Range. These rings are operationally representative of what would be encountered in an MCO setting. (Notional threat rings portray the distance around an emitter in which radar could detect an aircraft.) The air defense system in the North Range can be tailored to potential tactical and strategic needs and may be reconfigured with a variety of different threat systems and locations. However, the air defense system depicted in the South Range shows the maximum capability that can be provided at a limited number of fixed sites. Radars and electronic air defense systems on the South Range cannot currently be reconfigured because of the overlapping areas that were proposed for wilderness and land management approaches that prohibit a majority of military test and training activities outside of designated target areas.

Irregular Warfare Setting

IW may occur across a wide area of battlespace or in small areas and is typically characterized by tactical and man-portable air defense systems (MANPADS) and targets that are indistinguishable from civilian infrastructure where friendly ground forces are postured against an enemy that blends in with the local population. Operations Iraqi Freedom and Enduring Freedom are the most recent examples of IW. Typical IW operations over the past 14 years have involved the insertion of friendly ground forces on a drop zone or landing zone followed by terrain navigation through rural or urban areas with support from fixed-wing, rotary-wing, or remotely piloted aircraft, operating in a limited threat setting. IW T&E and training missions occur on both the North Range and the South Range. Although the South Range terrain is optimal for this setting, IW training is limited in the South Range due to the previously discussed restrictions on land use outside of the target impact areas and above 4,000 feet.

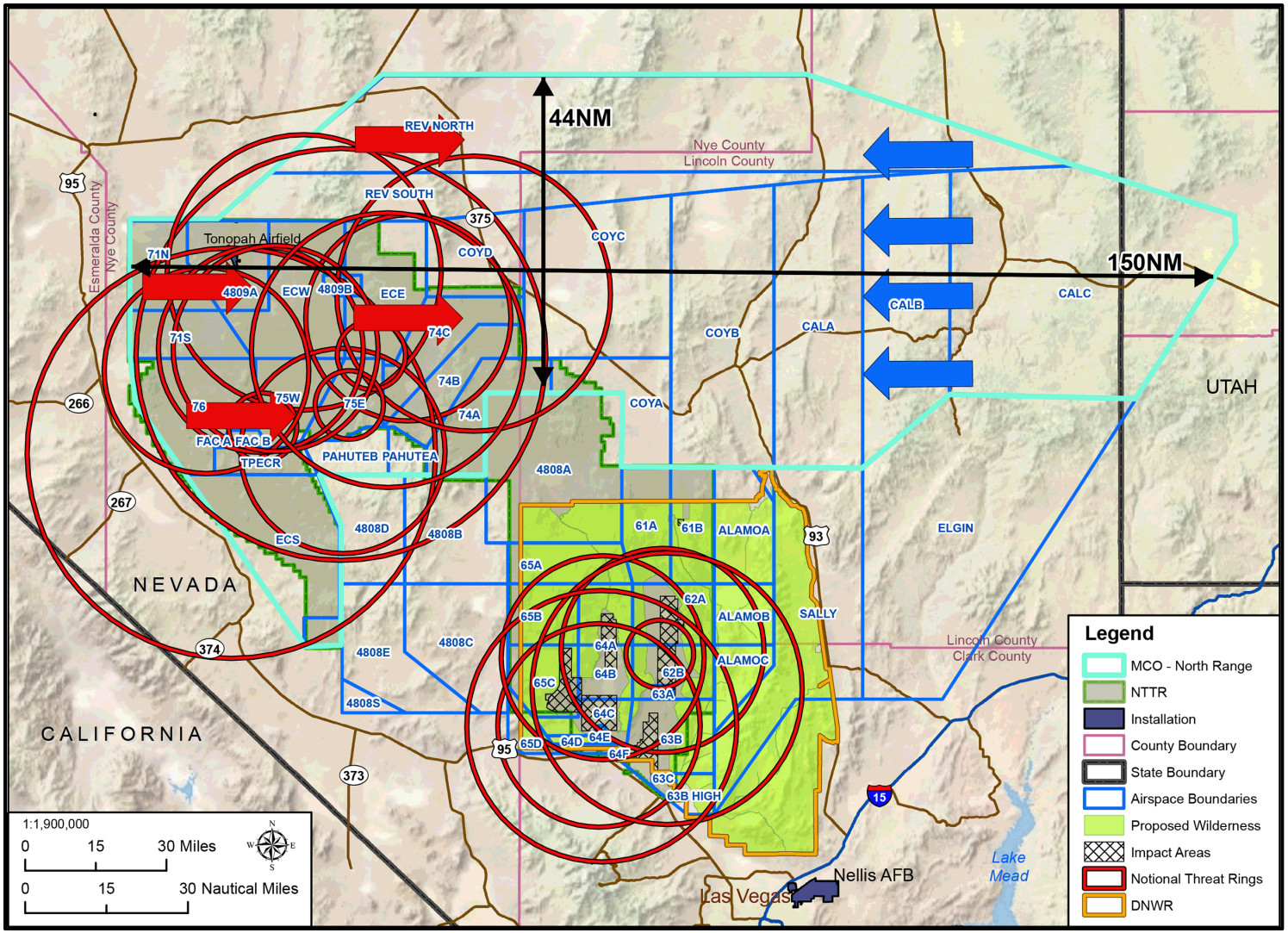

Figure 1-6. Current MCO Scenario

Note: "Proposed Wilderness" on the figure refers to the areas that were proposed for wilderness in 1971 (USFWS, 1971) for inclusion in the National Wilderness Preservation System. Red arrows represent a defensive force, while blue arrows represent an attacking force. Notional threat rings portray distance around an emitter in which radar could detect an aircraft.

1.4 PURPOSE AND NEED

The NTTR is a national asset with capabilities that cannot currently be replicated anywhere else in the world. The NTTR is critical for training various combat units of all branches of the U.S. Armed Services as well as U.S. allies that support or participate in certain aspects of tactical aviation and land combat missions. The NTTR land withdrawal is also critical to National Security and includes but is not limited to the activities of DoD, DOE, and Homeland Security and must be extended to ensure that a unique and enduring test and training range capability is available in the future.

The NTTR is a range in the MRTFB enterprise, which encompasses the largest, most fully equipped ranges designed to test and evaluate capabilities to support the DoD acquisition system and combat readiness. The MRTFB ranges also support operational training as capacity allows (U.S. Air Force, 2014a). The Air Force views the MRTFB ranges like the NTTR as irreplaceable national assets and the primary training ranges enterprise as an important component of combat readiness. In the January 2014 Congressional Report, the Air Force addressed six priorities that are critical to ensuring the viability of range infrastructure through 2025:

- Posturing for the new defense strategy
- Enhancing capabilities to support 5th generation aircraft and associated weapons
- Fostering compatible development
- Integrating space and cyber capabilities
- Institutionalizing Air Force special operations forces' range requirements
- Reducing range congestion and maximizing capacity through better business practices and innovative partnerships

For the Native American perspective on information in this section, please see Appendix K, paragraph 1.1.1.1.

For the past 20 years, the Air Force has been engaged in combat missions in the Middle East. The MRTFB adapted to the demands of these conflicts and evolved to deliver a test and training environment consistent with the demands of operations in both Iraq and Afghanistan. The MRTFB enterprise focused on counter-insurgency operations, desert and mountainous terrain, urban terrain complexes, and the incorporation of low-tech targets and simulated threats, which emulated the scenarios confronted in the Middle East.

Currently, defense strategy is directed toward a "pivot to the Pacific," which requires focusing on potential peer adversaries that may present more technologically advanced threats such as complex air defenses and highly sophisticated electronic countermeasures, including Global Positioning System (GPS) and radar jamming capabilities. The current MRTFB enterprise does not adequately replicate such a "peer adversary" environment at all of its ranges. To provide the realistic combat training required for aircrews, the Air Force must upgrade range infrastructure at select MRTFB ranges to accurately reflect the complex, concentrated environments that aircrews will likely encounter during combat operations with a peer adversary. These range

infrastructure upgrades include realistic integrated air defenses, target arrays compatible with advanced sensors, high-fidelity moving targets, and the ability to conduct operations in a contested and/or degraded environment.

Because constructing a test and training environment that adequately represents a technologically advanced adversary is costly, the Air Force cannot afford to invest in the needed infrastructure at all training ranges. Instead, investment must be focused on live infrastructure at a few, select ranges that will become hubs for intermediate to advanced training. The NTTR is the first of these ranges. The USAFWC is developing a strategic plan to guide investment in capabilities to allow the NTTR to more accurately replicate current threat environments (U.S. Air Force, 2014a).

Therefore, the Air Force's purpose and need for action is to sustain and enhance the military testing and training capacity, capability, and functionality of the NTTR through the land withdrawal process to meet current and future mission requirements, while continuing environmental stewardship of the lands entrusted to it. Mission requirements include, without limitation, the following:

- Increase MCO test/training capability to meet the demands of strategic guidance and alleviate competition for critical MCO electronic assets
- Enhance IW test/training capability
- Increase NTTR operational security and safety

Additionally, as a result of the overlap of the DNWR and areas that were proposed for wilderness in the South Range, there are significant restrictions on Air Force activities. These restrictions limit Air Force activities to ground areas below 4,000 feet and constrain development of new locations (such as emitter sites and communication sites) and use of historical targets that are located in areas that were proposed as wilderness in 1971.

While the Air Force has primary jurisdiction over the 60-series range impact areas, which are within the overlap between the DNWR and NTTR, they are live-fire target areas and do not offer the topography required for the development of simulated IADSs.

The South Range as a whole provides the terrain necessary to provide military training that would meet DoD requirements. However, land management restrictions outside of areas with primary Air Force jurisdiction currently do not allow for any ground-disturbing military testing or training activities. As a result, current land management practices prevent the majority of the South Range of the NTTR and associated airspace from being effectively used to support military testing and training activities.

Currently, the Air Force can use only about 112,000 acres of the approximately 1.2 million acres on the South Range for test and training activities.

As a result of the evolving mission, the Air Force proposes to withdraw and reserve public lands for military use to support the utilization and modernization of the NTTR by enhancing range capability for improved training and testing. The NTTR is the preeminent range for testing and evaluation of weapons systems, tactics development, and advanced combat training; however, the range and its infrastructure are quickly

becoming outdated as rates of technological development of new weapons systems and electronic warfare systems accelerate. Over the last two decades, enemy technology has become increasingly advanced and complex, requiring more space to replicate their potential threat configurations. The NTTR can no longer replicate this threat environment.

1.4.1 Increase MCO Test/Training Capability to Meet the Demands of Strategic Guidance and Alleviate Competition for Critical MCO Electronic Assets

As described previously, the NTTR provides a setting that can mimic potential large peer adversary scenarios. The NTTR must increase MCO capabilities to meet current and future MCO test/training requirements. This capability would be required during all NTTR operations (24 hours per day, seven days per week) in accordance with the HQ NTTR scheduling process.

DoD Strategic Guidance has shifted toward preparing for more technologically advanced peer adversaries, which possess complex air defenses and sophisticated electronic countermeasures. According to the *2025 Air Test and Training Range Enhancement Plan*, the United States' current range enterprise does not adequately reflect that complex combat environment (U.S. Air Force, 2014a). For realistic training that produces combat-ready aircrews, the Air Force must upgrade range infrastructure at select ranges, including the NTTR. Upgrades include realistic integrated air defenses, target arrays that are compatible with advanced sensors, high-fidelity moving targets, and the ability to conduct operations in a contested and/or degraded environment. To meet this challenge on the NTTR, additional MCO capability is required.

Current Capacity

The NTTR provides a training environment that can realistically replicate limited peer-adversary scenarios of countries with modernized air defense systems; however, MCO activities occur predominantly on the NTTR's North Range. The ability to simulate these large scale peer-adversary scenarios on the North Range is directly related to the Air Force's ability to have ready access to, and configure the training environment of, the North Range.

Ready access consists of four essential elements: adequacy, flexibility, timeliness, and variability. *Adequacy* means the complete ability to fully utilize all of the withdrawn land and its many features to meet NTTR mission requirements. *Flexibility* entails sufficiently permissive and cooperative management under applicable regulatory standards that allows the DoD and supported agencies to meet mission requirements, while *timeliness* is described in terms of the ability to conduct mission activities in a time-sensitive manner relative to National Security timelines, including short-notice, urgent missions, following established measures for expediting any necessary coordination. Finally, *variability* identifies the ability to adjust testing and training activities over time, including realignment of sites on lands withdrawn for the NTTR and varying the uses of such lands to meet DoD and

Establishing ready access in the South Range would considerably increase the capabilities there for MCO test and training missions.

supported agencies' mission requirements.

Although the Air Force has ready access in the North Range, it does not have ready access in the South Range. The lack of ready access for military use within the DNWR area of the South Range is the primary reason that MCO operations are channeled to the North Range. Ready access limitations on the South Range prohibit IADSs from being moved throughout the South Range; thus, IADS locations on the South Range are static and cannot be moved to emulate the real-world scenarios that warfighters will face during combat actions. This inability to install IADSs between egressing aircraft and target impact areas at distances similar to real-world scenarios nullifies the realistic training value and impedes effective use of the airspace associated with the South Range. Therefore, the capabilities in the South Range are insufficient to meet Air Force test/training needs. As a result of the limitations in the South Range, MCO test and training missions occur almost exclusively on the North Range due to its size and ready access to allow employment of robust threat and feedback systems, targets, and insertion capabilities.

However, the configurations in the North Range do not adequately represent real-world scenarios. Figure 1-7 shows an outline of a peer IADS located in an actual relevant geopolitical area that the U.S. warfighter might engage. The figure is illustrated with a white background to ensure anonymity; Figure 1-8 depicts the same system overlaying the NTTR, illustrating the limitations of the current land boundaries, which is a very limited battlespace compared to real-world scenarios. Figure 1-8 is a theoretical overlay and is not representative of any conceptual ideas for the Air Force's withdrawal application (Figure 1-6 illustrates the current MCO capacity).

MCO operations entail aircraft entering the North Range along an approximately 45-mile front while encountering electronic assets. During MCO training exercises, the airspace and live-fire targets are used at high-intensity rates for several weeks. Compressing a large number of aircraft in the relatively small space of the North Range leads to an emphasis on deconfliction efforts rather than tactical employment. Consequently, unique assets used in MCO T&E missions are unavailable during MCO training exercises. Furthermore, MCO testing events may last for several weeks, rendering targets and adversary threat systems unavailable for MCO training activities.

Use of the NTTR is accomplished by an internal scheduling and prioritization of requests within Nellis AFB and Creech AFB user groups; numerous requests for range time result in intense competition for NTTR land and airspace. NTTR test and training schedule blocks are managed to 15-minute intervals for each airspace and range area to ensure efficiency. Often, multiple users are active in one airspace unit, and many activities restrict or preclude the ability to conduct ground-based training activities because of safety considerations. Given the high demand for NTTR range access, NTTR range managers must often defer training for requesting military units while assigning them as a back-up user to a higher priority activity. Maintenance activities are scheduled for each ground area when not in active use, as windows of time become available. These activities include clearing ranges of unexploded ordnance (UXO) or preparing the range area for the next military test or training activity.

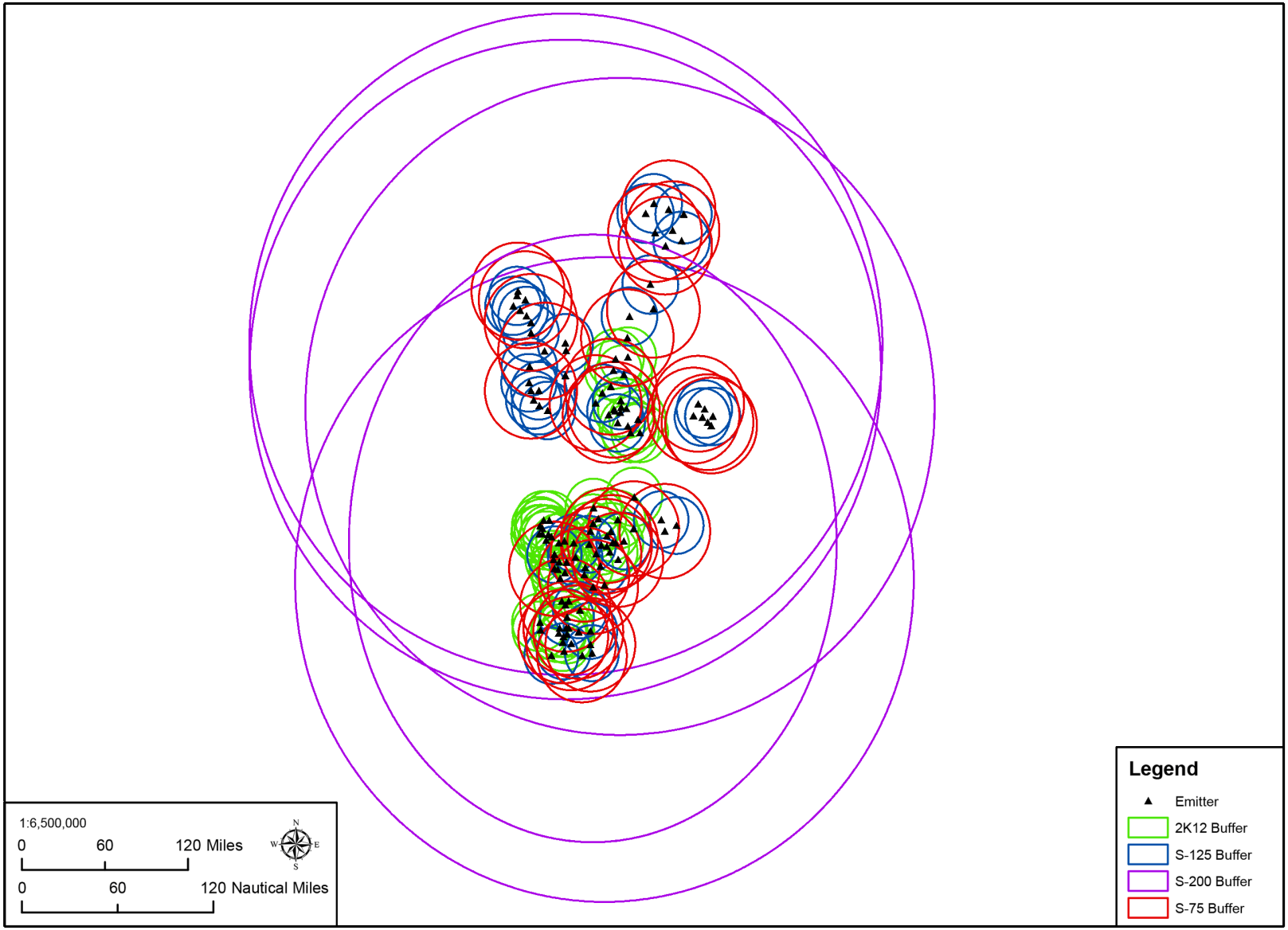

Figure 1-7. Real World Peer IAD System

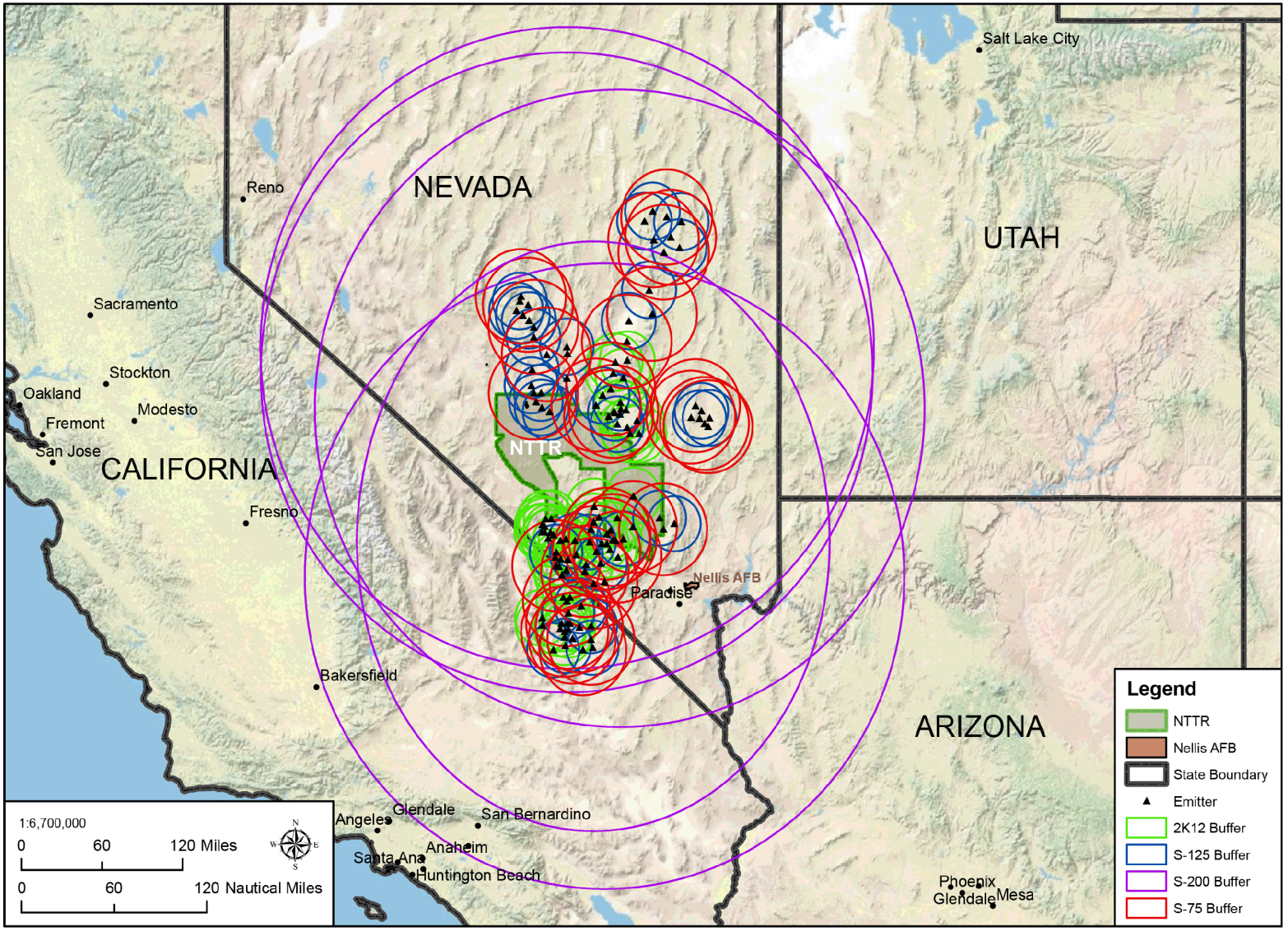

Figure 1-8. Overlay of a Real World Peer IAD System at NTTR

This is a theoretical overlay and is not representative of any conceptual ideas for the Air Force's withdrawal application.

Competition for land and airspace exceeds both permanent and transient/tenant units located at Nellis AFB and Creech AFB because a significant amount of the space is periodically used by other high-priority off-station users, such as Air Force Materiel Command and Edwards AFB assets, for test missions. Secondary-priority range users (Air Force Thunderbirds, 58th and 66th Rescue Squadrons, etc.), including tenant units and visiting off-station units, are increasingly constrained by scheduling challenges and encounter difficulties in efficiently meeting operational training objectives.

A review of the previous 10 years of UAS scheduling data shows the sustained growth of remotely piloted aircraft mission requirements has only added to the complexity and magnitude of scheduling, further intensifying mission competition. This competition has led to moving missions within the NTTR and in some situations displacing other missions.

The status quo for the NTTR is that testing and training requirements, along with maintenance and stewardship as well as regulatory activities, demand more than 100 percent of existing capacity. Virtually 24 hours per day/seven days per week, multiple testing and training missions along with other requirements compete for the same limited resources. As a result, on nearly any given day, an important National Security testing or training mission gets delayed. As technologies continue to advance, the Air Force can no longer discount the need for additional land to support its operations.

Expansion areas are being proposed for increased public safety and military operational security as the need and capabilities for test and training missions have increased.

Future Requirements

The technological advances incorporated in 5th generation aircraft (i.e., the F-35 Joint Strike Fighter) and associated weapons represent an unprecedented leap in combat capability. These advances allow crews to identify and engage multiple targets from greater distances with improved accuracy. The technology of precision-guided munitions has generally shifted the focus of training from weapon employment to target identification, increasing the complexity of the targets required to accomplish realistic training. The greater employment distances of these weapon systems add another limiting factor to the ability of range managers to conduct realistic training as individual sorties require larger portions of the range and airspace to train safely and effectively.

Range limitations of the NTTR will become more frequent and apparent as future mission requirements are scheduled. Since ready access for military use in the South Range is not available, there is limited ability to use the NTTR airspace to its maximum capacity. Simply put, pilots currently can approach the existing target impact areas only at limited angles from limited points in the airspace, which is one way that airspace is not being used to its maximum capacity. Approach angles are currently limited in large part because the emitters cannot be placed at realistic distances from the targets, which creates threat rings that are too close to

The current lack of ready access in the South Range forces the military to conduct major combat operations training and testing on only the North Range, causing backlogs and delays in testing and training missions.

the targets. The land available for threat emitter placement is extremely limited due to access restrictions and the current size of the NTTR withdrawal. The limitations on approaches could be greatly reduced if the Air Force were allowed access to other areas on the South Range to place threat emitters farther from existing target impact areas. While no new target impact areas are being considered as part of this proposed withdrawal extension or expansion, the ability to place threat emitters farther away from impact areas would allow pilots to approach the targets from a wider variety of points throughout the existing airspace, making the use of the airspace much more effective. Figure 1-9 illustrates how the current opportunities for target placement are limited and how the current placement of threat emitters (Figure 1-10) results in inadequate training for pilots.

Alleviate Competition for Critical MCO Electronic Assets

The NTTR has many unique MCO electronic assets; however, increased scheduling conflicts for range assets co-located in areas used for MCO activities creates competition between military communities and reduces the throughput rate of MCO T&E as well as MCO training. Increased capabilities that could reduce scheduling conflicts will improve the efficiency of current and future MCO activities.

In addition, Intelligence Surveillance Reconnaissance (ISR) has become a high-priority focus for the Air Force. Creech AFB is located on the NTTR, and their mission revolves around ISR training and T&E. Therefore, the NTTR has experienced increasing unmanned aerial system/remotely piloted vehicle/drone (i.e., UAS) training activities over the last 10 years at an unprecedented rate. Due to the lower speeds of UASs, it is difficult to schedule range areas within the interior without creating scheduling conflicts with MCO training and MCO T&E. UASs fly at much slower speeds than conventional air platforms, which creates a hazard for fast moving jet aircraft that are involved in MCO training and MCO T&E activities. As a result, there is a need for range areas that could accommodate the UAS training while limiting the impact to the MCO setting.

1.4.2 Enhance Irregular Warfare Test/Training Capability

Although the USAFWC recognizes the importance of providing large-scale peer adversary training exercises, it acknowledges that most of the current fight is of an IW nature. The Air Force test and training ranges have historically been used for the development of aircrew and airborne systems. However, IW operations have had an expanding role, highlighting the critical need to integrate special operations forces (e.g., Navy SEALs and Army Rangers) as well as battlefield Airmen. These forces, to include ground units, operate much differently than traditional air forces, but require the same access to realistic training space. The NTTR provides a unique natural topography similar to regions of the world where U.S. warfighters are currently engaged. In addition, the NTTR has infrastructure that is already available for IW training. The combination of infrastructure as well as natural topography makes the NTTR the ideal location for this training.

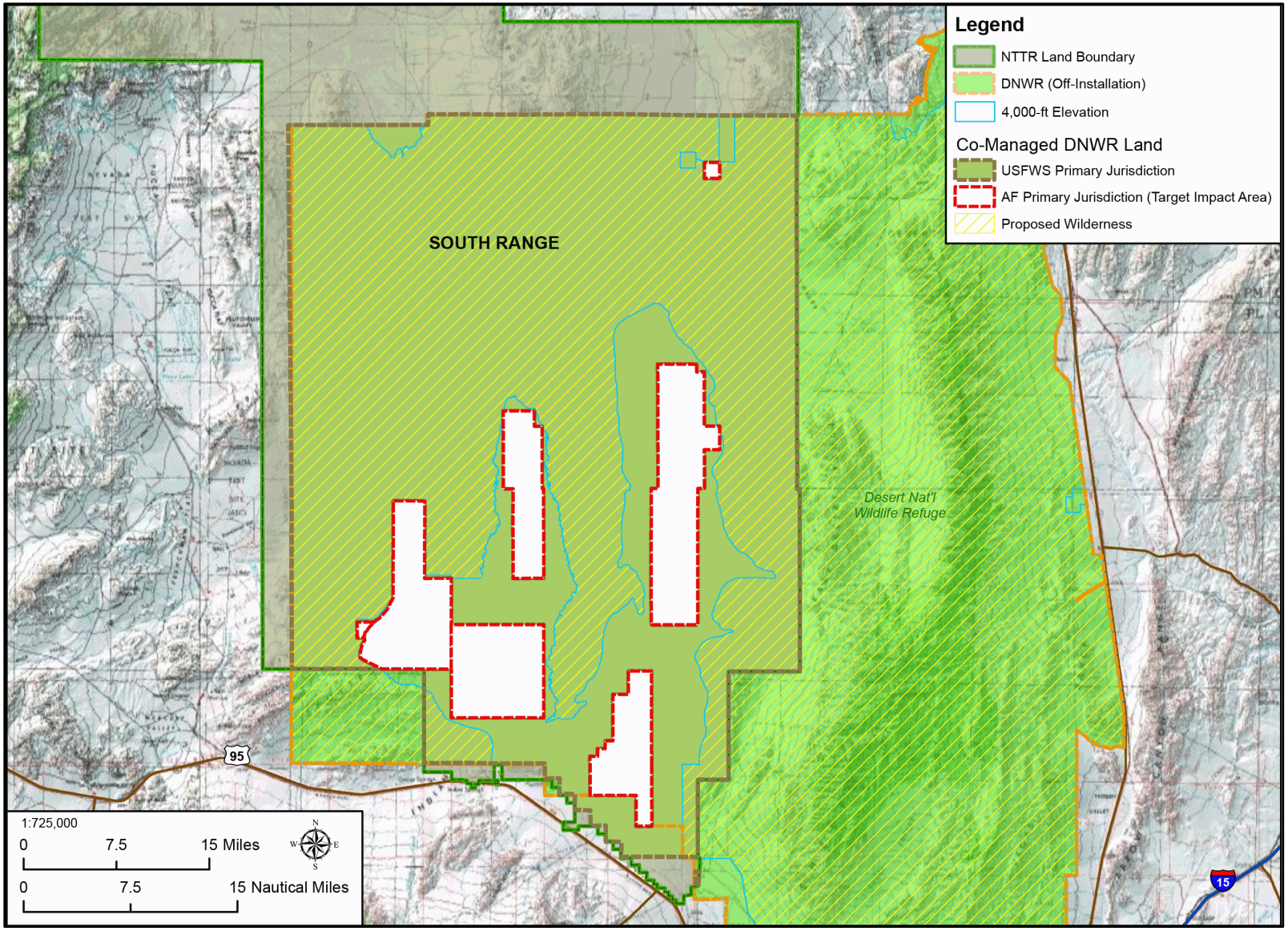

Figure 1-9. Current Primary Jurisdiction Designation of the DNWR

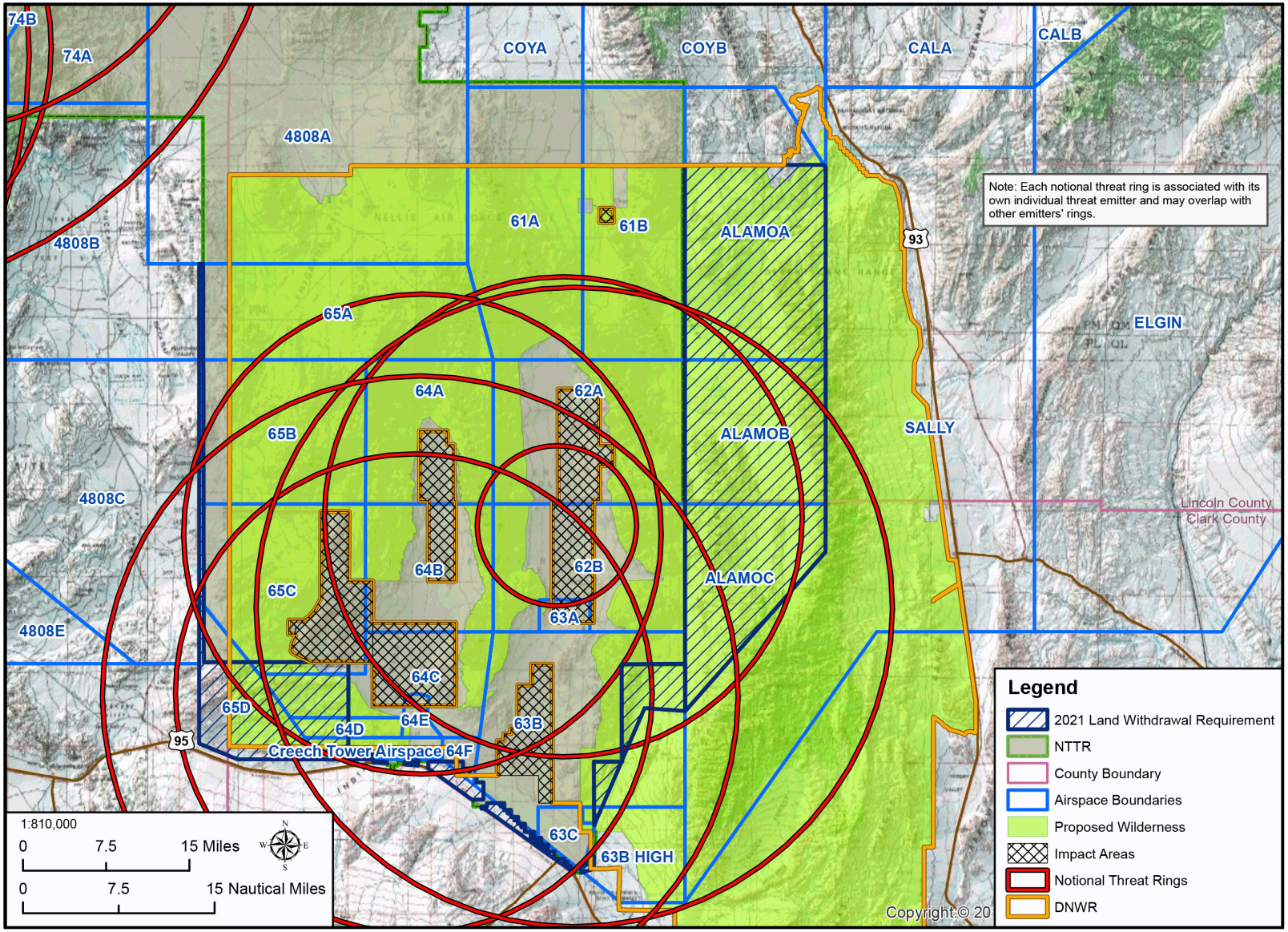

Figure 1-10. Current Threat Capability – South

Typical IW training includes ground training with the use of both air and vehicle operations support. Ground training includes a number of activities, but is generally the movement of dismounted soldiers through interstitial areas. Troop movements are typically stealthy as units transit from one objective to another. Special Forces teams usually operate in groups of up to 12 troops.

To increase the realism of the training events, some training ammunition (blank small arms), hand flares, smoke grenades, or other training munitions (such as paint balls) are expended during certain operations. In almost all cases, ground training on foot involves movement under covert, clandestine conditions without leaving any evidence of troop presence. Troop movement also generally occurs in single file movement of a small group, so that large troop movements over a large land mass do not occur. Land navigation training may occur during daytime or nighttime and usually involves the use of a compass, maps, and GPS. Troop movement on foot may also be used for training in search and rescue, personnel recovery, and reconnaissance. Personnel movement usually occurs on established roads, along mountainous terrain, and on rare occasions through riparian environments. These types of activities would occur with teams that are typically no more than 12 troops, and movements would occur in such limited frequency over the same area that the physical impact on the ground would be negligible.

Typical troop movement activity includes the following:

- Road march (done on existing roads for extended lengths of travel)
- 6- to 12-man team insertion/extractions from varying methods (parachute, airplane insertion, and helicopter); insertions are clandestine activities and regardless of how an insertion is accomplished, personnel would most often walk out of the insertion area
- Clandestine movement by foot to training objective sites (most often culminating at an Urban Operations Complex (UOC)
- Foot movement to a UOC through the interstitial and on existing roads

Air and Vehicle IW Operations Support

Airborne operations include the use of rotary or fixed-wing aircraft for the insertion, extraction, movement, or supplying of ground troops. This could include the delivery of special forces via an aircraft delivery to an insertion point or paradrops; paradrops are the delivery of equipment or supplies on pallets rigged with multiple automatically deploying parachutes. Insertion points, which are areas for inserting paratroops or paradropping equipment or palletized supplies, are established for user groups that conduct training and testing that integrate ground and air operations. Insertion points in this case are typically unimproved surfaces (i.e., ground areas without pavement or other improvements) and accommodate touchdown and takeoff of fixed-wing and rotary military aircraft.

Ground support vehicles are occasionally integrated into the training to deliver and retrieve the participating troops or provide support and logistics. Ground vehicle

movement is normally restricted to the existing road and trail network, but some training integrates the use of all-terrain vehicles or "dune buggies."

The NTTR plays a vital role in training combat units. Most of these ground forces perform a significant function in tactical aviation and land combat missions. As a result of this significant role, the USAFWC concluded that it requires the following capabilities at the NTTR:

- Development of unique insertion and extraction points
- Overland navigation (areas with and without mountainous terrain)
- UAS coordinated efforts with overland navigation

Insertion/Extraction (Drop Zone/Landing Zone) and Overland Navigation

One of the most challenging aspects of an IW operation is insertion and extraction of teams in a hostile threat environment. Keno Airfield in the North Range is highly utilized by Air Mobility Command, Special Operations Forces, and Marine Amphibious Forces to maintain combat mission-ready status. Keno is currently the only location on the NTTR that Mobility Air Forces, special operations forces, and coalition partners can test and train insertion and extraction capabilities. As described previously, the current DNWR-related ready access restrictions in the South Range limit IW training to the impact areas under Air Force primary jurisdiction within the South Range. However, insertion and extraction activities cannot be conducted safely in areas that may contain UXO, so those impact areas cannot be used for insertion/extraction activities. In addition to the lack of insertion and extraction locations in the South Range, the ability to conduct overland navigation is severely minimized as a result of the current USFWS management approach to land use. Consequently, the NTTR's current capability to replicate a full battle spectrum for IW training is severely constrained and essentially limited to the North Range.

Combined UAS and IW Training

The Air Force has identified ISR as a key component in IW strategies and has incorporated a robust training program to implement those strategies. Creech AFB is at the center of UAS training and is located on the NTTR. This provides a seamless opportunity to test and train crews and systems that are currently required for any IW operation. Ground personnel must be able to integrate ISR strategy into operations. Because of Creech AFB's proximity to the South Range, the South Range is the ideal location to test and train these assets. However, as mentioned previously, IW training in the South Range is limited due to access restrictions.

1.4.3 Increase NTTR Operational Security and Safety

Over the last 20 years, the population in Clark County (Las Vegas Metropolitan area) has grown significantly. Much of this growth has occurred in the northern half of the county, which abuts the NTTR. Consequently, NTTR managers have encountered public encroachment onto the range. In most instances, civilians have not realized that they are on the range as a result of losing their bearings, and sometimes civilians have

disregarded perimeter signage. Therefore, the USAFWC believes that a larger buffer area surrounding the NTTR in the southern portion of the range would aid in reducing these situations. Increasing the buffer and adjoining it to major infrastructure such as roads or fencing, would help the public more readily recognize the true boundaries of the range and limit the potential for public intrusions, thereby increasing public safety.

1.5 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

1.5.1 Requirements

Congress enacted NEPA to establish a national policy for the protection of the environment. It requires federal agencies to assess the environmental consequences of a proposed action and alternatives systematically as part of the decision-making process. The intent of NEPA is to protect, restore, or enhance the environment through well-informed decisions by federal decision makers. In the case of this LEIS, Congress will be the final decision maker. The Council on Environmental Quality (CEQ) was established under NEPA, 42 USC 4342 et seq., to implement and oversee federal policy in this process. In 1978, the CEQ issued regulations implementing the NEPA process under 40 CFR 1500–1508. The Air Force Environmental Impact Analysis Process (EIAP) for meeting CEQ requirements is accomplished via procedures set forth in CEQ regulations and 32 CFR 989. This LEIS has been prepared in accordance with NEPA and 32 CFR 989. These regulations outline the responsibilities of federal agencies and provide specific procedures for preparing EISs to comply with NEPA.

NEPA imposes a continuing duty to supplement (40 CFR 1502.9(c)) existing NEPA documents when substantial changes are made that are relevant to environmental concerns or in response to the identification of significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. In furtherance of NEPA's Section 101 goals to "protect, restore, and enhance the environment" (40 CFR 1500.1(c)), the Air Force may implement an adaptive management approach to managing the NTTR that is bounded by the analyses contained in the Final LEIS or follow-on site-specific analysis developed subsequent to the withdrawal legislation. Adaptive management allows for improving an understanding of complex, interrelated systems through a process built around a continuous cycle of experimentation, evaluation, learning, and improvement over time. The ability to experiment and test hypotheses in a time frame that allows meaningful data to be gathered and evaluated is an important element of that process. In the analysis of anticipated impacts in the LEIS, the Air Force has done its best to accurately predict potential impacts and anticipate future conditions. The area around the NTTR is a dynamic system that is continually evolving; it is likely that there will be unanticipated changes or new information may become available that may be different than expected. The Air Force is responsible for monitoring the predictions (e.g., impact, mitigations) made in its completed NEPA documentation (40 CFR 1505.3, 1505.2(c)).

This LEIS identifies and describes the affected environment and assesses the potential environmental impacts resulting from extending the current NTTR land withdrawal and the Air Force's proposed alternatives to expand the NTTR land boundary. Knowledge and information gained through the land withdrawal process provides benefit to the cooperating agencies involved in this LEIS by supplying enhanced baseline data and providing data that can be used in future management decisions and goals. Requests for access by government agencies or Native American tribal groups would follow the specific procedures established in the Integrated Natural Resources Management Plan (INRMP), Integrated Cultural Resources Management Plan (ICRMP), or an appropriate agreement, such as a Memorandum of Agreement/Understanding between the Air Force and the government agency or Native American group.

This NEPA analysis identifies environmental permits, potential specific mitigation measures, and management actions to prevent or minimize environmental impacts, if needed. This LEIS is unique in that a Record of Decision will not be signed. Congress, through legislative action, will make the final decision regarding the NTTR land withdrawal extension and proposed expansion. Therefore, mitigation measures will be incorporated through actions associated with the legislative language that Congress ratifies. It is anticipated that a mitigation plan will be developed in accordance with 32 CFR 989.22(d) but this will depend on the final legislative language developed during the Congressional process. If a mitigation plan is developed, it will address potential specific mitigations and management actions that the proponents of various actions could implement.

Some adaptations may require additional NEPA analysis, such as those that would result in a substantial change to the action. Since the LEIS is programmatic in nature, any future construction or operational actions will require site-specific NEPA-required analysis. This will include, but is not limited to, specific biological and cultural site surveys.

1.5.2 Public and Agency Review

NEPA and the Air Force's implementing regulations require the lead agency (in this case, the Air Force) to seek public participation throughout the EIAP. Accordingly, the Air Force's Notice of Intent (NOI) to prepare this LEIS was published in the *Federal Register* on August 25, 2016.

The Air Force elected to first involve the community through the "scoping" process, which included a series of public meetings and opportunities for comment on the development of the LEIS. Scoping helps identify potential issues and alternatives early in the environmental planning process.

Public comments are also solicited on the Draft LEIS. In providing for the opportunity to comment on the Draft LEIS, the Air Force requests that comments be substantive in nature. Generally, substantive comments are regarded as those specific comments that challenge the analysis, methodologies, or information in the Draft LEIS as being factually inaccurate or analytically inadequate; that identify impacts not analyzed or develop and evaluate reasonable alternatives or feasible mitigations not considered by

the Air Force; or that offer specific information that may have a bearing on the decision, such as differences in interpretations of significance, scientific, or technical conclusions, or cause changes or revisions in the proposed action. Nonsubstantive comments, which do not require an Air Force response, are generally considered those comments that are nonspecific, express a conclusion or opinion about the proposed action, agree or disagree with the proposals, vote for or against the proposal itself or some aspect of it, state a position for or against a particular alternative, or otherwise state a personal preference or opinion.

1.5.2.1 Summary of Public Scoping Process

Although a scoping process is not required for an LEIS, the Air Force elected to involve the community through a series of public scoping meetings. Notification of the meetings was published in local newspapers in 2016—the *Bullseye* on September 23 and October 7, the *Pahrump Valley Times* on September 28 and October 5, the *Lincoln County Record* on September 23 and October 7, the *Tonopah Times-Bonanza* on September 22 and October 6, and the *Las Vegas Review-Journal* on September 27 and October 6. The Air Force's public scoping meetings were subsequently held in Nevada in 2016: in Beatty on October 12, in Tonopah on October 13, in Caliente on October 18, in Alamo on October 19, and in North Las Vegas on October 20. The total number of attendees at each public scoping meeting hosted by the Air Force was 37, 21, 12, 25, and 155, respectively.

Appendix A, Public Involvement, provides additional details regarding the public scoping meetings and process.

1.5.2.2 Summary of Concerns Raised in the Public Scoping Process

During the public scoping period, verbal and written public comments were submitted to the Air Force via the website, e-mail, standard mail, and at the public scoping meetings. A total of 1,331 members of the public and government agencies submitted comments during the scoping period. The majority of public comments received were directed at the structure of the Air Force's proposal, biological and cultural resources impacts, and impacts on land use and areas that were proposed for wilderness. The most common concerns relevant to the development of the LEIS are discussed below. A full report of all comments can be found in Appendix A, Public Involvement.

NEPA Process and Development of the LEIS

Many commenters wanted the Air Force to comply with NEPA regulations and develop an LEIS before making a decision. Many sought the LEIS to address land management responsibilities between all agencies, stewardship and management practices, resource monitoring and results, and reporting requirements. Also, some thought that the resource assessments completed in the 1990s should be updated as part of the LEIS, including valuating the resources. Also, some asked that decision documents detail the anticipated enhancements to military readiness compared to the cost of conservation.

Other comments suggested that the LEIS include analysis of future Air Force needs; describe the legislative review and Congressional approval process, CEQ requirements, the *Engle Act*, the *Federal Land Policy and Management Act* (FLPMA), and the *Sikes Act*; describe the use of each range, including cleanup activities and buffer zones; and explain the history and purpose of the NTTR, DNWR, and wilderness areas. Others felt the LEIS's approach of providing a programmatic analysis is inadequate to fully and cumulatively analyze impacts or develop mitigations.

Purpose and Need

Several commenters felt that the purpose and need statement is narrowly constructed in favor of the proposed expansion areas and should reflect the missions of multiple users of the range such as BLM and the USFWS. Commenters suggested that the Air Force should also clearly justify the need for closing off public access. Other commenters raised concerns on future weapons and delivery platforms if there is nowhere else to expand. Also, commenters questioned the need for expanding safety buffers since the current range is deemed safe for present operations. Some comments claimed that if the Air Force says that an alternative "would not fully meet the purpose and need," the perception is the Air Force will automatically not select it, which implies pre-decision.

Description of Proposed Action and Alternatives

Many commenters requested that the LEIS include a clear project description with estimates and analysis of changes in levels of training. Commenters also asked that the LEIS include a detailed description of how the Air Force will implement management plans, including improvement of wildlife and habitat management on all withdrawn land.

Some commenters suggested expanding into other land adjacent to the NTTR or using open country in Nevada while others suggested moving Nellis AFB to Alaska or implementing cross-utilization and improved cooperation with other military installations. Others thought the East Desert Range Mountains would be a sufficient safety barrier.

Several commenters stated that new alternatives should be developed that represent both stakeholder and military preferences, consider current public land users, and potentially reduce the withdrawal area where possible. Other new alternatives were also proposed, including those that would: Congressionally designate wilderness for all areas that were proposed for wilderness; retain USFWS jurisdiction and designate wildlife migration corridors that may extend beyond DNWR boundaries; incorporate recreational access for stakeholders; limit NTTR use to airspace only; or maximize avoidance of impacts to public access. A mitigation was proposed that would have the Air Force, in exchange for withdrawing new lands, provide an equal release of currently restricted land to BLM, USFWS, or the public for multiple uses. Some commenters said that none of the existing alternatives include mitigations to impacts on biological, cultural, or recreational resources.

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

Comments related to Alternative 1 were primarily a vote for or against the alternative's implementation and did not offer substantive information for the Air Force to consider.

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

Comments related to Alternative 2 included views on proposed changes to USFWS jurisdiction in the South Range, involving possible incompatibility with wilderness and DNWR requirements and conservation goals. Some commenters expressed that the meaning of the term "ready access" and how it would be implemented was not clear. Some were concerned by North Range conditions being replicated on the South Range.

Alternative 3 – Expand Withdrawal of Public Lands for the NTTR

Comments on Alternatives 3A and 3C urged the Air Force to allow for multiple uses that avoid key recreational areas and utility corridor conflicts or to move testing further inside the NTTR so the proposed expansion areas are not needed. Alternative 3B concerns related to the loss of motorized access to the area. Commenters also requested details about planned construction activities and how public access would be preserved.

Alternative 4 – Establish the Period of Withdrawal

Comments on Alternative 4 stated that the choice of the withdrawal period must consider whether management plans will be fluid and adaptive. Many comments supported Alternative 4A (20 years) while others supported Alternative 4C (indefinite) to ensure that the military always has a place to train and test in realistic settings.

No Action Alternative

Various comments suggested that the Air Force should apply the No Action Alternative in only the South Range and continue using the North Range and/or training simulators.

Air Quality

Comments on air quality generally stated that the LEIS should assess ambient air quality impacts under each alternative, including National Ambient Air Quality Standards (NAAQS), criteria pollutant nonattainment and maintenance areas, greenhouse gases (GHGs), climate change, and conformity requirements of the *Clean Air Act* (CAA).

Airspace

Comments received regarding airspace questioned the need for more airspace, why dedicated airspace is required, and whether commercial air traffic travels at much higher altitudes than weapons delivery systems. Other comments requested additional information on airspace changes and claimed airspace demands do not equate to acquiring additional ground space. Other commenters suggested that the Air Force reconsider flight restrictions over "Area 51/Groom Range" to combine the North and South Ranges.

Biological Resources

Concerns about biological resources were related to potential negative impacts to wildlife (including bighorn sheep), conservation and management, habitat, and climate change. Some commenters requested that the LEIS describe how military activities would affect game animals, rare/unique species and habitats, seeps and springs, ephemeral streams and washes. Concerns also included the potential loss of the National Wildlife Refuge network, specifically the fragmentation of the refuge and loss of important ecosystems, as well as the potential for an increase in man-made fires. Other comments suggested that Air Force conduct surveys and develop maps to verify the presence of threatened/endangered and sensitive species and their habitats and avoid impacts or minimize/mitigate impacts when unavoidable impacts would occur.

Numerous comments discussed species conservation and management issues, such as potential impacts to habitat areas improved by other agencies and the ability for the USFWS and NDOW to access withdrawn lands for surveys and species maintenance (including guzzler maintenance). Others asked about impacts to ongoing monitoring and research that requires access to monitoring wells, springs, and surface waters. Some asked if the Air Force would install fencing at springs to keep animals away.

Several comments asked the Air Force to conduct adequate biological monitoring and habitat maintenance, develop an updated INRMP, and consider wildlife management issues as a high priority. Also, some commenters were concerned about potential impacts due to changing jurisdiction in the South Range, specifically from vehicle use, bombing, and infrastructure.

General sensitive species management concerns were expressed, particularly effects to protected species, and Air Force compliance with the *Endangered Species Act* (ESA) and contribution to species conservation. Commenters suggested that the Air Force should consider how existing partnerships and strategies to conserve special status species would be affected and whether biological species would fare better under the current management framework. Species-specific management and conservation concerns from the Proposed Action included migratory birds, bald and golden eagles, and the Amargosa toad.

Some comments asked the Air Force to consider climate change effects and the associated impacts to biological and natural resources under each alternative and adaptively manage operations to minimize the effects of climate change.

Cultural Resources

Most cultural resources comments related to possible damage from greater range use. Some thought that limits on public access to historical, geological, and archeological sites could prevent site studies, surveys, and management activities. The potential intrusion upon or impact to tribal ancestral lands was also a concern. Others wanted the Air Force to consult with tribes under Section 106 of the *National Historic Preservation Act* (NHPA) and have the LEIS describe the consultation process and identify the main tribal concerns, including tribal access to cultural resources and sacred sites.

Earth Resources

Concerns about earth resources focused on potential impacts to active mining claims and restricted access, including physical and institutional barriers, to potentially highly mineralized areas suitable for current and future mineral exploration and mining.

Hazardous Materials and Solid Wastes

The following hazardous materials and solid waste issues were requested to be addressed in the LEIS: use, management, and disposal of depleted uranium munitions; effects of chaff and flares on the environment; documentation of contaminated sites and site remediation activities; use and effects of perfluorinated compounds; range clearance plan; potential for off-range contaminants; and sampling and assessment of ecological and human receptors. Other commenters were concerned with the military's current and long-term utilization and potential contamination of areas that were proposed for wilderness and valley portions of the DNWR. Commenters asked the Air Force to identify the liable and responsible entity to cleanup contamination for future visitor use and wildlife safety once the range is no longer being utilized.

Health and Safety

Comments on health and safety addressed impacts and hazards from general military operations, including electromagnetic radiation, UXO, and fuel spills.

Land Use, Recreation, and Visual Resources

Land use comments asked how the proposed expansion would reduce multiple use opportunities and grazing rights. Commenters also voiced concerns for private ranches, cattle, and water access. Some said that analysis should assess impacts from reducing access to public lands for recreation, including wildlife-related recreational opportunities, research, monitoring, restoration projects, and economic activities. Commenters concerned with recreation asked the Air Force to provide continued access to the DNWR and Alamo Road and were concerned for the loss of recreation opportunities, such as hunting, off-roading, mountain biking, hiking, and the Desert off-highway vehicle (OHV) race. Access restrictions to Corn Creek, Hidden Forest Cabin, Hayford Peak, and the west side of Sheep Range were also mentioned. Some commenters suggested the Air Force should indicate when and where recreation closures would occur and consider open or shared use as mitigation.

Others were concerned for the potential loss of county-specific permits, rights-of-way, and access to county assets. Some were concerned that the proposed expansion areas would encroach on Beatty and future development projects. Also, some commenters felt there would be adverse impacts on DNWR and National Park Service (NPS) resources.

Visual resources concerns included potential light pollution impacts to naturally dark night sky cycles, stargazing, and "wild feeling" characteristics, as well as development that could remove scenic views, release fine dust, and alter landforms and vegetation.

Noise

The most commonly expressed noise concerns dealt with the potential for increased noise pollution and sonic booms, vibrations on homes, and impacts to elderly people and quality of life. Others suggested the Air Force implement and publicize flight rules to reduce noise impacts and include feedback from local citizens. Some asked that the LEIS discuss existing Air Installation Compatible Use Zones (AICUZ) and Range AICUZ (RAICUZ), describe in detail noise impacts to local communities and residents, include noise complaint data over the last 20 years, and ensure the analysis encompasses areas with noise complaints. Some comments pointed out that estimated noise levels in the LEIS should address sound as humans perceive it and include a nighttime penalty. Others suggested independent noise monitoring before and after the land withdrawal.

Transportation, Infrastructure, and Utilities

Infrastructure comments typically addressed the potential conflict with current and long-range planning of transportation and utility corridors, existing right-of-ways, existing roads and public use of and access to roads, back country roads, trails, and mountains.

Socioeconomics

Many socioeconomic concerns were about potential economic impact from the loss of recreation and tourism revenue generated within the proposed expansion areas, including the bike trails and OHV race. Others questioned potential losses related to the conservation excise tax on firearms, ammunition and hunting licenses, local and state revenue, tax revenue, and Payment in Lieu of Taxes (PILT). Some were concerned that impacts could occur to jobs from access restrictions to lands used for mining, ranching, oil and gas development, renewable energy, water rights, recreation, tourism, and other activities.

Commenters suggested using the 1991 Special Nevada Report as a baseline to examine a range of cumulative economic impacts from the continued withdrawal of the NTTR. Some said that the LEIS should include direct/indirect effects of continued land use restrictions, identify mitigations to offset economic impacts, include detailed past, present, and projected urban growth patterns in the noise-impacted areas, consider current and projected changes of aircraft types, and conduct a similar analysis for sonic booms. Lastly, commenters felt that the loss and defamation of the land would have negative psychological impacts on members of the public.

Water Resources

The primary water resources concerns dealt with potential loss of public access and water rights to springs, water sampling wells, water projects built and paid for by sportsman, water systems used for bighorn sheep and other wildlife, and/or prevention of future water resources developments. Other concerns addressed potential disruption to spring flows, other water supplies, and contamination of refuge waters. Some stated that the LEIS analysis should include surface water, groundwater, water quality, and wetlands and consider hydrographic area, quantities of unappropriated water resources, and continuous impacts from limiting access to water resources.

Wilderness and Wilderness Study Areas

Comments regarding wilderness and Wilderness Study Areas specifically wanted the LEIS to address how wilderness areas would be disturbed and protected. Many commenters disagreed with the potential change in land management of the areas that were proposed for wilderness, which would result in those areas no longer being managed as wilderness.

Cumulative Impacts

Most comments on cumulative impacts cited regulations that require the Air Force to assess cumulative impacts in the LEIS. Some felt cumulative impacts analyses should be integrated into the discussion of resource impacts as opposed to a separate chapter and the methodology used to assess cumulative impacts should be described. Others asked for the following to be included in the analysis: impacts to visual resources and landscape effects from constructing multiple facilities, identification of observation points so future facilities can be sited strategically to protect important viewsheds, and impacts to private land, ad valorem tax base, mining sector, and access to water resources.

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2. DESCRIPTION OF ALTERNATIVES

This chapter discusses the selection standards used to identify candidate alternatives. It describes a range of reasonable alternatives that, if combined, would fully meet the purpose and need for withdrawing and reserving land for the NTTR. Individual alternatives when taken separately may meet an Air Force need but not necessarily meet the full purpose and need for all of the operational requirements described in Section 1.4, Purpose and Need. The Air Force is evaluating alternatives that would extend the current NTTR land withdrawal as well as withdrawal of additional lands for the NTTR mission. This chapter also describes the No Action Alternative. The reasonable alternatives and No Action Alternative form the basis for the analyses of potential environmental impacts.

2.1 ALTERNATIVE DEVELOPMENT AND SCREENING PROCESS

For the Native American perspective on information in this section, please see Appendix K, paragraph 2.1.1.

NEPA and its companion regulations require federal agencies to develop and identify reasonable alternatives to a proposed action. Reasonable alternatives include those "that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant" (CEQ, 2010). In determining the scope of alternatives to be considered, the Air Force places emphasis on what is "reasonable" rather than on whether the proponent or applicant prefers or is itself capable of carrying out a particular alternative.

An alternative that is outside the legal jurisdiction of the lead agency must still be considered in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered (40 CFR 1506.2(d)). Alternatives that are outside the scope of what Congress has approved or funded must still be considered if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies (40 CFR 1500.1(a)) (CEQ, 2010).

Description of the selection standards identified as well as the alternatives not carried forward for detailed study are addressed in Section 2.2. Detailed descriptions of the action alternatives and no-action alternative are described in Sections 2.3 and 2.4, respectively. Section 2.5 summarizes applicable federal, state, and local permits and the potential for change in the permits due to implementing the Proposed Action and other action alternatives. Section 2.6 provides a framework for General Environmental Constraints while Section 2.7 provides a comparison of the anticipated environmental effects of the action alternatives and the no-action alternative. Section 2.8 presents potential mitigation measures.

2.2 APPLICATION OF SELECTION STANDARDS

To meet NEPA's requirement to evaluate a full range of alternatives, the Air Force developed a process to identify potential alternatives. The first step in that process was to establish whether any military installation other than the NTTR should be evaluated. In Section 1.4, the Air Force established the purpose and need for the NTTR land withdrawal, which was supported by the *Report to Congressional Committees: 2025 Air Test and Training Range Enhancement Plan* (January 2014), which states "…a few select ranges which will become hubs for intermediate to advanced training. The first of these ranges is the Nevada Test and Training Range (NTTR)." The 2014 Congressional Report makes it clear that the current test and training activities will continue and will increase to support the six priorities that are critical to ensuring the viability of major range infrastructure through 2025. It is estimated that the range infrastructure described in the 2014 Congressional Report has an estimated value of roughly $4 billion. Therefore, it would be extremely expensive to try to recreate the NTTR's existing infrastructure at another range, which is one of the major reasons the Air Force would like to retain use of withdrawn land in the NTTR. In addition, it is estimated that the cost to clean up contaminated sites on the NTTR would range from $1 to 4 billion. Consequently, if the DoD was required to recreate the infrastructure at another range as well as clean up current contamination, the cost would range from $5 to 8 billion. Because the 2014 Congressional Report details more infrastructure investment and specifically cites the NTTR as well as the significant cost for cleanup, it was concluded that the need for the withdrawal was specific to the NTTR (U.S. Air Force, 2014a).

The cost to relocate and build new infrastructure as well as clean up current contamination would range from $5 to 8 billion. Additionally, the variety of capabilities, terrain, range infrastructure, and airspace is unique to the NTTR's current location.

Besides the range infrastructure, the NTTR is unique from an airspace perspective. Large areas of airspace where commercial and private air traffic operating under both visual flight rules (VFR) and instrument flight rules (IFR) is restricted from overflight remain a key element of the NTTR. Figure 2-1 illustrates a five-hour snapshot in time of all U.S. commercial air traffic to give a sense of the airspace above the NTTR relative to the air traffic above the rest of the country.

The geographic proximity of the NTTR to China Lake and the Utah Test and Training Range is another important attribute of the range, making it an important part of a larger training resource. In the past, all three complexes have been used together to provide a larger capability for specialized test or training activities. For example, one annual tactics development exercise that supports new approaches to operations requires access to most military airspace from China Lake in the southwest to the Utah Test and Training Range in the northeast. The NTTR geographically links the three ranges and, with its electronic warfare capability, provides a crucial tactics mission environment.

The Air Force considered expansion of the NTTR in various directions to meet the purpose and need. However there are external encroachment issues that limited the Air Force's ability to expand to an extent that would make any useful difference. For example, external encroachment issues include, but are not limited to, major state and

interstate highways and interrelated population centers and roadway infrastructure (Figure 2-2). Furthermore, existing wilderness areas limit the Air Force's ability to expand. Wilderness areas to the north include the Toiyabi National Forest, with Table Mountain, Arc Dome, and Alta Toquima Wilderness areas. To the northeast are the Humboldt-Toiyabe National Forest (with Quinn Canyon and Grant Range Wilderness areas) and the Worthington Mountain Wilderness, and Weepah Springs Wilderness. The Big Rocks, Mount Irish, and South Pahroc, Delamar Mountains, Meadow Valley Range, Mormon Mountains, Muddy Mountain, and Arrow Canyon Wilderness areas are to the east, and the Mount Charleston Wilderness area is to the southwest, while the Mount Stirling Wilderness Study Area is to the southwest.

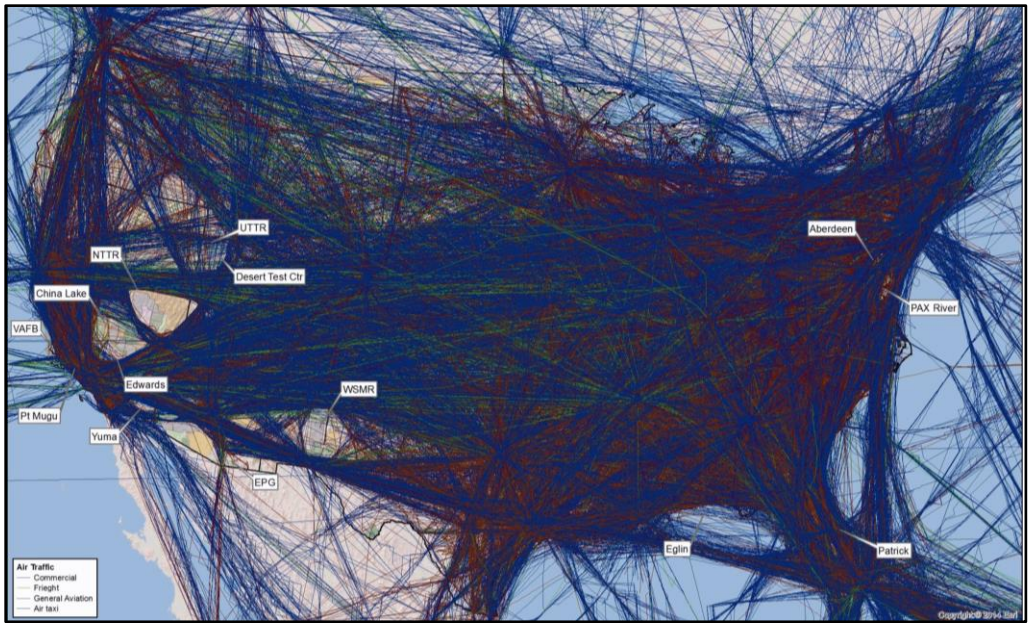

Figure 2-1. Snapshot of U.S. Commercial Air Traffic

As a result of the aforementioned infrastructure investment and cleanup costs, airspace attributes, and encroachment issues, it was determined that it is not feasible to meet the purpose and fulfill the needs of the NTTR land withdrawal at any other location. Furthermore, while the Air Force determined that current and future operational requirements (outlined in Section 1.4) require some additional land, the Air Force sought to limit the potential land expansion to areas already under federal control. Any expansion to lands that are not under federal control would be a result of operational security concerns and would be limited to reduce land use impacts.

The second step in the screening process was an Air Force evaluation of its operational requirements and a subsequent comparison of their requirements with two long-term criteria: capacity and range sustainment. The Air Force defined *capacity* as having the land and airspace needed to fulfill warfighter mission requirements, to include restricted areas specifically designated for hazardous activities, such as Special Use Airspace (SUA).

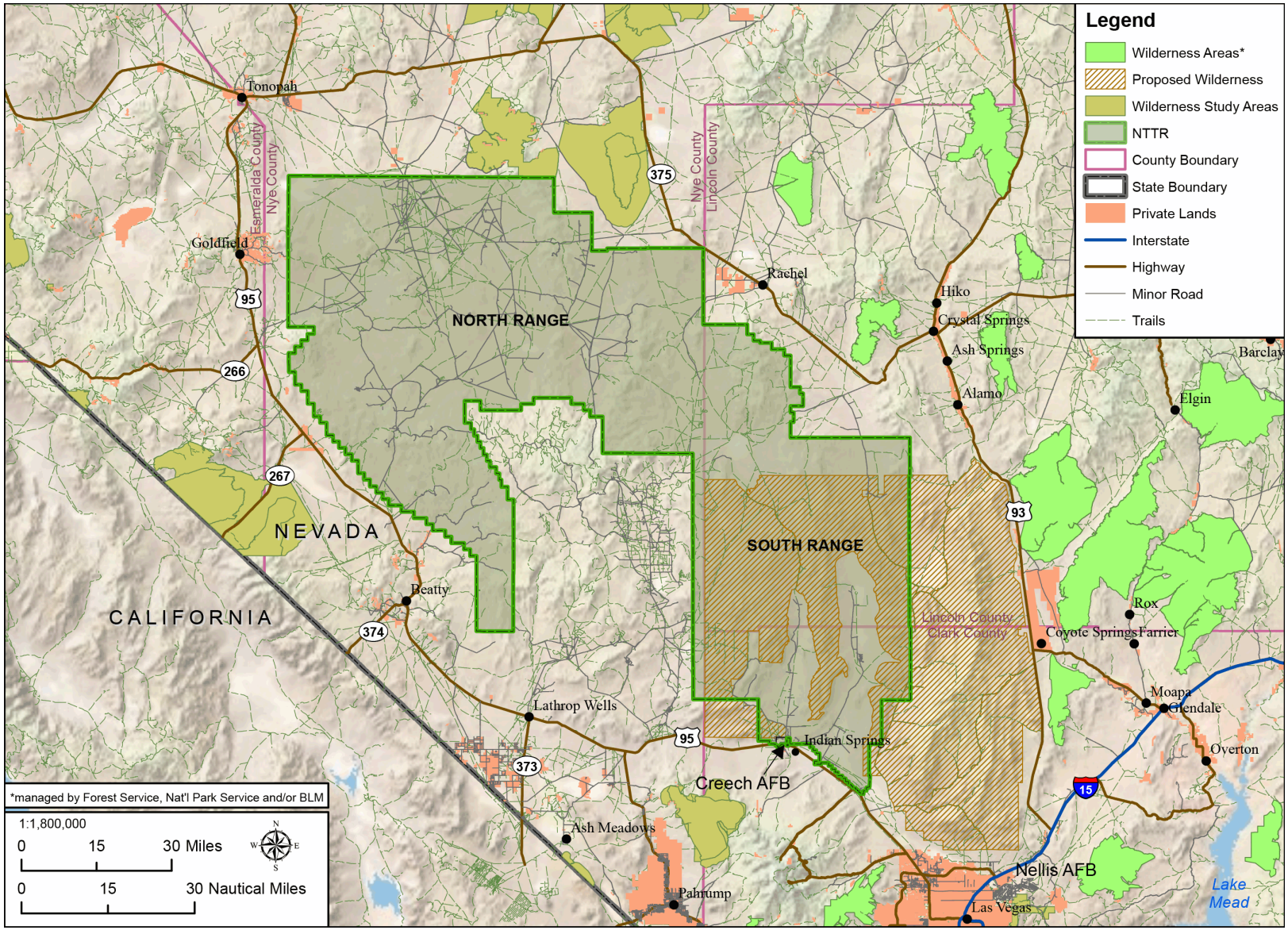

Figure 2-2. Population Centers, Roadway Infrastructure, and Wilderness/Wilderness Study Areas

Range sustainment was defined as the ability to conduct current test and training operations in addition to future predicted range operations. This includes addressing current and future encroachment issues as well as future requirements.

The third step in the screening process further addressed each of the Air Force's three distinct operational requirements anticipated in the future. Sections 2.2.1 through 2.2.3.1 summarize the selection standards developed for each of the operational requirements and present the alternatives evaluated but not carried forward.

2.2.1 Increase MCO Test/Training Capability to Meet the Demands of Strategic Guidance and Alleviate Competition for Critical MCO Electronic Assets

For the Native American perspective on information in this section, please see Appendix K, paragraph 2.2.1.1.

As a result of the overutilization of the North Range and the land management limitations in the South Range discussed in Section 1.4.1, when the Air Force increases MCO training on the NTTR, then MCO T&E capabilities are reduced, and if the Air Force increases testing missions, it reduces the ability to conduct MCO training exercises. To address the limitations imposed by this inverse relationship, the USAFWC developed a two-axis front concept that would create a longer Forward Edge of Battle Area. In laymen's terms, a Forward Edge of Battle Area is a front line in a military battle. This configuration would allow separate MCO activities to occur on the NTTR simultaneously, which is not possible in the current configuration (Figure 2-4), and would provide a more operationally relevant MCO test/training setting for large force exercises or tests. Training or testing that cannot be performed on the North Range would be able to occur elsewhere on the NTTR under a two-axis front configuration. A second location for MCO training would mitigate competition between MCO activities on the North Range and would add to the NTTR's relevance by creating a battlespace that allows a two-axis fight when the whole range is dedicated to MCO test or training.

Figure 2-5 illustrates the concept of using a two-axis front to add MCO capability specifically in the South Range, which would increase the capacity of the NTTR by reducing the intense competition for the NTTR North Range. This concept reduces scheduling conflicts and allows MCO T&E customers and training customers two options to gather test data or conduct training missions on the NTTR. Figure 2-5 also shows how notional threat emitters could be placed farther from the targets as a result of ready access in the South Range and expanded withdrawn lands. This emitter configuration replicates a more realistic training environment.

Initially, the Air Force evaluated displacing non-DoD missions such as NNSA's stewardship mission, but it was determined that such missions were less than 1 percent of the test and training requirements and would not significantly reduce the demand, especially on the North Range. Since displacing other DoD missions had a negligible impact, the Air Force identified locations on and adjacent to the NTTR that could accommodate a two-axis front concept and since live-fire exercises are a major component of MCO, the USAFWC applied primary selection standards based on safety concerns involving population centers and roadway infrastructure surrounding the NTTR (Figure 2-2). Relocating population centers or roadway infrastructure could not occur

within the withdrawal extension timeframes. Additionally, major state and interstate highways would not be impacted by any weapons safety footprint that could cause their closure. To ensure safety, the Air Force's weapons safety footprints would not extend outside of existing withdrawn lands. Refer to Figure 2-3 for a diagram of a weapons safety footprint.

Furthermore, the USAFWC established that they would not create new "dudded" areas (areas where live ordnance is used and unexploded munitions may remain) as part of the full battle spectrum associated with the MCO training exercises. Although not required, the USAFWC added this component to the selection standards associated with this operational requirement, which is specific to the NTTR land withdrawal effort. This would not preclude the creation of dudded impact areas in the future if DoD requirements changed. Any such action would require further evaluation of potential environmental impacts as part of a separate NEPA process.

The Air Force is not proposing to create any new target impact areas or "dudded" areas on the NTTR as part of this action.

The Air Force included specific selection standards for the placement of conceptual threat emitters. Threat emitters must be located in topography that will permit advanced detection to the east and north, which is required to implement the two-axis concept. To reduce overall impacts, the Air Force would locate threat emitters along existing roads or unpaved two-tracks, and threat emitter sites must have closed access for up to 1 mile if they are located outside of NTTR-controlled boundaries. Additionally, classified mission areas within the NTTR or NNSS must not be impacted by the siting of threat emitters.

Review of the selection standards indicated that population centers, roadway infrastructure, and Wilderness/Wilderness Study Areas surrounding the NTTR coupled with the criterion to limit the creation of "dudded" areas constrained locations that could accommodate MCO. As a result of this preliminary screening, it was determined that MCO exercises could only be expanded in NTTR's South Range. Therefore, the USAFWC concluded that electronic assets and existing dudded areas in the South Range could be utilized to emulate the integrated battle environment associated with MCO training and MCO T&E available in the North Range.

After preliminary screening established that MCO exercises could be expanded on the South Range, the USAFWC developed additional selection standards specific for implementation of MCO exercises on the South Range. Two additional selection standards were added—operational feasibility and operational realism (defined as follows):

- Operational feasibility: The ability to conduct the mission activities within an area that can accommodate weapon safety footprints.
- Operational realism: The ability to conduct current and future mission activities in a manner consistent with real-world operations.

See Figure 2-6 for a representation of the current limited weapons employment capabilities at the NTTR and Figure 2-7 for a conceptual illustration of weapons employment required for an operationally realistic training scenario.

Weapons Safety Footprints:

Whenever live-fire exercises are conducted, safety buffers are created due to potential safety hazards from misfires and shrapnel or debris from explosions.

Figure 2-3 illustrates the safe axis, or direction, by which aircraft can drop air-to-ground weapons on a target. The red container area on the left side of the figure depicts a safe buffer, from weapon release to impact, and provides a safe zone should there be any weapons malfunctions that affect the munitions flight path or ability to guide on target.

However, there is not just one potential safety axis; there can be multiple axes that cumulatively create a composite safety weapons footprint area surrounding the target, as depicted on the right side of the figure.

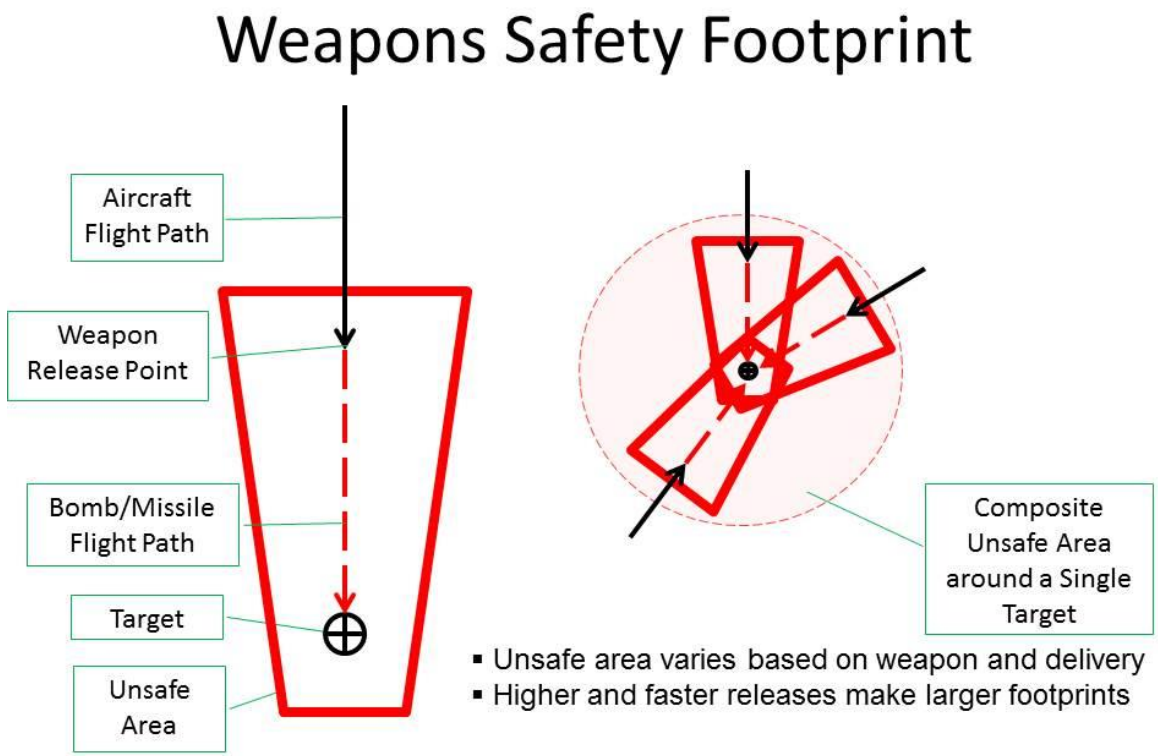

Figure 2-3. Diagram of a Weapons Safety Footprint

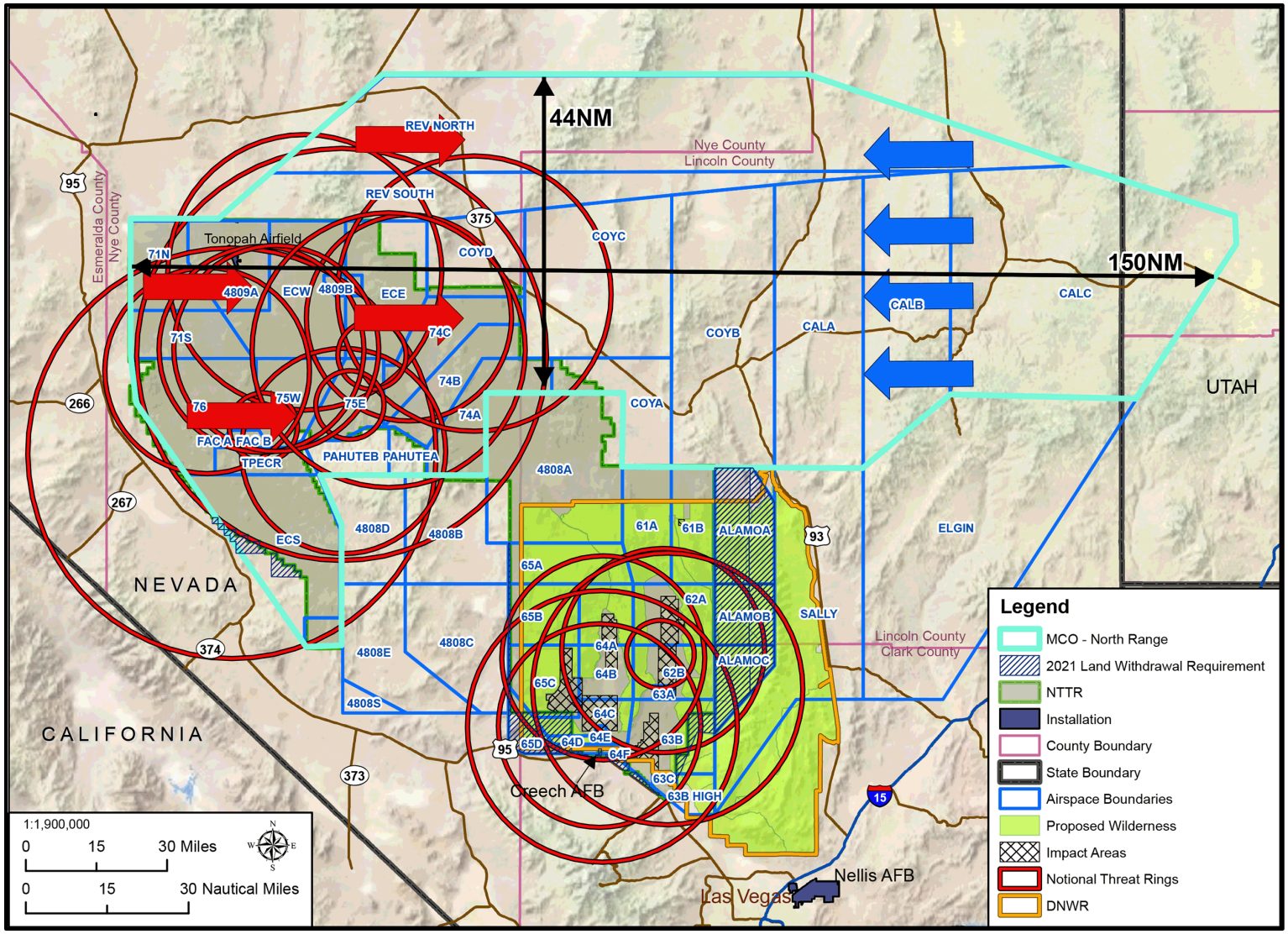

Figure 2-4. Current MCO Scenario

Note: "Proposed Wilderness" on the figure refers to the areas that were proposed for wilderness in 1971 (USFWS, 1971) for inclusion in the National Wilderness Preservation system. Red arrows represent a defensive force, while blue arrows represent an attacking force. Notional threat rings portray distance around an emitter in which radar could detect an aircraft.

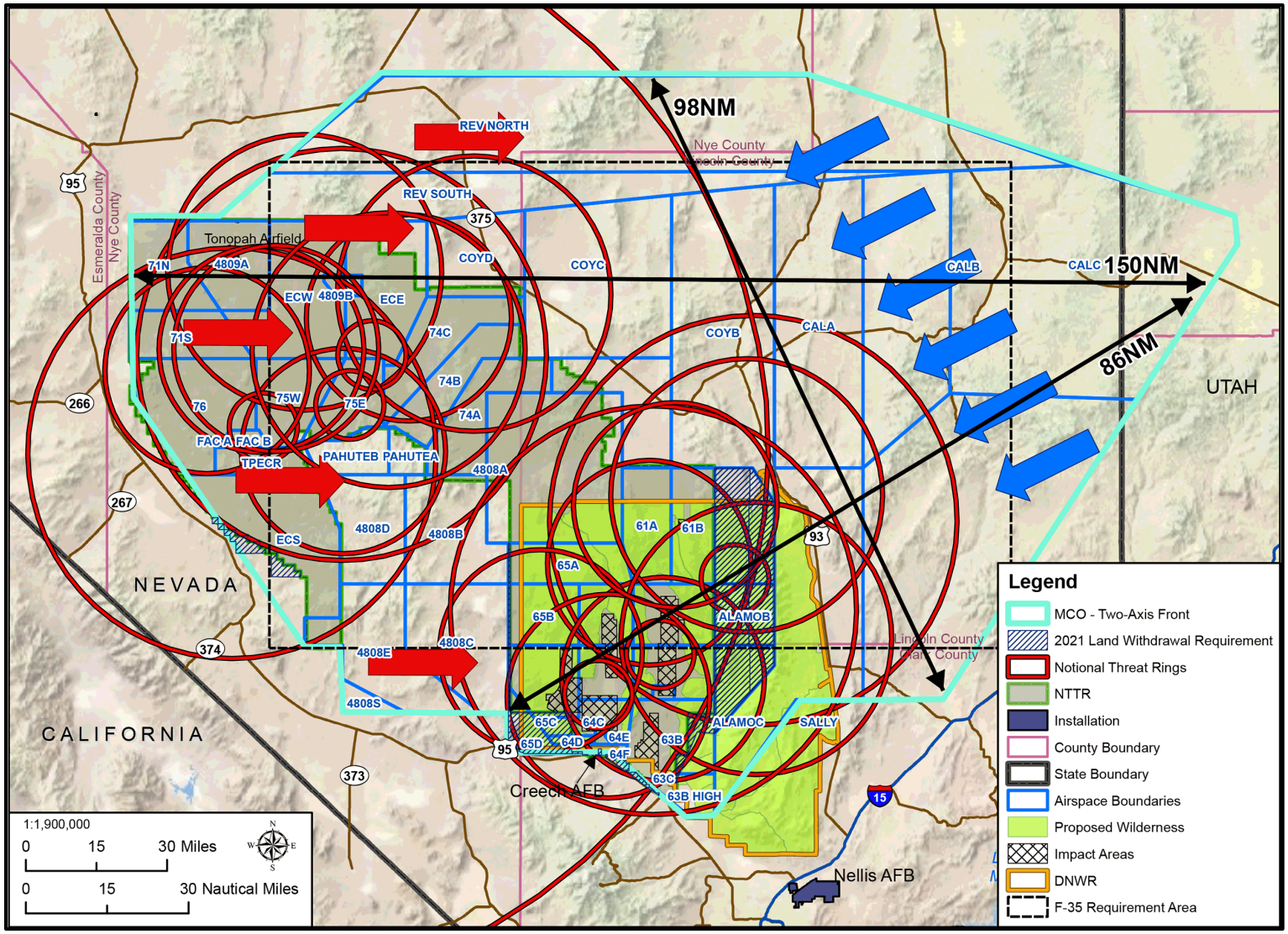

Figure 2-5. MCO Two-Axis Front Concept

Note: "Proposed Wilderness" on the figure refers to the areas that were proposed for wilderness in 1971 (USFWS, 1971) for inclusion in the National Wilderness Preservation system. Red arrows represent a defensive force, while blue arrows represent an attacking force. Notional threat rings portray distance around an emitter in which radar could detect an aircraft.

Operational Realism:

Figure 2-6 represents the current limited weapons employment capabilities at the NTTR. Because of limited land area in the South Range, pilots must approach the target from a restricted direction and altitude above the ground. The yellow cone in the figure represents the limited flight approach that pilots must use to ensure that the weapons safety footprint (depicted by the dotted red circle) remains within the NTTR boundaries. These limitations do not provide for operational realism.

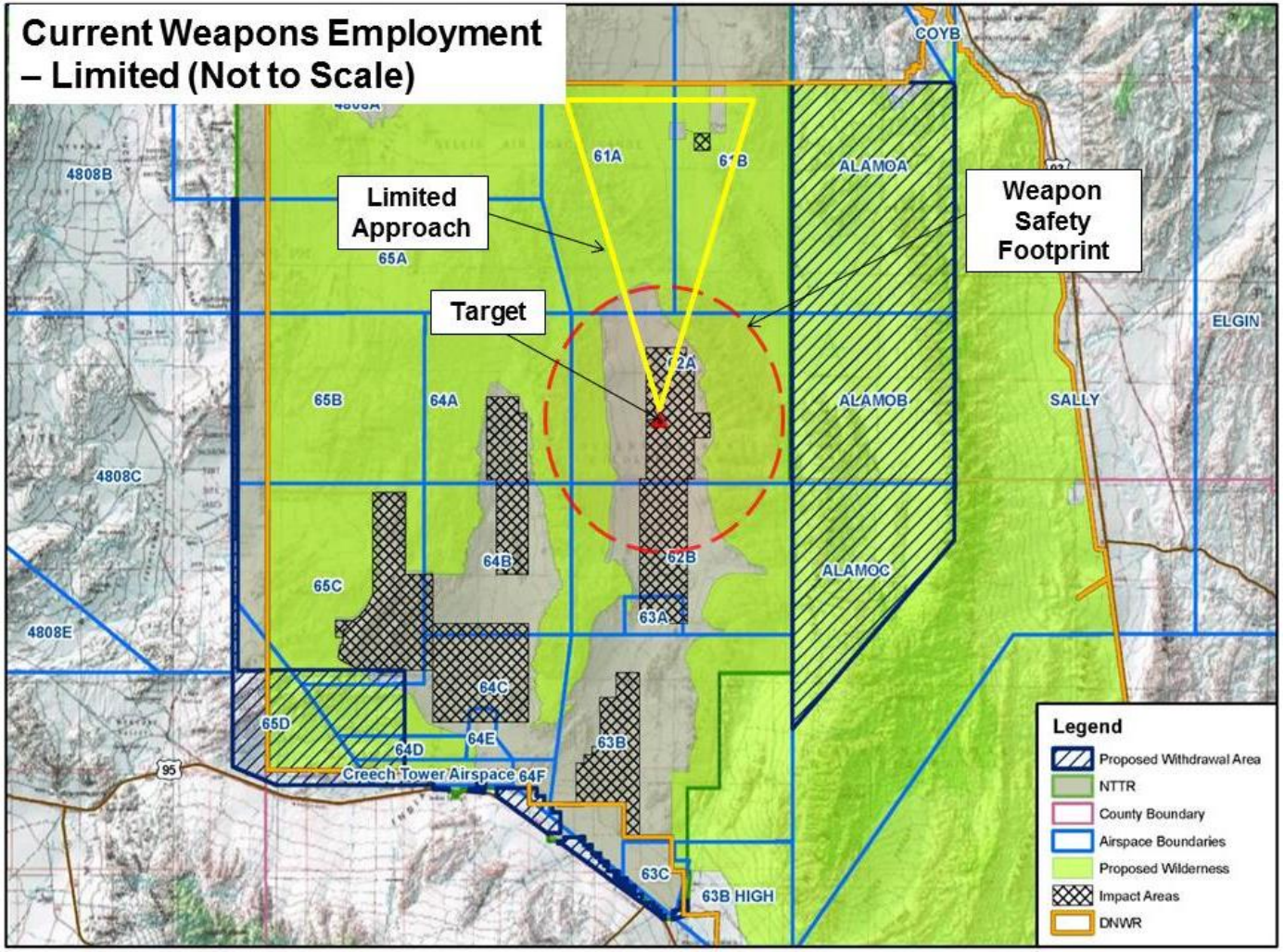

Figure 2-6. Current Limited Weapons Employment Capabilities at the NTTR

Operational Realism:

Figure 2-7 illustrates the required weapons employment for an operationally realistic training scenario. The yellow circle represents a 360-degree approach to the target at a combat-representative altitude as compared to the current limited weapons employment. This higher altitude and faster approach speeds increase the weapons safety footprint, represented by the dotted red circle.

The dotted red circle illustrates the weapons safety footprint and depicts the area that is required to be cleared to ensure human safety when dropping a weapon in a realistic training scenario. It should be noted that there will be no new target impact areas created as a result of the withdrawal process.

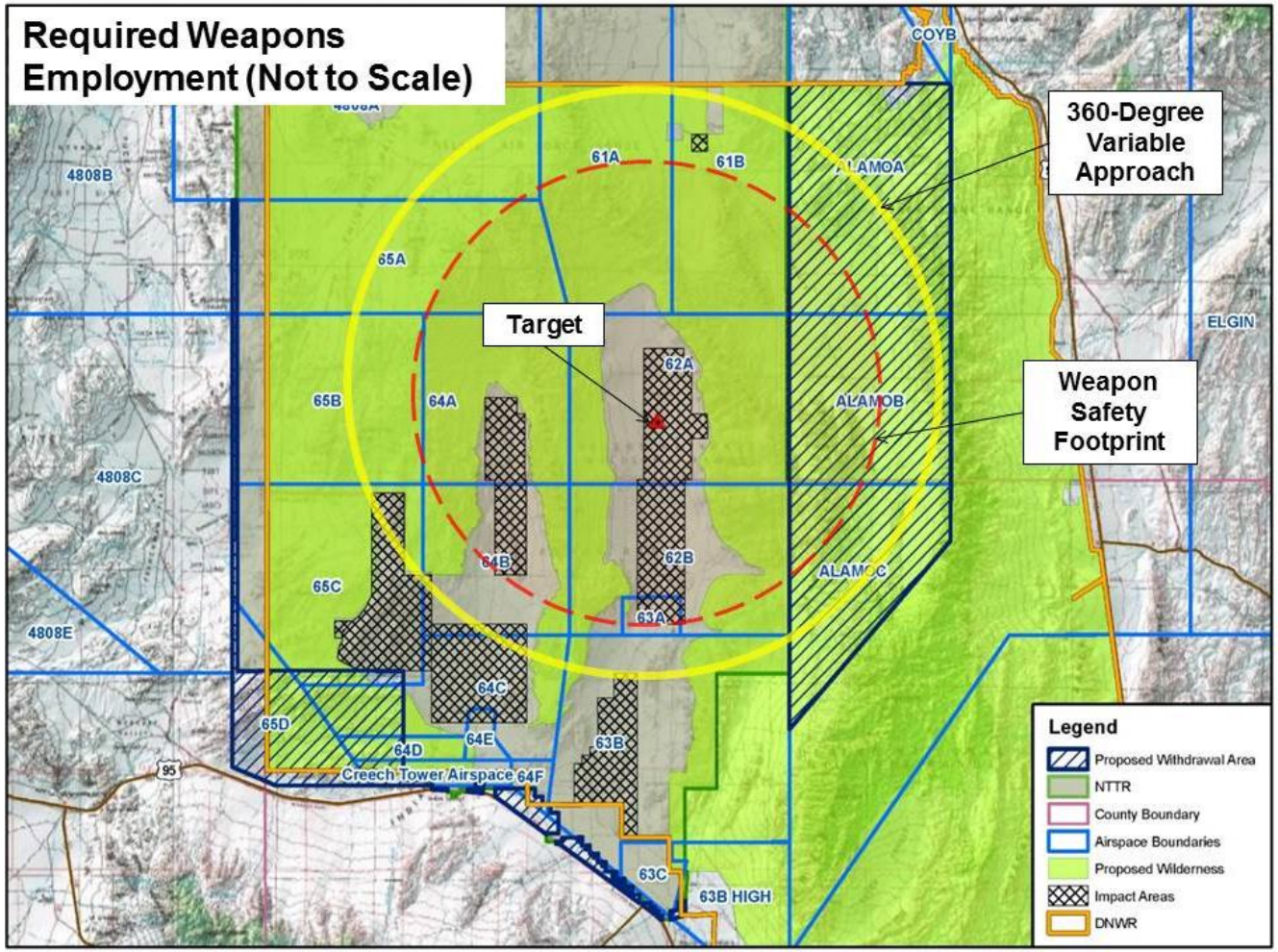

Figure 2-7. Conceptual Weapons Employment for Operationally Realistic Training

In addition to the Air Force's selection standards, the Air Force held discussions with its cooperating agency partners and identified the following planning considerations.

DOE/NNSA explained that the following infrastructure on the NNSS could not be moved because of their National Security significance: Device Assembly Facility; Nonproliferation Test and Evaluation Complex; Big Explosives Experimental Facility; Radioactive Waste Management (Area 5); and Joint Actinide Shock Physics Experimental Research (JASPER). Figure 2-8 illustrates the locations that were identified as infrastructure which could not be moved.

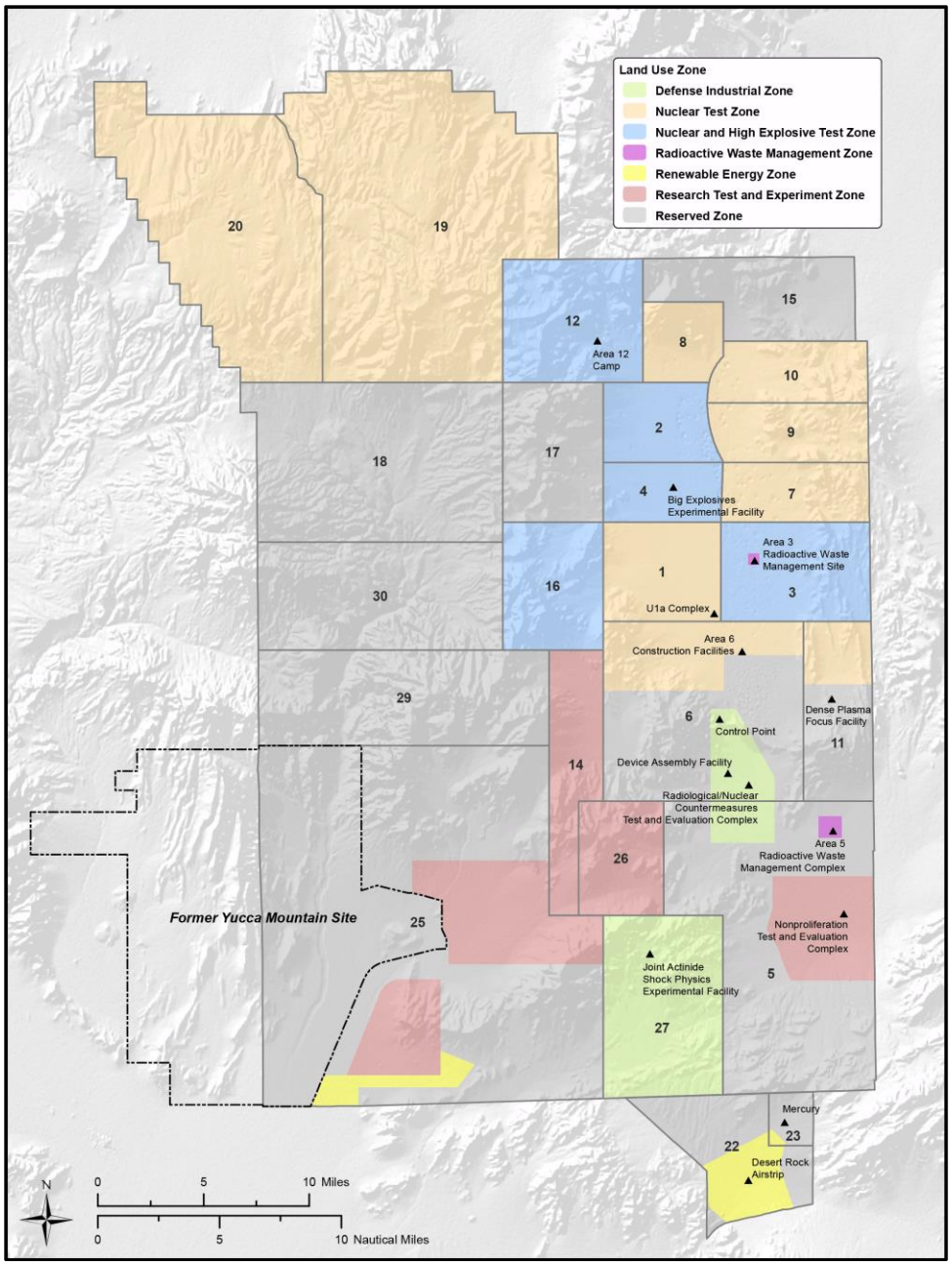

Figure 2-8. DOE Infrastructure that Cannot be Moved due to National Security Significance

The NDOW and BLM indicated any conceptual withdrawal planning efforts must consider, at a minimum: bighorn sheep and the impacts to guzzlers; mule deer; pronghorn; burrowing owls; bats; chuckwallas; banded Gila monsters; wild horse and/or burro herd management areas (HMA); and invasive species.

Two divisions of the USFWS (Refuge and Ecological Services) were contacted about any conceptual withdrawal planning efforts. They indicated that in addition to cultural resource concerns associated with Native Americans, at a minimum, the following must be considered: desert tortoise; migratory birds; Las Vegas buckwheat; Las Vegas bearpoppy; bighorn sheep; golden eagle; burrowing owls; spring snails; spring resources and potential impacts; Alamo Road; and Hidden Forest Road. In addition, the USFWS added after initial discussions that public access to the northern part of the DNWR along Alamo Road and connecting spur roads, including Hidden Forest Road, should be considered as well.

During discussions with cooperating agencies, one of the major considerations raised by all agencies was their respective ability to access the currently withdrawn NTTR lands and any proposed military withdrawal expansion areas in order to conduct natural and cultural resource management activities.

The Air Force would continue to coordinate with agencies that share responsibility for land and wildlife management, such as the USFWS and NDOW, to manage biological resources on DNWR lands that overlap with the NTTR and expansion areas, and would comply with federal regulations and plans.

Currently, Air Force Instruction (AFI) 13-212 encourages shared use of range land with non-DoD users when it will not compromise public safety, detract from mission accomplishment, or impair range operations. For safety and security purposes, access by others (non-DoD users) must be strictly controlled. For example, public access is prohibited in areas known or suspected to contain UXO or other munitions. Hazard areas present operational hazards from on-going testing and training activities, as well as residual hazards following the use of munitions. The Air Force must not allow public access to unsafe areas, to ensure the protection of members of the public during mission operations and their continued safety at other times. Potentially unsafe areas would need to be clear of UXO or other munitions before access could be allowed. The sensitivity of certain areas requires additional controls or restrictions related to access by non-DoD users.

The NTTR does have a process for enabling access by others to select areas of the NTTR, which do not include impact areas. Requests for access may be submitted to the NTTR Range Operations Branch, who can assess if such access could be granted. Requests for access by the general public must be made at least 90 days prior to an expected event to receive consideration while requests from government agencies or Native American tribal groups would follow the specific procedures established in the INRMP, ICRMP, or an appropriate agreement, such as a Memorandum of Agreement/Understanding between the Air Force and the government agency or tribal groups. The Air Force will review the requests and assist non-DoD users through the process of gaining access to a given area. If a request is approved, the Air Force assigns a Project Officer, who manages the request throughout the entire process. All

visitors granted access must participate in a range safety briefing prior to entering the range.

The Air Force is committed to assisting the cooperating agencies and other non-DoD users in meeting their access needs and will refine this procedure as necessary to ensure non-DoD activities can be conducted compatibly with DoD test and training missions to the extent practicable. Using this procedure, the Air Force will coordinate with the appropriate agencies to allow physical access for management and hunting in specified areas under mutually agreed upon conditions. Additionally, the Air Force will support management of resources on lands withdrawn for military use by ensuring that monitoring and other data is exchanged between the applicable cooperating agencies. The coordination procedure for data exchange and access would be outlined in the INRMP and ICRMP. Access to natural and cultural resources in a safe manner on a non-interference basis can be compatibly addressed through these plans, subject to scheduling requirements for test and training activities. As an example of access by others currently allowed, the INRMP addresses the hunting program, which provides for limited access to select areas subject to specific conditions compatible with operational activities and hunter safety.

Regarding access by the public to the areas of the DNWR included in the proposed withdrawal expansion, the Air Force has heard from several public and recreational groups of their desire to visit specific areas for birding and other recreational uses in the spring and fall migration timeframes. Since the data gathered by these recreational groups are used to support management decisions by cooperating agencies, the Air Force could seek to modify the INRMP to address shared use for these types of activities.

Furthermore, the Air Force met with Native American groups in the early stages of the Draft LEIS development and obtained their input and comments regarding the withdrawal proposals. One of their suggestions was to include a Native American perspective that would complement each of the affected resources discussed in the Draft LEIS. This perspective was provided by a Native American writers group that was created by the Consolidated Group of Tribes, which comprises 17 tribes. One specific concern raised during tribal engagement was the impacts of overflights on Native American cultural sites such as rock shelters and petroglyphs. As a result, the Air Force has specifically addressed this concern in Chapter 3. Additionally, the Air Force has included an appendix within the LEIS that provides Native American perspective as it relates to the proposed withdrawal (see Appendix K).

The Air Force has met with Native American groups, continues to ask for their input and comments, and has chosen to include their perspective within this LEIS in Appendix K.

Using the secondary selection standards and cooperating agency's planning considerations, the Air Force contemplated moving target areas and electronic assets within NTTR's South Range to the west but operational feasibility was impacted by the NNSS infrastructure constraints.

Moving target areas or electronic assets to northern areas of the South Range would have impacted current sensitive missions along with private property and grazing

allotments. The Air Force evaluated moving assets to the south; however, the selection standards of population density and relocation of roadway infrastructure as well as ensuring the weapons safety footprints are contained within withdrawn lands under current restricted airspace eliminated such a potential alternative. Thus, the potential for eastward expansion on the South Range became the most apparent approach for increasing MCO exercises.

Since the Air Force had decided not to create new "dudded" areas for MCO training activities, target sites and their associated weapon safety footprints were evaluated in the Air Force's current live-fire target impact areas on the South Range. Using target sites within the current live-fire target impact areas as a center and the weapons safety footprints as a threshold for area, the Air Force anticipates that conceptual threat emitters must be located at distances of 10, 15, and 20 miles from the target sites. The threat emitters will be oriented to detect aircraft approaching from the east for both tactical and strategic purposes. A tactical radius identifies aircraft approaching at distances of 20 miles or less on average while a strategic radius typically identifies aircraft approaching at distances of 20 to 80 miles. In addition to the tactical and strategic radius distances, the threat emitters must be oriented so that they can monitor an area of at least 50 to 75 percent of the easterly "field of view" that aircraft would utilize in a two-axis concept.

The Air Force reviewed the planning considerations of BLM, USFWS (Ecological Services and DNWR), and NDOW and discussed potential conceptual site threat emitter locations in areas with the least impact. However, all three cooperating agencies indicated that the conceptual ideas described by the Air Force were contrary to the current governing legislation (the *Wilderness Act* and *National Wildlife Refuge System Improvement Act of 1997*) associated with the areas of overlap between the NTTR and the USFWS areas in the DNWR. During discussions with the cooperating agencies, the Air Force explained that a potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered (40 CFR 1506.2(d)).

Section 2.3 presents the alternatives and subalternatives that the Air Force developed to address this operational requirement.

2.2.1.1 MCO Alternatives Evaluated but Not Carried Forward

The Air Force evaluated three alternatives that were not carried forward.

First, the Air Force evaluated withdrawing land north of the current North Range boundary; however, roadway infrastructure as well as wilderness areas would have been impacted by weapons safety footprints. These impacts would have required closing both locations on a regular basis as a result of the high utilization rate of test and training missions on the NTTR. This did not meet two of the general selection criteria outlined in Section 2.2.1.

Second, the Air Force evaluated an alternative entitled the Alamos Real Estate Alternative, but did not carry the alternative forward. This potential alternative would have included developing a real estate agreement or memorandum of agreement with BLM and USFWS. An agreement would have been developed with USFWS whereby the areas under Alamos A, B, and C would include the expansion of weapons safety footprints but would not have created new impact areas in Ranges 60A, 60B, or 60C.

In addition, the Air Force would have developed an agreement so that IADS could be placed on BLM land to the east of the Alamo areas; specifically, IADS would be located between egressing aircraft and target areas to create a more operationally realistic MCO test and training environment. This possible alternative would have been implemented to facilitate co-use between the Air Force and both BLM and USFWS.

This alternative was deemed infeasible since the NTTR expected the newly placed emitters to be used daily and moved to new locations on a regular basis. This would have required the area to be placed under a hazardous restriction on a 24-hour basis, seven days per week. In addition, it was anticipated that there could be ancillary impacts to wilderness areas as well as Wilderness Study Areas. Figure 2-9 provides a conceptual illustration of threat emitters on BLM lands, which will not be carried forward for analysis.

The third alternative considered but not carried forward would have combined some NTTR activities with Naval Air Station (NAS) Fallon operations, as suggested by a few public participants during the scoping process. The status quo for the NTTR, described in Section 1.4.1, is that testing and training requirements, along with maintenance, stewardship, and regulatory activities, demand more than 100 percent of existing capacity. Virtually around the clock, seven days per week, multiple testing and training missions, along with other requirements, compete for the same limited resources. As a result, on nearly any given day, an important National Security testing or training mission gets delayed. Given the high demand for NTTR range access, the idea that NTTR activities could be reallocated to NAS Fallon to relieve scheduling conflicts was explored with the Navy. The Air Force contacted the Navy regarding the possibility of utilizing NAS Fallon airspace and ground targets to offset training activities from the NTTR. However, NAS Fallon is undergoing its own land withdrawal extension and expansion process, and the Navy indicated that NAS Fallon is experiencing the same operational issues as the NTTR, which has necessitated the Navy's withdrawal expansion request for NAS Fallon. Therefore, while the Air Force considered relocating NTTR training operations to NAS Fallon, due to the scheduling issues at NAS Fallon and its inability to support NTTR operations, this alternative was not carried forward.

The idea of combining NAS Fallon and the NTTR missions was considered but not carried forward for analysis. NAS Fallon is undergoing its own land withdrawal effort, and NAS Fallon and the NTTR are already both at full capacity.

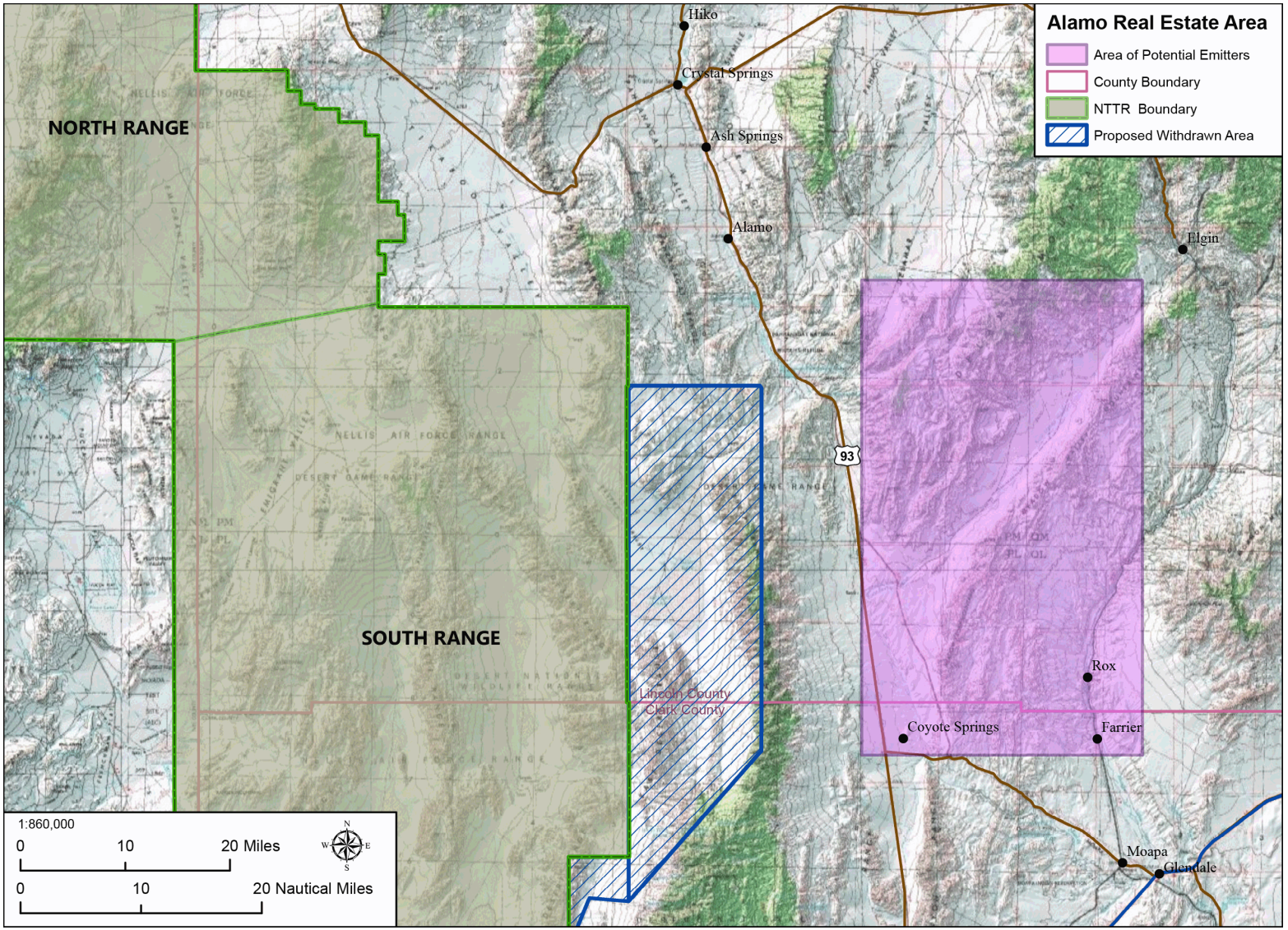

Figure 2-9. Candidate Alamo Real Estate Alternative with Conceptual Potential Emitter Area on BLM Land (Not Carried Forward)

2.2.2 Enhance IW Test/Training Capability

In order to meet IW requirements outlined in Section 1.4.2, the USAFWC determined that the constraints on movement within the South Range must be addressed; the ability to move unconstrained within the South Range is necessary to effectively meet the purpose and need for the established and future military mission in the NTTR. To further enhance IW capabilities, a Landing Zone would be developed. Using this staging location, DoD IW units would conduct insertion and extraction exercises as well as overland navigation through mountainous terrain to a UOC.

The USAFWC review of their enhanced IW requirements was centered on incorporation of a full battle spectrum and topographical restrictions, specifically mountainside terrain. Thus, the following selection standards were established:

- Must have flat surface terrain for unimproved runways used as insertion points.
- Insertion points (i.e., runways) must be within 17 miles (15 NM) of a location that either currently has an urban operations exercise area or can support the construction of an urban operations exercise area.
- Insertion points must allow exercises that would traverse a mountainous area with an elevation of at least 2,000 feet.
- Ensure that UAS activities do not impact MCO flight activities.
- Due to National Security, current classified mission areas within the NTTR or NNSS will not be impacted by new alternative siting.

Conceptually, the Air Force used an established UOC located on Range 62 as a focal point, and a radius of 17 miles (15 NM) was established around the UOC. The 15-mile radius was identified as a minimum distance for overland navigation from a potential insertion point to the UOC. Since an insertion point would consist of two runways, areas with flat topography were identified. After the identification of potential insertion points, the Air Force evaluated the same planning considerations identified in Section 2.2.1. Using the cooperating agency planning considerations, the Air Force tried to identify conceptual locations that would meet the selections standards previously identified. Figure 2-10 illustrates a composite of the UOC and the conceptual insertion sites identified. Although these potential sites were identified, they are not ready for detailed consideration at this time but are an anticipated requirement in the future. When this requirement becomes more refined, the Air Force will conduct a more detailed NEPA analysis. Section 2.3 presents the detailed alternatives that the Air Force developed to address this operational requirement.

2.2.2.1 Enhance IW Test/Training Capability – Alternatives Evaluated but Not Carried Forward

All evaluated alternatives were carried forward.

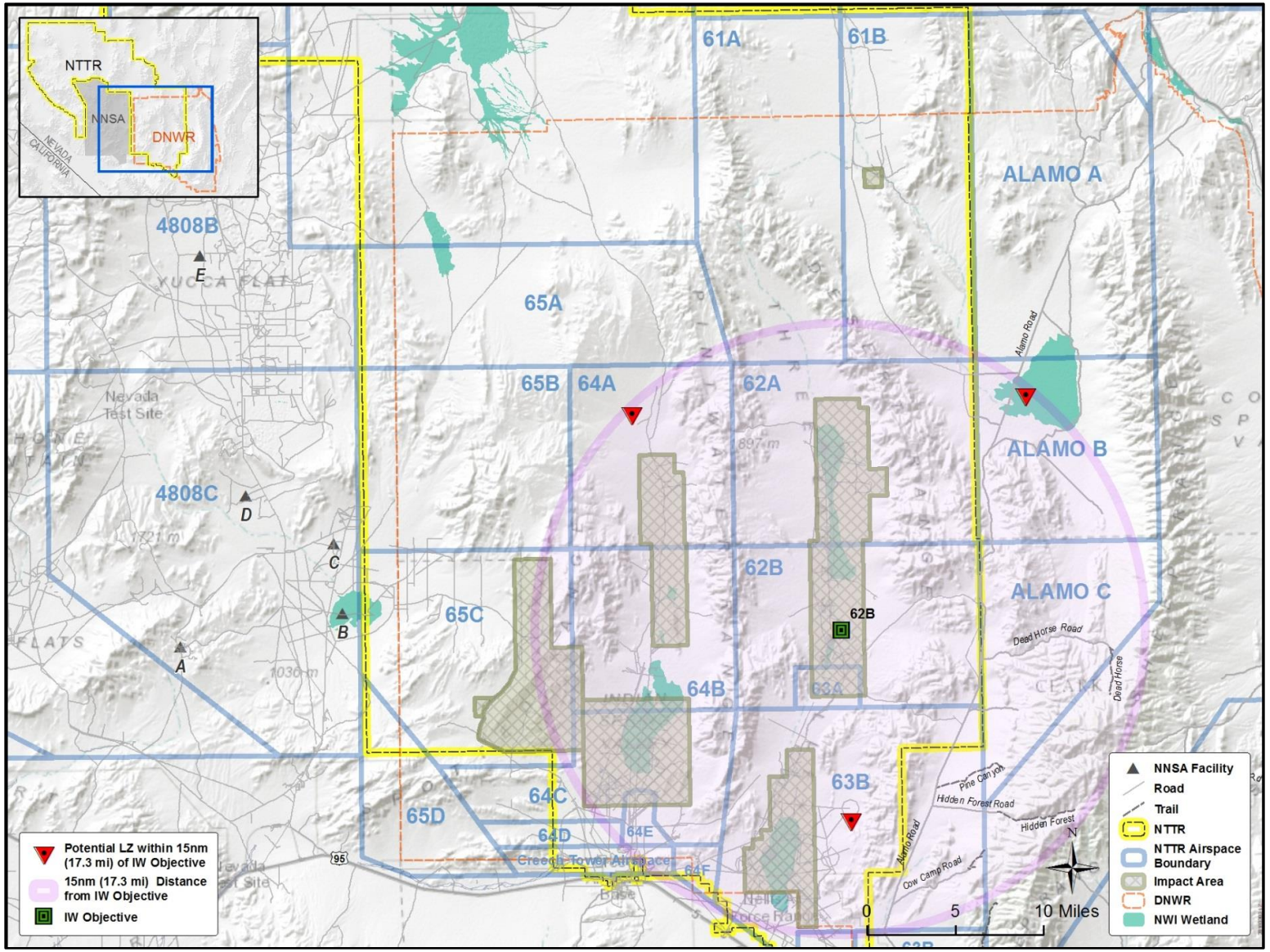

Figure 2-10. Composite of the Urban Operations Complex and the Conceptual Insertion Sites

2.2.3 Increase NTTR Operational Security and Safety

To address unauthorized public access incidents that have occurred in the overlap of the northern portion of Clark County and NTTR's South Range, the USAFWC evaluated those areas where the most incidents have occurred to minimize the amount of buffer area to be requested. In addition, areas that were administratively omitted by BLM during the previous land withdrawal were included so they could be formally included as part of the security buffer. The USAFWC used roadway infrastructure to establish a recognizable boundary along with airspace maps.

The USAFWC evaluated range areas surrounding the perimeter of the NTTR using Creech AFB as the originator for all UAS training and T&E activities. After reviewing the perimeter range areas, it was clear that all perimeter range areas with the exception of EC South and the live-fire ranges on the South Range could not be carried forward without creating scheduling conflicts with MCO operations. As previously mentioned, Section 2.3 presents the detailed alternatives that the Air Force developed to address operational requirements.

2.2.3.1 Increase NTTR Operational Security and Safety – Alternatives Evaluated but Not Carried Forward

All evaluated alternatives were carried forward.

2.3 ALTERNATIVES

All action alternatives that are carried forward for analysis must meet a part of the purpose and need outlined in Section 1.4 and reserve the NTTR for the military purposes as provided by the current withdrawal, which includes use by the Secretary of the Air Force as an armament and high-hazard testing area; for training for aerial gunnery, rocketry, electronic warfare, and tactical maneuvering and air support; for equipment and tactics development and testing; and for other defense-related purposes consistent with the previously specified purposes. The NTTR is available to both DoD and non-DoD users who have valid requirements for its capabilities. Each alternative was evaluated against selection standards established and described in Section 2.1. Input from the scoping process as described in Section 1.5 (Environmental Impact Analysis Process) also affected development of the alternatives. In order to meet the USAFWC's requirements, the Air Force requires implementation of Alternatives 2 and 3, including all subalternatives, as well Alternative 4C. Consequently, implementation of any individual alternative or subalternative would meet a part of the purpose and need but not fully meet the requirements of the Air Force.

The Air Force recognized that there was one commonality associated with each candidate alternative: the Air Force would not relinquish any lands as part of the land withdrawal. Since each alternative includes this commonality, it will not be discussed in detail below for each specific alternative.

2.3.1 Alternative 1 – Extend Existing Land Withdrawal and Management of NTTR (North and South Range) – Status Quo

Under Alternative 1, there would be no changes to the current NTTR boundary. The North Range would maintain ready access and would continue to support the majority of MCO operations. The weapons-delivery areas will continue to be utilized to simulate tactical targets as described in Section 1.2.1. The three ECRs (Tonopah ECR, Tolicha Peak ECR, and EC South) will remain active and support the MCO test and training mission. The activities outlined in Section 1.2.1 for the SNL would continue, such as projectile firings, ground-launched rockets (both high altitude and low altitude), air-launched rockets, explosion effects tests, earth penetration tests, cruise missile flights, and many miscellaneous activities requiring a remote location for non-nuclear DOE research and development projects or for other safety or security reasons.

In NTTR's South Range, adequate access would not be available, and the USFWS would continue to have primary jurisdiction over a majority of the South Range of the NTTR while the Air Force would have primary jurisdiction over the valley floors in the South Range to the 4,000-foot contour levels (U.S. Air Force, 1997a). Of the 259,714 acres that are below 4,000 feet, 112,000 acres are authorized only as target impact areas (associated with NTTR's 60-series ranges). The Secretary of the Interior maintains secondary jurisdiction over this acreage for wildlife conservation purposes. The area proposed by the USFWS for wilderness designation located in the South Range would be continued to be managed as wilderness.

In addition, the airspace utilization under Alternative 1 would remain at current levels as illustrated in Table 2-1. NTTR airspace is grouped in the following manner: Restricted Airspace (RA), Military Operating Areas/Air Traffic Controlled Assigned Airspaces (ATCAAs), Visual Routes (VR), and Creech Airfield operations, since Creech overlaps the NTTR boundary. Aircraft operational levels located in the airspace used for test and training are listed in Table 2-1.

Table 2-1. Current Airspace Utilization

Type of Airspace	Aircraft Operations
Restricted Airspace	24,898
MOA/ATCAAs	96,604
Visual Routes	57
Creech Airfield Operations	44,220

MOA/ATCAA = Military Operations Area/Air Traffic Control Assigned Airspace
Note: Restricted Airspace includes 4806, 4807, 4808, 4809; MOA/ATCAAs include Caliente, Coyote, Eglin, Reveille, Sally; and Visual Routes include 209 and 222

As with aircraft operations, munitions expenditures would remain at current levels as outlined in Table 2-2.

Table 2-2. Current Munitions Utilization

Munitions Type	Numbers Used
Large Caliber	10,915
Small Caliber	1,600,746

Note: Large caliber includes weapons in the following categories: AGM, CBU, GBU, LUU, M206, MK, and 2.75" rockets; small caliber includes .50 cal, 20 mm, 30 mm, 40 mm, 5.56 mm, and 7.62 mm

Alternative 1 or the "status quo" would meet a limited portion of the purpose and need described in Section 1.4, and the military test and training missions conducted at the NTTR would become increasingly constrained moving into the future. Although Alternative 1 significantly restricts test and training missions, it was evaluated and also used as a baseline for a comparative programmatic evaluation contrasted to all other alternatives.

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

The NTTR boundary under Alternative 2 would be the same as with Alternative 1, but the Air Force would have "ready access" in both the North and South Ranges. Section 1.4.1 describes the four essential elements of ready access (adequacy, flexibility, timeliness, and variability) that are necessary to meet current and future NTTR mission requirements.

Ready access could be instituted through a combination of methods, which may include the following:

- A Congressionally directed change in land management that effectively eliminates the need to manage the withdrawn lands as if they were wilderness. This could be incorporated in the 2021 Congressional decision on the NTTR withdrawal extension and expansion.
- Reallocation of primary jurisdiction between the USFWS and the Air Force for portions or all of the area of the DNWR that overlaps with the NTTR.
- Development, within a specified time period, of a binding Memorandum of Agreement, granting ready access to the DoD and establishing written procedures to ensure full compliance with other federal agency requirements. These written procedures may be included in other support documents such as the INRMP or ICRMP.
- Enactment of legislative provisions that ensure ready access, notwithstanding the operation of other specific statutory measures limiting such access, provided the withdrawn lands are managed under an approved INRMP in accordance with the *Sikes Act*.

***Ready access** means having the ability to use the lands and resources on the NTTR without having to compromise mission success and realistic training because of land use restrictions and delays in access to the range. Coordination with other federal agencies who share responsibility for managing resources on these lands would still be essential.*

It should be noted that ready access does not mean exemption from applicable laws and regulations that are not specifically addressed by legislation supporting the withdrawal.

Providing ready access in the South Range would help meet increased demand by allowing for equal capabilities for MCO training and MCO T&E in the North Range and South Range, reducing scheduling conflicts and increasing overall range capacity. For the purpose of analyzing the potential impacts associated with the increase in overall range utilization under Alternative 2, 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 at operational tempos 30 percent greater than those levels stated in Alternative 1. The anticipated increase in aircraft operations stems from projected F-35 requirements (U.S. Air Force, 2015a) as well as UAS and other operations. It is presumed that munitions usage and other operational equipment would increase at a level consistent with aircraft operations. In addition, it is assumed that there will be approximately 7.5 acres of ground disturbance associated with the installation of threat emitters and repeaters as well as 4 acres of road improvements. Consequently, there would be a total of 11.5 acres of total ground disturbance.

Table 2-3 and Table 2-4 provide the operational tempo for aircraft operations and munitions used for analysis associated with Alternative 2. Regarding vehicle operations, since specific numbers and types of vehicles (i.e., motorized vehicles that are not aircraft) are difficult to obtain, analysis for this category was based on historical installation fuel consumption data. Resources that are affected by changes in motorized vehicular operations are addressed in Chapter 3 under the respective resource section.

Table 2-3. Thirty Percent Increase in Operations

Type of Airspace	Aircraft Operations
Restricted Airspace*	32,367
MOA/ATCAAs	125,585
Visual Route	74
Creech Airfield Operations	57,486

MOA/ATCAA = Military Operations Area/Air Traffic Control Assigned Airspace
*Note: Restricted Airspace includes 4806, 4807, 4808, 4809; MOA/ATCAAs include Caliente, Coyote, Eglin, Reveille, Sally; and Visual Routes include 209 and 222

Table 2-4. Thirty Percent Increase in Munitions

Munitions Type	Numbers Used
Large Caliber	14,190
Small Caliber	2,080,969

Note: Large caliber includes weapons in the following categories: AGM, CBU, GBU, LUU, M206, MK, and 2.75" rockets; small caliber includes .50 cal, 20 mm, 30 mm, 40 mm,5.56 mm, and 7.62 mm

2.3.3 Alternative 3 – Expand Withdrawal of Public Lands for the NTTR

Each of the subalternatives included in Alternative 3 would include ready access as defined in Section 1.4.1 and described under Alternative 2. As was the case with Alternative 2, it is anticipated that operations will increase by 30 percent in the near future. For the purpose of analyzing the potential impacts associated with the increase in overall range capacity under Alternative 3, this LEIS uses a projected 30 percent increase in test and training activities to provide a reference point for analytical comparisons (see Table 2-3 and Table 2-4).

The land boundary under Alternative 3 would include the current NTTR boundary as outlined in Alternative 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. Figure 2-11 illustrates those areas that would be fenced. In order to conduct programmatic analysis, 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.

It should be noted that the environmental consequences analysis for each applicable affected resource has been conducted using the total area to be fenced that abuts the current NTTR boundary. This will provide a conservative analysis. However, there may be instances where natural barriers will not allow for fence construction.

Additionally, the Air Force recognizes that various cooperating agencies conduct ongoing studies and survey activities that are not related to this LEIS. Valuable data has been assimilated as a result of these long-term efforts, which specifically assist in managing biological and cultural issues in the areas associated with Alternative 3. Thus, the Air Force would seek to provide avenues to continue these long-term study and survey efforts as practicable within the Air Force procedures currently in place and outlined in Section 2.2.1.

2.3.3.1 Alternative 3A – Range 77 – EC South Withdrawal

As outlined in Section 1.4.2, the Air Force has identified ISR as a key component in IW strategies and has incorporated a robust training program to implement those strategies. As a result, the NTTR planners assessed range areas along the exterior perimeter of the NTTR that could accommodate the UAS training while reducing the impact to the MCO environment. It was determined that EC South would accommodate this type of training.

Under Alternative 3A, the EC South area would be redesignated as "Range 77" to allow full air-to-ground operations. This area was previously used for live-fire exercises in the past but had been changed to an electronic range (see Section 1.4.1). Alternative 3A would increase the NTTR boundary by 17,906 acres and would be used to add buffer to the safety footprint of Range 77. For the purposes of the LEIS and the ease of the reader, the LEIS presents this acreage as "approximately 18,000 acres." In order to preserve the safety of the public yet provide wildlife passage, a fence, as outlined in Section 2.3.3, would be constructed; however, this would be the only construction occurring in this area. There would be approximately 25 miles of fence. Munitions will not be used in this area. It would only serve as a safety buffer for live weapons deployment on the interior of Range 77. Figure 2-11 illustrates the proposed expansion area. Alternative 3A would meet the purpose and need described in Section 1.4 and partially meet the additional operational requirement to enhance IW test/training capability described in Section 1.4.2.

2.3.3.2 Alternative 3A-1 – Amended Range 77 – EC South Withdrawal

As a result of the public input process, the Air Force added an additional subalternative to Alternative 3A. Alternative 3A-1 was created in response to concerns raised by the Beatty community regarding potential impacts to recreational and economic resources as well as concerns identified by the state of Nevada related to the proposed routes of the 368 Energy Corridor and Interstate 11. The Air Force considered this public input and sought an option that would allow them to adjust target areas so the proposed expansion area could be reduced.

Alternative 3A-1 reduces the proposed expansion area of Alternative 3A by 2,592 acres so that the total proposed expansion area of Alternative 3A-1 is 15,314 acres. For the purposes of the LEIS and the ease of the reader, the LEIS presents this acreage as "approximately 15,000 acres." Figure 2-12 illustrates the adjustments made to the boundary for Alternative 3A to create Alternative 3A-1. The reasons for the withdrawal proposed by Alternative 3A-1 are the same as outlined in Section 2.3.3.1 for Alternative 3A.

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

Alternative 3B would withdraw approximately 57,000 additional acres along the current NTTR boundary. Of those acres, 55,376 are located along the southeastern border of the NTTR, including approximately 48,880 acres along the southern border of the NTTR (areas designated as 64C/D and 65D) and 6,496 acres parallel to the current NTTR boundary and a U.S. Route 95 Nevada Department of Transportation right-of-way (Figure 2-11). Withdrawing both of these areas would support the NTTR with operational security and safety buffers as outlined in Section 1.4.3. The remaining 1,125 acres would be along the eastern edge of range areas 63B and 63C. During the 2001 land withdrawal process, this acreage was not included in the MLWA published boundary for the NTTR, although it was analyzed in the 1999 LEIS (U.S. Air Force, 1999). At that time, BLM's Public Land Survey System went through a significant software update, resulting in a shift of the coordinate system and causing a perceived boundary shift. Essentially, under BLM's old Public Land Survey System data, the legal description was accurate, but when the software update affected the coordinate system, this acreage was no longer included in the legal description. In addition, the legal description was never published by DOI in the *Federal Register* as directed by the MLWA. Consequently, the BLM and the Air Force have agreed to rectify the situation by incorporating the change as part of this withdrawal process. Figure 2-11 illustrates the 1,125 acres to be incorporated. After Congressional withdrawal decisions are made, a land survey of the entire NTTR boundary will be conducted by the Air Force in cooperation with BLM's Cadastral office.

This area would be included in the withdrawal in addition to the 55,376 acres. Thus, the total for this alternative would be 56,501, or approximately 57,000, acres. Of the 57,000 acres, 33,000 acres are managed by the USFWS Refuge program. There would be no construction activities other than construction of fencing as outlined in Section 2.3.3 to reduce public access yet provide wildlife passage. The fencing would be approximately 30 miles.

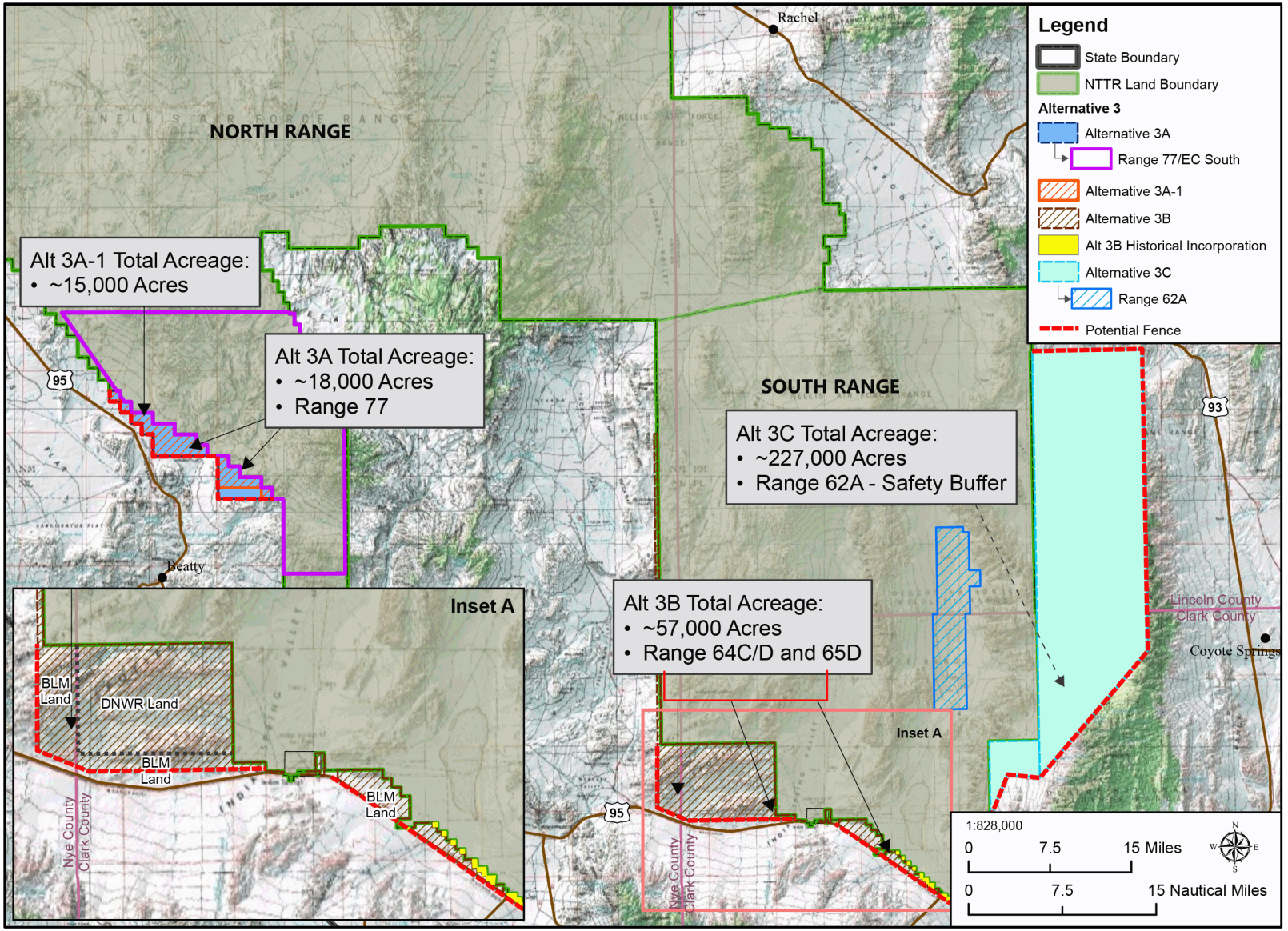

Figure 2-11. Alternative 3A, 3B, and 3C Locations and Acreages

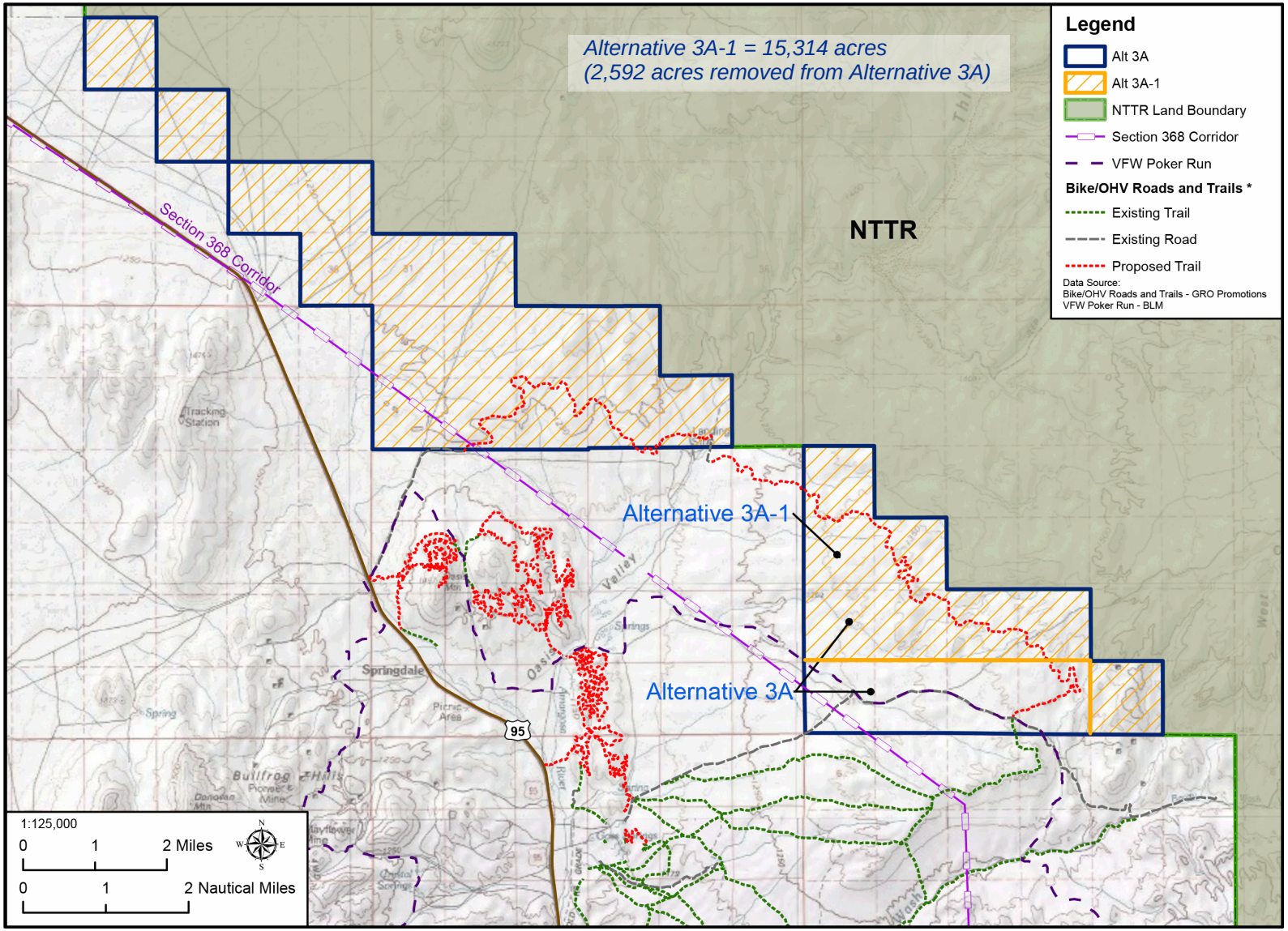

Figure 2-12. Alternative 3A-1 Location and Acreage

2.3.3.4 Alternative 3C – Alamo Withdrawal

Based on the need for increasing operational requirements associated with MCO operations as well as alleviating competition for MCO electronic assets, Alternative 3C was developed to allow a two-axis front concept as outlined in Section 2.2.1.

As illustrated in Figure 2-11, Alternative 3C would request the withdrawal of 227,027 acres of the DNWR to correspond with potential weapons safety footprints associated with target impact areas associated with the 60-series ranges. (For the purposes of the LEIS and the ease of the reader, the LEIS presents this acreage as "approximately 227,000 acres.") These safety footprint areas must be controlled for public safety purposes; however, live munitions are only used specifically in the target impact areas. For example, Figure 2-13 illustrates the overlap of the weapon safety footprint located on 62A as it relates to the DNWR. This overlap of the weapons safety footprint necessitates the withdrawal request as outlined in Section 2.2.1.

During public scoping, concerns were raised about the loss of public access to the DNWR. During initial development of the Alternative 3C proposed expansion area, the Air Force took into consideration the potential impacts to grazing and recreational areas and reduced the land area to accommodate grazing rights and recreational areas to the south of the proposed expansion area. As a result, the public would continue to have access to key recreational areas such as Hidden Forest Cabin, Corn Creek Field Station, Cow Camp trailhead, and Joe May trailhead, as well as springs such as Corn Creek, Cow Camp, Upper Deadman, Lower Deadman, and Sawmill, among others. Figure 2-14 and Figure 2-15 illustrate recreational areas in the vicinity of Alternative 3C.

The public expressed an interest in the Air Force developing a "shared use" concept for the area associated with Alternative 3C. Unrestricted access would present public safety concerns associated with weapon safety footprints and security concerns for technologically advanced equipment that will be used for future test and training activities. Limited access, based on current practices, is granted on a case-by-case basis and would continue under Alternative 3C should Congress select this alternative.

In addition, Alternative 3C implements IW capabilities that would involve developing potential insertion points as outlined in Section 2.2.2 and conceptualized in Figure 2-10 in that section. The insertion point would include one runway that would be a mockup location to provide special operations personnel a location to practice tactics, while a second runway would be an active runway, providing more realistic insertion training. Each runway would be 6,000 feet long and 90 feet wide. It is anticipated that ground disturbance activities associated with construction of the runways would be less than 13 acres. The mockup runway would not be used for aircraft operations. However, it is anticipated that the active runway would be a dirt runway and operational levels would occur at a tempo of 520 takeoff and landings annually. Also, it is assumed that there will be approximately 7.5 acres of ground disturbance associated with the installation of threat emitters and repeaters as well as 4 acres of road improvements. Consequently, it is anticipated that there would be 24.5 acres of total ground disturbance for Alternative 3C, which was the upper limit used in analyses of the affected resources outlined in Chapter 3.

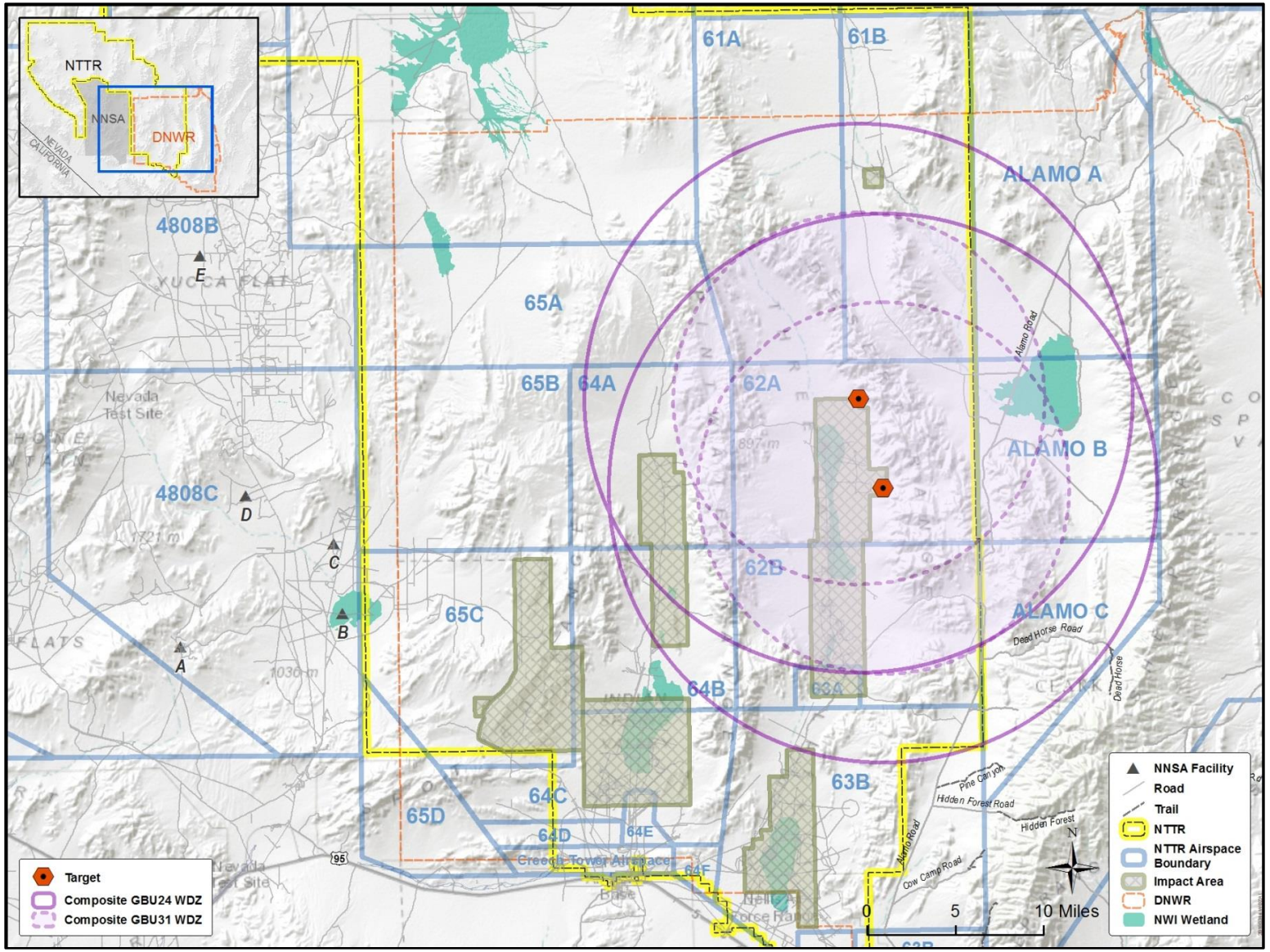

Figure 2-13. Alternative 3C – Conceptual Weapons Safety Footprint for 62A on DNWR

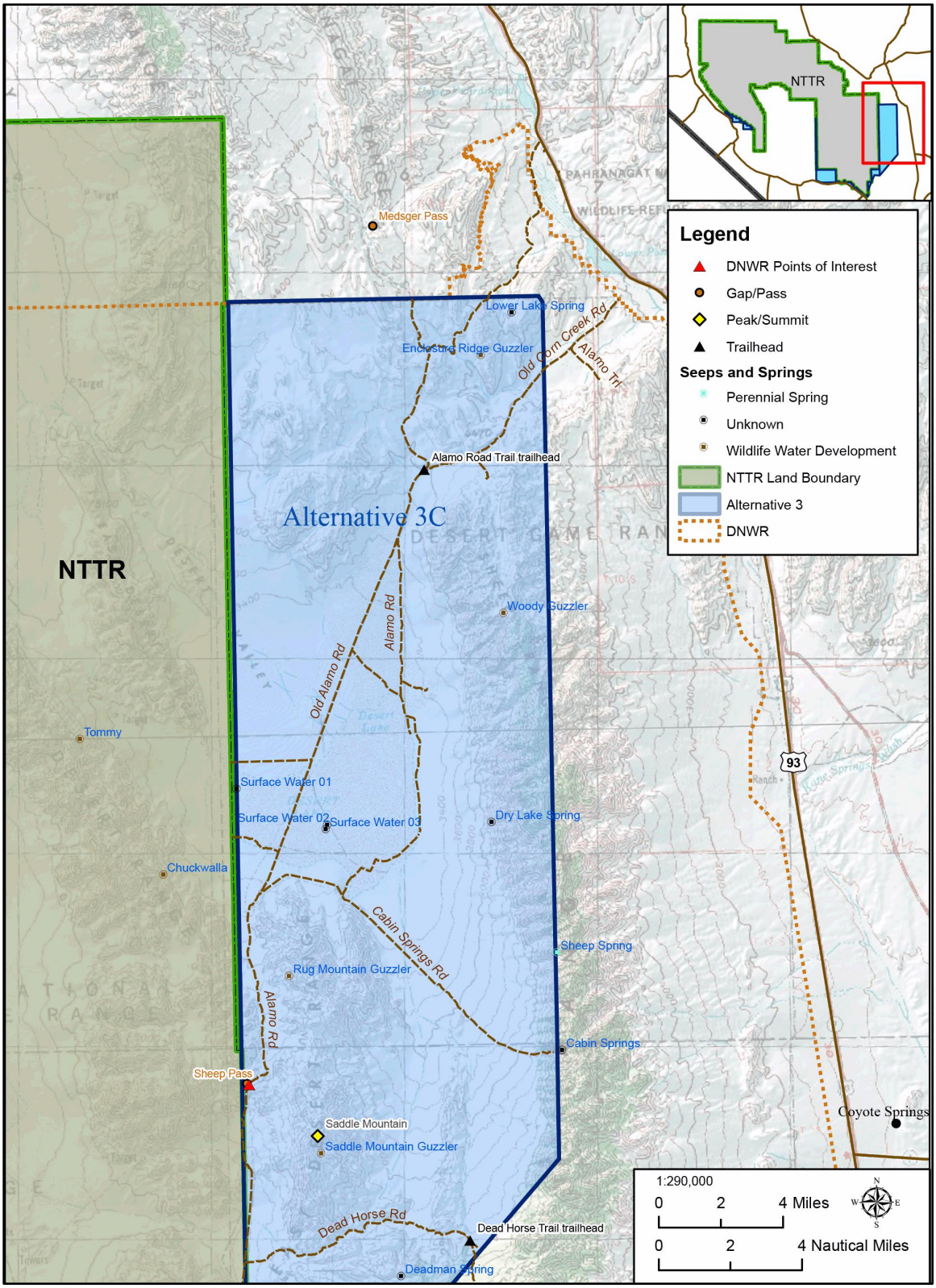

Figure 2-14. Recreational Areas Affected by Alternative 3C – Northern Area

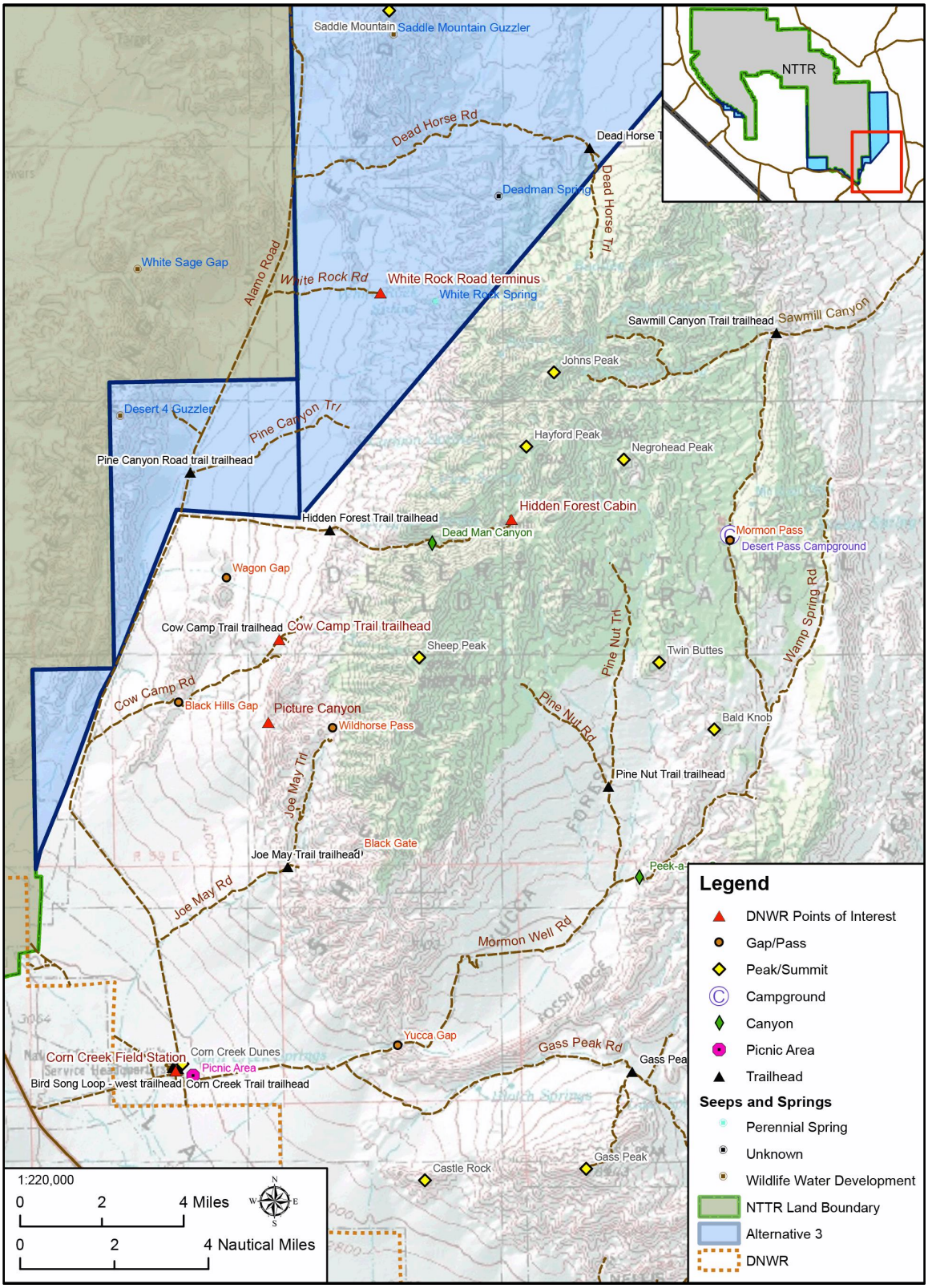

Figure 2-15. Recreational Areas Affected by Alternative 3C – Southern Area

The training activities would be associated with various aircraft to include A-10, C-17, C-130, CV-22, HH-60, and AH-64. Forward Area Arming and Refueling Points (FAARP) would be used during the training activities. As the name indicates, FAARP consists of two training activities (refueling and munitions loading of aircraft) that occur in austere areas such as a dry lake bed.

In addition to the conceptually planned activities previously described, the Air Force will construct fencing as outlined in Section 2.3.3 to reduce public access yet provide for wildlife passage. There would be approximately 60 miles of fence with Alternative 3C. Small arms blank munitions and inert weaponry will be used in this area, but no new target impact areas will be created as part of this withdrawal action. However, at this time, the details associated with specific locations that might experience ground disturbance are not ready for decision or site-specific NEPA-related environmental analysis in this LEIS. Analysis of this alternative focuses mainly on the proposed use of the area from a conceptual and qualitative perspective, and site-specific NEPA analyses will be necessary in the future for specific locations and routes once a decision on withdrawal has been made and information becomes more mature.

2.3.4 Alternative 4 – Establish the Period of Withdrawal

Alternative 4 cannot be implemented on its own. In order to implement Alternative 4, it would be necessary to also pair it with one or more of the other alternatives or subalternatives presented previously. The only difference among the three subalternatives is the length of the new withdrawal period, which would begin upon the conclusion of the existing withdrawal period that is currently scheduled to expire on November 6, 2021.

2.3.4.1 Alternative 4A – 20-Year Withdrawal Period

Alternative 4A would implement one or more of the aforementioned alternatives or subalternatives, and the new period of withdrawal would expire at the end of a period of 20 years.

2.3.4.2 Alternative 4B – 50-Year Withdrawal Period

Alternative 4B would implement one or more of the aforementioned alternatives or subalternatives, and the new period of withdrawal would expire at the end of 50 years.

2.3.4.3 Alternative 4C – Indefinite Withdrawal Period

Alternative 4C would implement one or more of the aforementioned alternatives or subalternatives, and the new period of withdrawal would not expire.

2.4 NO ACTION ALTERNATIVE

The CEQ regulations (40 CFR 1502.14(d)) require the alternatives analysis in an EIS to "include the alternative of no action." The No Action Alternative provides a baseline against which decision makers can compare the magnitude of potential environmental effects of the action alternatives.

Under the No Action Alternative, Congress would exercise its constitutional authority to not take action to extend the withdrawal legislation in time to support MLWA expiration in November 2021.

Detailed evaluations and characterizations are not included in this analysis since the full scope of the No Action Alternative implementation will be determined in coordination with the Secretary of the Interior.

Under the No Action Alternative, BLM-administered public lands would be subject to the multiple use resource management objectives of the FLPMA. Surface management of the DNWR would continue to reside with the USFWS.

Prohibitions previously placed in effect by the MLWA on appropriations under the public land laws would expire. Expiration of these prohibitions means that appropriative land uses such as mining, mineral leasing, or livestock grazing could potentially be reintroduced. Management of the former NTTR lands would continue as currently directed until new management planning under FLPMA and NEPA regulations could be completed.

Although withdrawal of these lands under MLWA from all forms of appropriative land use (such as mining, geothermal leasing, or livestock grazing) would expire, segregation of these lands from appropriative land uses would continue until the Secretary of the Interior publishes an order opening the lands for such uses. An opening order could not be issued by the Secretary until the costs, benefits, and environmental consequences of competing land use could be fully evaluated through planning directed by FLPMA and analyzed in NEPA documentation. The results of new land management planning may or may not find that portions or all of the former NTTR lands managed by the BLM should be opened to some or all forms of appropriative land use.

Existing land use management objectives of BLM lands on the perimeter or the vicinity of the NTTR would continue. Because the range lands would remain under the administration of the BLM and no changes would be expected in land status of adjacent lands, the No Action Alternative would not be expected to affect applicable general plans, resource management plans, or the officially stated policies or goals of agencies responsible for managing affected lands.

If land is contaminated, and the Secretary of the Interior and the Secretary of the Air Force determine that decontamination is practicable and economically feasible and that upon decontamination the land could be opened to operation of some or all of the public land laws, including the mining laws, the Secretary of the Air Force shall decontaminate the land to the extent that funds are appropriated for such purpose.

If the Secretary of the Interior decides that it is in the public interest to accept jurisdiction over lands proposed for relinquishment, it is authorized to revoke the withdrawal. Should the decision be made to revoke the withdrawal, the Secretary of the Interior shall publish in the *Federal Register* an appropriate order which shall:

1. terminate the withdrawal and reservation;
2. constitute official acceptance of full jurisdiction over the lands by the DOI; and
3. state the date upon which the lands will be opened to the operation of some or all of the public lands laws, including the mining laws.

If the Secretary of the Interior concludes that decontamination is not practicable or economically feasible of all or part of the former NTTR, or that the land cannot be decontaminated sufficiently to be opened to operation of some or all of the public land laws, or if Congress does not appropriate funds for the decontamination of such land, the Secretary of the Interior shall not be required to accept the proposed land for relinquishment.

If the Secretary of the Interior declines to accept jurisdiction over lands proposed for relinquishment or determines that some of the lands are contaminated to an extent that prevents opening the lands to operation of the public and laws, then the Secretary of the Air Force:

1. would take appropriate steps to warn the public of contamination of lands and any risks associated with entry onto those lands;
2. shall undertake no activities on such lands except in connection with decontamination of such lands; and
3. shall report to the Secretary of the Interior and Congress concerning the status of the lands.

Existing airspace would not be affected by not extending the land withdrawal; however, without control of ground areas, the airspace could not be used to support live-fire exercises and related military high-hazard activities.

Withdrawal Period

The withdrawal duration of the No Action Alternative would end on November 6, 2021.

Management Responsibilities

The DOI, through the USFWS, would continue to manage the DNWR to protect and preserve desert bighorn sheep and other species of wildlife. It is anticipated that the DOI, through the BLM, would employ multiple-use concepts on lands that do not pose a health threat to potential users. A detailed estimation of the former NTTR areas requiring remedial actions prior to final release or a determination of actions required would be necessary if Congress selected the No Action Alternative. Access to the DNWR would be under the jurisdiction of the USFWS. Access to all other lands would be under the jurisdiction of the BLM.

NTTR Boundary Realignment

The approximately 2.9 million acres of lands withdrawn under P.L. 106-65 as amended would no longer be segregated for military use. Much of the South Range that overlaps the DNWR would be under the jurisdiction of USFWS. Most of the North Range would be returned to BLM.

Disposal and Management of Released Lands

The lands withdrawn by the USFWS for the DNWR would be administered by the USFWS. Lands that the DOI does not consider contaminated would be administered by the BLM. Lands considered to be contaminated would remain the responsibility of the Air Force or the DOE until sufficiently decontaminated to allow for the transfer to the DOI, as described in P.L. 106-65 as amended.

2.5 PERMIT REQUIREMENTS

This LEIS is prepared in compliance with NEPA; other federal statutes, such as the CAA and the *Clean Water Act* (CWA); Executive Orders; and applicable state statutes and regulations. This section lists NTTR-related permits and certifications reviewed during the LEIS process as well as potential permits that may be required for the future conceptual activities described in Section 1.4.

Airspace Management

As indicated in Section 1.3.1, additional airspace is not a requirement for this withdrawal nor is it being requested as part of this withdrawal extension or expansion; however, the current airspace is not used to its full potential because of land use restrictions in the South Range. If airspace requirements change, the Air Force would work with the Federal Aviation Administration (FAA) to address the changes.

Air Quality

- Changes to operations and/or withdrawn lands may require review and revisions to the following permits:
    - Creech AFB Title V Part 70 Operating Permit for Source: 473 (expires May 30, 2018)
    - Nellis AFB Title V Part 70 Operating Permit for Source: 117 (expires September 17, 2020)
    - Class I Air Quality Operating Permit #9711-1233.01, issued December 2, 2011

Biological Resources

- An Incidental Take Permit for impacts to federally listed species and migratory birds and eagles may apply depending on the results of USFWS consultation.

Cultural Resources

- Cultural resources fieldwork conducted in support of this LEIS will require permits for all studies conducted in proposed expansion areas. *Archaeological Resources Protection Act of 1979* permits and agency approval are required for all archaeological projects that would occur on BLM or USFWS lands.

Earth Resources

- The Nevada Division of Environmental Protection (NDEP) requires a General Construction Stormwater Permit if the project will discharge to a Waters of the State and if the project will disturb 1 or more acres, or if it is part of a larger plan for development that will ultimately disturb 1 acre or more.
- If NDEP determines that a project less than 1 acre in size will impact receiving waters or its tributaries within a 0.25-mile radius of the project, the project will also require a construction stormwater permit. If the project requires a construction stormwater permit a NOI would be completed for coverage under the Construction Stormwater General Permit. Stormwater permits would contain best management practices (BMPs) subject to approval by NDEP. BMPs could include stormwater diversion, erosion control or any number of best practices.

Water Resources

- National Pollutant Discharge Elimination System (NPDES) permit, in accordance with the CWA (NDEP, Bureau of Water Pollution Control)
- Construction activities that disturb 1 acre or more of land would require development of a Stormwater Pollution Prevention Plan as part of the NPDES permitting process. In general, a Stormwater Pollution Prevention Plan identifies measures that will be implemented to prevent the discharge of sediments and pollution (via stormwater) from a construction site.
- Permit to discharge dredged or fill material into waters of the United States (including wetlands) under Section 404 of the CWA (U.S. Army Corps of Engineers [USACE]), and associated certification of compliance with State water quality standards (NDEP, Bureau of Water Quality Planning).
- Permit for appropriation of surface water or groundwater rights (Nevada Division of Water Resources, Office of the State Engineer)
- Application for Approval of a Water Project and Permit to Operate a Public Water System, in accordance with the *Safe Drinking Water Act* (NDEP, Bureau of Safe Drinking Water).
- Any activities resulting in changes to oil storage quantity or management measures would require either preparation of a new Spill Prevention, Control, and Countermeasure (SPCC) Plan, or update of an existing SPCC Plan. The purpose of a SPCC Plan is to identify and implement methods to prevent the discharge of oil or oil-based products into waterways.

2.6 GENERAL ENVIRONMENTAL CONSTRAINTS

As the EIAP process evolved for the LEIS, it became apparent that the site-specific locations for detailed activities were not yet ready for decision. Therefore, the focus of alternative analyses with respect to environmental impacts in this LEIS is to catalog resources within proposed withdrawal areas and, based on the types of activities proposed in these areas, identify in a conceptual and qualitative manner potential impacts that may occur to cataloged resources from a programmatic perspective; this serves to support the EIAP for future proposed activities once defined. An example of this type of analysis is to consider that, while the Air Force does not yet know where, exactly, a potential threat emitter might be placed within a proposed withdrawal area, it is reasonable to recognize that threat emitter placement results in ground disturbance and generation of electromagnetic radiation. In addition, the Air Force realizes that such ground disturbance has particular impacts to various affected resources (such as various animal species for example) and understands that electromagnetic radiation has certain impacts to different types of animal species (e.g., birds, rodents, bighorn sheep). Therefore, from a programmatic perspective, the Air Force does not necessarily need to understand where specifically an emitter might be placed to understand the potential impacts to specific types of resources.

To further this programmatic analysis, through cataloging the types of resources present in the proposed withdrawal areas, the Air Force can identify potentially sensitive areas that should be avoided for specific activities; as an example, springs and seep areas should be avoided for ground-disturbing activities such as construction or vehicle use. Avoidance of construction and vehicle use within springs and seeps would be considered an "environmental constraint." In support of environmental impact analysis, this environmental constraint dictates that there would be no construction or vehicle use in spring and seep areas and, therefore, there would be no adverse impacts to these water sources within the NTTR for these types of activities.

The NTTR has many existing environmental constraints for avoiding or mitigating impacts to resources throughout the entire NTTR, as implemented through the NTTR natural resources management program, Cultural Resource Programmatic Agreement, and the NTTR ICRMP. These environmental constraints are inherent to operational activities on the NTTR and would be applied to any additional withdrawn lands. The environmental constraints form the basis of the baseline environmental impact analysis within the context of this LEIS.

As a component of this analysis, the existing environmental constraints have been identified and expanded to cover proposed withdrawn lands. In addition, other environmental constraints have been identified through consultation with the Nevada State Historic Preservation Officer (SHPO) and the USFWS. Documentation resulting from consultation with the Nevada SHPO and the USFWS regarding this Proposed Action is provided in Appendix B, Agency Consultation and Coordination, and incorporated into the environmental constraint structure because they are required to be implemented as part of the Proposed Action regardless. Environmental constraints were then used to identify "constraint areas" within the NTTR and proposed expansion

areas to support programmatic analyses. These analyses can then be utilized for future planning purposes during the EIAP when decisions regarding placement of emitters or locations for specific training activities are proposed; the constraint analysis will help to inform comparisons between operationally suitable emitter/training locations and the intersection with environmental constraints, and then site-specific analysis can be conducted in the future.

Therefore, in the context of this document, "General Environmental Constraints" are actions inherent to the Proposed Action (and therefore not technically mitigations) resulting from existing standard practices/requirements and/or consultation documentation with Nevada SHPO and the USFWS. Through the environmental impact analysis process associated with this LEIS, additional "Resource-Specific" Mitigations and management practices were also identified to minimize potentially adverse impacts for activities that may pose adverse impacts despite operational constraints. The mitigations would be required to be implemented, depending on the associated alternative selected through the decision-making process.

Summarized below are the General Environmental Constraints that would be implemented as part of the Proposed Action.

The NTTR operates under two major planning programs. The natural resources management program, which supports requirements of the *Sikes Act*, establishes and implements guidance regarding the management of natural resources throughout the NTTR. In addition to the natural resources management program, the NTTR operates under a cultural resources management program, which establishes and implements guidance for management of cultural resources. Both programs and resulting management guidance documents incorporate requirements associated with respective consultations of the USFWS, NDOW, and SHPO. Since the basis of both the natural resources management program and cultural resources management program implement consultation guidelines and requirements, the Air Force has chosen to generally include each of these programs' management guidelines as environmental constraints.

Below are examples of some those management guidelines that will be implemented prior to the Proposed Action:

- Develop a Mitigation Plan as required by NEPA identifying Proposed Resource-Specific Mitigations to be implemented, responsible parties for mitigation implementation and compliance evaluation, and monitoring mechanisms for evaluation of mitigation effectiveness.
- Develop and implement a methodology to identify specific training areas and corridors prior to ground operations to allow for any natural or cultural resource surveys and protection measures that may be necessary (i.e., desert tortoise and cultural surveys).
- Through various existing program offices and current practices, NTTR planners, with user group support, will:

- Develop guidance on environmental restrictions and compliance requirements, to include mitigations and environmental constraints identified in this LEIS and associated consultations, as well as the natural resources management program and cultural resources management program.
- Provide both a visual and written presentation of restrictions as presented in this LEIS to unit commanders and training personnel. This can be accomplished through NTTR Range Safety and Operations Procedures annual briefings, additional site-specific environmental briefings, and/or through the Center Scheduling Enterprise.
- Document and resolve any issues related to environmental compliance with the cooperating agencies upon notice of any compliance issues.

It should be noted that the scope of this LEIS addresses test and training activities that would take place within the boundaries of the NTTR. It does not address those test and training activities wherein the public lands are used outside the bounds of the NTTR.

2.7 ENVIRONMENTAL COMPARISON OF ALTERNATIVES

A summary of the environmental consequences, grouped by resource area, associated with each potential alternative combination and the level of the impacts of the alternatives described, including the no-action condition is presented in this section. Table 2-5 provides an overall summary of impacts for all of the activities that constitute the Proposed Action and utilizes color coding to reflect the degree of impact without consideration of any potential mitigations outside those required by law and/or as a result of regulatory/permits that would be required as part of an alternative. Permit related requirements (i.e., "permit mitigations") that would be part of an alternative as required by law (e.g., storm water permits) are included in the analyses of impacts because these "permit mitigations" will be implemented regardless of the outcome of the analyses. The significance of impacts was determined by evaluating the context, intensity, and duration of the action (40 CFR 1508.27) and the relative effect on individual resources. This process is further detailed in Chapter 3.

Details on programmatic actions and their potential impacts as related to the potential withdrawal expansion areas can be found in Chapter 3. While Table 2-5 provides an "at-a-glance" summary of impacts based on the individual alternative analyses presented in Chapter 3, see Section 3.15.1 for a more detailed summary of impacts resulting from the interaction between potential alternative combinations.

Impacts were evaluated with consideration of implementation of general environmental constraints inherent to the Proposed Action associated with NTTR operational procedures and other NEPA-related documents for similar actions occurring on the NTTR on similar resources. General Environmental Constraints are a prerequisite for implementing the Proposed Action. Once analyses were completed, additional Proposed Resource-Specific Mitigations were identified to avoid or minimize adverse

impacts. All General Environmental Constraints were previously described in Section 2.6; all Proposed Resource-Specific Mitigations identified through analyses are provided in Section 2.8.2.

Terms Used to Describe Significance

As previously mentioned, significance of impacts is determined by considering how the Proposed Action interacts with the various resources in terms of context, intensity, and duration, as described in each respective resource section in Chapter 3. Context can be analyzed in terms of society as a whole (human, national), the affected region, the affected interests, and the locality. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than across a broad region.

Intensity refers to the severity of the identified impact, while duration considers the long-term and short-term nature of the potential impact. The impact analyses consider direct, indirect, and cumulative impacts on resources along with how both beneficial and adverse impacts affect public safety, the characteristics of the geographic area and proximity of the Proposed Action to sensitive resources, the potential controversial nature of the potential impact, whether possible effects are highly uncertain or involve unique or unknown risks, whether the action may establish a precedent for future actions with significant effects, cumulative impacts, impacts to cultural resources or endangered species, and whether the Proposed Action and/or alternatives threatens to violate federal, state, or local laws or environmental protection requirements. Each of these aspects is addressed as appropriate in the applicable resource area sections and chapters in this LEIS. General criteria for impacts to resource/issue areas are summarized below and are presented relative to individual resource/issue areas:

- Beneficial – Beneficial impacts may occur under any context, intensity, or duration. These generally result in some benefit or overall improvement to the resource impacted by the action. Such impacts may include a reduction in air emissions or restoration of habitats; the scope of the impact is directly related to the context, intensity, and duration of the impact. Elimination of baseline air emissions or recovery of large areas of desert tortoise habitat may be considered significant beneficial impacts, while a small reduction in baseline air emissions or restoration of small areas of habitat may be considered beneficial but relatively insignificant.
- Adverse – Adverse impacts generally result in detriment or degradation of the impacted resource, the degree or level of impact directly related to the context, intensity, and duration of the impact. The Air Force has identified the potential for adverse impacts for several resource areas, which can be either significant (unavoidable or avoidable/mitigatable) or insignificant. Resources experiencing potential adverse impacts are shaded “yellow” or “red” in the summary of impacts table (Table 2-5).
    - Significant Unavoidable – Physical aspects are easily perceptible, and typically endure over the medium-to-long term, with a regional context and a high intensity; however, significant impacts can occur potentially over

the short term under any context given a high intensity. Significant adverse impacts are typically not recoverable over the short term and require long-term recovery processes with extensive mitigation or revision of the Proposed Action to avoid or minimize impacts. An example of a significant adverse impact would be destruction of large percentages of desert tortoise habitat or degradation of water quality that may affect human health and the environment. Potential significant effects that cannot be reduced to acceptable levels through mitigation or management measures would be considered significant unavoidable adverse effects. Such impacts are identified as "red" in Table 2-5. Unavoidable impacts are further discussed in Section 2.8.3, Unavoidable Impacts.

  - Significant Avoidable/Mitigatable – Impacts are similar as described above. However, these impacts can either be avoided or minimized through implementation of mitigations and/or management actions. These impacts are identified as "yellow" in Table 2-5.

- Insignificant – These impacts can be beneficial or adverse and are typically short- to medium-term impacts under any context or intensity. Beneficial impacts that are not significant may include restoration of small areas of desert tortoise habitat. Adverse but not significant impacts are typically recoverable over the short-to-medium term, with mitigations required to minimize the level of impact or potential for impact. The extent of mitigation would be dependent on the identified context and intensity of the impact. Examples of adverse impacts that are not significant may be short, intermittent increases in noise to transient recreational users that do not affect overall usability of recreational areas or the potential for localized, intermittent soil erosion on washes due to troop movement during dismounted movements. These are recoverable impacts over the short term through Proposed Resource-Specific Mitigations to avoid noise-sensitive areas for training in the case of noise impacts and, for soil impacts, minimizing the size of troop units conducting ground training activities, rotating troop movement corridors, and not using locations that show signs of erosion. Resources experiencing insignificant effects are identified as "green" in Table 2-5.
- Neutral or No Effect – These are impacts that are typically of a low-intensity, such that they are imperceptible regardless of context or duration. Such impacts, whether beneficial or otherwise, are recoverable over the short term without mitigation and result in no overall perceptible change to the resource. Resources experiencing neutral or no effects are identified as "green" in Table 2-5.

Table 2-5 summarizes the impacts for each resource area as they relate to the potential combination of alternatives. More detail on all impacts can be found in the respective resource-specific discussions provided in the associated sections in Chapter 3 and summarized in Section 3.15, Summary of Impacts.

Table 2-5. Summary of the Degree of Impacts for Potential Alternative Combinations

Alternative Key: **Alt 1 = Existing NTTR Only** **Alt 2 = NTTR + Ready Access** **Alt 3A = NTTR + EC South** **Alt 3A-1 = NTTR + EC South, but Avoid Corridor, Poker Run, Trails** **Alt 3B = NTTR + 64C/D, 65D, and Administrative Incorporation** **Alt 3C = NTTR + Alamo Withdrawal** **Alt 4A = 20 years** **Alt 4B = 50 years** **Alt 4C = Indefinite**	**Air Quality**	**Airspace**	**Biological Resources**	**Cultural Resources**	**Earth Resources**	**Hazardous Materials and Solid Waste**	**Health and Safety**	**Land Use and Recreation/**	**Visual Resources**	**Noise**	**Socioeconomics**	**Environmental Justice**	**Transportation**	**Water Resources**	**Wilderness and Wilderness Study Areas**
Alt 1 + 4															
Alt 2 + 4															
Alt 3A + 4															
Alt 3A-1 + 4															
Alt 3B + 4															
Alt 3C + 4															
Alt 1 + 3A + 4															
Alt 1 + 3A-1 + 4															
Alt 1 + 3B+ 4															
Alt 1 + 3C+ 4															
Alt 1 + 3A + 3B + 4															
Alt 1 + 3A-1 + 3B + 4															
Alt 1 + 3A + 3C+ 4															
Alt 1 + 3A-1 + 3C+ 4															
Alt 1 + 3B + 3C+ 4															
Alt 1 + 3A + 3B + 3C+ 4															
Alt 1 + 3A-1 + 3B + 3C+ 4															

Table 2-5. Summary of the Degree of Impacts for Potential Alternative Combinations

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Alt 2 + 3A + 4															
Alt 2 + 3A-1 + 4															
Alt 2 + 3B + 4															
Alt 2 + 3C + 4															
Alt 2 + 3A + 3B + 4															
Alt 2 + 3A-1 + 3B + 4															
Alt 2 + 3A + 3C + 4															
Alt 2 + 3A-1 + 3C + 4															
Alt 2 + 3B + 3C + 4															
Alt 2 + 3A + 3B + 3C + 4*															
Alt 2 + 3A-1 + 3B + 3C + 4*															
No Action Alternative															

Green – Neutral or no effect on the resource
Yellow – Potential significant impact, but avoidable or can be reduced to less than significant through mitigation, to public health and safety, the human and natural environment, and/or potential violation of federal, state, or local regulations
Red – Potential significant unavoidable adverse environmental impact that cannot be minimized through mitigation.
*This configuration best meets Air Force requirements.

Impacts to public health and safety would be either avoided or minimized through implementation of operational constraints and mitigations. Any unique geographic characteristics (e.g., sensitive habitats, areas prone to erosion) associated with the proposed emitter or training sites would be avoided to the extent practicable, and any potential adverse impacts to the quality of the human environment would be minimal (mainly the potential for occasional annoyance to recreational users from noise and limited access to some previously accessible areas). There are no unknown risks or impacts that may be considered controversial in nature associated with emitter site use or training activities (such actions have been extensively analyzed in this LEIS and other Air Force documents as referenced in this LEIS), and the Proposed Action is not precedent-setting because the DoD utilizes public lands throughout the United States for both emitter sites and military training. If adverse impacts to cultural resources and endangered species are identified, these impacts would also be minimized/mitigated through implementation of operational constraints and mitigations as identified through consultation under the NHPA and the ESA, respectively. Additionally, the use of emitter sites and training activities would comply with all federal, state, and local laws. Finally, the Air Force has not identified any significant potential for cumulative impacts (as discussed in Chapter 4). Therefore, based on the context, intensity, and duration of impacts identified in this LEIS, the Air Force has not identified significant beneficial impacts under the Proposed Action and Alternatives, but has identified the potential for significant adverse impacts to land use and recreation, visual resources, and wilderness under certain alternatives.

2.8 MITIGATION

Specified mitigation measures have been identified, and analyzed, and will be carried forward in implementing the selected actions. Some impacts are mitigated through avoidance, by incorporating proposed mitigation measures into the design of the alternatives carried forward. For alternatives where potential impacts are not mitigated by avoidance, potential mitigation measures are summarized in this section and analyzed under the appropriate resource area.

2.8.1 Defining a Mitigation Measure

The mitigation measures discussed and analyzed in an LEIS cover a range of issues generally addressing mitigation measures applied in the design of reasonable alternatives (i.e., mitigation by avoidance) or address mitigations not included in the design, but applied after the impact analysis. Mitigation measures are considered even for impacts that, by themselves, would not be considered “adverse.” The proposal is considered as a whole to address specific effects on the environment (regardless of the level of the impacts), and mitigation measures are developed and analyzed where it is feasible to do so.

CEQ regulations (at 40 CFR 1508.20) define mitigation in the following five ways:

1. **Avoiding** the impact altogether by not taking a certain action or parts of an action.
2. **Minimizing** impacts by limiting the degree or magnitude of the action, and its implementation.
3. **Rectifying** the impact by repairing, rehabilitating, or restoring the affected environment.
4. **Reducing or eliminating** the impact over time by preservation and maintenance operations during the life of the action.
5. **Compensating** for the impact by replacing or providing substitute resources or environments.

During the initial development of the proposed implementation of various alternatives for extending the withdrawal and expanding the boundaries of the NTTR, mitigations were included in the screening standards. This meant that avoiding, minimizing, or reducing potential impacts was a priority guiding the development of alternatives. Depending on the final legislative language developed by Congress defining the way ahead for the withdrawal and expansion of the NTTR, it is anticipated that language would address mitigations that will be required to be implemented and, therefore, a supporting mitigation plan would be developed in accordance with 32 CFR 989.22(d). If a mitigation plan is developed, it will address specific mitigations that the proponents of various actions will be required to implement.

Mitigations directed in Congressional withdrawal legislation or agreed to as part of interagency consultation will be adopted by the Air Force. However, it should be noted that since Congress will make the final decision through legislation, it is not appropriate for the Air Force to commit to mitigations and management actions on behalf of Congress. As a result, Section 2.8.2 below provides potential mitigations identified through analyses,that would serve to avoid or minimize potential adverse impacts.

2.8.2 Potential Resource-Specific Mitigations and Management Actions Proposed to Reduce the Potential for Environmental Impacts

Noise

- Provide information regarding noise sensitive areas and impacts on wildlife to military personnel, specifically pilots, prior to conducting training or testing activities. This would assist pilots in avoiding the creation of noise-related impacts. This action could minimize any impacts across all alternatives. (See Section 3.2.2.2.)

Air Quality

- Employ standard management measures 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. This would serve to minimize air emissions associated with elements of the Proposed Action and across all alternatives. (See Section 3.3.2.2.)

Land Use, Recreation, and Visual Resources

- Recommended measures to minimize visual impacts and light emissions, as practical, include the following (see Sections 3.4.2.3 and 3.4.2.4):
    - Site and design future facilities as described in Unified Facilities Criteria for Interior and Exterior Lighting Systems and Controls (UFC 3-530-01) in order to minimize night-sky effects and reduce light trespass and glare. Examples include: all lighting should be designed to provide the minimum illumination of an appropriate color needed to achieve safety and security objectives; be directed downward and shielded to focus illumination on the desired areas; controlled lighting with timers, sensors, and dimmers; using vehicle-mounted lights for nighttime maintenance work rather than permanently mounted lighting; utilize anti-glare light fixtures.
    - In order to minimize landscape scarring where surface disturbance may occur by such actions as construction, troop movement, or training structure emplacement, the Air Force may evaluate the following: treatments such as thinning and feathering vegetation at project edges to smooth the transition between natural and built areas; salvaging landscape materials such as rock, soil, and vegetation for reuse; contouring soil borrow areas and other features to approximate natural slopes; using native vegetation to establish form, line, color, and texture consistent with the surrounding undisturbed landscape; distributing stockpiled topsoil to disturbed areas and replanting; removing or burying gravel or other surface treatments; and controlling noxious and invasive weeds.
    - Consider developing a Facilities Design Plan for Reduced Visual Dominance. This may increase the visual harmony of new facilities with the natural landscape through:
        - Selecting appropriate materials and surface treatments for structures to reduce visual contrast, such as coloring the concrete to match the predominant color in the surrounding landform and using nonreflective materials
        - Painting facilities a suitable color to reduce the contrast of the structures on the landscape
        - Selecting the most appropriate color to as closely as possible match the predominant background colors of the immediate area for natural shadows, normal fading, and weathering

- Using topography and vegetation on the landscape to screen the view of new development and avoiding locating facilities near visually prominent landscape features

Socioeconomics

- To minimize potential conflicts between NTTR operations and population, housing, and economic activity in the region (to include grazing and mining, OHV recreation, and dispersed recreation), the Air Force would continue coordination between the military and federal land management agencies as well as local and regional planning departments. (See Sections 3.6.2.3 and 3.6.2.4.)

Biological Resources

Vegetation (see Section 3.8.2.2.1):

- Construction projects or military actions will evaluate implementation of the following vegetation management guidelines/mitigations to minimize or avoid direct impacts to vegetation during ground disturbance activities:
  - Mission actions could be planned and sited in a manner to avoid sensitive plant communities, species, and habitat whenever possible. Similarly, riparian vegetation communities associated with springs, seeps, and wetlands could also be avoided wherever possible.
  - For activities involving soil disturbance or vegetation removal, the Air Force may consider the following:
    - For areas that would be temporarily disturbed or where restoration is proposed, the top 6 inches of soil may (if required by federal resource agencies) be excavated separately from deeper soils and stockpiled in a separate location. Any excavations should be backfilled with deep soils first, with the topsoil being backfilled as the final layer. This allows the site to have a final layer of soil that approximates original soil conditions and that contains a relatively healthy seed bank for regrowth of vegetation, thus rectifying potential soil displacement.
    - Soils may be lightly rolled or compacted to reduce the potential for wind erosion.
    - Native plants may be installed (seeded or planted) so they are allowed to germinate following the first storm event after project completion. Initial irrigation may be used to stimulate germination of seedling plants but ought not to be continued to prevent adaptation of the plants to an artificially wet environment. If nursery stock is used for replanting, all plants should be native and endemic to the specific area. This would rectify loss of vegetation during ground disturbance.
  - To minimize the spread of invasive plant species throughout the NTTR and proposed expansion areas, the Air Force will consider the following:

- Encroachment of invasive plants in disturbed or restored areas should be prevented, and any invasive plants that become established should be removed.
- Excavation and construction equipment should be cleaned thoroughly before traveling from one area to another on the NTTR.
- Off-road vehicle use should be minimized whenever possible to decrease the spread of invasive species such as red brome, Russian thistle, halogeton, and cheatgrass.
- Wherever possible, maintenance of road shoulders ought to be minimized to prevent the spread of Russian thistle, halogeton, and cheatgrass. Those areas should be managed to develop native plant populations.

- To minimize impacts of grazing on vegetation communities, no new livestock grazing allotments and no forest product removal may be allowed on the NTTR and proposed expansion areas. However, the Air Force may work to accommodate those ranchers that have current livestock grazing allotments in proposed expansion areas.
- In order to further avoid, minimize, or reduce impacts over time, long-term monitoring of NTTR and proposed expansion area vegetation could be conducted, to include high-resolution aerial photos (taken every five years). Natural resource managers can use monitoring to assess any major changes in vegetation characteristics (such as invasion of plant species, changes in hydrology, disturbance to soils, and other alterations of the native habitat). If significant changes are observed, the Air Force could evaluate the need to investigate and assess the areas to determine the cause of the change and take appropriate actions.

Special Status Plant Species (see Section 3.8.2.2.4):

- Construction projects or military actions will consider employing the following management guidelines for special status plants species (those considered sensitive or rare):
  - In order to avoid direct impacts to special status plant species from ground disturbance, the geographic information system (GIS) database could be reviewed during project planning to determine if the site of the action contains sensitive or rare plant species, including cacti and Joshua trees, or their habitats. If sensitive plant populations are identified, the action may be modified to avoid or minimize impacts to the rare plants where practical.
  - If impacts to rare populations cannot be avoided, methods of mitigation should be evaluated, which may include transplanting the plant population to another suitable habitat or planting substitutes to compensate for any loss. A location should be selected such that it can be avoided by future impacts if practical.

Special Status Wildlife Species (see Section 3.8.2.2.4):

- Construction projects or military actions may consider employing the following management guidelines for special status wildlife species (which include bats, reptiles and amphibians, mammals, and wild horses):
- To avoid, reduce, or eliminate potential direct impacts to bats:
    - If an action potentially impacts mines, wooded areas, seeps, springs, or abandoned structures, the areas could be surveyed to determine if bats are present and if those bats are species of concern that should be conserved.
    - Potential locations of unimproved runways could be surveyed to assess bat activity, especially in mines, abandoned buildings, and springs or seeps. If necessary, bat roosts in common flying areas could be closed and bats moved to another area, if possible. Roosts can possibly be eliminated by closing mine shafts and removing or altering structures.
    - In areas that do not conflict with the military mission, the Air Force could consider using management guidelines for bats documented in the Nevada Bat Conservation Plan (Nevada Bat Working Group, 2006).
- Low-level flight paths could avoid springs, seeps, and wetlands if at all possible to eliminate bird/wildlife-aircraft strike hazard (BASH) issues.
- To avoid, reduce, or eliminate potential direct impacts to special status reptiles, amphibians, small mammals, or wild horses:
    - Prior to the implementation and planning of any construction activity, the site will be surveyed to determine the presence of any of these species. If possible, construction plans could be altered to avoid impacts to any specials status, sensitive, rare, or uncommon species. The NDOW protocol for protection of the banded Gila monster (see Appendix H, Biological Resources) should be implemented when possible.
    - During any other surveys or projects, biologists and other qualified personnel could document the location and species of any reptiles and amphibians observed.

Migratory Birds, Bald and Golden Eagles (see Section 3.8.2.2.4):

- To comply with recent Incidental Take and Eagle Nest Take Regulations, activities would be located and scheduled to avoid or minimize adverse impacts to golden eagles, known nests and migratory birds, and BASH issues (USFWS, 2016a).
    - In order to avoid, reduce, or eliminate potential direct impacts to migratory birds and bald and golden eagles, the Air Force could evaluate whether low-level flight paths used by aircraft traverse areas where habitat conducive to nesting or foraging by significant populations of birds may be present. If information is not available, the 99th Civil Engineering

Squadron (99 CES) could survey the areas. Flight paths could then be adjusted to avoid these areas.

- All projects and proposed mission actions may also be reviewed to determine if they will impact nesting areas of raptors.

Desert Tortoise (see Section 3.8.2.2.4):

- Specific mitigations measures, derived from the current NTTR Desert Tortoise Management Plan (99 CES/CEIEA, 2015), are described in Appendix H, Biological Resources, and proposed conservation measures associated with the Biological Assessment resulting from the Section 7 Consultation process are included in Appendix B, Agency Consultation and Coordination. These conservation measures would characterize a plan of action if the desert tortoise or its habitat is compromised, although avoidance of the desert tortoise habitat typically would be the preferred mitigation practice. It is anticipated that, once a Congressional decision on land withdrawal is made, the USFWS will issue a Biological Opinion, which will identify terms and conditions for operating on any withdrawn lands.

Fencing (see Section 3.8.2.4):

- The following mitigation measures, adapted from the BLM Handbook H-1741-1: Fencing (BLM, 1989), are proposed to reduce potential adverse impacts to biological resources from fence installation in proposed expansion areas:
  - Minimize direct removal of vegetation and ground disturbance. Avoid bulldozer clearing or other major soil disturbing methods. In brushy areas, keep the cleared area to the minimum needed to allow construction. In areas with heavy vegetation, consider irregularly shaped fence line clearings rather than those with uniform width. Mechanical clearing can be successful if accompanied by rehabilitation actions that minimize soil loss and avoid long-term contrasts in vegetative cover.
  - In places where watershed conditions create the potential for a large amount of runoff, special drainage crossing structures (sometimes called “water gaps”) could be used. Designs of this type of fencing vary, and need to consider the field situation and purpose of the fencing. The need for periodic reconstruction or major maintenance can be substantially reduced if this type of fence structure is used.
  - Periodic monitoring of the fence and maintaining the fence in a usable condition, consistent with the original as-built standards, could be conducted. In addition, monitoring should include the fence line and access roads for invasive plant species.
  - Major reconstruction or replacement should occur only when construction or design inadequacies, or the normal effects of use and environmental influences, leads to sufficient wear and deterioration that replacement is required.

Cultural Resources

- Consider as per the installation (Nellis, Creech, and the NTTR) ICRMP (2012a) specific mitigations, management actions, and/or BMPs that would be presented as part of a treatment plan if cultural resources are threatened, although avoidance of the resource typically would be the preferred mitigation practice. If any undertaking does threaten historic properties, a treatment plan will be prepared by Nellis AFB for review by the Nevada SHPO, tribes, interested parties, and the Advisory Council on Historic Preservation. (See Section 3.9.2.2.)

Earth Resources

- In general, to avoid, reduce, or eliminate potential erosion impacts, the most sensitive areas prone to erosion (loose soils, slumps and slopes, seep/spring banks, etc.) from ground-disturbing activities may be avoided. If avoidance is not possible, the Air Force may consider implementation of mitigations (discussed under Water Resources later in this section) to minimize impacts to earth resources from erosion. (See Section 3.10.2.2.)

Water Resources

- To avoid, minimize, or reduce the potential for direct impacts to groundwater, aquatic environments, and other surface water resources, including indirect effects resulting from soil erosion, the following management requirements would be considered (see Section 3.11.2.4):
    - Avoid altering natural flow patterns of seeps and springs by diverting water, causing siltation, or damming any portion of seeps or springs.
    - Keep wheeled vehicles to existing trails/roads, except for missions that have been approved for off-road vehicle use.
    - Trenches dug for IW training purposes should be filled immediately after use.
    - Construction activities could be phased to limit the soil exposure for long periods of time.
    - Where applicable, erosion can be reduced by using rough grade slopes or terraced slopes.
    - To reduce overall soil exposure from construction activities, consider retaining as much area of existing undisturbed vegetation as possible.
    - Do not use seeps and springs or other water bodies as sediment traps.
    - Minimize the size of troop units, rotate troop movement corridors, and avoid troop movement through areas that show signs of erosion.
    - Avoid use of exploding ordnance within 200 feet of a well or natural spring.
    - Avoid ground-disturbing activities in areas where known seeps, springs, and other water resources are located.

Transportation

- To minimize any potential transportation impacts from road closures, the Air Force may provide advanced notice to the public regarding any permanent or temporary road closures associated with withdrawn lands. This would allow the public sufficient time to make alternate transportation arrangements.

2.8.3 Unavoidable Impacts

To the extent possible, mitigation measures, such as those identified in Section 2.8.2, should be applied to reduce potential effects to acceptable levels. However, some impacts that cannot be mitigated would occur. Some of these impacts could be considered adverse or annoying to individuals potentially affected.

Noise

- Operational activities (flight operations, munitions use, vehicles, etc.) would continue to generate noise at or slightly above current levels, so surrounding communities, persons, and/or sensitive receptors may experience some annoyance. However, noise levels would not increase perceptibly above baseline levels (see Section 3.2.2).

Land Use, Recreation, and Visual Resources

- Unavoidable adverse impacts associated with land use and recreation include no longer managing the areas that had been proposed for wilderness designation in the South Range as wilderness under Alternative 2, loss of access to one active mining claim under Alternative 3A and 3A-1 (Range 77 withdrawal area), and elimination of existing recreational uses (except designated sheep hunts) within all proposed Alternative 3 withdrawal areas (see Section 3.4.2.4).
- The introduction and ongoing presence of equipment, structures, fencing, roads, and other elements of the proposed action alternatives could have a long-term impact on the visual character of the site. Areas of continued surface and vegetation disturbance and the presence of structures would create visual contrast in form, line, color, and texture compared to existing conditions. Depending on the viewer's location relative to new features, structural elements introduced by a future project could block views. Restoring the natural, predisturbance visual character of a desert environment is extremely difficult, can take decades, and often is unsuccessful. Therefore, surface and vegetation disturbance could create long-term visual impacts due to the persistence of scars in arid and semi-arid landscapes and the presence of permanent facilities developed under the proposed action alternatives (see Section 3.4.2).

Wilderness and Wilderness Study Areas

- Adverse impacts to the solitude or primitive and unconfined recreation quality of wilderness areas, areas that were proposed for wilderness, and Wilderness Study Areas outside the NTTR land boundaries would result from noise associated with aircraft operations (see Section 3.5.2).

- Varying amounts of land area would no longer be managed as wilderness within the southern Nevada region.

Socioeconomics

- A reduction in PILT payments in Nye County associated with the Proposed Action would occur (see Section 3.6.2.4).
- Permanent and/or temporary closures to recreational areas (see Section 3.6.2.4) would occur.

Water Resources

- Metals and chemical constituents resulting from munitions and explosive materials would be deposited on the NTTR and would have the potential to migrate into surface waters or groundwater. There is no practical method to collect and remove such materials from large areas. Lead and explosive residues have been found in groundwater near the southern boundary of the NTTR, but concentrations were either below U.S. Environmental Protection Agency (EPA) and Air Force screening levels (lead) or below levels considered to affect human health (explosive residue) (see Section 3.11.2.2).

Transportation

- Unavoidable adverse impacts associated with transportation include temporary and/or permanent road/trail closures associated with safety footprints and other military activities within the South Range under Alternative 2 and the proposed Alternative 3 withdrawal areas (see Section 3.14.2).

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