

**United States Department of the Interior
Bureau of Land Management**

**Environmental Assessment
DOI-BLM-UT-W010-2015-0015-EA**

Eastern Lake Mountains Target Shooting Plan Amendment

April 2016

Location: Township 6 South to 10 South, Range 6 West to 9 West, Various Sections,
Tooele County, Utah

Applicant/Address: Not Applicable

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Eastern Lake Mountains Target Shooting Plan Amendment

DOI-BLM-UT-W010-2015-0023-EA

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1 PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to analyze and disclose the environmental consequences of the Eastern Lake Mountains Target Shooting Plan Amendment (Plan Amendment), located within the Bureau of Land Management's (BLM) Salt Lake Field Office (SLFO). An EA is a site-specific analysis of potential impacts that could result from the implementation of the proposed action or alternatives to the proposed action. An EA assists the BLM in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA in 40 Code of Federal Regulations (CFR) CFR §1508.27.

An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) statement for a particular action. If the decision maker determines that this project would have significant impacts based on the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed approving the selected alternative, another alternative or a combination of alternatives. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) beyond those already addressed by the Record of Decision (ROD) for the Pony Express Resource Management Plan (RMP) (BLM 1990), as amended/maintained and its supporting documents.

1.2 Background

The Planning Area for this amendment is located on the east side of the Lake Mountains in Utah County and consists of approximately 8,124 acres (Figure 1). It is bound on the north and west by the Israel Canyon/Mercer Canyon county-maintained road, on the south by the Soldier Pass county-maintained road, and on the east by the Utah Lake shoreline. Portions of Highway 68 run through the eastern portion of the Planning Area. Residential development from the City of Saratoga Springs occurs adjacent to the Planning Area from the northeast, while Eagle Mountain City residential development is 2 miles away from the Planning Area to the northwest. The Planning Area is utilized by the public for multiple recreational activities, including target shooting.

With the growth in population along the Wasatch Front, recreational target shooting in the Planning Area has increased dramatically—resulting in increased public health and safety issues, resource impacts, and multiple use conflicts on public and private land. Public lands within the Planning Area and adjacent state and private lands have become impacted by issues related to public safety, wildfires, dumping, cultural resource damage and property damage. Some target shooters leave behind their trigger trash (ammunition, shot up targets and other objects), which includes hazardous materials inappropriately used as targets. Beginning in December 2012 and again in December 2014, BLM implemented a temporary target shooting closure for approximately 893 acres within the Planning Area to protect public health and safety from errant gunfire. An unintended result of these temporary closures was that target shooters moved away

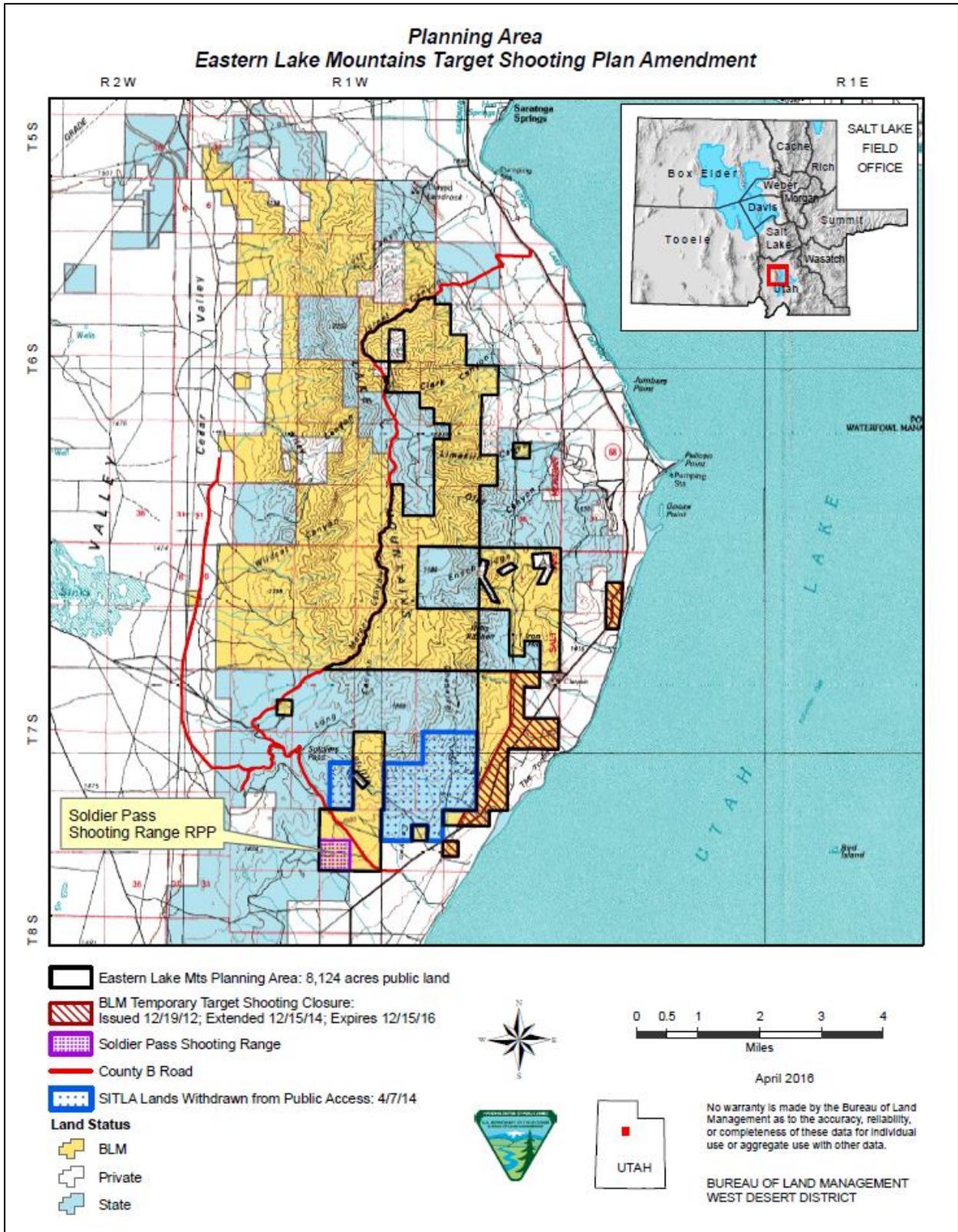


Figure 1 Planning area map.

from the closed areas to areas that contained culturally important Historic Properties (specifically petroglyphs). As a result, damage to the petroglyphs from target shooting has increased since 2012. The term “Historic Properties” is used to encompass all cultural resources that meet the eligibility criteria for listing in the National Register of Historic Places (36 CFR §60.4).

While the term “Historic Properties” is not limited to petroglyphs, for the purposes of this action, the focus is on petroglyphs.

In addition, the BLM SLFO and other agencies, associations, and organizations expend considerable time, effort and funds fighting wildfires caused by target shooting, reclaiming lands damaged by these wildfires, removing trigger trash, installing fences and signs designed to protect petroglyph panels, and documenting damaged petroglyph panels.

Public health and safety concerns intensified in 2012 when the BLM and Utah County Sheriff received complaints from local private land owners regarding stray and ricocheting bullets striking structures and nearly hitting people on private and public lands along the Highway 68 corridor and the west shore of Utah Lake (in the vicinity of the current temporary closure). On-site investigations were made to verify the impacts, identify the source of the bullets, and assess the level of threat to these land owners and other visitors to this area. With the encroaching community of the City of Saratoga Springs, the proximity to private homes and Highway 68, and the relatively flat terrain lacking a safe backstop for shooting, BLM SLFO determined that recreational target shooting in the area included in the current temporary closure, posed an immediate and continuing threat to the lives and property of nearby residents, other users of the area, and motorists along Highway 68.

In response to this determination of serious threat, on August 17, 2012 the BLM SLFO implemented a temporary shooting closure for public health and safety purposes encompassing 893 acres of public land on the southeast side of the Lake Mountains. A second two-year temporary closure was issued for the same area effective on December 15, 2014 with an expiration date of December 15, 2016. The temporary closures were imposed under 43 CFR 8364.1 authorizing BLM to issue closure and restriction orders which provide for the protection of persons, property and public lands and resources. These regulations are issued under the provisions of the Federal Land Policy and Management Act of 1976 (FLPMA) [Public Law (P.L.) 94-579, 90 stat. 2743, 43 United States Code (U.S.C.) 1701].

While the existing temporary closure has been, and continues to be, effective in improving public safety and reducing the risk of damage to the public lands within this 893 acre area and adjacent private properties, it is only temporary and cannot be renewed in perpetuity. In addition, new and increased impacts and threats are now occurring outside the closure area where the displaced target shooters have moved. With the 2014 closure due to expire in December 2016, the SLFO is proposing to amend the Pony Express ROD/RMP to assess more intensive and long-term management of target shooting within the proposed 8,124 acre Planning Area. This planning effort will focus solely on recreational target shooting and impacted resources in order to respond to the short time-frame for the expiration of the 2014 temporary closure and to address critical public safety concerns now rather than waiting for a field-office-wide plan revision.

Public involvement is an important and key component of the plan amendment process. BLM SLFO is working with key stakeholders, including: local city, county, state and tribal governments; interested private landowners; members of the target shooting community; environmental and cultural resource preservation organizations; and interested individuals and

members of the general recreating public. Relationships with many of these stakeholders were already developed with the planning and implementation of the 2012 and 2014 temporary shooting closures.

1.3 Purpose and Need

This Plan Amendment is being prepared to address public target shooting within the Planning Area boundaries of the Eastern Lake Mountains Target Shooting Plan Amendment. The Pony Express ROD/RMP decisions related to management of recreational target shooting and affected resources are no longer adequate in this area. The BLM has determined that additional analysis and planning is warranted. Through this plan amendment process, the BLM will address management prescriptions for target shooting activity parameters and target shooting related public safety concerns, cultural and natural resource protection, wildfire incidents, property damage and law enforcement. This process will focus only on the amendment of recreation management decisions for target shooting in the portion of the Pony Express ROD/RMP that is within the designated Planning Area.

This plan amendment is necessary for several reasons involving changing circumstances, updated policies, and new information since the Pony Express ROD/RMP was finalized in January 1990. The reasons include several serious public safety incidents of errant gunfire endangering the lives and property of adjacent residents, motorists on Highway 68, and other visitors to the area; the annual high incidence of target shooting caused wildfires; documented irreparable damage to Historic Properties (specifically petroglyphs) and the large amounts of trigger trash, dumped household waste, trash and hazardous materials left on public, state and private property.

The BLM policy for temporary shooting closures is outlined within Washington Office (WO) Instruction Memorandum (IM) 2013-035, Requirements for Processing and Approving Temporary Public Land Closure and Restriction Orders. It clearly states that long-term closures must be implemented through a land use planning process:

“Temporary closures or restrictions must generally be limited to 24 months or less in duration. This policy is necessary to ensure that temporary closures or restrictions do not become de facto permanent closures or restrictions without public involvement or without a defined time frame for resolution... Closures and restrictions that are longer than 24 months in duration generally must be accomplished through the land use planning/LUP amendment process, which includes a NEPA analysis. Permanent closures must always be accomplished through the land use planning process.”

With the 2014 temporary closure due to expire in December 2016, this plan amendment will focus solely on recreational target shooting and impacted resources in order to respond to the short time-frame for the expiration of the latest temporary closure and to address critical public safety concerns now rather than waiting for a more all-encompassing field office-wide RMP update. BLM has identified a need to evaluate the recreation program decisions in light of changing circumstances within the Planning Area regarding recreational target shooting.

1.4 Conformance with BLM Land Use Plan

The following land use plan (LUP) and amendments are applicable to this planning effort:

- Pony Express Record of Decision and Resource Management Plan (ROD/RMP), Approved: 1990 (BLM 1990)
- Pony Express Resource Area Off-Highway Vehicle Designations (OHV), Approved: 1992 (BLM 1992)
- Salt Lake District Office Fire Management Plan Amendment (SLDO FMP), Approved: 1998 (BLM 1998)

The alternatives developed in this plan amendment are also consistent with the Pony Express ROD/RMP decisions, goals and/or objectives related to the management of the following resources: air quality, soil, water, visual resources, cultural resources, lands, hazardous waste, range, recreation, fire/fuels and wildlife management as required by 43 CFR 1610.5:

Pony Express Record of Decision and Resource Management Plan (1990)

- Lands Program: Decision 1 (Disposal, page 3), Decision 3 (Exchange, page 3), Decision 5 (Withdrawals, Page 4), and Decision 7 (Access, page 14).
- Hazardous Waste Program: Decision 1 (Evaluate, page 29).
- Soil, Water and Air Program: Decision 1 (Evaluate, page 30), Decision 4 (Erosion, page 30), and Decision 7 (Air Quality, page 31).
- Range Program: Decision 1 (Forage, page 32) and Decision 2 (Develop Allotment Management Plans).
- Wildlife Program: Decision 1 (Develop Habitat Management Plans, page 34), Decision 2 (Provide for T&E, page 36), Decision 4 (Protect Habitat, page 37), and Decision 5 (Improve Crucial Habitats, page 37).
- Recreation Program: Decision 1 (Manage for Special Recreation Management Areas and Extensive Recreation Management Areas, page 40) and Decision 2 (ORV Designation, page 41).
- Visual Resource Program: Decision 1 (Visual Resource Management (VRM) Designation, page 41).
- Cultural Resources Program: Decision 1 (Evaluate Impacts, page 49), Decision 3 (Monitoring Plan, page 49), and Decision 5 (Education, page 50).
- Transportation & Utility Program: Decision 1 (Future Proposals, page 56).
- Fire Management Program: Decision 1 (Fire Suppression, page 56).

Pony Express Resource Area Off-Highway Vehicle Designations (1992)

The final off-highway vehicle (OHV) designations for public lands in the Pony Express Resource Area are depicted on the January 1992 map attached to the July 22, 1992 State Director's signature. The Planning Area is located within the B-2 category where motor vehicle use is limited to existing roads and trails year-round to promote resource values of soils, vegetation, wildlife habitat, cultural, watershed, riparian, wetlands, and visual resource.

Salt Lake District Office Fire Management Plan Amendment (1998)

The Planning Area occurs within the A-12 fire management unit and fire management zones (FMZ) 1 and 6. The management goals for these include resource objectives, control and suppression strategies/costs, and balancing suppression strategies with resource needs.

1.5 Relationship to Statutes, Regulations, or Other Plans and Programs

Development of the target shooting plan amendment alternatives is consistent with the applicable federal and state laws, regulations, policies, county ordinances and other plans listed below, to the maximum extent possible. Federal policies include Executive Orders (EO) and Department of Interior (DOI) and BLM Manuals, Handbooks (H), Instruction Memorandum (IM) and Information Bulletins (IB). Compliance includes the completion of procedural requirements, including consultation, coordination, and cooperation with stakeholders, interested publics, and Indian Tribes and completion of the applicable level of NEPA review.

These documents and their supporting information and analysis are hereby incorporated by reference as applicable to the management of target shooting in the Eastern Lake Mountains, based on their use and consideration by various preparers of this EA. The attached Interdisciplinary Team Checklist (Appendix A) was developed after consideration of these documents and their content. The specialists identified which issues to carry forward and analyze further in this document or, if not impacted, provided a rationale for not carrying them forward.

Authorities (As Amended)

- Archaeological Resource Protection Act and Antiquities Act of 1906 (16 U.S.C. 433)
- Migratory Bird Treaty Act of 1918, (16 U.S.C. 703)
- Migratory Bird Conservation Act of 1934 (16 U.S.C. 715)
- Taylor Grazing Act of 1934 (43 U.S.C. 315)
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668)
- Fish and Wildlife Act of 1956 (16 U.S.C. § 742a et seq.)
- National Historic Preservation Act of 1966, (16 U.S.C. 470)
- National Environmental Policy Act of 1969 (42 U.S.C. § 4321 et seq.)
- Endangered Species Act of 1973, (16 U.S.C. 1531-1544)
- Federal Noxious Weed Act of 1974 (P.L. 93-629)
- Hazardous Materials Transportation Act of 1975 (49 U.S.C. 5101)
- Federal Land Policy and Management Act of 1976 (43 U.S.C 1701 et seq.)
- Clean Air Act of 1977 (33 U.S.C. 1251 et seq.)
- Clean Water Act of 1977 (33 U.S.C. 1251 et seq.)
- Public Rangelands Improvement Act of 1978 (P.L. 95-514)
- Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.)
- American Indian Religious Freedom Act of 1996 (42 U.S.C. § 1996)
- Committee Report accompanying the Department of the Interior, Environment and Related Agencies, HR 83, December 16, 2014.

Regulations

- 36 CFR 800 Protection of Historic Properties
- 36 CFR 60 National Register of Historic Places Federal Program Regulations
- 36 CFR 68 Secretary of the Interior's Standards for the Treatment of Historic Properties
- 43 CFR 4100 Grazing Administration—Exclusive of Alaska

Executive Orders

- Consultation and Coordination with Indian Tribal Governments, EOs 13175 and 130840
- Control of Invasive Species, EO 13112
- Responsibility of Federal Agencies to Protect Migratory Birds, EO 13186
- Environmental Justice, EO 12898

Manuals and Handbooks

- BLM NEPA Handbook, H-1790-1
- BLM Land Use Planning Handbook, H-1601-1
- BLM CERCLA¹ Response Actions Handbook, H-1703-1
- BLM Environmental Compliance Handbook, H-1703-6
- BLM Visual Resource Contrast Rating Handbook, H-8431-1
- BLM Visual Resource Inventory Handbook, H-8410-1
- BLM Rangeland Health Standards, BLM Manual Section (MS) 4180
- Special Status Species Management, MS 6840
- Cultural Resource Management, MS 8100
- Guidelines for Identifying Cultural Resources, MS 8110
- Guidelines for Protecting Cultural Resources, MS 8120
- Native American Consultation, MS 8160
- Visual Resource Management, MS 8400

Instruction Memorandum or Bulletins

- Updated Bureau of Land Management (BLM) Sensitive Species Lists for Utah, Utah (UT) IM 2011-037
- Visual Resource Management: Standard Environmental Colors Chart – Updated, WO IB 2008-116
- Visual Resource Management Policy Restatement, WO IB 98-135
- Assessing Tribal and Cultural Considerations, WO IM 2004-052
- Implementation of Utah Recreation Guidelines, UT IM 2001-090

Memorandum of Understanding

- Memorandum of Understanding (MOU) between the U.S. Department of the Interior Bureau of Land Management and the Fish and Wildlife Service to Promote the Conservation of Migratory Birds, BLM MOU WO-230-2010-04
- Federal Lands Hunting, Fishing and Shooting Sports Roundtable Memorandum of Understanding, BLM MOU WO-250-2014-01

¹ CERCLA refers to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980

State of Utah, County and City Plans and Rules

The BLM will consider plans of other State, local, and Federal agencies that are relevant in the development of this EA and will seek to be consistent with or complementary to these plans whenever possible. The plans the BLM will consider during this planning effort include:

- Utah County General Plan (1990)
- City of Saratoga Springs, Land-Use Element of the General Plan (2005)
- Eagle Mountain General Plan (2005)
- Northern Utah Annual Operating Plan for Fire Management 2015 (updated annually)
- Deer Herd Unit Management Plan Deer Herd Unit #19 (4/2012)
- Utah Comprehensive Wildlife Conservation Strategy (2005)
- Utah Cougar Management Plan (2015-2025)
- Utah Mule Deer Statewide Management Plan (12/2014)
- Utah Pronghorn Statewide Management Plan (1/2009)
- Utah Administrative Code R657-5 Taking Big Game (9/2015)
- Utah Administrative Code R657-6 Taking Upland Game (9/2015)
- Utah Administrative Code R657-48 Wildlife Species of Concern and Habitat Designation Advisory Committee (9/2015)

Other EISs and EAs that influence the scope of this document include:

- Proposed Pony Express RMP and Final EIS (9/1988)
- Draft Pony Express RMP and EIS (5/1988)
- Vegetation Treatments Using Herbicides on BLM Lands in the 17 Western States (6/2007)
- Salt Lake District Proposed Fire Management Plan Amendment (SLD FMP) (4/1998)
- Off-Highway Vehicle Designations (3/1992)
- West Desert District Normal Fire Year Rehabilitation and Stabilization Plan (WDD NFRP) DOI-BLM-UT-W000-2010-0001-EA (6/2010)
- Five Year Noxious Weed Plan (BLM 1996) UT-020-1996-0024 (6/1996)

Other Documents:

- BLM Utah Fire Prevention Order (Order #UT910-14-001), updated annually
- BLM Utah West Desert District Fire Prevention Order (Order #UTW002-15-01), updated annually
- Rangeland Health Assessment (1999)
- Utah Standards and Guidelines for Rangeland Health (5/1997)
- Salt Lake Field Office (SLFO) Law Enforcement Plan (2016)

1.5.1 Recreation Management Specific Laws, Regulations, and Policies

Management of recreation on public lands is provided for under FLPMA and in the following regulations (including but not limited to):

- 43 CFR 2930 – Permits for Recreation on Public Lands
- 43 CFR 8350 – Management Areas
- 43 CFR 8360 – Visitor Services
 - Subpart 8364 – Closures and Restrictions

○ Subpart 8365 – Rules of Conduct

Laws, regulations and policies specific to target shooting include the following:

- Executive Order 13443 “Facilitation of Hunting Heritage and Wildlife Conservation,” August 16, 2007
- WO Memorandum “Protecting Recreational Shooting Opportunities on Public Lands,” November 23, 2011
- WO IM 2008-074, Change 1 Methods for Authorizing Shooting Range Areas on Public Lands
- WO IM 2015-157 Advanced Congressional Notification for Proposed Closures Related to Recreational Shooting, Hunting, or Fishing (Sept. 29, 2015)
- WO IM 2014-131 Implementation of the Federal Lands Hunting, Fishing and Shooting Sports Roundtable Memorandum of Understanding (August 26, 2014)
- BLM West Desert District Fire Prevention Order (FPO) Number UTW002-15-01. Prohibited acts include use of steel core or steel jacketed ammunition; use of any tracer or incendiary ammunition; and possession or use of any kind of explosives, incendiary or chemical devices, pyrotechnics or fireworks, or exploding targets

There are no BLM regulations (43 CFR) specific to target shooting; however, there are several relevant regulations under which violations are cited. These include, but are not limited to, the following:

- 43 CFR 4140.1 (b)(6) Acts prohibited on public lands. Littering.
- 43 CFR 8365.1 Rules of Conduct for Public Land Users.
- 43 CFR 8365.1-4(a)(2) Public health, safety and comfort. Creating a hazard or nuisance.
- 43 CFR 8365.1-5(a)(2) Property and resources. Willfully deface, remove or destroy plants or their parts, soil, rocks or minerals, or cave resources.
- 43 CFR 8364.1(d) Closure and restriction orders. Violation of a closure or restriction order.

Laws, regulations and policy specific to dumping on public lands including trigger trash and illegal dumping are as follows:

43 CFR § Dumping and Sanitation

- 8364.1(d) Violation of closure or restriction orders: In general Public Lands in Utah.
- 8365.1-1(b)(1) Disposal of non-flammable trash except in place provided.
- 8365.1-1(b)(2) Disposal of flammable trash except in authorized fire or place provided.
- 8365.1-1(b)(3) Drain or dump refuse or waste from trailer or other vehicle: Sewage and Petroleum products.
- 8365.1-1(b)(4) Dispose of any household, commercial or industrial waste or refuse: Household, Commercial and Industrial.

Target shooting restrictions are also included within BLM Utah WDD FPO (Order #UTW002-15-01), which is updated annually. The current FPO specifically states:

Under Title 43 CFR 9212.1, Prohibited Acts: Unless permitted in writing by the Authorized Officer, it is prohibited to perform any act restricted by this Fire Prevention Order on public lands managed by the BLM WDD within the counties of Salt Lake, Tooele, Utah, Rich and Box Elder. Prohibited Acts:

1. Use of any steel core or steel jacketed ammunition of any caliber between June 20 and September 30 each year.
2. Use of any tracer or incendiary ammunition of any caliber.
3. Possession or use of any kind of explosives, incendiary or chemical devices, pyrotechnics or fireworks, or exploding targets.
4. Use of any Sky Lanterns, Chinese Lanterns, Fire Balloons, Acetylene Balloons or similar device.
5. Use of any Off Road Vehicle (ORV) that is not equipped with a properly installed and maintained spark arrestor. Spark arresters shall meet the 80 percent efficiency level standard when determined by the appropriate Society of Automotive Engineers recommended practices J335 and J350. Refer to Title 43 CFR 8343.1.

State and county laws and ordinances specific to target shooting include, but are not limited to, the following:

- State Statute 53-5a-102: Uniform firearm laws.
- State Statute 76-10-508: it is illegal to “discharge a firearm from a vehicle, near a highway, or in the direction of any person, building, or vehicle.” The statute does not define “near.”
- Utah County Ordinance No. 2011-35 An Ordinance Enacting Section 13-3-16, Prohibited Targets of the Utah County Code (amendment of Utah County Code 13-3-16 Prohibited Targets). Utah County Code, Section 13-3-16 specifically states:

Prohibited Targets: No person within the unincorporated area of Utah County including on state or and federal public lands, shall use or possess with intent to use as a target, any object, either solid, liquid, vapor, or particulate that will shatter, break apart, fragment, ignite, or explode, that may create a hazard or nuisance to any persons, property, public lands, wildlife, or livestock. This ordinance does not apply (1) to any objects used as targets commonly referred to as clay pigeons, sporting clays, or objects of a similar nature, and (2) any private property owner on his property, or any person on the private property owner’s property in possession of written permission from the property owner to engage in recreational target shooting activities on the property.

1.5.2 Closure Authorizations and Violations

Implementation of closures on public land is authorized under the following:

- Title 43 CFR, Subpart 8364.1, “Closures and Restrictions.” Provides BLM with authority to establish closures and restrictions to protect persons, property, and public lands and resources.

Section (a): “To protect persons, property, and public lands and resources, the authorized office may issue an order to close or restrict use of designated public lands.”

- WO IM 2013-035, “Requirements for Processing and Approving Temporary Public Land Closure and Restriction Orders” [Note: WO IM 2013-035 replaced WO IM 2010-028, Change 1, dated June 6, 2011, under which the original 2012 Eastern Lake Mountains temporary closure was implemented.]

“The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative (or repetitive) temporary closures.”

“Where a solution to the issues that necessitated a closure or restriction can be found, but will take longer than 24 months to resolve, (e.g., via a long-term planning decision), managers should issue new temporary closure or restriction orders in accordance with this IM before the original order expires.”

- Closure violations are cited under 43 CFR § Closure 8364.1(d) Violation of closure or restriction orders: In general Public Lands in Utah

1.6 Planning Criteria

Planning criteria guide development of the Plan Amendment by defining the decision space. “Planning criteria will generally be based upon applicable law, Director and State Director guidance, the results of public participation, and coordination with any cooperating agencies and other Federal agencies, State and local governments, and federally recognized Indian tribes” [43 CFR 1610.4-2(b)]. Planning criteria represent the overarching factors used to resolve issues and develop alternatives. The planning criteria considered in the development of this document are as follows:

- The Plan Amendment addresses BLM-administered public lands only.
- The Plan Amendment makes land use planning decisions specific to potential closure or restrictions of target shooting to determine the desired future condition and uses of these public lands.
- The Plan Amendment utilizes a collaborative and multi-jurisdictional approach to determine the desired future condition of public lands.
- The Plan Amendment complies with NEPA, FLPMA, and other applicable laws, executive orders, regulations and policy.
- The Plan Amendment recognizes valid and existing rights.
- The Plan Amendment does not change existing planning decisions that are still valid.

This planning effort does not cover a full RMP revision. It remains focused on the management decisions pertaining to target shooting in the Planning Area. Due to the limited focus of this planning effort, decisions that would normally be considered in a full RMP revision will not be addressed.

Valid existing rights shall not be affected by any alternatives analyzed in this EA. The BLM has no authority over private, county, state. No decisions shall be made by BLM regarding use of firearms on private, county, state or other federal lands. The Utah County Sheriff’s Office is the appropriate contact for any emergency. Non-emergency issues on federal, private, county or state lands within the Lake Mountains can be referred to the managing agency. Law enforcement officers from the State of Utah Division of Parks and Recreation and the School and Institutional Trust Lands Administration (SITLA) also patrol the Planning Area. Administrative citations would be issued by BLM law enforcement Rangers.

1.7 Planning Process

Land Use Plans (LUPs) are “designed to guide and control future management actions and the development of subsequent, more detailed and limited scope plans for resources and uses” (43 CFR Part 1601.0-2). BLM has determined that changes to the recreation program LUP decisions in the existing Pony Express ROD/RMP must be made through the plan amendment process.

The BLM planning process, as set forth in the Federal regulations at 43 CFR 1600 and the land use planning guidance found in the BLM Land Use Planning Handbook (H-1601-1), consists of the following steps for an EA level LUP amendment (Table 1):

Table 1 Plan amendment steps.

Step/Task	Completion Status*
Preparing a Notice of Intent (NOI)	Completed
Conducting Scoping	Completed
Formulating Alternatives	Completed
Preparing a Draft RMP Amendment and EA/FONSI	Completed
Providing a Public Comment Period	In progress
Preparing a Proposed RMP Amendment and EA/FONSI	Upcoming
Submit Closure Notification Form to State Director for Processing through the DOI to the House and Senate Committees On Appropriations	Upcoming
Providing a Protest Period and Resolving Protests	Upcoming
Concluding the Section 7 Consultation process with State Historic Preservation Office (SHPO)	Upcoming
Conducting a Governor’s Consistency Review Period	Upcoming
Preparing a DR/FONSI/RMP Amendment	Upcoming
Implementing, Monitoring and Evaluating Plan Decisions	Upcoming
* The completion status will be updated at the various steps of the planning process.	

In accordance with Section III of BLM’s Land Use Planning Handbook (H-1601-1, pages 25-29), SLFO did not prepare documents for a preparation plan, a scoping report, or an analysis of the management situation. In lieu of a scoping report, a scoping summary is provided in this EA at Section 1.9.1. Information that is used in preparing an analysis of the management situation is provided in Chapters 1, 2 and 3 of this EA. SLFO will not be issuing a Notice of Availability for the Draft Amendment and its corresponding EA/FONSI. Instead, SLFO will notify the public of the Draft Amendment through news release(s), website updates and via letters/emails to those on the project mailing list.

1.8 Cooperating Agencies and Consulting Parties

The BLM extended cooperating agency status to government agencies that have responsibility, authority, and expertise for lands adjacent to the Planning Area. The following is a list of the cooperating agencies that signed a MOU agreeing to work with BLM as cooperating agencies on the development of this EA:

- State of Utah, Public Lands Policy Coordinating Office (PLPCO)
- State of Utah, School and Institutional Trust Lands Administration

- City of Saratoga Springs
- Eagle Mountain City
- Utah County

As part of the planning process, the BLM initiated consultation with the following Native American Tribes: Confederated Tribes of the Goshute Reservation, Skull Valley Band of the Goshute Tribe, Paiute Tribe, Ute Indian Tribe and Jemez Pueblo. The Tribes did not participate as cooperating agencies. The BLM SLFO attended a Paiute Tribe Business Council meeting to discuss this planning effort. Later, the Paiute Tribe sent a letter to BLM stating that although they were supportive of the effort, they had no concerns. The BLM SLFO also met with representatives of the Confederated Tribes of the Goshute Reservation; and they expressed interest in the progress of the RMP amendment. No response was received from any of the other tribes.

As part of the public involvement component of the National Historic Preservation Act (NHPA)² process outlined in 36 CFR Part 800, the following governments, organizations and individuals were considered by the BLM as consulting parties for this undertaking:

- Congresswoman Mia Love
- Lake Mountain Land and Livestock/Doyle Smith Family Living Trust
- The Archaeological Conservancy
- Utah Archaeological Research Institute
- Utah County Chapter of Utah Statewide Archaeological Society
- Utah Rock Art Research Association
- Utah Shooting Sports Council
- Long Range Shooters of Utah
- Nina Bowen, concerned citizen

1.9 Identification of Issues

Identification of issues requiring analysis was accomplished through internal analysis; coordination and consultation with Cooperating Agencies and through reviewing comments submitted from the public, including the Consulting Parties. The BLM interdisciplinary team (ID Team) completed site visits and worked with stakeholders previously defined in Section 1.2.

The ID Team identified resources within the Planning Area which might be affected, and considered potential impacts using current office records, geographic information system (GIS) data, site visits, and information received from the public. The results of this review are summarized in the Interdisciplinary Team Checklist, included as Appendix A to this EA.

² In accordance with the provisions contained in 36 CFR §800.8 Coordination with the National Environmental Policy Act, SLFO is combining the public participation requirements of NEPA and NHPA.

Section 1.9.1 summarizes the information received as a result of public participation in the NOI comment period.

Resources determined to be present and potentially affected by the proposed action (PI – present in the area with probable impact) are carried forward for analysis in this EA. Where resources are present but not determined to be impacted (NI - present, but not affected to a degree that detailed analysis is required) or resources are determined not to be present (NP - not present in the area impacted by the proposed or alternative actions), a rationale for not considering them further is provided in the ID Team checklist (Appendix A).

Resources identified as present and potentially impacted that will be carried forward for detailed analysis in this EA are listed in Section 1.9.4.

1.9.1 Scoping Summary

To satisfy the public involvement requirements of the Federal regulations at 43 CFR 1610.2 of the FLPMA and 40 CFR 1501.7 of the NEPA, the SLFO conducted a 30-day public scoping process. This process began with the publication of a NOI to amend the Pony Express RMP in the *Federal Register* on June 12, 2015, which closed on August 20, 2015. [Notice of the proposed Plan Amendment was posted on the Utah BLM Environmental Notification Bulletin Board (ENBB), NEPA Register (e-planning) and project websites on June 12, 2015. A corresponding news release was also issued to local media. This public scoping period was subsequently extended to August 20, 2015 with the requirement to provide a two-week comment submission period after the public scoping meetings, which were held on August 4-5, 2015.]

Approximately 318 public scoping letters were mailed or emailed to interested parties (some of which were duplicates) on July 1, 2015. This included congressional representatives; state and local government officials and agencies; tribal leadership; national, state and local organizations; local business owners; private landowners; and interested individuals. From June 29 through July 10, 2015, key officials and stakeholders were contacted via phone conferences or scheduled phone calls. These included Utah Congressional Representatives for Senator Orrin Hatch, Senator Mike Lee, Representative Rob Bishop, Representative Chris Stewart, Representative Jason Chaffetz, and Representative Mia Love; Utah state and local officials for the Governor's Office, SITLA, Utah County Commission, Utah County Sheriff, Eagle Mountain City, City of Saratoga Springs, and Lehi; law enforcement officers from the division of the Utah County Sheriff's Office, Eagle Mountain City Sheriff's Office and City of Saratoga Springs Police Department; Tribal leaders of the Jemez Pueblo, Confederated Tribes of Goshute Reservation, Skull Valley Band of Goshute Tribe, Paiute Indian Tribe of Utah, Ute Indian Tribe, and Eastern Shoshone; Shooting Sports Roundtable (SSRT); Utah Shooting Sports Council; Utah Rock Art Research Association (URARA); and local private landowners. Public scoping meetings were held on August 4 and 5, 2015 in the City of Saratoga Springs and Sandy, Utah, respectively.

The scoping process included discussions with and reviews from the ID team, meetings with the Consulting Parties and Cooperating Agencies, two public open houses, website postings (NEPA Register, ENBB and the project webpages), and an invitation for the public to provide written comments. Additional information is provided in Chapter 5. This section describes the scoping process and identifies the issues derived from the scoping comments.

SLFO received 112 comment letters from the public. Of the 112 comments:

- 86 were emailed to BLM specialists/managers directly or to the SLFO’s comment email address,
- 3 were received via the BLM’s eplanning system,
- 8 were submitted on the BLM comment forms at the scoping open houses,
- 9 were mailed letters, and
- 6 were recorded by the court reporter at the scoping open houses.

Of these comments, 99 were citizens, 4 were government and 9 were representing 18 organizations. Some comments were received more than once. For example, the same comment letter could have been faxed and emailed or hand carried and mailed. Where possible, duplications were paired up and counted as only one comment letter. Comment letters that were addendums to previous submissions or represented additional comments were counted as a second letter. SLFO received only one request from the public to modify their comment letter; this modification was accepted.

Throughout the planning process, SLFO maintained a copy of all scoping comments in its public room for review during business hours. Comments were reviewed by the Cooperating Agencies and Consulting Parties (refer to Section 1.8).

Comments received from the public were sorted into one of three categories:

1. Issues addressed through other policy or administrative action;
2. Issues beyond the scope of the plan amendment; or
3. Issues to be addressed in the plan amendment.

Additional information regarding the public participation process, including scoping, is found in Chapter 5.

1.9.2 Issues Addressed Through Policy or Administrative Actions

Policy or administrative actions include those actions that are implemented by the BLM as a standard operating procedure, because law requires them, or because they are the policy of the BLM. Administrative actions do not require a planning decision to implement. The following issues can be addressed by administrative actions:

- Complying with existing laws and policies (FLPMA, NEPA, Endangered Species Act (ESA), American Antiquities Act, Clean Air Act, NHPA, etc.).
- Conducting education, enforcement/prosecution, and volunteer coordination.
- Managing Historic Properties (specifically petroglyphs) that includes up to date inventories, and non-disclosure of spatial data.
- Administering existing leases, permits, other authorized uses and valid existing rights.
- Following standard law enforcement operating procedures as described in the SLFO Law Enforcement Plan (2016). Citations would be issued for illegal activities in accordance with all provisions provided for in the 43 CFR (including vandalism, dumping, and theft). Target shooting on BLM land is an allowed activity (except where closed) and it must be conducted in a safe manner.
- Conducting monitoring and assessment processes including rangeland health, watershed, soils, vegetation, wildlife, and air quality.
- Applying mitigation measures for site-specific projects.

- Controlling noxious and invasive weeds through spraying herbicides and mechanical treatments.
- Installing rangeland and wildlife improvements.
- Conducting emergency stabilization and rehabilitation (ESR) planning and implementation.

1.9.3 Issues Beyond The Scope Of The Plan Amendment

Issues beyond the scope of the plan amendment include all items not related to decisions that would occur as a result of this planning process. In short, they include determinations or decisions that are beyond the capability of the SLFO to resolve as part of this target shooting plan amendment or are not under the jurisdiction of the SLFO. Issues identified in this category include, but are not limited to the following:

- Settlement of RS 2477 claims.
- Special designations such as areas of critical environmental concern, special recreation management areas or lands with wilderness characteristics.
- Eliminating or closing portions of grazing allotments or mineral developments, including associated authorizations or permits.
- Travel and Transportation decisions such as OHV restrictions, road closures, or road decommissions in the Planning Area.
- Revision of existing laws, policies, and regulations.
- Availability of funding and personnel for managing programs, projects or agreements.
- Fire closure orders.
- Land tenure adjustments.

In addition to this list, other program-specific issues were identified during the public scoping process that are beyond the scope of this plan amendment. With the imminent expiration of the current temporary closure, the scope of the plan amendment was limited to target shooting only. The following issues are outside the scope of this plan amendment for the stated reasons.

1.9.3.1 Overarching

- Can use of public lands be limited to activities that are not destructive or harmful to other visitors or cultural resources?

BLM is mandated by FLPMA to address all uses of the public lands. BLM can utilize its existing regulations to address destructive or harmful actions.

- What long term management plans does the BLM have for the Planning Area including the entirety of the Lake Mountains outside of the Planning Area?

Although this topic has been discussed, BLM does not have current plans to undertake a comprehensive plan amendment for the entire Lake Mountains. The SLFO is not on the Director's schedule to complete a plan revision at this time.

- Should an emergency closure be enacted on certain lands north of Soldier Pass Road and west of Highway 68 prior to the completion of the plan amendment?

As stated in the NOI, this plan amendment will focus on management actions that address long term management of target shooting. Therefore this comment is outside the scope of this analysis.

1.9.3.2 Fire/Fuels

- Is the United States Forest Service's (USFS) rifle-bullet study that demonstrates shooting can start fires a definitive study? Is it based on unfair and unrealistic assumptions?

A study was completed in 2013 by the U.S. Department of Agriculture (USDA), Forest Service, Rocky Mountain Research Station (Finney *et al.* 2013) which found that certain rifle bullets had a potential to cause ignitions. This paper was peer reviewed and represents the best available science at this time. Assessing the efficacy of this study is outside the scope of this analysis.

Personal communication was held with author Mark Finney on November 23, 2015 regarding 2013 USFS study on ignition by rifle bullets (Finney 2015). The tests conducted showed that it was possible to get ignitions. The equations utilized in the study are not predictive; they show that there is a potential increase in temperature that is sufficient to cause ignition. The mechanism is kinetic energy transfer: rapidly deforming metal (or plastic deformation) occurs when the bullet strikes a hard surface. Studies conducted at UC Berkley of hot metal fragments from power lines causing ignition through contact with a receptive fuelbed after dropping to the ground, also show the capability of metal to ignite wildland fuels. Currently, exploding targets are being tested currently and other additional field tests are planned in hot and dry conditions using granite as a target.

- Can landowners partner in managing fuels?

Private landowners can contact their local Natural Resource Conservation Service (NRCS) office. For this planning effort, planning or conducting cooperative fire hazard reduction projects is outside the scope of this analysis. Current cooperative efforts are described in Chapter 3.

- Should public safety and wildfire prevention have management priority over target shooting?

The health and safety of the public and firefighters remains a management priority for the BLM. Resource management, including target shooting opportunities, remains part of BLM's multiple use mission.

1.9.3.3 Enforcement

- What are target shooters rights and would a target shooting closure or restrictions constitute an infringement on second amendment rights?

Public lands are open to target shooting, except in areas that are closed for public safety or in areas closed under LUP decisions. A discussion about the second amendment which grants the right to bear arms is not directly linked to the act of target shooting. Citizens can carry weapons throughout the Planning Area as provided under State and County ordinances.

- What can be done to curtail illegal/unlawful activity in the area?

Illegal and unlawful activities are addressed and will continue to be addressed through the procedures outlined in the SLFO Law Enforcement Plan, in conjunction with the regulations at

43 CFR. The area is patrolled and issues are addressed as they occur. Local law enforcement will also be patrolling the area and enforcing local regulations, when violations occur.

- Can law enforcement ensure public safety and protection of cultural and natural resources, regulate unsafe shooting practices and stop closure violations?

Local law enforcement is limited in the action they can take on BLM specific restrictions. While local law enforcement can enforce local regulations to assist in the security of public safety, they do not enforce BLM regulations or closures. Cultural and natural resources located on BLM administered public lands fall under federal jurisdiction. BLM is responsible for the enforcement and protection of public lands, its resources and its users.

- Would there be new restrictions on the types of targets and ammunitions that can be used in the area?

Currently there are restrictions on the types of ammunition that can be used in the Planning Area as outlined in the WDD Fire Prevention Order, which is renewed annually (refer to section 1.5.1). There are also restrictions on the types of targets as outlined in the Utah County Ordinance (refer to section 1.5.1). These apply on all public lands within the Utah, Salt Lake, Tooele and Rich counties. The implementation of new regulations is outside the scope of this document.

- Are people using hunting as an excuse to continue to shoot in closed areas?

There are no hunting closures within the SLFO. There are several ways to tell the difference between target shooters and hunters. Depending on the prey, hunters can be mobile or sedentary in activity. A hunters quarry is a moving animal. Target shooting is stationary and involves set up and/or use of an object that is aimed or shot at. These objects are used in target shooting and not hunting. Whether or not individuals hunting within a closed area are indeed target shooting is a determination that will be made by a law enforcement officer and is outside the scope of this document.

- Are legal shooting locations well defined/signed?

Public lands are open to target shooting except where specifically prohibited. Areas that are closed to target shooting are clearly signed. BLM does not sign open target shooting areas due to the considerable expense of signing large areas that are open to target shooting. Target shooting is generally allowed within the SLFO, if it is done in a way that does not create a hazard and/or nuisance to the public land or its users. The public land user has the responsibility of locating a safe and accessible area in which to target shoot on BLM administered public lands.

- How can the general public report crime, violation of the closure and other illegal/unlawful activity in the area?

Call your local BLM office (801-977-4300) or County Sheriff (801-794-3970). In cases of emergencies, call 911.

- Can local residents assist with enforcement and patrols?

General members of the public are not advised to contact other members of the public who are shooting or in possession of firearms. BLM will work with local law enforcement agencies to address any issues. General members of the public can contact law enforcement agencies for assistance or report illegal activities.

- Can BLM share patrol costs and fees (from citations) with local law enforcement to increase patrol budgets?

The BLM has contracting capabilities with local agencies.

- Would the closure complicate or affect emergency responses within or adjacent to the Planning Area?

Under this plan amendment, motor vehicle use and access will not be affected in the Planning Area.

- How much of trigger trash is illegal dumping? How much of the trash is actually from target shooters?

All trigger trash is illegal dumping. Areas where there is a large amount of trigger trash and dumped household waste are more prone to additional shooting and non-shooting related dumping.

In general, locations where people target shoot are full of trash—much of which has been shot up. Whether this trash was already there or was brought in by target shooters to be used as a target is outside the scope of this document.

- What are private landowner rights regarding unwanted target shooters on their lands or shooting toward their property?

Land owners who have their property signed according to the required state law should contact the local county sheriff and report trespassing.

- Is target shooting legal in Hidden Hollow Canyon and how can it be managed to protect residents?

Hidden Hollow is outside the Planning Area. It is located at the north end of the Lake Mountains and is accessed from Eagle Mountain or Saratoga Springs City. Where BLM property is located adjacent to Hidden Hollow Canyon, target shooting would remain allowed activity subject to City, County and BLM restrictions. If City and County governments initiate activities in which the BLM can contribute to long term management efforts, BLM will participate as allowed by jurisdiction. If public land is annexed within a city limit, applicable city prohibitions would be applied to public lands.

- How do non-shooters approach shooters if they want to view the Historic Properties?

Members of the general public are not advised to contact other members of the public who are shooting or in possession of firearms. If a shooter is shooting in an area that an individual would like access to, the public is encouraged to wait until the area is safe for such activities or go to another location.

1.9.3.4 Wildlife

- Would BLM closures affect hunting within the Planning Area?

This planning effort focuses solely on target shooting and impacted resources. Lawful and legal hunting of wildlife in the Planning Area would not be restricted or affected. Persons with valid state hunting licenses can still hunt in the area. Hunters would be allowed legal use of firearms

within the closure for the legal pursuit of game consistent with State of Utah Division of Wildlife Resources (UDWR) regulations and seasons.

- Could water chemistry in critical June Sucker habitat in Utah Lake be affected by trigger trash and ammunition draining into the lake?

While nutrient levels and water chemistry of Utah Lake are a general concern, impacts to water chemistry from target shooting and ammunition debris has not been identified as a threat to June sucker or an important cause of water quality issues in Utah Lake. Critical habitat for June sucker is only in the Provo River which is on the opposite side of the lake more than nine miles from the Planning Area, so there would be no impacts on critical habitat. June sucker are present but rare in the area of Utah Lake closest to the Planning Area (Watson *et al.* 2011; Seegert and Watson 2014). Within the Planning Area, there is less than 2,100 feet of BLM-administered land adjacent to the lakeshore. There are no perennial streams in the Planning Area which would provide runoff to the water body. A study of persistence of lead in surface water runoff from target shooting ranges indicate that lead levels return to normal within 50 m downstream of high impact shooting areas (Craig *et al.* 1999) which is a greater distance from Utah Lake than the majority of the shooting would occur. Therefore BLM considers this project to have no effect on June sucker and any further analysis is outside the scope of this document.

1.9.3.5 Range

- Would current and future permittees be permitted access through a closure to access their allotments and range improvements?

This planning effort would not affect public access to or within a target shooting closure area. A closure would only apply to target shooting activities. Livestock grazing permittees would retain access to the grazing allotments within the Planning Area. A target shooting closure would not change the mandatory, field office-wide or allotment specific terms and conditions of a grazing permit, including any authorized use of a rangeland improvement (corrals, fence lines, pipelines, troughs etc.). BLM would not be limited in considering any proposed preference transfer or rangeland improvement deemed necessary for administering the grazing allotments. Grazing permit holders and their agents would still retain full access to a BLM grazing allotment.

Private property landowners would continue to and maintain any existing fence line, gate, water development, facility or structure they deemed necessary for conducting their business.

- Are livestock, ranchers, range improvements, range management practices, standing forage and stacked feed at risk from target shooting and target-shooting related wildfires? What can be done to provide additional protection, if needed?

Ranchers, livestock, range improvements, forage (on the ground or stacked for hay) could be at risk from being shot by target shooting or subjected to wildfire started by target shooting activity within or adjacent to the Planning Area. Under private ownership and control, a rancher or landowner can contact the Utah County Sheriff if they are experiencing vandalism, harassment, injury or deaths due to the actions of the general public including target shooters. Only the Sheriff has authority to pursue criminal charges against citizens. BLM's enforcement authority, especially when it comes to private property, is limited. If an action on private property has potential to affect public land, BLM has the authority to take an action to protect public land users and public land. BLM can issue citations to individuals who are causing imminent threat to private property. The general public, including target shooters, is responsible for knowing

whose property they are on and should only be on private property at the landowner's permission. The private landowner, through the Sheriff, can pursue charges against members of the public who do not abide by city or county ordinances, including trespass.

The BLM grazing allotments are primarily used in spring/winter months (March through June and early November). Permittees engage in season long grazing systems and rely on herding livestock practices. Range improvements, such as fences, within the Planning Area are not owned or managed by the BLM. Therefore, target shooting does not affect BLM owned or permitted range improvements. The BLM does not have any documentation that livestock have been harmed by target shooting within BLM allotments. During the scoping and consulting parties meetings, BLM received information from a rancher whose property is immediately adjacent to the Planning Area. This rancher has stated that his livestock have been shot by target shooters and hit by vehicles traveling on Highway 68 because gates were left open or fence lines were cut by the recreating public. BLM has to yield to the jurisdiction of the Sheriff in these instances.

In the future, if livestock or range developments within the BLM allotments are found to be adversely affected by target shooting activities, those affects would be analyzed in a separate EA to determine the management actions required to protect livestock. The existing forage could be damaged by wildfires that result from target shooting activity. However, those damages would be addressed through emergency stabilization and rehabilitation (ESR) procedures.

- Do livestock consume or can their movements be hindered by trigger trash and could this cause illness, injury or death to permitted stock animals?

There is no evidence that livestock are consuming or being hindered by trigger trash within the Planning Area, and this will not be analyzed in this document.

- Should wood fence posts be replaced with steel fencing products, because wooden fence posts encourage use as shooting supports and metal posts are less likely to be consumed by wildfires?

Regardless of ownership (private entity or BLM authorization), wood posts, rails and supports within a fence line including its gates, can be damaged by target shooting activity and associated wildfire. Once the wood component and support feature is damaged, the fence line's integrity can be compromised by loose or downed posts and wires making it ineffective at controlling livestock or marking of private property boundaries. Fence lines within the Planning Area are not owned or maintained by the BLM and are not used in association with the grazing allotments. Fence lines are associated with private livestock pastures and marking private property including the Highway 68 right-of-way (ROW). Construction and maintenance of these fence lines, including any associated gates, are the responsibility of the private land owners. As costs and maintenance allows, the owner of these structures can replace wood components with metal structures to improve the life expectancy of a fence line. A private landowner can seek assistance from the Utah State University Extension Service, the USDA NRCS and State of Utah's Grazing Improvement Program in designing and maintaining their fence lines that are used in agricultural practices.

If fence lines within the Planning Area are proposed on BLM administered public lands or in association with the grazing allotments, the type of fence, including its materials, would need to be considered in a future EA for that specific development.

- Have livestock been directly affected by target shooting?

The 2012 temporary closure was in response to a number of unsafe shooting practices, one of which was a verbal report of livestock being shot; however, we have no documentation of this incident.

The BLM does not have any evidence that livestock have been lost due to target shooting activity within the BLM grazing allotments. BLM's grazing program records (actual use reports, letters of correspondence or changes to annual grazing authorizations etc.) indicate that each of the grazing permits within the Planning Area have been used to their full extent allowed, with only a couple of instances where a permittee has taken non-use for an unspecified reason. A BLM permittee, who has a grazing permit for the Lake Smith Allotment, was contacted by telephone to discuss what affects target shooting has had to his grazing operation. The permittee stated that he and other permittees no longer graze livestock within the Planning Area. The permittee stated that wildfires have affected the forage to a point that it is no longer able to sustain grazing. If any changes to the grazing permits are found to be needed in the future, this would be addressed in a separate EA at the regularly scheduled permit renewal effort.

If fence lines are cut or gates left open by the recreating public (including target shooters), livestock could move outside their allotted use area or from private pastures and be found in trespass within BLM allotments or found on other private property adjacent to the Planning Area. If unauthorized livestock are found on BLM allotments, trespass procedures would be followed. If livestock are trespassing onto private property, that landowner can contact the Sheriff and/or brand inspector. The Sheriff has jurisdiction in this matter on private property.

1.9.3.6 Lands

- Should land tenure adjustments be made to help solve damage to private property?

Land tenure adjustments by exchange could be done at this time if a proposal meets management approval and public interest. Identifying any new parcels of land other than what has been already identified in the current LUP for sale or other forms of disposal is outside the scope of this document. There are currently only 4 parcels (totaling 840 acres) within the target shooting Planning Area that are available for sale or other forms of disposal. Any additional parcels would have to be processed through a plan amendment.

- Would current and future ROW holders be permitted access through a closure to access their sites and facilities?

This planning effort will not affect access to or within the target shooting closure area. The closure affects only target shooting. Existing ROW holders will have access to their sites for routine inspections and maintenance consistent with their authorizations.

1.9.3.7 Visual Resources

- None

1.9.3.8 Invasive Species/Noxious Weeds

- None

1.9.3.9 Vegetation/Soil

- None

1.9.3.10 Waste Materials

- What cleanup efforts would be done, by whom and how frequently? Are they expensive and time consuming? How would workers be protected from target shooting?

Clean-up efforts for trigger trash and dumped household waste are typically conducted by volunteers (e.g., hunters groups, Boy Scouts, etc.). The BLM coordinates with volunteer groups, often providing dumpsters. Although this approach is considerably less expensive than the agency doing all the cleanup activities themselves, it still represents a cost to the agency. Over a period of two years, SLFO spent over \$20,000 on cleanup efforts. The cleanups are done more frequently in the warmer months but occur on a fairly regular basis. Protection from target shooting comes from visibility and awareness of the surrounding area. On some larger cleanup efforts, the BLM has coordinated with law enforcement officers to keep target shooters out of the cleanup area. In the event that hazardous materials are found in a target shooting area (or anywhere else in the Planning Area), the clean-up is conducted by a contractor and must be disposed of in an EPA (Environmental Protection Agency) approved facility. This is considerably more expensive and time consuming. The costs and time involved would vary on a case-by-case basis.

1.9.3.11 Recreation

- How can target shooting be managed to provide for a safe, quality recreational experience?

This LUP amendment is not a plan for managing or providing for recreational target shooting opportunities within the Lake Mountains but addressing the protection of public safety and cultural resource protections from target shooting activities within certain locations of the Planning Area. The specific management of recreational target shooting opportunities within the Lake Mountains would require the completion of a recreation area management plan for the area, which would be considered in future planning efforts for the area in cooperation and coordination with other agencies and the target shooting community.

- Who uses the Planning Area more for target shooting, the general public or gun clubs/organizations?

There is no doubt the area is used by both the general public and gun clubs/organizations. There are indications that organized group target shooting events have been conducted in the Planning Area and the BLM has received requests for others in other locations in the Lake Mountains. Under BLM regulations 43 CFR 2930, a special recreation permit (SRP) is required for any organized group activities on public lands, including target shooting events. No SRPs have been issued for organized shooting events within this area. Violations are handled by the law enforcement program and are outside the scope of this document.

- What can be done to provide for and/or meet the high demand for target shooting in the Lake Mountains?

This LUP amendment is not a plan for managing or providing for recreational target shooting opportunities within the Lake Mountains but addressing the protection of public safety and cultural resources from target shooting activities within certain locations of the Planning Area. Meeting the demand for recreational target shooting opportunities within the Lake Mountains will require the completion of a recreation area management plan for the area—as a future planning effort in cooperation and coordination with other agencies and the target shooting community.

- Is all the ecosystem damage in the Planning Area from target shooting? What about other recreational activities?

While other recreational activities do contribute to ecosystem damage in the Planning Area (especially as a result of motor vehicle access and use), this plan amendment focuses on the damage and public safety issues created by target shooting within the area. For this plan amendment, the ecosystem damage created by other recreational activities is outside the scope of this document.

- Do hunters and target shooters use the Planning Area differently?

While hunters and target shooters both use firearms in the practice of their sport and may overnight camp in the Lake Mountains while engaging in their sport, the purpose for which they use their firearms is entirely different. Hunters also may be target shooters and vice versa. However, while hunting, firearms are used to acquire game. Target shooters choose a location to set-up their targets and practice shooting—remaining in that same location and often leaving their trigger trash behind. An analysis of how hunters and target shooters use the Planning Area is outside the scope of this document.

- Have hunters or hunting activity caused damages to the petroglyphs in the area?

It is known that Historic Properties, specifically petroglyphs, have been damaged by target shooters displaced by the temporary target shooting closure. Whether the gunfire damage to petroglyphs in the Planning Area was also made by hunters while hunting is a determination that is outside the scope of this document. This Plan Amendment does not affect a citizen's right to hunt game as identified in their State Of Utah issued license. Additional clarification is contained in section 1.2.

- How can SITLA and BLM work together to improve the overall public recreational and residential experiences within the Planning Area?

A partnership between SITLA and BLM for comprehensive management of the Lake Mountains will be addressed in future land use planning for the area.

- How would BLM manage for a quality shooting experience on public lands in the Planning Area? What are the components of a quality shooting experience on public lands?

This LUP amendment is not a plan for managing or providing for recreational target shooting opportunities within the Lake Mountains but addressing the protection of public safety and cultural resources from target shooting activities within certain locations of the Planning Area. Dispersed target shooting is self-directed and very individual in nature. The choice of where they choose to target shoot is based on personal preferences. The specific management of recreational target shooting opportunities within the Lake Mountains would require the

completion of a recreation area management plan for the area, which would be considered in future planning efforts for the area in cooperation and coordination with other agencies and the target shooting community.

- Are Utah's recreation guidelines for public land health being met?

An analysis and/or assessment of public land health standards within the planning area and whether or not these meet Utah recreation guidelines is an issue outside the scope of this plan amendment.

- Is the State providing any support for other users of public lands instead of just those second amendment ones (such as target shooting)?

State planning for recreational activities within Utah is addressed in the 2014 Utah State Comprehensive Outdoor Recreation Plan, dated September 2013, which includes support and funding for various recreational activities throughout the state. There is nothing in the state plan specific to the Lake Mountains or the Planning Area.

Carrying Capacity

- Does the public demand for target shooting in the Planning Area exceed the carrying capacity of the area?

The carrying capacity for any recreational activity is an analysis that would be addressed in a recreation area management plan for the area and is outside the scope of this plan amendment. This document focuses on the public safety issues and cultural resource damage from target shooting activities in certain locations. While the high volume and concentration of shooters in certain locations within the Planning Area (and most especially the current temporary closure area prior to the closure) contributed to making these certain locations unsafe, this is not an indication of whether or not the carrying capacity for target shooting has been exceeded within the Planning Area or the Lake Mountains. This assessment would require a level of analysis that is outside the scope of this document.

- Should a limit be set on the number of shooters in any one area?

The purpose of this document is not to set limits on the number of shooters in any one area. An assessment of whether there are too many shooters in one area requires an analysis that is outside the scope of this document.

Need For Public Land Target Shooting Opportunities/Areas

- Where can target shooters go to enjoy their sport that is not limited by fencing, fees, restrictions and driving long distances?

Target shooting is permitted on BLM-administered public lands except where it is specifically prohibited, such as in developed recreation sites and identified closure areas. Information about target shooting locations and restrictions on other federal and non-federal lands will need to be obtained from these other agencies. The SLFO manages approximately 3.25 million acres of public land in northern Utah, of which 83,256 acres (or 2.5%) are closed to target shooting.

Target shooting closure areas can be found on the BLM SLFO website at http://www.blm.gov/ut/st/en/fo/salt_lake/recreation/target_shooting.html. Fire restrictions regarding ammunition and exploding targets, safe target shooting practices and carrying out all trash apply to all BLM lands. The public land user has the responsibility of locating a safe and accessible area in which to target shoot on BLM administered public lands.

- What considerations would be made to keep new or additional areas from being shut down to target shooting?

This document only analyzes target shooting areas within the Planning Area that have become unsafe or have caused damage to cultural resources. Whether new or additional areas may be shut down to target shooting is outside the scope of this document and is a consideration for future planning efforts in the Lake Mountains. Public outreach and education efforts are oriented toward helping shooters be safe, selecting safe areas to shoot and to pick up their own trigger trash. If other areas become unsafe or cause too much damage to resources, they may be closed too.

National Historic Trail

- Does the presence of the Pony Express National Historic Trail contribute to the recreational experiences in the Planning Area? Does target shooting affect management and/or the visitor experience of the Pony Express National Historic Trail?

The Pony Express National Historic Trail does not cross through or occur adjacent to the Planning Area. It is several miles away to the north. The trail has no impact on resources within the Planning Area.

Designated Shooting Areas

- Will the new Soldier Pass Shooting Range take target shooting pressure off the culturally rich areas where it currently occurs?

The development of the Soldier Pass Shooting Range is covered under a separate Decision Record issued for the Soldier Pass Shooting Range EA, DOI-BLM-UT-W010-2013-0019-EA. The intent of the range is to provide a safe place to shoot while providing protection to cultural resources. It is anticipated that the new Soldier Pass Shooting Range will take at least some, but not all, of the pressure off of some of the cultural sites currently at risk. Designation or development of target shooting areas or additional shooting ranges is an alternative eliminated from further consideration (Section 2.5).

- Could the BLM designate safe target shooting areas on public lands in the Lake Mountains (or close to Lake Mountains), to be managed exclusively for target shooters in areas already heavily used by target shooters?

For this plan amendment, the focus is on protecting public safety and cultural resources. Providing or designating safe target shooting areas is an action that may be considered in future planning efforts for the Lake Mountains, in coordination with other agencies, such as Utah County and Camp Williams, and local target shooting groups and organizations. Designation of target shooting areas is an alternative eliminated from further consideration (Section 2.5).

- Would additional target shooting ranges be appropriate within the Planning Area and what types? Would BLM coordinate with target shooting communities on this?

Although outside the scope of this project, BLM has completed a land transfer to Utah County for the development of the Soldier Pass shooting range. For this plan amendment, the focus is on protecting public safety and cultural resources. Providing additional target shooting ranges within the Planning Area is an action that would need to be undertaken in cooperation with other agencies, such as Utah County, and in coordination with local target shooting groups and organizations. Development of additional target shooting areas is an alternative eliminated from further consideration (Section 2.5).

- Can public shooting areas be provided away from Lake Mountains in partnership with Camp Williams or other groups or agencies?

For this plan amendment, the focus is on protecting public safety and cultural resources within the Planning Area. Providing other shooting areas outside of the Lake Mountains is an action beyond the scope of this plan amendment. This action may be considered through a future cooperative effort with other agencies, such as Utah County and Camp Williams, and local target shooting groups and organizations.

- Do additional areas or ranges need to be provided outside the Planning Area?

The development of additional target shooting ranges outside of the Planning Area, to help decrease target shooting pressure within this area, would need to be addressed in a future planning effort for the area and in cooperation and coordination with other agencies.

Irresponsible Shooters

- Can the behaviors of unsafe and/or irresponsible target shooters be influenced or managed?

As with any recreational activity on public lands, there will be individuals who engage in unsafe and irresponsible practices. Outreach, education and signing are the primary methods for managing these behaviors—through voluntary compliance. When this is not successful, rules and regulations are employed—with enforcement for non-compliance. A final step is the prohibition of the activity altogether within a certain area. After first utilizing outreach, education and signing, this plan amendment is proceeding with rules and regulations prohibiting target shooting in certain areas to protect public safety and cultural resources from unsafe and damaging target shooting practices in these areas. Prior to the implementation of the initial 2012 temporary target shooting closure, the SLFO conducted an extensive public outreach campaign regarding target shooting issues in the Lake Mountains and safe target shooting practices. The campaign included extensive signing of the area, bulletin board postings, installation of new bulletin boards with information postings, information booths at local gun shows, information flyers for local businesses, postings on BLM websites and social media, cooperative trigger trash cleanups with local target shooting groups and a video of the Lake Mountains target shooting issues. Additional actions taken subsequent to the initial 2012 temporary target shooting closure to protect public safety and resources are outlined in Section 3.3.9.

- Did the increase in gun sales happen because of the public's concern for personal safety and threatening gun control laws?

Any increase in gun sales or the rationale for such is outside the scope of this document.

- Do the people who are selling guns or ammunition tell their customers to come shoot their new weapon in the Planning Area?

Information provided by local gun shops, including suggestions on where to shoot, is outside the scope of this document. It is unknown to the BLM what a company's sales staff may be telling their customers. BLM has participated in some gun shows in the past and provided information at a booth.

1.9.3.12 Cultural

- Are potential site stewards unwilling to participate in this role out of concern for their safety?

This is unknown; however, safety concerns may influence a potential site steward's decision to work in a particular area.

1.9.4 Issues to Be Addressed In the Plan Amendment

Because of ecological or behavioral relationships, some issues can apply to more than a single category for sorting or analysis purposes. Note that some resources have been grouped in order to simplify the format of the analysis.

1.9.4.1 Fire/Fuels

- What is the cause, occurrence and history of wildfires in the area and who is responsible?
- Is there a much higher incidence of fires in the Lake Mountains?
- Does target shooting start and/or increase the risk of wildfires? Will target shooting always be a risk for starting wildfires? What fire prevention measures are being taken in the area and what additional measures could be?
- Are there fire prevention measures that would be more beneficial and economic than a closure to reduce the threat of wildfire to neighboring communities?
- What are the effects/impacts/threats to visitors, communities, infrastructure and natural resources (wildlife, vegetation, soil) from wildfire? What can be done to reduce these threats?
- Is there a danger of increased wildfire threat to developments and local communities from a closure that would displace shooters closer to these developments?
- How effective would fuels treatment projects be in this area to help manage wildfire threats?

1.9.4.2 Enforcement

- Are there law enforcement practices that would be more effective/economical than closure, such as increased patrols?
- Are there restrictions on the types of targets and ammunition that can be used in the area?
- How would violations be addressed under each of the alternatives?
- Has theft and vandalism of cultural resources and other property damage occurred from target shooters in the Planning Area?
- How would the closure be enforced? How effective has enforcement been of the current temporary closure?
- What are the penalties for shooters who leave trash and people who dump on public lands and in closed areas?
- What are the penalties for target shooting in closed areas?

1.9.4.3 Wildlife

- Has target shooting activity affected the historic ranges of big game and upland game species and their habitat in the Planning Area? Do they need to be protected from target shooting and how can this be done?
- Has target shooting affected migratory bird habitat and use in the Planning Area? Do they need to be protected from target shooting and how can this be done?
- Has target shooting affected special status species habitat and use in the Planning Area? Do they need to be protected from target shooting and how can this be done?

1.9.4.4 Lands

- Are ROW holders, their facilities and customers, and regular facility access and maintenance at risk from target shooting and target-shooting related wildfires? What can be done to provide additional protection, if needed?
- Do target shooting activities on public land affect private property and what can the BLM and private property owners do to protect private land?

1.9.4.5 Visual Resources

- Do target shooting activities affect visual resources and scenic quality in the Planning Area and enjoyment of these resources by others?

1.9.4.6 Invasive Species/Noxious Weeds

- Would a closure be effective in reducing cheatgrass conversions from target shooting caused wildfires?
- Are additional management actions necessary to reduce the transportation and spread of noxious weed seeds by motorized vehicles in the area?

1.9.4.7 Vegetation/Soil

- Would a closure be effective in reducing loss of vegetation including trees from wildfire and target shooters?
- Would a closure be effective in reducing the threat of mudslides from loss of vegetation as a result of (or from rangelands affected by) target shooting caused wildfires?

1.9.4.8 Waste Materials

- How would the trigger trash and illegal dumping (including the existing accumulated debris) be prevented/managed long-term in the Planning Area and in target shooting closures?
- Has the temporary closure been effective in reducing the amount of trash left?
- Would a closure simply shift the trigger trash, illegal dumping, environmental risks and lead contamination to new areas/locations?
- How much of trigger trash is actually hazardous waste?
- Do target shooting activities (targets, ammunition) in the Planning Area pose environmental risks (such as lead contamination) that would require specialized cleanup methods/remediation?

1.9.4.9 Recreation

- Is target shooting a legitimate recreational activity on public lands?
- Has target shooting activity increased in the Planning Area?
- Does target shooting damage ecosystems and cultural resources, increase the risk of wildfires, and pose a public safety hazard?
- Can target shooting be part of the multiple use on Lake Mountains or does target shooting, by its very nature, exclude/preclude use by other recreationists for sightseeing, hiking, camping, OHV/all-terrain vehicle (ATV) riding, search and rescue training exercises, etc.?
- Would a target shooting closure be enough to adequately protect cultural resources and public safety and reduce trigger trash and environmental degradation or are additional measures/restrictions warranted or necessary (for motor vehicles, camping and manmade fires)? Is a target shooting closure economically feasible?
- Could target shooting be managed by other methods and would these be adequate to protect cultural features and public safety?
- How is target shooting affecting the experiences and conditions for other recreational activities and actions (such as mining, etc.) within the Lake Mountains?

Outreach/Education

- What methods can be used for on and off-site outreach and education of target shooters and other users of the Lake Mountains? Could the BLM partner with gun stores, gun show exhibitors and the shooting community to help resolve user conflicts, decrease resource degradation and provide accurate information about areas that are open and closed to target shooting?

Public Safety

- Has target shooting in the Lake Mountains created unsafe conditions or posed a public safety hazard? What are these safety concerns and were there any incidents prior to 2012 when the temporary closure was implemented? Has anyone been shot, injured or pinned down since the temporary closure was put into effect?
- Can target shooting be made safe in the Lake Mountains or should it be prohibited?
- Has the current temporary closure improved public safety? If not, would BLM re-open the area?

Displacement

- Would a long-term closure simply shift target shooting and its associated problems to new areas within or adjacent to the Planning Area that are just as undesirable or unsafe?
- How would shooter displacement be handled? Did the temporary closure do this?

Signs

- How would signing be used to identify safe shooting areas, post rules and regulations (such as is done in gun ranges) and warn about closures in the Planning Area?
- What can be done about signs that are removed, ignored and shot/destroyed?

Concern of Closing Areas

- What factors would determine whether traditional/long-used target shooting areas would be closed?

Socio-Cultural: Western Tradition/Family Activity/Firearm Training

- Is target shooting on public lands an important part of Utah and Western culture and family tradition that should be protected in the Lake Mountains?
- Are public lands in the Planning Area a vital component in the outdoor practice of family-oriented shooting and firearm safety, training, proficiency and practice?

1.9.4.10 Cultural

Historic Properties: Value, Damage, Other

- What is the perceived value, monetarily or otherwise, of the petroglyphs?
- Are Historic Properties protected by federal statute?
- What factors or activities, natural or human-oriented (anthropogenic), can damage Historic Properties?
- What are the methods of production, physical characteristics, and locations of the petroglyphs?

Implementation

- Is the BLM capable of managing Historic Properties and if not, who is?
- What evidence is there that the temporary closure was effective and will a long-term closure be just as effective for the protection of cultural resources?
- How long would it reasonably take to manage recreational target shooting and are the needs of Historic Properties being met?

Education

- Will education and interpretation of Historic Properties be implemented/undertaken and what strategies would be most effective?
- Are there alternatives to a closure for protection of Historic Properties?

1.10 Summary

Following is an overview of the general format of this EA. Chapter 1 introduces the proposed plan amendment; presents the purpose and need, background and scope of the proposed plan amendment; assesses conformance with the governing LUP as amended/maintained and other relevant statutes, regulations, and plans; and identifies the relevant issues to be addressed in the EA. Chapter 2 describes the range of alternatives developed for the proposed plan amendment. Chapter 3 describes the affected environment, providing the background information necessary to understand the assessment of each alternative's effects in terms of the environmental issues/concerns identified in Chapter 1. Chapter 4 provides an assessment of the potential environmental effects/consequences resulting from the implementation of each of the alternatives. Chapter 5 summarizes the BLM's efforts to consult and coordinate with the public and other agencies in the preparation of this EA. Chapter 6 lists references cited in the EA and provides a list of the acronyms and a glossary of terms used in the document. The appendices provide the ID Team checklist and additional information, as listed.

2 ALTERNATIVES

2.1 Introduction

The three alternatives considered in this EA were developed by the BLM SLFO ID Team in coordination with the Cooperating Agencies, interested stakeholders (including private landowners; local city, county and state governments; tribal members; members of the target shooting community; and cultural resource preservation organizations) and comments received from the general public during the public scoping period.

The range of alternatives explores alternative means of meeting the purpose and need for action. The purpose and need statement assist in defining the range of alternatives. The main concerns addressed by the alternatives are protection of public health and safety and Historic Properties (specifically petroglyphs). The alternatives are described in detail in Sections 2.2–2.4.

- Alternative A: No action. Allow current 893 acre temporary closure to lapse and implement no other target shooting restrictions.
- Alternative B: Make the current 893 acre temporary closure long term.
- Alternative C: Expand current closure to include other public lands adjacent to the existing temporary closure for a total of 3,450 acres of public land and make the closure long term.

The order of alternatives does not indicate any order of preference. The No Action Alternative has been made Alternative A as a starting point for describing the alternatives and their consequences. It presents the minimal level of management and restrictions for target shooters while Alternatives B and C involve more restrictions for target shooters.

In the context of an EA, a range of alternatives is developed to explore alternative means of meeting the purpose and need for the action (Section 1.3) while addressing the identified environmental concerns/issues (Section 1.9.4). This range of alternatives must be reasonable, feasible, and realistic—in addition to being within the scope of the document, as defined by the purpose and need.

As described in the NEPA Handbook (H-1790-1, Section 6.6, Alternative Development), NEPA directs the BLM to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources;...” [NEPA Sec.102 (2) (E)]. For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. When there are numerous alternatives, only a reasonable number are needed to cover the full spectrum of alternatives [Question 1b, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981 and 40 CFR §1502.14].

2.2 Alternative A: No Action

Under this alternative, the current 893 acre temporary closure would be allowed to lapse (Figure 2). No other target shooting restrictions would be implemented beyond the BLM Utah and WDD Fire Prevention Orders restricting the use of exploding targets statewide on BLM administered public lands year round and use of steel ammunition from June 20-September 30 each year on public lands in the WDD; Utah County Code 13-3-16 prohibiting the use of any targets except paper, cardboard and clay; and any additional fire prevention orders

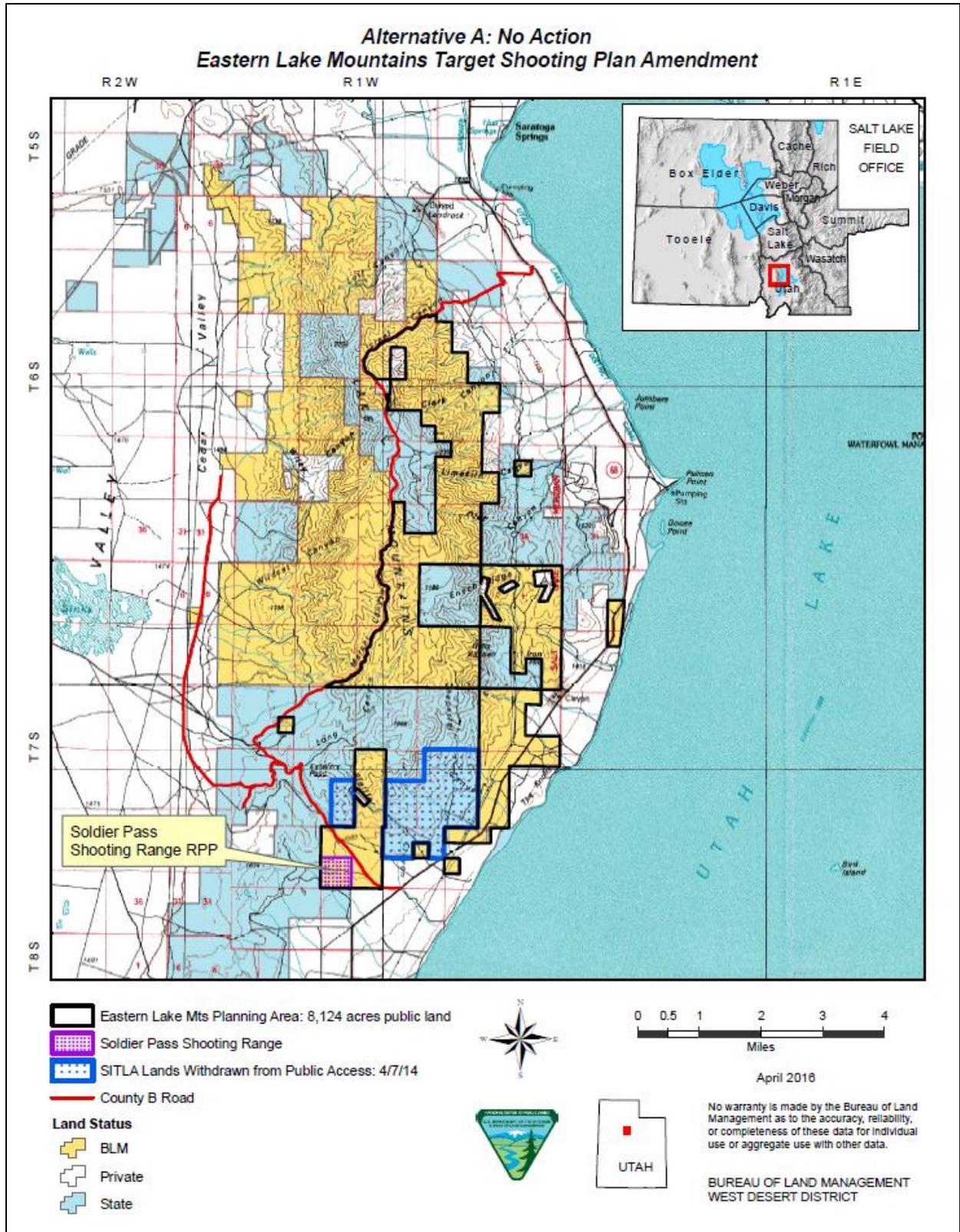


Figure 2 Alternative A map.

regarding specific fire problems, such as campfires. These BLM administered public lands would be re-opened to target shooting, subject to applicable statutes, regulations, policy and the Pony Express ROD/RMP as currently amended/maintained. All signs and posted information regarding the temporary target shooting closure would be removed. This alternative is the least restrictive to target shooters. This alternative poses the most safety risks to adjacent communities, infrastructure, and resource damages. No protective measures are provided for Historic Properties, specifically petroglyphs within the Planning Area. A LUP amendment would not be completed. This alternative provides a baseline for comparison of impacts with the other alternatives.

Existing BLM program efforts would continue, including law enforcement presence and management of renewable and non-renewable resources and their uses. Foot and vehicle access and lawful and legal hunting would not be restricted or affected. Hunters would be allowed legal use of firearms within the Planning Area for the legal pursuit of game consistent with UDWR regulations and seasons.

Implementation of existing fire management objectives would continue as directed by the SLDO FMP. Response protocols to wildland fire would remain unchanged in concert with cooperative interagency fire management agreements. Post-fire actions would adhere to the WDD Normal Fire Year Rehabilitation and Stabilization Plan (NFRP) 2010. Planning and implementation of fuel breaks would continue in accordance with the SLDO FMP and associated environmental analysis and interagency coordination. Investigation of all wildfires of human or unknown origin would continue.

Fire prevention orders enacted by BLM Utah (Order #UT910-14-001) and the WDD (Order #UTW002-15-01) covering fire cause issues related to target shooting would continue to be in effect for this area. During times of high to extreme fire danger, additional fire prevention orders targeting specific fire problems would be enacted according to interagency agreements. Assistance and outreach to adjacent communities in fire preparedness and safety would continue with interagency partners.

2.3 Alternative B: Make Temporary Closure Long-Term

Under this alternative, the current 893 acre temporary closure would be made long-term (Figure 3). This alternative covers the same geographic extent as the current temporary closure. BLM would issue a long-term closure order prohibiting target shooting on the 893 acres of BLM administered land. Under this alternative, target shooting is restricted to provide safety for adjacent landowners. No protective measures are provided for Historic Properties, specifically petroglyphs outside the current closure boundary. Law enforcement patrols of the closure area would be emphasized.

Access to and within the target shooting closure area would not be affected. The closure would affect only target shooting activity. Existing BLM program efforts would continue including law enforcement presence and management of renewable and non-renewable resources and their uses. Foot and vehicle access and lawful and legal hunting would not be restricted or affected. Hunters would be allowed legal use of firearms within the closure for the legal pursuit of game consistent with UDWR regulations and seasons. Law enforcement officers would be allowed legal use of firearms within the closure while in the performance of their official duties.

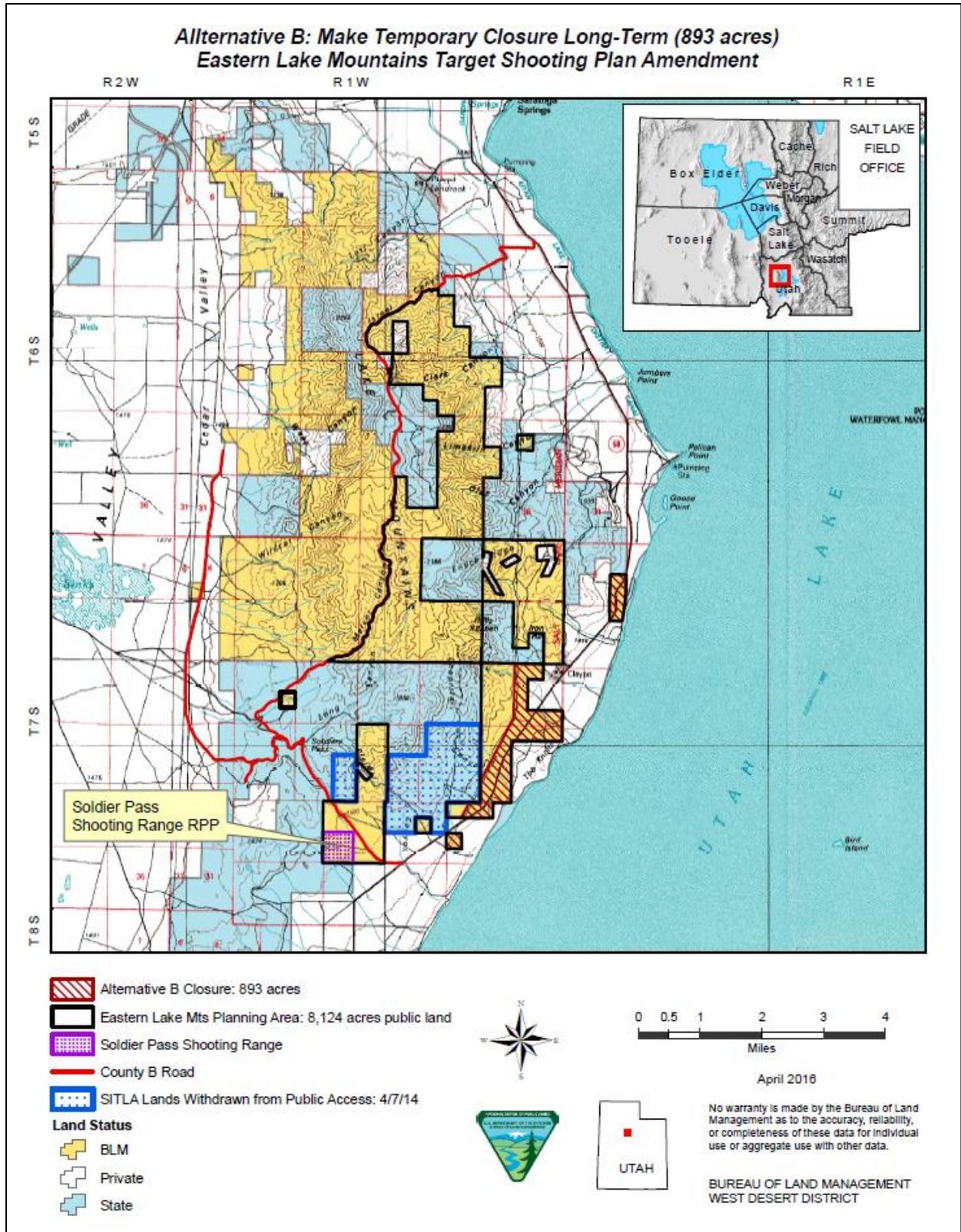


Figure 3 Alternative B map.

Notification of the long-term closure order would be posted on-site and published in local media and on the BLM SLFO website. In order to effectively implement and enforce the closure and protect public safety and cultural resources, BLM SLFO would maintain signs along the closure boundary and bulletin boards/kiosks, as necessary; increase patrols; conduct outreach/education to, and in association with, local community groups and organizations, including the target shooting community. These implementation actions would be analyzed under separate site-specific NEPA prior to installation.

Fire management objectives and implementation would not change. Less fire prevention measures would be needed within the closure area. Existing fire management objectives would continue as directed by the SLDO FMP. Response to wildland fire would remain unchanged in concert with cooperative interagency fire management agreements. Post-fire actions would adhere to the WDD NFRP. Planning and implementation of fuel breaks would continue in accordance with the SLDO FMP and associated environmental analysis and interagency coordination. Investigation of all wildfires of human or unknown origin would continue.

Fire prevention orders enacted by BLM Utah (Order #UT910-14-001) and the WDD (Order #UTW002-15-01) covering fire cause issues related to target shooting would continue to be in effect for this area. During times of high to extreme fire danger, additional fire prevention orders targeting specific fire problems would be enacted according to interagency agreements. Assistance and outreach to adjacent communities in fire preparedness and safety would continue with interagency partners.

2.4 Alternative C: Expand Current Closure and Make Long-Term

Under this alternative, the current 893 acre temporary closure would be expanded to include adjacent public lands to the north and to the west to include an area of approximately 3,450 acres (Figure 4). A long-term closure of this expanded area would enhance public health and safety and help protect known and probable petroglyph sites in the area. This alternative emphasizes resource protection while maximizing public health and safety. Law enforcement patrols of the closure area would be prioritized.

Access to and within the target shooting closure area would not be affected. The closure would affect only target shooting activity. Existing BLM program efforts would continue including law enforcement presence and management of renewable and non-renewable resources and their uses. Foot and vehicle access and lawful and legal hunting would not be restricted or affected. Hunters would be allowed legal use of firearms within the closure for the legal pursuit of game consistent with UDWR regulations and seasons. Law enforcement officers would be allowed legal use of firearms within the closure while in the performance of their official duties. Notification of the long-term closure order would be posted on-site and published in local media and on the BLM SLFO website. In order to effectively implement and enforce the closure and protect public safety and cultural resources, BLM SLFO would install signs along the closure boundary and bulletin boards/kiosks as necessary; increase patrols; conduct outreach/education to, and in association with, local community groups and organizations, including the target shooting community.

This is the BLM's preferred alternative.

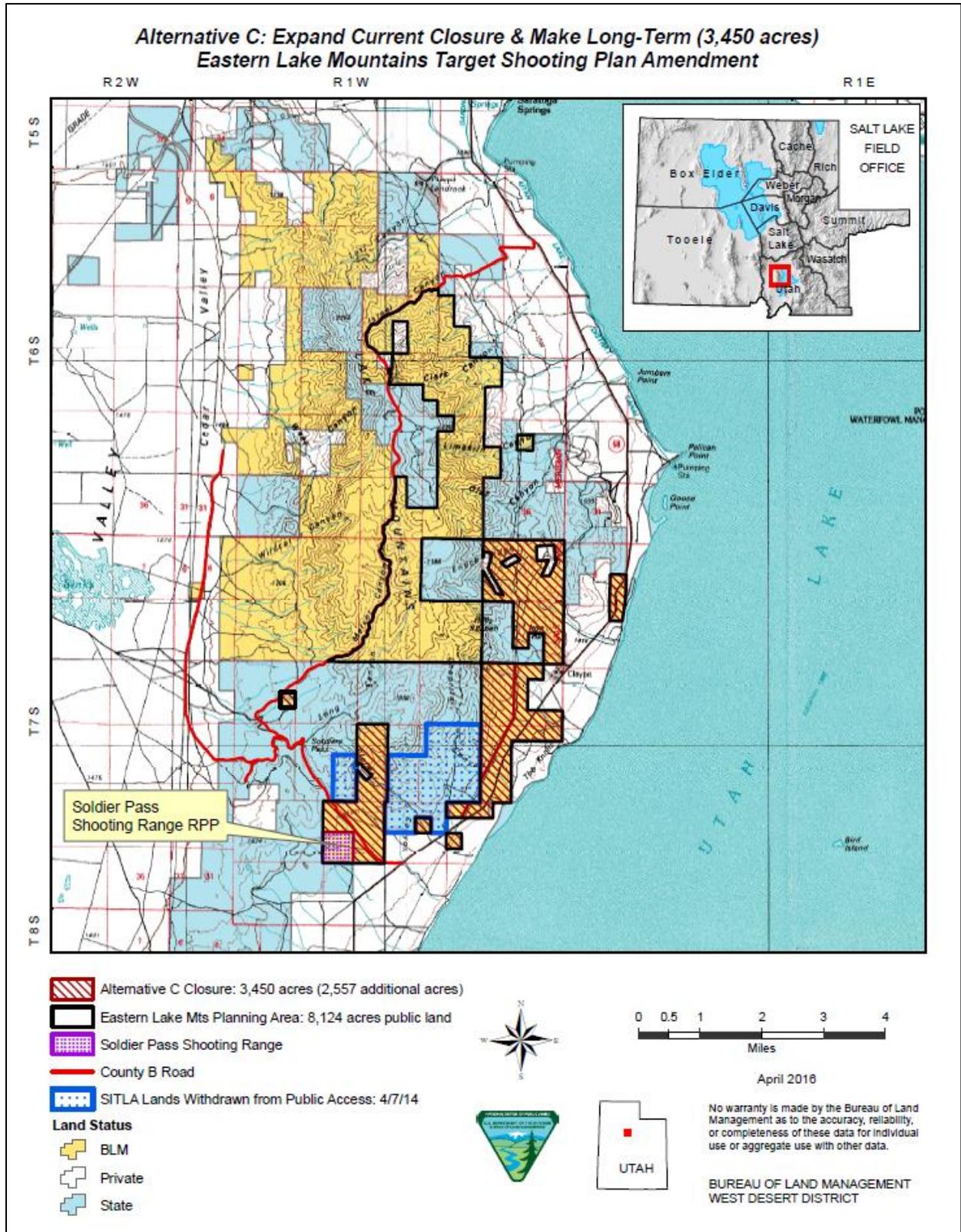


Figure 4 Alternative C map.

To provide additional protection to some cultural sites, fencing may be installed in certain locations. These implementation actions would be analyzed under separate site-specific NEPA prior to installation. Fire management objectives and implementation would not change. Less fire prevention measures would be needed within the closure area. Existing fire management objectives would continue as directed by the SLDO FMP. Response to wildland fire would remain unchanged in concert with cooperative interagency fire management agreements. Post-fire actions would adhere to the WDD NFRP. Planning and implementation of fuel breaks would continue in accordance with the SLDO FMP and associated environmental analysis and interagency coordination. Investigation of all wildfires of human or unknown origin would continue.

Fire prevention orders enacted by BLM Utah (Order #UT910-14-001) and the WDD (Order #UTW002-15-01) covering fire cause issues related to target shooting would continue to be in effect for this area. During times of high to extreme fire danger, additional fire prevention orders targeting specific fire problems would be enacted according to interagency agreements. Assistance and outreach to adjacent communities in fire preparedness and safety would continue with interagency partners.

2.5 Alternatives Considered but Eliminated

The following alternatives were considered but not carried forward for analysis in the EA. They were identified as possible alternatives by the SLFO ID Team or brought forward by the public during the scoping period.

Variations on the Expanded Closure: Other variations for different geographic locations and different total acreages proposed for a closure were considered by the SLFO ID Team. The alternatives carried forward for detailed analysis do cover a wide range of possible closures (zero acres to 3,450 acres). An alternative addressing a closure larger than 3,450 acres was not necessary because of health and safety concerns or the known locations of Historic Properties (specifically petroglyphs).

In accordance with the NEPA Handbook (H-1790-1, page 49), BLM "... must analyze those alternatives necessary to permit a reasoned choice (40 CFR 1502.14). For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. When there are potentially a very large number of alternatives, you must analyze only a reasonable number to cover the full spectrum of alternatives (see Question 1b, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981)."

Close the Entire Planning Area to Target Shooting: Closing the entire 8,124 acres of the Planning Area is not necessary or warranted to meet the purpose and need for protecting public health and safety and Historic Properties (specifically petroglyphs).

Close All or Portions of Planning Area to Motorized Vehicle Access: BLM did not analyze this alternative in detail because the 1992 Off-Highway Vehicle Designations, Plan Amendment, has already limited motor vehicle use within the Planning Area to existing roads and trails. As identified in the NOI, the focus of this RMP amendment was on target shooting.

Federal Register Notice Summary: "...intends to prepare a resource Management Plan (RMP) Amendment with an associated Environmental Assessment for target shooting in the Eastern Lake Mountains area."

Federal Register Notice Supplementary Information: "The RMP amendment will make land use planning decisions specific to potential closure or restrictions to target shooting to determine the desired future condition and uses of these public lands."

Closing all or portions of the Planning Area to motorized vehicles is not consistent with the Notice of Intent for this plan amendment. Route designation within the Planning Area including the criteria to select or reject specific roads and trails will be considered through a separate, non-plan amendment (implementation level) public process as time and staff allow.

Designate/Develop Target Shooting Areas: Many comments were received during the public scoping process regarding the need to provide specific designated locations/areas for recreational target shooting and the possibility of setting up such locations in safe areas (either within or outside the Planning Area) where other users and sensitive resources would not be threatened. This alternative was dropped from further consideration for the following reasons:

1. Current national direction prohibits the establishment of target shooting ranges on BLM-administered public lands.
2. The immediate need for the Planning Area is the protection of public health and safety and Historic Properties (specifically petroglyphs).
3. BLM will fully consider any proposal received from the public or Utah County in the future.

The provision of continued target shooting opportunities in the Lake Mountains and/or analyzing other potential locations on BLM-administered land for designated recreational target shooting locations is a separate need that is outside the scope of the proposed plan amendment. It will need to be addressed via other methods and approaches in partnership with other agencies and organizations. WO IM 2008-174, Change 1 states that under no circumstances should new shooting range sites be authorized by any type of lease or other land use authorization that does not transfer fee title to the applicant. If proposals are brought forward, the BLM will cooperate with local governments to provide additional recreational target shooting opportunities through the Recreation and Public Purposes Act (R&PP). On January 7, 2016, the SLFO approved an R&PP application from Utah County to develop the Soldier Pass Shooting Range in the Planning Area.

In general, BLM administered public lands are open to target shooting unless administratively closed through a closure order. Alternate target shooting locations (public and private) are available in Utah, Tooele, Juab and other nearby counties. The SLFO manages approximately 3.25 million acres of public land in northern Utah, of which 83,256 acres are closed to target shooting (Table 2).³ This amounts to 2.5% of BLM-administered public lands as closed to target shooting. Fire restrictions regarding ammunition and exploding targets, safe target shooting practices and carrying out all trash apply to all BLM lands. The public land user has the

³ A map of the closure areas can be found on the BLM website at http://www.blm.gov/ut/st/en/fo/salt_lake/recreation/target_shooting.html.

responsibility of locating safe and accessible areas in which to target shoot on BLM administered public lands.

Table 2 SLFO-wide target shooting closures.

Area	Acres
Birch Creek Campground	10
Clover Spring Campground	24
Fivemile Pass Recreation Area	31,090
Knolls Special Recreation Management Area	35,878
Little Creek Campground	12
North Oquirrh Management Area	14,590
Simpson Springs Campground	759
Lake Mountains Temporary Closure (Alternative B)	893
TOTAL	83,256

Establish the Area as a Natural Conservancy or Outdoor Museum for Petroglyphs: This alternative was dropped from further consideration because it is outside the scope of the plan amendment. Establishing the area as a conservancy or museum would not resolve the purpose and need statement. It does offer long term solutions to provide for health and safety or protection of Historic Properties (specifically petroglyphs) within the planning area.

Promotion of public appreciation, interpretation and further protection of the valuable petroglyphs in the Lake Mountains can and should be done. With its close proximity to major population centers and many schools, the Lake Mountains would be an ideal location for such—once the target shooting issues have been resolved to allow safe on-site study and protection of Historic Properties (specifically petroglyphs).

Transfer the Lands to Other Entities: This alternative was dropped from further consideration because the identification and processing of lands for transfer, or any other form of disposal, is beyond the scope of this plan amendment. On January 7, 2016, BLM approved the transfer of 160 acres of public land to Utah County for the Soldier Pass Shooting Range. The transfer or disposal of additional lands requires a land exchange or identification for disposal within the LUP for the area. Within the Planning Area, only four parcels (totaling 840 acres) have been identified as available for disposal in the Pony Express ROD/RMP (at its Table 1) Lands Identified for Disposal (parcels 72, 73, 74 and 76). Any additional parcels would require a plan amendment. BLM has not received any proposals for a land exchange in this area. A lands transfer would not resolve or provide for the purpose and need statement. As shown, target shooting including trespass onto private property would still occur within and adjacent to the Planning Area.

2.6 Summary

This chapter has described the range of alternatives. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4.

3 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix A and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting

Urban expansion into the Lake Mountains from the adjacent communities (Eagle Mountain City and the City of Saratoga Springs) has created increased pressure on public lands that once were fairly remote and isolated. With their close proximity to the major population centers of the Wasatch Front, Salt Lake and Utah counties; unrestricted access; and suitable topography, the Lake Mountains became an extremely popular, highly used and traditional location for target shooters. Over the years, the numbers of target shooters and occurrences of unsafe shooting practices has dramatically increased. With urban expansion and use of the area by other recreationists, serious resource issues, user conflicts and public health and safety threats have occurred. These have included: safety threats to private residents, motorists on Highway 68, other visitors to the area and livestock; unsightly and unsafe trigger trash sites—many with hazardous materials; target shooting-related wildfires; and damage to Historic Properties (specifically petroglyphs), signs, power lines, power poles, and private property. The pressure on the public lands to provide recreational target shooting opportunities within the Planning Area while protecting public health and safety has dramatically increased to the point where a LUP amendment for recreational target shooting is paramount for the east side of the Lake Mountains.

Since the implementation of the BLM's temporary target shooting closure in 2012, several actions were undertaken by private landowners, other agency partners and the BLM to address target shooting issues on the east side of the Lake Mountains. The Utah County Sheriff and BLM law enforcement rangers have increased regular patrols. Private citizens have patrolled use that is occurring around their property and have installed barricades at several locations to restrict public access to their property. In April 2014, the SITLA closed approximately 1,500 acres of Utah trust lands to recreation access adjacent to and near the BLM closure. Also in 2014, Utah County installed a six-mile fence along Highway 68 to further protect and restrict access to private land in this area while providing public access via gates on a few routes open for recreational and other authorized activities, including target shooting in areas outside of the temporary closure area. Utah County has submitted an R&PP application to BLM to construct and operate a target shooting range at Soldier Pass, on the southeast side of the Lake Mountains. The SLFO and partners have constructed fuel breaks and green strips along the southeast portion of Lake Mountains to contain fires, most of which were target shooting related. The SLFO has conducted numerous public outreach campaigns, including information booths at local gun shows, information flyers and a video of the Lake Mountains target shooting issues. Numerous volunteers, including members of target shooting groups, dedicated hunters, local schools and Boy Scouts, have conducted cleanups on BLM and SITLA property within the closure and throughout the Lake Mountains (including the Planning Area).

In association with these actions, the BLM's 2012 and 2014 temporary closures of 893 acres have proven effective in redirecting target shooters to other locations—with a subsequent decrease in target shooting related safety incidents and target shooting caused wildfires. The closure has relieved some public safety threats to adjacent private property owners and other visitors to the area and has reduced illegal dumping and damage to public lands resources in the area. Volunteers have been able to clean up the large amounts of trigger trash and dumped garbage, household appliances and other waste left in these areas. Other recreationists previously displaced by the unsafe and unregulated target shooting in the area, such as OHV/ATV riders, have begun using the area again. The adjacent communities of the City of Saratoga Springs and Eagle Mountain City have expressed interest or started plans to develop a trail system in the Lake Mountains. Since the implementation of the temporary closure in August 2012, target shooting safety incidents were greatly reduced and only four target-shooting related wildfires occurred in the area—none of which were in the temporary closure area. A few violators have continued to target shoot in the closed area; monitoring and patrols have been increased to enforce compliance.

3.3 Issues Brought Forward for Analysis

As presented in the Interdisciplinary Team Checklist (Appendix A) and Section 1.9.4, only those resources or uses that have been identified as a potential impact are carried forward for detailed analysis. Resources that are not present or would not be impacted to a degree that requires detailed analysis are described in the Checklist.

3.3.1 Fire/Fuels Management

Fire Management

The Planning Area falls within FMZ A-12, which encompasses the Lake Mountains and West Mountain (SLDO FMP, BLM 1998). According to the FMZ A-12 fire management objectives, wildland fire is not desired, either naturally occurring or prescribed. Wildfire in this area tends to have more harmful impacts than is beneficial to the ecosystem, communities, businesses, infrastructure, and air quality.

Invasive species, such as cheatgrass, often become established following wildfire events and often outcompete native grasses and forbs within the plant communities in this zone. Cheatgrass is established in some lower elevation areas in the Planning Area. Where cheatgrass becomes established, it propagates wildfire. It contributes to easy ignition and fast-moving wildfires, which contributes to an annual occurrence of wildfire in some locations of the Planning Area.

The current FMP wildfire suppression objectives are not being met. The FMP calls for 90 percent of wildfires to be contained at 300 acres or less and the total wildfire acres burned should not exceed 1,000 acres in any 5 year period, or 1,500 acres in any 10 year period.

Plan maintenance conducted on July 6, 2009 to the Pony Express ROD/RMP incorporated the use of new terms to update the FMP. Potential Natural Vegetation Groups (PNVG), or desired vegetation types, were characterized. The plan maintenance also incorporated the terms Fire Regime/Condition Class to indicate wildfire's historic frequency and severity and the departure from natural vegetation composition. Fire regime refers to five wildfire patterns across the landscape, characterized by the occurrence interval and relative intensity. There are five fire regimes which are based on the average number of years between fires (frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

Condition classes are: 1 – natural range, 2 – moderate departure, and 3 – high departure from natural vegetation. The PNVG within the Lake Mountains is characterized as Wyoming big sagebrush and pinyon-juniper woodlands. Wyoming big sagebrush falls within fire regime 3 (35-100 year frequency and mixed severity) and an existing condition class 3. The pinyon-juniper woodlands are in fire regime 2 (0-35 year frequency with stand-replacing severity) but also within an existing condition class 3. Due to the existing condition of natural vegetation as described and the high fire occurrence and acres burned annually, fire management objectives are not being met.

SLFO-Wide Wildfire History

Within the boundaries of the SLFO, lightning accounts for 60% of wildfires and 68% of acres burned. Human-caused wildfires are responsible for 40% and 32% respectively. As a percentage of the total wildfires in the field office, target shooting accounts for approximately 8% of wildfires and acres burned (Table 3).

Table 3 SLFO-wide wildfire occurrence from 2002 to 2015.

	Lightning		Human (includes target shooting)		Target Shooting Caused Wildfires		Total	
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
Number	911	401,834	596	189,665	129	44,763	1,507	591,499
Percentage	60%	68%	40%	32%	8%	8%	100%	100%
Data from the Wildland Fire Management Information System								

Lake Mountains Wildfire History

In contrast to the larger footprint of the field office during this same period of time, wildfires in the Lake Mountains caused by human activity account for 71% of wildfires and 95% of the acres burned. Of the 71% of human-caused wildfires, ignition sources include: fireworks, debris burning, sparks from power lines or transformers, escaped campfires, vehicles, arson, and target shooting. At least two fires categorized as power line-caused wildfires were started when target shooters hit conductors on the transmission power lines, causing the wildfire. By far the largest category of human-caused wildfires is target shooting which accounts for 41% of all wildfires and 58% of the acres burned in the Planning Area (Table 4).

Table 4 Lake Mountains wildfire occurrence from 2002 to 2015.

	Lightning		Human		Target Shooting Wildfires Caused		Total	
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
Number	38	1,261	91	23,967	53	14,611	129	25,229
Percentage	29%	5%	71%	95%	41%	58%	100%	100%
Data from the Wildland Fire Management Information System								

Target shooting related wildfires occur in other locations within the SLFO but with much less frequency. When comparing target shooting related wildfires for the entire field office (No.=129) to the Lake Mountains (No.=53), it is found that over 40% of the shooting-related wildfires in the field office occur in the Lake Mountains alone. Areas such as West Mountain in

Utah County and Stansbury Island, Timpie Point, Lone Rock, and Delle/Black Mountain in Tooele County have seen repeated shooting related wildfires. These locations are also popular target shooting locations.

Approximately 25,229 acres have burned within the last thirteen years (2002-2015) on Lake Mountains, averaging 1,941 acres per year which exceeds the FMP objectives. During this period, a total of 129 wildfires have occurred from lightning and human actions and the BLM expended over \$3 million in suppression. This is an annual average cost of over \$235,000. In addition, approximately \$888,000 in ESR costs were incurred during the same period of time. These data are inclusive of BLM action wildfires only, which are defined as wildfires occurring on BLM lands, threatening BLM lands, or other lands protected by BLM under a contract or cooperative agreement, such as USFS or Bureau of Reclamation (BOR) lands within the fire dispatch area closely corresponding to the field office boundary. These numbers do not represent wildfires that did not require a BLM response or support on state or private lands.

Wildfire occurrence in the Lake Mountains generally is characterized by frequent and often large wildfires (over 300 acres in size). Proximity of the Eastern Lake Mountains to urban development has led to numerous wildfires in the area threatening nearby residences and local communities (Eagle Mountain City and the City of Saratoga Springs). To SLFO's knowledge, no homes or businesses were destroyed during any of these wildfire events, although BLM is aware that private properties were damaged. Large wildfires have caused the closing of Highway 68 numerous times, evacuations of hundreds of people from their homes, and damage to power line and communication infrastructure. In addition, the large number and size of wildfires produces smoke and affects air quality in a non-attainment area (UDAQ 2014).

Persons responsible for the human-caused wildfires include residents and businesses or industry from Utah and Salt Lake Counties. Visitors at times accompany residents for various recreational activities and have been found responsible for some of the wildfires. When wildfires have been started by abandoned campfires or passing vehicles, the responsible party may not be identified. Oftentimes when shooting related wildfires occur, the responsible party has remained on site to speak with officials and attempted to suppress the wildfire initially.

Target Shooting as a Cause of Wildfires

The concentration of target shooters in the Planning Area is due to its proximity to the highly populated Wasatch Front and is likely a factor contributing to the high occurrence of wildfires. The popularity of shooting as a recreational activity or sport may have increased the number of shooters. The cause of a wildfire is classified as shooting related when the mechanism of ignition and circumstances involve bullet ricochet or fragmentation, tracer or incendiary rounds, exploding targets or other shooting related activities. In 2013, the USFS completed a study on several types of rifle bullets to determine whether ignitions could occur (Finney *et al.* 2013). This study found that the mechanism of heat transfer from kinetic energy to mechanical energy (heat) was created through plastic deformation of the steel and copper creating what is often referred to as a "ricochet" caused wildfire. Ignitions were observed during the testing phases of the study. Metal bullet fragments were found to retain temperatures as high as 1,200-1,400°F (Fahrenheit). Cured cheatgrass, which is a common fuel at the Lake Mountains, is capable of igniting at temperatures near 518°F (Fahrenheit) (Babruskas 2003).

The SLFO actively investigates all human-caused wildfires to determine the cause as per the fire trespass and investigation standard operating procedures. Investigations into the causes of wildfires include, among other things, physical evidence in the origin location of the wildfire and vicinity and witness interviews.

Prevention of target shooting related wildfires has been conducted on an interagency basis and has included outreach to media, shooting sports groups, gun and ammunition retailers, public service announcements, and regional gunshows. Patrols by BLM wildfire prevention technicians and law enforcement, combined with posting of signs in popular shooting areas with prevention measures and prevention orders occurs throughout the summer (when fire danger is at higher levels) in the Planning Area. Patrols can also occur during the off-season throughout the year. Prevention orders and target shooting wildfire prevention information are posted on the field office and Utahfireinfo.gov websites. Fire Prevention Orders include BLM Utah (Order #UT910-14-001) which restricts use of exploding targets statewide on BLM lands and the BLM WDD (Order #UTW002-15-01) which restricts use of steel ammunition from June 20-September 30 each year and exploding targets year round. The steel ammunition restriction was instituted because steel jacket, tip or core ammunition was a common factor in many shooting wildfires. In addition, exploding targets have been found to have started numerous wildfires over the past ten years in the field office. Efforts to educate the public on safe shooting practices and several high profile shooting related wildfires has improved some members of the public's general understanding of the risks of shooting.

Following the target shooting temporary closure in 2012 which was implemented due to critical public health and safety concerns, the occurrence of wildfires has fallen but target shooting remains the highest single cause (Table 5). Also affecting the number of shooting related wildfires in the Lake Mountains, the Utah State Forester implemented a temporary shooting restriction to prevent wildfires during the summer of 2012. This restriction was rescinded by the Utah State Forester in the fall of 2012. Following these actions, no further target shooting wildfires occurred in 2012 and very few wildfires have started in the Lake Mountains since 2012 (Table 5). The 2013-2015 wildfire seasons were less active overall within the field office boundaries and in particular, the Lake Mountains. Wildfire occurrence and acreages burned are well below average across the field office for this period. Even with the moderate fire conditions, four shooting related wildfires (0.5 acre or smaller) have occurred in the Lake Mountains outside of the temporary closure area. No lightning wildfires and only one other human-caused wildfire were documented during the three years. A query of wildfire costs since the closure totals approximately \$11,000 with no ESR efforts required. Prior to the closure, the annual average suppression costs exceeded \$235,000.

Table 5 Annual occurrence of target shooting wildfires from 2002 to 2015.

Year	Target Shooting Related Fire	Other Wildfires	Total Wildfires
Prior to Temporary Closure Implementation			
2002	1	2	3
2003	2	5	7
2004	3	2	5
2005	1	16	17
2006	4	16	20

Year	Target Shooting Related Fire	Other Wildfires	Total Wildfires
2007	4	3	7
2008	1	3	4
2009	7	4	11
2010	5	10	15
2011	9	10	19
2012	12	2	14
After Temporary Closure Implementation			
2013	1	2	3
2014	0	1	1
2015	3	0	3
Total	53	76	129

Fuels Management

Fuels management and reduction of hazardous fuels has been found to be an effective method for reducing the severity and intensity of wildfire. Fuel breaks may not stop wildfires from spreading but will allow fire crews to access areas safely and incorporate safe and effective tactics and strategies to suppress a wildfire. Larger fuels treatments on a landscape level may affect fire severity and intensity, reducing the need for post-fire stabilization or rehabilitation.

Since 2002 in the Lake Mountains, approximately 15 fuels treatments have been implemented on BLM lands to reduce hazardous fuels and provide fuel breaks in order to assist fire suppression and protect communities and infrastructure. Most projects have been located in the northern Lake Mountains, adjacent to the communities of Eagle Mountain City and the City of Saratoga Springs. Two projects have been completed in the Planning Area. This includes the Lake Mountain Dyno Nobel project completed in 2002 in the Little Cove area where approximately 17 acres east of Highway 68 were disked and seeded with less fire prone species. The second treatment is the Lake Mountains greenstrip⁴ located on the southeast side of the Lake Mountains and within the Planning Area. This greenstrip was created using an Ely chain to remove existing vegetation and prepare the seedbed, applying herbicide to control cheatgrass, and then seeding with less fire-prone forbs and grasses. The project was implemented by Utah County in 2015 in cooperation with the BLM and SITLA.

The BLM is active in the Utah Governor's Catastrophic Fire Initiative for the Wasatch Front Area administered by the Utah Division of Forestry, Fire and State Lands. Known as CatFire, the initiative created a partnership between landowners, stakeholders, elected officials, land

⁴ Linear vegetation treatment that strategically establishes a long, narrow band of fire-resistant vegetation to reduce the rate of spread and the intensity of wildfires. Greenstripping is a preferred method in areas that have undergone conversion to invasive annual grassland or areas highly susceptible to annual grass invasion. Greenstrips are usually accomplished using mechanical means or herbicides, followed by seeding of fire-resistant vegetation.

management agencies and fire agencies to address wildfire issues. Through CatFire, the Planning Area was identified as an area of concern and funding was provided for a fuel break extending along the western edge of the City of Saratoga Springs on private and SITLA lands. This fuel break is planned through rotational grazing to reduce grass fuel loading next to the community. Funding has also been provided for fencing to focus grazing at that location.

Emergency Stabilization and Rehabilitation

The field office utilizes the WDD NFRP (BLM 2010) and dispatches resource specialists to assess fire impacts both during and following wildfires to determine whether action is necessary to mitigate wildfire impacts. Fires of 40 acres or larger are assessed automatically and smaller fires if impacts warrant. ESR actions are monitored for effectiveness. Examples of ESR actions may include, but are not limited to, mechanical preparation of the soil using chaining, disking or other means, application of herbicides, seeding or planting, and signing to gain the public's assistance in these efforts. In addition, erosion control structures are utilized to prevent flooding and landslides.

3.3.2 Enforcement

Public Education

The BLM's law enforcement program mission is to "educate our customers to maximize their enjoyment of the land and its resources, and minimize violations of legal requirements" as per the SLFO Law Enforcement Plan. This mission is a priority for activity within the Planning Area as well as the entire SLFO.

In working with the SLFO recreation staff and other resource specialists, BLM rangers provide information to the public through contacts (field, office, telephone and letters), high visibility patrols, signing (signs and bulletin boards) and attending local events geared toward the target shooting community. The BLM's Recreation Management Information System (RMIS) estimates 4,000 visitors per month visit public lands within the Planning Area boundary. The Planning Area is highly used by the recreating public. For example, in January of 2011 prior to the implementation of the shooting closure in 2012, 664 people were contacted by law enforcement on public lands in and around the temporary target shooting closure in the Lake Mountains on four consecutive Saturdays. This high number of contacts with recreational shooters continues.

Patrol

BLM rangers assigned to the SLFO patrol approximately 3.25 million acres of BLM administered public lands. There are eleven counties within the boundaries of the SLFO encompassing 87% of the population of Utah. These eleven counties include 5 of the most populous counties in the state of Utah: Salt Lake, Utah, Davis, Weber, and Cache, respectively. The Planning Area is frequently patrolled by law enforcement officers from Utah County and SITLA. Routine patrols are regularly scheduled and coordinated among the agencies.

BLM administered public lands in the SLFO, especially in Tooele and Utah counties occur within the wildland urban interface and are easily accessible by a large population base which results in year round visitation. The public's recreational use alone, by such a large population base, results in multiple impacts to the public land resources administered and patrolled by the BLM.

While recreational target shooting occurs throughout the SLFO, several areas with easy public access are heavily used for recreational target shooting which is causing resource damage and public safety issues. This damage is primarily occurring in areas of dispersed use and not developed recreation sites. In addition to the Lake Mountains, areas that receive heavy recreational targets shooting in the SLFO include West Mountain, Timpie Point, Stansbury Island, and Lone Rock.

One of the benefits of the 2012 and 2014 temporary target shooting closures is increased safety for law enforcement officers patrolling the area, in addition to the target shooters and general public land users. The temporary closure funnels displaced target shooters to specific, easily patrolled locations along the power line road forming the west boundary of the temporary closure. In this location, shooting is focused in the same direction—west toward the Lake Mountains hillsides, which creates a de facto safety zone for law enforcement officers patrolling the area. Officers can easily stay out of the line of fire of the target shooters, in contrast to the situation that existed prior to the temporary closures when target shooters were dispersed throughout the 893 acres of the now temporary closure area. As a result, patrols currently are much more efficient—although target shooters are now displaced into areas where many petroglyphs are located. In 2015, BLM documented 52 incidents within the Planning Area: 30 were law enforcement incidents which resulted in warnings or citations and 22 were non-law enforcement actions, including patrol checks and public contacts.

Theft and Vandalism

Theft and vandalism of cultural resources and other property damage has occurred within the Planning Area [43 CFR 7.4(a)]. Although the perpetrators of these incidents are largely unknown, BLM has several documented cases of vandalism in the Planning Area that is directly attributed to target shooters. For example, on two documented occasions it was discovered that an individual or individuals had spray-painted targets directly onto several boulders within proximity to known petroglyph sites. These individuals then used the spray-painted boulders as their targets for target shooting. The vandalism was removed and within the year it had been vandalized again in the same location. This and other types of vandalism are a common occurrence within the Planning Area.

Enforcement

BLM has no jurisdiction on state or private property. However, unsafe shooters on public lands can be cited for creating a hazard or nuisance to public lands or its users. Laws, regulations and policies specific to target shooting on public lands are provided in Section 1.5.1. These apply to all public lands within the Planning Area except within the temporary closure where target shooting is prohibited.

Currently the SLFO enforces long-term target shooting closures in the following developed recreation sites or designated management areas, in addition to the Lake Mountains temporary closure: Birch Creek Campground, Clover Spring Campground, Fivemile Pass Recreation Area, Knolls Special Recreation Management Area, Little Creek Campground, North Oquirrh Management Area and Simpson Springs Campground (Table 2, Section 2.5).

Common violations within the area of the Lake Mountains are: violation of a closure or restriction order, creating a hazard or nuisance to public land and/or its users, littering, unlawful disposal of household or commercial waste, vandalism, and theft of government property. Illegal and unlawful activity is addressed through the procedures outlined in the SLFO Law Enforcement Plan (2016), in conjunction with the regulations listed in 43 CFR. Violations include penalties and fees. The specific regulations and restrictions are listed in Sections 1.5.1 and 1.5.2.

3.3.3 Wildlife

Big Game and Upland Game Species

The Lake Mountains provide habitat for both big game and upland game species. Habitat conditions, the availability of food and shelter, the level of human disturbance activities, and a species' response to those disturbances contribute to their survivability. There are critical periods during an animal's life cycle when they are particularly vulnerable to disturbances related to human activities.

UDWR has divided the game ranges into two categories, those having substantial value and those having crucial value. Substantial value habitat is defined as habitat used by wildlife species that is not vital for the population's survival, as degradation or lack of substantial value habitat will not result in species decline. Crucial value habitat is defined as that essential to the life history requirements of a wildlife species survival because there are no alternative ranges or habitats available. Degradation or unavailability of crucial habitat will lead to declines in carrying capacity and/or numbers of wildlife species in question. An example of this habitat type is crucial winter range, where individuals migrate to lower elevations and compete for limited resources, which can limit mule deer populations (UDWR 2014a). Mule deer (*Odocoileus hemionus*) are also vulnerable during fawning periods, as does tend to their fawns by providing food, cover and protection from predators.

Mule deer is the major big game species that uses habitat in the Planning Area. Mule deer habitat distribution within the Planning Area is shown in Figure 5. The Planning Area contains crucial spring/fall and yearlong substantial habitat for mule deer (Table 6). The Lake Mountains are within the Deer Herd Unit #19-C (West Desert, Tintic). While this unit does not hold a lot of mule deer, some big, mature bucks are among the population. The Lake Mountains range is one the best mountain ranges to hunt on the unit and is also the range closest to many hunters (UDWR 2014b). One of the management goals for the unit is to maintain and protect critical summer ranges from future losses or degradation (UDWR 2012). However, the Planning Area does not overlap with critical summer ranges. Other habitat goals include restoration and improvement of sagebrush steppe habitats critical to deer (UDWR 2012).

Hunted species within the Lake Mountains area includes numerous species of game animals. The majority of the Planning Area contains substantial yearlong habitat for chukar (*Alectoris chukar*) (Figure 6 and Table 6). Although there are no UDWR habitat designations, pronghorn antelope (*Antilocapra americana*), cottontail rabbits (*Sylvilagus* species) and jackrabbits (*Lepus* species) are observed often within the Planning Area. Jackrabbits can be hunted without a State of Utah license. Mountain lions (*Puma concolor*) also inhabit the Planning Area and are hunted with a State of Utah license.

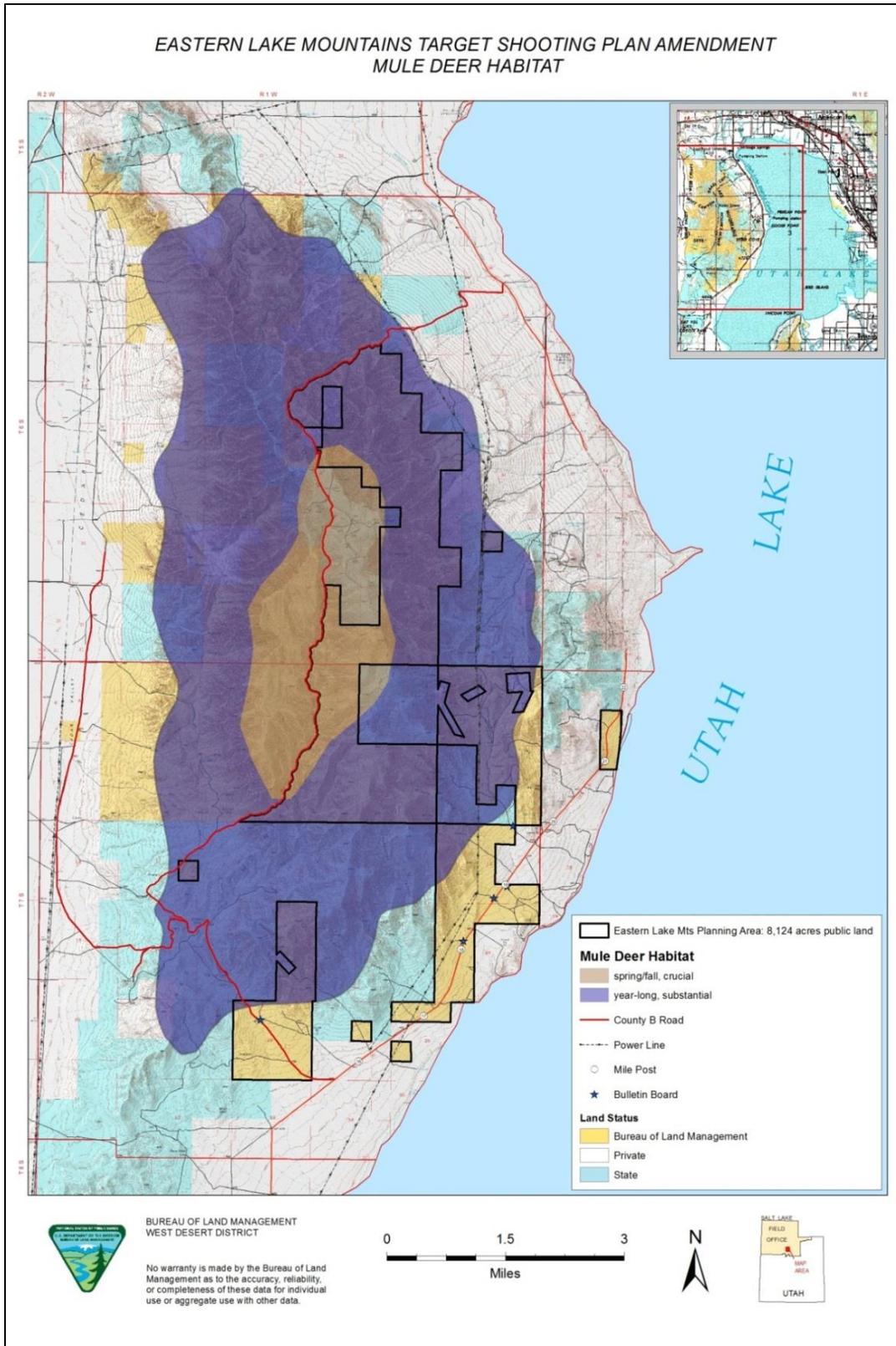


Figure 5 Mule deer habitat.

Table 6 Habitat for mule deer and chukar.

Species	Crucial Spring/Fall (acres)	Substantial Yearlong (acres)
Mule Deer	935	4,914
Chukar	-	6,408

Migratory Birds

A diverse variety of migratory bird species use various habitats for breeding, nesting, and foraging throughout the Planning Area. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918. Eagle species are afforded additional protection under the Bald and Golden Eagle Protection Act of 1940. Under Executive Order 13186, federal agencies are responsible for implementing the provisions of the MBTA by promoting conservation principles and management practices into agency activities. Federal agencies must ensure that federal actions are evaluated for potential impacts on migratory birds. The BLM and the U.S. Fish and Wildlife Service (USFWS) operate under an agreement (BLM MOU WO-230-2010-04), which provides management direction to integrate the conservation of migratory bird species. This MOU provides direction for evaluating the effects of the agencies' actions on migratory birds through the NEPA process. This includes identifying potential measurable negative effects on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, the BLM would implement approaches to lessen the negative effects.

USFWS's Birds of Conservation Concern (BCC) report identifies migratory and non-migratory bird species (beyond those already designated as threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. The BCC report lists bird species representing their highest conservation priorities geographically by Bird Conservation Region (BCR). The Planning Area falls within BCR 9 (Great Basin) (USFWS 2008). Another source BLM utilizes to determine which migratory bird species should be considered is the Avian Conservation Strategy (AVS) published by the Utah Partners in Flight (UPIF) Program. UPIF ranked a total of 24 habitat types and 231 bird species with respect to their need for conservation action (Parrish *et al.* 2002). BLM considers species listed on BCC's report as well as UPIF's AVS when analyzing effects of proposed management actions and implements recommended conservation measures where appropriate. According to these lists, the identified bird species that could inhabit the Planning Area are included in Table 7.

Across North America and the Western Hemisphere, avian populations have declined, particularly neotropical migratory birds (Parrish *et al.* 2002). These declines are largely attributed to the loss of habitat due to fragmentation and other landscape modifications, including urbanization. The majority of human-induced changes in bird populations and distributions have occurred in the recent past. Other primary factors that are associated with migratory bird species declines include natural disasters, loss or alteration of habitat in nonbreeding areas and along migratory routes, and brood parasitism (Parrish *et al.* 2002) Among birds, grassland and shrubland dependent species are declining faster than any other group of species in North America (Dobkin and Sauder 2004; Brennan and Kuvlesky 2005). Bird species that utilize woodlands have benefitted from the recent expansion of juniper and pinyon pine habitat, mainly due to grazing and alteration of wildfire frequencies (Belsky 1996).

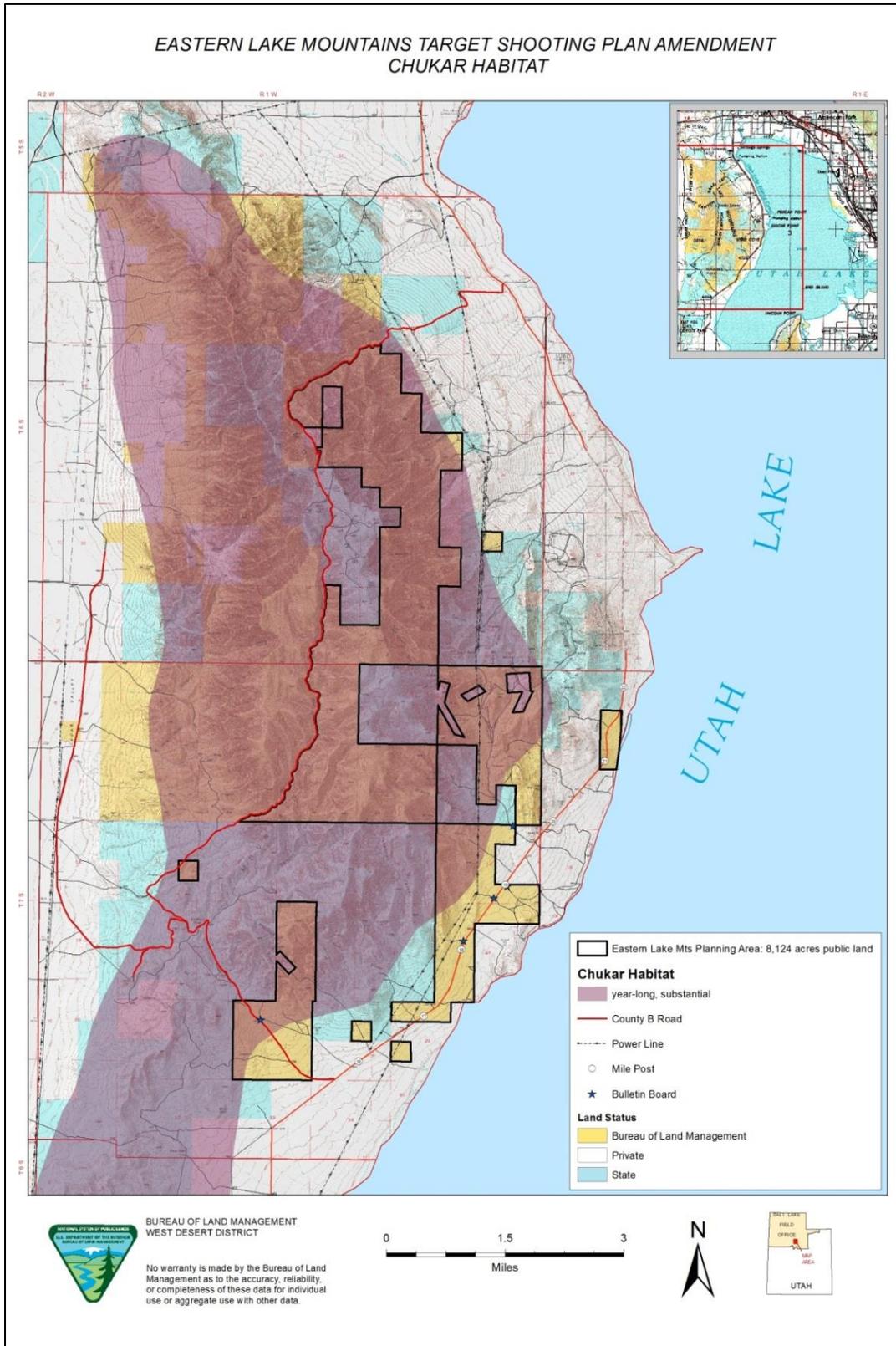


Figure 6 Chukar habitat.

The majority of the bird species in the Planning Area are associated with shrub steppe, grassland and pinyon/juniper habitat. For example, the brewer's sparrow, sage sparrow, and sage thrasher are heavily reliant on sagebrush steppe for nesting and foraging. Loggerhead shrike, black-throated sparrow, and green-tailed towhee are less reliant on sagebrush but are dependent on shrubland habitat. Long-billed curlews are primarily associated with short-grass communities, including high-density cheatgrass habitat, during the breeding season (UDWR 2011). Most of these ground nesting or shrub-dependent species rely on the vegetative structure and cover found in these habitat types for successful breeding. Species that are associated with pinyon/juniper habitat are green-tailed towhee, black-throated gray warbler, and gray flycatcher.

Many raptor species, including a wide variety of hawks as well as bald and golden eagles, inhabit the Planning Area permanently or as migrants. However, raptor nests in the Planning Area are less dense than similar habitat adjacent to the Planning Area [Raptor Inventory Nest Surveys (RINS) 2016; UDWR 2015]. This is likely because of the heavy target shooting activities occurring in the area (RINS 2016).

In Utah, bald eagles were extirpated by the early 1980s, but recovery efforts have resulted in a steady increase of bald eagle pairs in the state, which were estimated to be at 11 nests as of 2007 (Center for Biological Diversity 2007). During winter months, bald eagle populations in Utah are some of the largest in the United States. Bald eagles winter roost along the whole stretch of the west side of Utah Lake using trees and power lines. The largest roost in the area is in a cottonwood near Pelican Point to the north and east of the Planning Area. On the south end of Utah Lake, there have been large aggregations near Goshen attracted to the carp removal efforts (Hersey 2015). Bald eagles are known to use sagebrush habitats within big game winter range where they will forage for deer and other mammal carcasses during winter months and to a lesser extent throughout the year.

Golden eagles are common year-round residents of Utah and are found near mountainous areas in open country (UDWR 2015a). Nesting occurs on cliffs or large trees (UDWR 2015a). The Utah Legacy Raptor Partnership (ULRP) compiled and studied long-term raptor data (golden eagle, ferruginous hawk, and burrowing owl) collected in the West Desert from 1997 to 2011. Golden eagles, ferruginous hawks, and burrowing owls prefer open shrub steppe, sagebrush and grassland habitats. Golden eagles and ferruginous hawks nest on cliffs and rocky outcrops. Burrowing owls nest in open areas with low vegetation within burrows, usually dug by other animals. The study found that golden eagle and burrowing owl nest activities declined after large wildfires (ULRP 2012). High cheatgrass cover was also negatively associated with long-term territory activities for all three species (ULRP 2012). The same results would likely apply to the Planning Area because of the ecological and climatic similarities, and these three species nest and forage within the Planning Area.

Within the Planning Area, there is a small amount of BLM-administered land adjacent to the Utah Lake's shoreline. Utah Lake provides habitat for many shorebird species. There is a record of American white pelicans nesting on Rock Island in Utah Lake in 1904 (UDWR 2015a) and the species is often observed in Utah Lake (Sullivan *et al.* 2009). American avocet, black-necked stilt, mallard, California gull, Canada goose, and western grebe are some of the species frequently observed on the west side of Utah Lake (Sullivan *et al.* 2009).

Table 7 List of bird species of conservation concern.

Common Name	BCC Great Basin ¹	UPIF Great Basin ²	State of Utah Sensitive Species ³	Utah BLM sensitive Species ⁴	1st Breeding ²	2nd Breeding ²	Wintering Habitat ²
American Avocet		✓			Wetland	Playa	Migrant
American White Pelican		✓	✓	✓	Water	Wetland	Migrant
Bald Eagle	✓		✓		Lowland Riparian	Agriculture	Lowland Riparian
Black-necked Stilt		✓			Wetland	Playa	Migrant
Black-Throated Gray Warbler		✓			Pinyon-Juniper ⁵	Mountain Shrub	Migrant
Brewer's Sparrow		✓			Shrubsteppe ⁵	High Desert Scrub	Migrant
Burrowing Owl			✓	✓	High Desert Scrub	Grassland ⁵	Migrant
Calliope Hummingbird	✓				Mountain Riparian	Mountain Shrub	Migrant
Eared Grebe	✓				Wetland	Water	Water
Ferruginous Hawk	✓	✓	✓	✓	Pinyon-Juniper ⁵	Shrubsteppe ⁵	Grassland
Golden Eagle	✓				Cliff ⁵	High Desert Scrub	High Desert Scrub
Grasshopper Sparrow			✓	✓	Grassland ⁵	Grassland ⁵	Migrant
Green-Tailed Towhee	✓				Mountain Shrub	High Desert Scrub	Migrant
Lewis's Woodpecker	✓	✓	✓	✓	Ponderosa Pine	Lowland Riparian	Northern Oak
Loggerheaded Shrike	✓				High Desert Scrub	Pinyon-Juniper ⁵	High Desert Scrub
Long-Billed Curlew	✓	✓	✓	✓	Grassland ⁵	Agriculture	Migrant
Peregrine Falcon	✓				Cliff ⁵	Lowland Riparian	Wetland
Pinyon Jay	✓				Pinyon-Juniper ⁵	Ponderosa Pine	Pinyon-Juniper
Sage Sparrow		✓			Shrubsteppe ⁵	High Desert Shrub	Low Desert Shrub
Sage Thrasher	✓				Shrubsteppe ⁵	High Desert Shrub	Migrant
Short Eared Owl			✓	✓	Wetland	Grassland ⁵	Agriculture
Snowy Plover	✓	✓		✓	Playa	Playa	Migrant
Virginia's Warbler	✓	✓			Northern Oak	Pinyon-Juniper ⁵	Migrant

¹ Birds of Conservation Concern (BCC) 2008 (USFWS 2008)
² Utah Partners in Flight Avian Conservation Strategy Version 2.0 (Parrish *et al.* 2002)
³ Utah Division of Wildlife Resources (UDWR), Sensitive Species List (UDWR 2015b)
⁴ Utah BLM Sensitive Species List-IM UT-2011-037
⁵ Habitat type within the Planning Area.

Special Status Species

As per BLM Manual 6840, Special Status Species Management, “species designated as BLM sensitive species must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

- There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or
- The species depends upon ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.”

BLM Special Status animal species include those species designated by USFWS as threatened or endangered under the ESA, species proposed or petitioned for listing, or are candidates for listing. All federal candidate species, proposed species, and delisted species will be conserved as BLM sensitive species for at least 5 years following delisting.

Many of the sensitive species listed by the BLM overlap with Utah state sensitive species list (UDWR 2015b), but the lists differ slightly. These lists are subject to periodic updates, and new lists will be incorporated into the BLM land use planning document through plan maintenance or amendments. The most recent IM listing Utah BLM State Sensitive species is IM UT-2011-037 (BLM 2011). The most recent list was updated on July 27, 2011. Table 8 lists the sensitive species that occur or may occur in the Planning Area.

Table 8 List of BLM sensitive species.

Common Name	Scientific Name	BLM Status*
Birds		
Northern Goshawk	<i>Accipiter gentiles</i>	CA
American White Pelican	<i>Pelecanus erythrorhynchos</i>	SS
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SS
Short-Eared Owl	<i>Asio flammeus</i>	SS
Burrowing Owl	<i>Athene cunicularia</i>	SS
Ferruginous Hawk	<i>Buteo regalis</i>	SS
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SS
Lewis’ Woodpecker	<i>Melanerpes lewis</i>	SS
Long-Billed Curlew	<i>Numenius americana</i>	SS
Snowy Plover	<i>Charadrius nivosus</i>	SS
Mammals		
Townsend’s Big-Eared Bat	<i>Corynorhinus townsendii</i>	SS
Spotted Bat	<i>Euderma maculatum</i>	SS
Allen’s Big-Eared Bat	<i>Idionycteris phyllotis</i>	SS
Western Red Bat	<i>Lasiurus blossevillii</i>	SS
Fringed Myotis	<i>Myotis thysanodes</i>	SS

Common Name	Scientific Name	BLM Status*
Big Free-Tailed Bat	<i>Nyctinomops macrotis</i>	SS
Kit Fox	<i>Vulpes macrotis</i>	SS
*CA – Conservation Agreement Species and SS – BLM Sensitive Species		

These species are managed as necessary to protect the species and their habitat from loss in accordance with FLPMA, BLM guidelines, and federal directives. In addition, the Utah BLM sensitive species are managed in accordance with BLM Manual 6840, Special Status Species Management.

Current Situation

Since the 2012 temporary closure, target shooting has been prohibited within the 893 acre temporary closure area. Within the Planning Area, but outside of the current temporary closure area, wildlife and their habitat are influenced by anthropogenic disturbances (target shooting and vehicle traffic). Wildlife is affected directly and indirectly by target shooting activities, either as a hunted species under Utah laws or indirectly through habitat alterations (Hotze 2016). Vegetation in the area, especially juniper trees and sage brush, have either been used as targets, or targets have been placed in or on them resulting in the tree or shrub being cut in half by bullets. This activity alters vertical structure in the habitat, reducing its usability to wildlife.

Wildfire caused by target shooting has increased the spread of weeds, increased habitat degradation, and displaced wildlife. Wildfire also directly affects wildlife, as demonstrated by the Dump Fire in 2012 just to the northwest of the Planning Area. This fire consumed a total of 5,507 acres of federal, state, and private land. Before being controlled, the fire burned a golden eagle nesting site and a golden eagle chick was severely burned. The chick was later found alive and rescued.

3.3.4 Lands

The Planning Area includes land use authorizations generally permitted on BLM administered public land by means of ROW grants under Title V of FLPMA. Most ROW grants since the 1980s are issued for a term of 30 years, but older grants and grants to Federal, State, or local agencies may be issued for longer periods or in perpetuity. According to the lands records database (LR2000), there are currently 12 approved ROWs within the Planning Area.

Approved ROWs

- UTU-001331 issued to Rocky Mountain Power – 46 kilovolt (kV) Power Line Saratoga to Eureka
- UTU-054892 issued to Rocky Mountain Power – 7.2 kV Power Line
- UTU-0017252 issued to Rocky Mountain Power – 7.2 kV Power Line to Federal Aviation Administration (FAA) Communication Site
- UTU-0115794 issued to Rocky Mountain Power – 345 kV Power Line Camp Williams-Nephi Segment
- UTU-054871 issued to BLM – Communication Site for Emergency Fire Radio
- UTU-070314 issued to Utah Transit Authority (UTA) – Communication Site for Private Mobile Radio Service
- UTU-081920 issued to Pabco Building Products – Access Road
- UTU-082941 issued to Peck Rock & Productions Inc. – Access Road

- UTU-0015661 issued to FAA – Access Road and Storage Site
- UTU-0074806 issued to Federal Highway Administration (FHA) – State Highway 68
- UTU-091438 ROW issued to Utah County for an Access Road to Soldier Pass Shooting Range
- UTU-091092 ROW issued to Utah County for an Access Road to Utah Lake

For the purpose of this document, an assumption is made that BLM will continue to process and ultimately approve all of the pending actions listed above.

All of the existing ROWs have benefitted from the additional safety provided by the temporary closure area. Prior to the temporary closure, stray bullets crossing Highway 68 were a serious concern for travelers along that stretch of the Highway 68. Further evidence suggests that a large decrease in target shooting related wildfires has resulted from the temporary closure, which affects ROWs both within and outside of the closure area.

The western boundary of the temporary closure is defined by the Rocky Mountain Power 345 kV Saratoga to Eureka power line road. Target shooting is not restricted west of the power line road. Three ROWs are within the current temporary closure area: Highway 68, the access road ROW to the Pabco Building Products private property, and a pending ROW to Utah County for the management of an existing road used to access Utah Lake. The remaining ROWs within the Planning Area are outside of the temporary closure area but are still affected by target shooting activities, including damages from bullet impacts.

3.3.5 Visual Resources

Visual resources are identified through the Visual Resource Inventory (VRI) process and managed through the VRM process. The VRI process consists of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones. Based on these factors, BLM-administered lands are placed into four VRI classes: VRI Class I, II, III and IV. Class I and II are the most valued, Class III represents a moderate value and Class IV is of the least value. These VRI classes serve as an inventory tool that represents the relative value of visual resources in that area and is utilized during land use planning to assign VRM classes to each of these areas.

VRM classes serve as a planning/management tool that provides an objective for managing visual resources on public lands. Four classes are utilized: VRM Class I, II, III and IV. The VRM class objectives are defined in BLM Manual H-8410-1. In summary, the Class I VRM objective is for preservation of the existing landscape and is assigned to all special areas where the current management situation requires maintaining a natural environment essentially unaltered by man, such as wilderness and natural areas. The Class II VRM objective is for retention of the existing landscape and allows for new projects that blend in with the existing surroundings and do not attract attention. The Class III VRM objective is for partial retention of the existing landscape and allows for moderate change; new projects can be approved that are not large scale dominating features. The Class IV VRM objective allows for maximum change of the existing landscape; this category has the lowest restrictions and would allow for most uses in the area.

The degree to which a management activity affects the visual quality of a landscape largely depends on the visual contrast created between the proposed project and the existing landscape. The contrast can be measured by comparing the project features or components with the major features in the landscape. The basic visual elements of form, line, color, and texture are used to

make this comparison and to describe the magnitude of the visual contrast created by the proposed project. The level of contrast is then compared with the VRM class objective for the area. For comparative purposes, the four levels of contrast (none, weak, moderate, and strong) roughly correspond with VRM Classes I, II, III, and IV, respectively. This means that a “strong” contrast rating may be acceptable in a Class IV area but probably would not meet the VRM objectives for a Class III area. (BLM 1986)

Lake Mountains Visual Resources

The Planning Area is entirely within VRM Class IV and VRI Class IV. The VRM class is determined during the land use planning process; this area received its VRM Class IV designation in the Pony Express ROD/RMP (BLM 1990). The VRI Class IV designation was determined through a field-office wide visual resource inventory completed in November 2011 by Logan Simpson Design (LSDI 2011).

VRI ratings were determined through field assessments, staff knowledge and the Visual Inventory Class Matrix (H-8410-1, Illustration 11). Visual resources within the VRI Class IV area of Lake Mountains were determined to have the following ratings: scenic quality rating of “B” (medium), sensitivity level rating of “moderate”, distance zone of “foreground-middleground.” These 2011 ratings are based primarily on the high urban interface setting, the high level of use, and the moderate scenic quality of the Lake Mountains. These ratings remain consistent with the 1990 VRM Class IV assignment for the Lake Mountains.

The VRM Class IV objective is to allow for management activities that involve major modification of the existing character of the landscape. The level of contrast can be high—dominating the landscape and the focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the characteristic landscape. This definition comes directly from BLM Manual H-8410-1 Visual Resource Inventory (Section V. Visual Resource Classes and Objectives), which also states that this category has the lowest restrictions of any class and would allow for most uses in the area.

The characteristic landscape of the Planning Area is the east facing slope of the Lake Mountains—a moderate mountain range with elevations ranging from approximately 4,500 to 7,600 feet and steep canyons sloping down to gently rolling foothills extending to the west shore of Utah Lake. The vegetative community is mixed shrub with grasses and scattered pinyon and juniper trees at the lower elevations and primarily pinyon, juniper and mountain mahogany in the higher elevations—all of which has been greatly affected by invasive cheatgrass due to numerous wildfires. The vegetation contributes to seasonal color variations of green, gray-green, tan and brown in the lower slopes (grasslands, sagebrush and exposed dirt and road surfaces). Soil colors are primarily tan and brown. Man-made features in the Planning Area are primarily linear—consisting of graded and primitive dirt roads and trails, livestock fences, power lines and Highway 68. Other non-linear man-made features include signs and bulletin boards, gravel and clay pits, illegal dumping, target shooting related damage to natural resources (vegetation destruction and boulder fragmentation), and trigger trash from a high level of use by target shooters. Outside the Planning Area, man-made features include private residences, several large commercial sand/gravel/rock pit mining operations and communication towers.

Current Visual Impairments

Visual resources within the Planning Area currently are impaired by trigger trash and illegal dumping—primarily in locations frequented by target shooters. How much of this trigger trash was actually left by target shooters or was already in the area cannot be determined, although sites with trigger trash typically attract illegal dumping and target shooting sites are typically littered by trash, some of which may be hazardous. Cleanup projects are not able to keep pace with the level and frequency of trigger trash and illegal dumping at most target shooting sites. Over a period of two years, SLFO spent over \$20,000 on cleanup efforts. The density of target shooting, and consequently trigger trash, is highly variable throughout the Planning Area.

Other existing target shooting related visual impairments in the Planning Area include: damaged resources (including signs, power lines, vegetation, and boulders—some with petroglyphs); the effects of numerous wildfires in the area (burned off and blackened vegetation and conversion of native vegetation to a landscape dominated by invasive cheatgrass); and the high impact public use, noise, vehicle traffic and visual presence of the target shooters themselves. Target shooting damages resources through destruction of natural and manmade features used as targets and by stray/ricochet bullets. In some instances, errant gunfire has hit nearby homes and structures on private property. Additionally, the visual effects of the numerous, frequent wildfires—many caused by target shooting—currently are visible throughout the Planning Area. There are visual intrusions from the many developments currently existing within and around the Planning Area: roads and trails, livestock fences, power lines, signs and bulletin boards, private residents, several large commercial rock/gravel and clay pit mining operations, and communication towers.

Within the current 893 acre temporary closure, many of these visual impacts have been considerably reduced—thereby greatly improving visual resources. Prior to the 2012 and 2014 temporary closures, the area within the temporary closure was one of the most popular target shooting areas—and one of the most heavily impacted by trigger trash, damaged resources, and target-shooting caused wildfire starts. As a result of the temporary closures and the prohibition on target shooting, much of the temporary closure area has been cleaned up, illegal dumping has been reduced and the presence of target shooters within the closure area have been greatly reduced.

3.3.6 Invasive Species/Noxious Weeds

Invasive and noxious weeds occur throughout the Planning Area (Table 9). The Planning Area is also part of the Utah County Cooperative Weed Management Area.

Table 9 List of invasive and noxious weeds.

Common Name*	Scientific Name	Invasive(I)/Noxious(N)
Cheatgrass/Downy Brome	<i>Bromus tectorum</i>	I
Squarrose Knapweed	<i>Centaurea virgate</i>	N
Russian Knapweed	<i>Centaurea repens</i>	N
Spotted Knapweed	<i>Centaurea maculosa</i>	N
Diffuse Knapweed	<i>Centaurea diffusa</i>	N
Leafy Spurge	<i>Euphorbia esula</i>	N
Black Henbane	<i>Hyoscyamus niger</i>	N
Dyers Woad	<i>Isatis tinctoria</i>	N

Common Name*	Scientific Name	Invasive(I)/Noxious(N)
Houndstongue	<i>Cynoglossum officinale</i>	N
Canada Thistle	<i>Cirsium arvense</i>	N
Medusahead	<i>Taeniatherum caput-medusae</i>	N
Scotch Thistle	<i>Onopordum acanthium</i>	N
Musk Thistle	<i>Carduus nutans</i>	N
Dalmation Toadflax	<i>Linaria dalmatica</i>	N
*As per BLM 1996.		

EO 13112 defines an invasive species as: “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” A noxious weed is any plant designated by a Federal, State or county government as injurious to public health, agriculture, recreation, wildlife or property (Sheley *et al.* 1999).

The use of vehicles and other human activities in the Planning Area has promoted the spread of weeds by the unintentional transportation and distribution of seeds throughout the area. The Planning Area has also been susceptible to wildfires over the last decade due to target shooting, lightning and other causes. As a result, much of the native plant community has burned and the invasive cheatgrass now dominates much of the area, which adds to the fire danger as cheatgrass is highly flammable when it has cured out during the warm weather. The vegetation which has not been affected by wildfire has a fairly good mix of native shrubs interspersed with some cheatgrass.

The SLFO follows control measures as described in the Five Year Noxious Weed Plan (BLM 1996) and the Record of Decision for Vegetation Treatments Using Herbicides EIS (BLM 2007). Herbicides are applied following an approved Pesticide Use Proposal (PUP). The public, including target shooters, are using the existing road system throughout the Planning Area. In 2013, several barricades and a fence were installed by private landowners, Utah County, and the BLM along Highway 68. Vehicles still access the area but from limited locations as a result of these barricades and fences. Vehicle still remain as a vector for transporting weed seeds to and from the Planning Area.

3.3.7 Vegetation/Soil

According to the Utah County soil survey (USDA SCS 1972, USDA SCS 1984) and its corresponding Ecological Site Descriptions (ESD)⁵ (Table 10), the soils in the lower elevations of the Planning Area are mainly alluvial and colluvial deposits overlying the older Lake Bonneville shoreline. Consequently, the soils are very rock-strewn and are described as a cobbly to gravelly loam. There are a couple of large sand, gravel, clay, and rock enterprises within and adjacent to the Planning Area. Some of the gravel and clay pits are used by target shooters as a backdrop for target shooting activity. The ESDs describe vegetation within the lower elevations

⁵ The NRSC’s ESDs are available online at: <https://esis.sc.egov.usda.gov/Default.aspx>

of the Planning Area as sagebrush steppe with occasional junipers and desert shrub mix. Potential erosion hazard for these soils is rated slight to moderate.

Mid elevations are mountain conifer and Wyoming Big Sagebrush sites, and the upper elevations are Mountain Big Sagebrush sites. Middle to upper elevations include steep canyons with mountain gravelly loam soil. According to the ESDs, these steep canyons are described as Douglas Fir (*Pseudotsuga menziesii*) sites. Much of the steep canyon slopes have been consumed by past wildfires and the vegetation within these sites has been drastically changed and become very susceptible to invasive plants such as cheatgrass. Without the native vegetation the soil structure is lost, which increases the likelihood of large damaging mudflows during heavy rain and runoff events.

All of these sites have been disturbed by wildfire and are now interspersed with invasive and introduced species. For a listing of potential plant communities and soil types expected within the Planning Area, refer to the information contained in the ESDs (Table 10). The ESDs describe all sites found within the Planning Area as being primarily suited for livestock grazing and wildlife habitat.

Table 10 List of ecological sites.

Ecological Site Description Number	Vegetation Type	Soil Type
R028AY236UT	<i>Artemisia nova</i>	Semidesert Shallow Loam
R028AY325UT	<i>Artemisia nova</i>	Upland Shallow Loam
R028AY324UT	<i>Juniperus osteosperma, Pinus monophylla, Artemisia nova, Pursha tridentata, Pseudoroegneria spicata, Poa nevadensis</i>	Upland Shallow Loam
R028AY320UT	<i>Pinus monophylla, Juniperus osteosperma</i>	Upland Shallow Hardpan
R028AY334UT	<i>Artemisia tridentata var. vaseyana</i>	Upland Stony Loam
R047XA338UT	<i>Artemisia tridentata, Pseudorogneria spicata</i>	Upland Stony Loam
R028AY310UT	<i>Artemisia tridentata var. vaseyana</i>	Upland Loam
R047XA456UT	<i>Pursha tridentata</i>	Mountain Stony Loam
R028AY220UT	<i>Artemisia tridentata var. vaseyana</i>	Semidesert Loam
R028AF222UT	<i>Atriplex canescens</i>	Semidesert Sand
R028AY215UT	<i>Artemisia tridentata var. vaseyana</i>	Semidesert Gravelly loam
R047XA408UT	<i>Pseudotsuga menziesii</i>	Mountain Gravelly Loam
R028AY226UT	<i>Artemisia tridentata var. vaseyana</i>	Semidesert Sandy loam
R028AY004UT	<i>Sarcobatus vermiculatus</i>	Alkali Flat
R028AY231UT	<i>Artemisia nova</i>	Semidesert Shallow Hardpan
R028AY202UT	<i>Sarcobatus vermiculatus</i>	Semidesert Alkali Loam

3.3.8 Waste Materials

Waste materials in the Planning Area are generally directly associated with target shooting. Primarily, this is solid waste that is left from the activity in the form of target remains and spent ammunition casings and shot shells. The target remains may consist of broken clay targets used for skeet or trap shooting and components from televisions, computers, monitors, glass bottles, washing machines, cellular phones, furniture and other items used inappropriately for target practice.

Illegal dumping does contribute to the quantity of solid waste left on public lands within the Planning Area; however trigger trash is a much larger contributor. There seems to be a dynamic (which has not been studied or quantified) where the presence of trigger trash tends to attract illegal dumping. It is assumed that the parties that dump illegally would dump on the public land regardless of the presence of trigger trash, but they seem to more often dump in areas where trigger trash is present.

The cleanup of trigger trash is usually conducted through the volunteer efforts of community groups (e.g., Boy Scouts, school groups, conservation groups, and hunter's organizations). These groups typically donate their time to gather and remove solid waste left behind by the target shooters and those individuals dumping debris on the public lands.

Hazardous Wastes

On occasion, target shooters may bring hazardous wastes into the Planning Area to use as targets. These might include paint (buckets and cans), flammable liquids, and metals that are components in electronics used for targets (e.g., mercury, lead and cadmium). When such items are shot, these hazardous materials are dispersed and released into the environment. Cleanup of these types of materials are usually more involved and require the use of BLM contractors to ensure that the hazardous wastes are removed and disposed of in a way that minimizes impacts on human and ecological health and on the environment (BLM Environmental Compliance Handbook H-1703-6).

Target Shooting Contamination

Also of concern from a hazardous waste perspective is the fate and transport of metals from bullets and bullet fragments accumulating in soil. Of these metals, lead is the predominant contaminant although copper, iron, and other metals are also of concern. Additionally, lead is also a component of the primer which is used to ignite the gunpowder. Lead can become concentrated in impact areas and lesser so in areas where the gun is fired.

Upon impact, bullets may penetrate the soil, ricochet, fragment or behave in other ways. Most of the projectile mass is deposited in the impact area in the form of intact projectiles or large fragments. Small lead particles also are present. These large and small lead fragments and particles are subject to various physical and geochemical processes that control lead mobility in the environment. Generally, small lead particulates bond to soil particles while larger pieces of lead (e.g. bullets and shot) remain intact. In this non-acidic environment, lead does not leach out of the soil; however, it can be taken up by plants, moved by surface water, and to a lesser extent moved by wind. Air and water can cause lead to corrode if acidic conditions exist; however, lead in soil is relatively immobile in the environment (ATSDR 2007). Lead bullets and shot usually come to rest in the soil. Coupled with the arid nature of the Planning Area, the lead

corrosion that takes place is minimal, leaching is virtually non-existent, and migration into surface water or ground water is unlikely.

Gunshot residue contains lead from the detonation of the primer, as well as lead particles and vapors generated as the bullet travels down the barrel of the gun (Willmsen *et al.* 2014). While this undoubtedly contributes to the overall contamination, it is far less than the contamination in impact areas.

A potential long-term problem with shooting is the concentration of lead on public lands. Should it ever become necessary to remediate these areas, the cost of clean-up could be extensive. In the meantime, this contamination may present risks to the public and to wildlife.

Inhaled or ingested lead can build-up in the human body, often without any obvious symptoms. Frequent exposure, particularly at high levels, can harm the nervous, digestive and reproductive systems and produce a wide variety of symptoms. Lead can harm the brain, damage the kidneys, and affect the ability of bone marrow to make blood (ATSDR 2007).

Since lead does not naturally break down, lead accumulations in surface soil can remain for up to 2,000 years, sometimes wiping out entire populations of micro-organisms (Greene, 1993). Plants are impacted by lead through absorption and the settling of lead on leaf surfaces, and animals also experience severe side effects from lead exposure – most often in the central nervous system, like in humans. Animals exposed regularly, like grazing animals, experience the most serious effects which can often lead to death (Greene, 1993). Livestock injury or deaths due to lead poisoning within the Planning Area have not been reported to the SLFO.

Current Situation

Solid and hazardous waste in the temporary, 893 acre closure area is presently reduced from pre-2012 levels. The temporary closure has reduced the number of recreational target shooters and the trigger trash that they leave behind within the Planning Area. Illegal dumping still occurs, but tends not to be concentrated in the trigger trash areas as it has been in the past. Some micro-trash still remains within the area of the temporary closure. The temporary closure has pushed recreational target shooters out into portions of the Planning Area not covered by the temporary closure where they still leave trigger trash. Likewise, the release of hazardous waste from inappropriate targets in the temporary closure area has been reduced, while the releases of hazardous substances in the portions of the Planning Area outside the temporary closure are likely higher as displaced shooters have moved into these areas in greater quantities due to the temporary closure.

The activity of shooting itself causes the emplacement of lead to the Planning Area; however since target shooting activity is dispersed, the lead does not become highly concentrated. Furthermore, the environmental conditions in the Planning Area are not conducive to the lead from bullets or shot contaminating the environment outside of the soil where it comes to rest. However, no investigation has been conducted on the amount of lead contamination in the Planning Area.

3.3.9 Recreation

The Planning Area occurs within the SLFO's extensive recreation management area. There are no special recreation management designations. With its proximity to large urban areas and its views of Utah Lake and the Wasatch Front, the Lake Mountains provides a setting for many outdoor recreational activities opportunities. It has no developed sites but receives a high level

of dispersed recreation use. In the past, typical recreation activities have included target shooting, hunting, OHV/ATV riding, mountain biking, hiking, camping, horseback riding, petroglyph viewing and sightseeing. However, over the years, target shooting has become a primary recreational activity, especially on the east side of the Lake Mountains. In many locations along the base of the eastern Lake Mountains, many of the traditional dispersed recreation uses have yielded to target shooting due to the inherent dangers of the sport, its associated resource conflicts and the uncontrolled nature of that activity in this area. With the increasing population of the Wasatch Front and the popularity of the sport, the volume of recreational target shooting activity on public lands within the Planning Area is very high.

Generally, BLM administered public lands are open to target shooting unless administratively closed through a closure order. The public land user has the responsibility of locating a safe and accessible area in which to target shoot on BLM administered public lands⁶ and fire restrictions regarding ammunition and exploding targets, safe target shooting practices and carrying out all trash apply to all BLM administered public lands. The SLFO manages 3.25 million acres of public land, of which 83,256 acres are closed to target shooting. Within SLFO, closure orders are implemented on developed and semi-developed recreation sites of non-compatible recreation activities, such as campgrounds and OHV/ATV play areas. In some circumstances, closures are implemented in undeveloped areas that have become unsafe for target shooting or where other resources are being damaged, such as in the Lake Mountains. This amounts to only 2.5% of BLM-administered public lands closed to target shooting. Table 2 (Section 2.5) identifies the specific closure areas and their acreages.

Within the Planning Area, target shooting became popular largely because of its close proximity to urban areas, undeveloped and open public lands, and ease of access for a wide variety of vehicles from Highway 68. The lower elevations are a mix of private, state, and public land with traffic along adjacent Highway 68, private residences, ranching activities (including livestock), and other recreational and general public use associated with both Lake Mountains and nearby Utah Lake. Prior to the implementation of the 2012 temporary 893 acre closure, certain locations within the temporary closure received high levels of recreational target shooters every day of the week, with especially high levels on the weekends. Monthly visitation was as high as 4,000 target shooters with as many as 400 shooters concentrated into five primary areas along Highway 68 on the weekends (RMIS, FY14-15). This high volume of recreational target shooters in a relatively small area in the relatively flat and rolling terrain on the lower slopes along the west side of the Planning Area created a serious safety hazard for nearby private landowners and their homes, ranchers and their livestock, motorists traveling along the adjacent state Highway 68, other visitors to the area and the target shooters themselves. Errant gunfire from target shooters in this area resulted in several life-threatening near-misses. During the public scoping period, numerous comments were received regarding the unsafe conditions of the

⁶ For more information and a map of target shooting closures, refer to the BLM SLFO website at http://www.blm.gov/ut/st/en/fo/salt_lake/recreation/target_shooting.html.

area. Even other target shooters recognized the safety issues of the area and stopped shooting there.

Public Safety

To protect the public from the serious dangers imposed by target shooting in this unsafe area, and before someone was seriously injured or killed, an immediate temporary closure of 893 acres on the lower slopes of the Lake Mountains was approved in 2012. The unsafe conditions of the area necessitated the renewal of this temporary closure in 2014 and the instigation of this plan amendment for long-term management of target shooting in the Eastern Lake Mountains. Given the topography of the area, the high volume and concentration of recreational target shooters who use the area, and the urban sprawl from nearby communities, the area remains unsafe for target shooting from these lower elevations on the Lake Mountains within the current temporary closure. It would not be feasible to make shooting within the existing temporary closure area safe.

Over several years prior to the implementation of the initial 2012 temporary 893 acre closure, conflicts between private landowners and target shooters were increasing dramatically, with BLM law enforcement officers and Utah County Sheriff being dispatched constantly to incidents, including night patrol calls. Numerous complaints were received about recreational target shooting threatening the safety of public land visitors and nearby homes and damaging private and public property. Despite the BLM SLFO's efforts to manage the situation with increased law enforcement and an extensive public relations campaign, the number of complaints, incidents and near-misses escalated and nearby homes continued to be struck by errant gunfire.

Safety Incidents

Prior to the implementation of the first temporary closure in 2012, serious public safety incidents resulting from errant gunfire from target shooting within the now temporary closure area were reported to the BLM and Utah County Sheriff. Many of these incidents appeared in local newspapers and on the local news channels. These incidents illustrated the critical problem in the area and the serious issues compelling the implementation of the 2012 temporary closure. These incidents occurred from target shooting on BLM-administered public lands within the current temporary closure prior to the August 2012 implementation of the temporary closure. There have been no reported safety incidents since the implementation of the temporary closure.

Incident 1: In February 2012, a group of high school children on a field trip to Utah Lake were forced to take cover from ricocheting bullets flying past their heads from two individuals shooting on public lands adjacent to Utah Lake. The two men were firing at targets in the low terrain at the base of the Lake Mountains—unaware of a school bus full of students on the other side of the low hill toward which they were shooting. When the shooting began, the students were taking photos and testing water samples along the western shoreline of Utah Lake. Students and teacher had to take cover from the gunfire and wait 20 minutes for the Utah County sheriff to alert the target shooters to the danger they were creating. This incident was reported on the local evening news.

Incident 2: In June 2012 several bullets shot from BLM public land in the Little Cove target shooting area traveled approximately 2,000 feet into a home on nearby private land—barely missing the residents. One of those stray bullets hit the bedpost in the bedroom. The residents

wrote a letter to BLM Utah State Director Juan Palma and Utah County Commissioner Whitney demanding immediate action. These same residents reported the discovery of several additional stray bullets embedded in their home that were traced back to target shooters on BLM public lands within the current temporary closure. During a meeting at this private landowners' home to discuss what could be done to prevent their home from being shot by ricocheting bullets, the homeowner was quoted by the local newspaper as saying "Every single time I hear a rifle go off over there (pointing to BLM land nearby), and they're shooting fast, all I can think, walking around here is 'What bullet's going to kill me?'"

Incident 3: On June 15, 2012, while representatives of several federal, state, county agencies and local media were meeting at a home about a half-mile away from one of these popular Lake Mountains target shooting areas, a 150-acre wildfire was started by target shooters hitting an exploding target within this area.

Unsafe Shooting Practices

Within the Planning Area, dangerous situations occur with high impact, high volume target shooting. These dangerous situations are characterized by unsafe shooting practices and were especially egregious within the area of the temporary closure prior to its implementation—and what eventually compelled the temporary closure. Many of these unsafe shooting practices are illegal and include:

- Shooting toward or too close to other persons and vehicles.
- Shooting toward or across motor vehicle routes or roads—including Highway 68.
- Shooting without a safe backstop into boulders and dry vegetation.
- Shooting at electronics, appliances, glass, exploding targets, or containers of flammable liquids and gas.
- Shooting at transmission power lines, towers, and poles.
- Shooting at or near petroglyphs.
- Shooting into or trespassing onto private property from public lands.
- Leaving hazardous materials and household or commercial waste.
- Using targets other than the paper, cardboard or clay targets required under Utah County law (Utah County Code 13-3-16 Prohibited Targets)
- Using exploding targets, tracers, and steel-jacketed or steel-core ammunition—all of which are banned on public lands and have caused many wildfires in the Lake Mountains, especially from target shooting within the current temporary closure area prior to its implementation (BLM Utah FPO #UT910-14-001 and BLM WDD FPO #UTW002-15-01, updated annually).

Under State Statute 76-10-508, it is illegal to "discharge a firearm from a vehicle, near a highway, or in the direction of any person, building, or vehicle." The only other legal restrictions within the Planning Area are seasonal fire restrictions, a prohibition on the use of steel core and steel jacketed ammunition and exploding targets, and a Utah County ordinance requiring the use of paper, cardboard or clay targets. These same restrictions apply throughout the Planning Area (and on all BLM-administered public lands)—except within the temporary closure where target shooting is prohibited. There are no other restrictions on target shooting and the area was, and remains, open to motorized vehicle use on existing roads and trails (Limited OHV designation). Other regulations regarding target shooting on BLM-administered public lands are listed in Section 1.5.1.

Outside the closure area, displaced and new target shooters created new or more concentrated areas of disturbance and damage and threat to other resources, especially cultural resources.

Public Education and Outreach

Prior to the implementation of the initial 2012 closure, the SLFO conducted an extensive public outreach campaign regarding target shooting issues in the Lake Mountains and the need for safe target shooting practices. The campaign included extensive signing (and re-signing) of the area, bulletin board postings, installation of new bulletin boards with information postings, information booths at local gun shows, information flyers for local businesses, postings on BLM websites and social media, press releases, interviews with local news reporters, a public service video of the Lake Mountains target shooting issues and cooperative trigger trash cleanups with local target shooting and other volunteer groups. Many of these same measures were repeated for the 2014 temporary closure and were utilized for the start of this LUP amendment—with the addition of public scoping meetings.

Where voluntary compliance with the closure has not occurred, local law enforcement officers from the BLM and Utah County Sheriff are contacted. If a violation of the closure has occurred, the violator is issued a citation. Regulations governing closure orders and violations of closure orders are outlined in Section 1.5.2.

Temporary Closure

The 893 acre temporary target shooting closure has proven effective in improving public safety and reducing target shooting damage to public lands within the temporary closure area and on adjacent properties. With the elimination of high impact recreational target shooting in the temporary closure, the cleanup of trigger trash and the reduction of illegal dumping, some of this disturbed land may eventually recover. One of the unpredictable effects of the temporary closure was the displacement of target shooters to other areas within the Planning Area. Damage by vehicles creating new routes, parking areas, pull offs, and shooting damage to petroglyphs has increased west of the power line.

Current Situation

Within the Planning Area where target shooting occurs, areas of trigger trash and illegal dumping are common. How much of this trigger trash was actually left by target shooters or was already in the area cannot be determined, although sites with trash typically attract illegal dumping and target shooting sites are typically littered by trash. Cleanup projects are unable to keep pace with the level and frequency of trigger trash and illegal dumping at most shooting sites. Over a period of two years, SLFO spent over \$20,000 on cleanup efforts. The density of target shooting, and consequently trigger trash, is highly variable throughout the Planning Area.

Target shooting activities within the Planning Area also damage resources (including signs, power lines, vegetation, and boulders—some with petroglyphs); ignite wildfires (burned off and blackened vegetation and conversion of native vegetation to a landscape dominated by invasive cheatgrass); cause noise and vehicle traffic; and create new vehicle routes, pullouts, turnarounds and parking spots. Target shooting damages resources through destruction of natural and manmade features used as targets and ricochet/stray bullets. Prior to the temporary closure, the BLM expended considerable time and effort fighting fires caused by target shooting. These fires also damaged public land resources, including petroglyphs.

Within the current 893 acre temporary closure, many of these impacts have been considerably reduced; however, damage due to shooting at petroglyphs and vehicle damage outside the current temporary closure has increased. Prior to the 2012 and 2014 temporary closures, the temporary closure area was one of the most popular target shooting areas—with a high level of trigger trash, damaged resources, and target-shooting caused wildfire starts. With the 2012 and 2014 temporary closure orders, target shooting was prohibited within the temporary closure area and target shooters moved into other areas within and adjacent to the Planning Area. Subsequently, much of the temporary closure area has been cleaned up; illegal dumping has been reduced; and the number of target shooters has been greatly reduced. The public, including target shooters still travel through the temporary closure area to reach other destinations.

Socio-Cultural: Western Tradition/Family Activity/Firearm Training

Communities within Utah County are generally made up of young individuals and are experiencing rapid growth rates in housing and businesses. According to the Demographics Report [Economic Profile System (EPS) 2015], most (93.3%) of the people living within Utah County are below the age of 65. The county population grew by a 51% increase from 2000 to 2014 (EPS 2015, Socioeconomic Measures Report). The county population, employment and personal income also showed increases of 297%, 457% and 587% (respectively) from 1970 to 2013.

It is reasonable to assume that these increases would continue as the dynamics of Utah County change and the urban interface increases around the Planning Area. Many industries are directly benefitting from and supporting the growth within the communities, including Eagle Mountain City and The City of Saratoga Springs. These industries include (but are not limited to) utilities, real estate, construction and services. It is also reasonable to assume that individuals and families that are living in these local communities are moving there to enjoy the open space and recreational opportunities afforded in the West Desert, including the Planning Area. People may also be using Highway 68 to commute to and from work and may be traveling through the Planning Area on a daily or weekly basis.

Travel and tourism employment industries in Utah County that included a recreational component in 2013 made up 0.9 percent of their total. Whereas, 88.6 percent of the industries were non-travel or tourism related (EPS 2015, Amenities Report). There are sectors that, at least in part, provide goods and services to visitors to a local economy. Specific industries that induce travel and tourism include portions of retail trade including gasoline stations, clothing and accessory stores and miscellaneous store retailers; portions of passenger transportation including air transportation and scenic and sightseeing transportation; portions of arts, entertainment, and recreation including performing arts and spectator sports, museums, parks and historical sites, and amusement, recreation; and accommodation, food service and drinking places.

The BLM sponsored EPS⁷ does not generate recreation related reports and therefore would not show how much of the time individuals spend in recreational activities or the types of recreation enjoyed. Within Utah, including those living along the Wasatch Front, individuals do enjoy target shooting and the social aspects of this sport with family and friends. Enthusiasts include the full spectrum from professional competitors to amateurs participating in family outings. The Planning Area has been used by several generations of Utahans to practice their sport of target shooting. As the population and incomes increase, more and more individuals could be expected to spend time recreating in the Planning Area. Depending on specific areas within the Planning Area, some other recreational activities such as OHV/ATV riding, hiking, cycling, bird watching, and viewing cultural resources may be in direct conflict with target shooting pursuits.

The social aspects of target shooting include time with family and friends and sharing of or practicing techniques to improve their accuracy. Individuals use the Planning Area as a way to experience the outdoors. Some people prefer an outdoor/natural setting to that of a shooting range (indoor or outdoor). Normal costs for participating in this sport are associated with the firearms, ammunition, targets, membership fees, range fees, clothing, protective equipment, vehicles and the fuel to operate the vehicle. Individuals often combine their recreational outings such as picnicking, hiking or riding an ATV while they also take time to target shoot. Within the Planning Area, most target shooters are there only for a day trip and will return home after their activity. Some individuals use the Planning Area as a training site to instruct new individuals in the proper use of fire arms and cleaning up their site after use. An outdoor environment offers other elements that are not available in an indoor shooting range such as natural elements (e.g. wind, sun, uneven terrain), long-range shooting, the use of unconventional targets not allowed in a range setting, lack of range fees, and less rules and restrictions.

Target shooters using the Planning Area are local (communities within Utah and Tooele counties) and from all areas along the Wasatch Front. Along with all members of the public, some target shooters are better at using Tread Lightly⁸ philosophies while recreating within the Planning Area.

Some target shooters are also avoiding the Planning Area because of the high use it receives. Others are fine with the number of individuals encountered who are also target shooting in the Planning Area. The choices are very personal as to whether or not they will use an area and if they will return to a specific spot to enjoy their sport.

⁷ The EPS toolkit can be accessed online at: <http://headwaterseconomics.org/tools/economic-profile-system/about>. The social aspect of target shooting discussion here is qualitative.

⁸ The Tread Lightly official site can be accessed online at: <https://www.treadlightly.org/>.

3.3.10 Cultural Resources

Cultural resources in the Planning Area range from small lithic scatters to petroglyph sites comprised of a diverse array of images created over several millennia. The location of cultural sites cannot be disclosed as this information is protected by statute (Archaeological Resources Protection Act (ARPA) 1979). Specific information about cultural resources found within the Planning Area is contained in the cultural resources inventory report U-11-SQ-0795b (*Smith et al.* 2011). Petroglyph sites, by virtue of their eligibility for the National Register of Historic Places (36 CFR 60.4), require special consideration in the planning process (Section 106, NHPA) and protection (Section 102, Part 8, FLPMA), and are particularly vulnerable to damage and losses from target shooting. Damage to petroglyphs is a violation of ARPA. These statutes require the BLM to manage Historic Properties on federal public land in their jurisdiction, including those within the Planning Area.

Cultural Context

The Planning Area occurs within the Great Basin province. Cultural resources that could be impacted by the Plan Amendment are attributable to the entire span of human occupation in the Great Basin. The prehistoric and historic context for the Planning Area is summarized in Table 11, with specific reference to the association of each period with petroglyph sites. A detailed cultural context can be found in Appendix B.

Table 11 Prehistoric and historic context.

Years Before Present	Cultural Affiliation	Petroglyphs Documented
11,000-8,000	Paleoindian	Questionable
8,000-5,000	Early Archaic	Questionable
5,000-3,000	Middle Archaic	Yes
3,000-2,000	Late Archaic	Yes
2,000-1,500	Terminal Archaic	Likely
1,500-800	Formative/Fremont	Yes
800-~300	Late Prehistoric	Likely
~300-150	Exploration/Fur Trade	Likely
150-138	Early Settlement	Likely
140-60	Industrial Development	Questionable
80-Present	Modern	Yes

As noted, the Planning Area is home to a diverse array of cultural resources. The most numerous among them are prehistoric Native American petroglyphs attributable to the Archaic and Fremont periods. The petroglyphs found in the Planning Area are unusual in that, unlike many other petroglyphs that are found on large vertical boulder faces, they are found almost exclusively on boulders of varying sizes that are strewn across the landscape.

Current Situation

In recent years it has become increasingly clear that these petroglyphs are extremely vulnerable to damage associated with target shooting. It is apparent that some of the damage from target shooting is inadvertent and some is intentional. Cultural sites outside of the temporary closure are at risk of being lost and damaged due to displaced target shooters. With the temporary

closure, target shooting enthusiasts are funneled to these areas that contain the petroglyphs. To date two different, but related, forms of damage to the petroglyphs have been documented and both of these represent a violation of ARPA): bullet impacts and paint spatter.

Bullet impacts cause craters in the surface of the boulder. The size of the crater is proportional to the caliber of the bullet. Large caliber bullets produce larger impact craters. Where bullet impacts occur within a petroglyph, a portion of the glyph is destroyed. This damage is permanent and irreparable. Damage to petroglyphs from bullet impacts is generalized throughout the Planning Area; however, it is heavily concentrated at several sites adjacent to Soldier Pass road and west of the power line road. At one of the sites along Soldier Pass road, an entire panel of petroglyphs has been completely destroyed. West of the power line road, numerous panels have sustained substantial damage from bullet impacts.

The second form of shooting related damage to petroglyph sites is associated with paint. Several boulders have had targets painted on them, most commonly in the form of a human silhouette. It is evident from the positioning and orientation of the targets, that the shooter was interested in long range shooting (~500m). While these boulders do not contain petroglyphs, they are in close proximity to boulders that do. It seems likely that it is only a matter of time before a target is painted over a petroglyph which will incur subsequent damage from bullet impacts. Another issue related to paint and its role in target shooting in the Planning Area pertains to the use of paint cans as targets. Filled paint cans have been used as targets at several petroglyph sites. Upon impact, the paint can explodes due to hydrostatic shock and paint is sprayed over a large area. At this point in time, although paint splatter hasn't been observed directly on petroglyphs, it has been observed within inches of petroglyphs. It's just a matter of time before paint splatter lands on an irreplaceable petroglyph. As is the case with bullet impacts, damage from paint spray is permanent and irreparable. Removing the paint will remove the patina of the boulder into which the petroglyph is carved; and it will also remove any repatination which provides a coarse indicator of petroglyph age. Although damage to petroglyph sites from paint is found throughout the Planning Area, it seems to be concentrated at sites adjacent to the power line road west of Highway 68.

Wildfire also represents a large threat to petroglyph sites. Wildfires have been fairly common in the Planning Area in recent years. Many of these wildfires have been caused by unregulated target shooting. Wildfire presents multiple threats to petroglyph sites. The wildfire itself can cause spalling of boulder surfaces and consequent destruction of petroglyphs from intense heat. Fire suppression activities pose a risk to petroglyphs as well. By virtue of their placement on small/low boulders scattered throughout the Planning Area, petroglyphs can be damaged by heavy fire-suppression equipment driving across or cutting fire suppression lines in the ground surface. In addition, ESR activity associated with stabilization or rehabilitation efforts (as well as other vegetation treatments), although potentially damaging to other types of cultural resources, do not pose a major threat to known petroglyph sites as Historic Properties are routinely avoided. Consistent with the DR and FONSI issued for the WDD NFRP, all cultural resources would be avoided by any surface disturbing activity such as chaining or drill seeding. Historic sites, including petroglyphs that could be scratched, broken or overturned by heavy equipment used in completing ESR activity would be avoided.

Theft of petroglyphs has been documented within the Planning Area. Recent field visits suggest that at least two petroglyphs may have been stolen from an area where target shooting has been a documented problem. Target shooting produces fairly high volumes of human traffic and that traffic leads to greater exposure and, in some cases, that enhanced exposure can lead to theft.

3.4 Summary

This chapter has described the existing situation for the general area and the issues that are being considered. The potential environmental impacts or consequences resulting from the implementation of each alternative are considered in detail and analyzed in Chapter 4.

4 ENVIRONMENTAL IMPACTS

4.1 Introduction

This section analyzes the impacts of the alternatives to those resources described in the affected environment Chapter 3.

4.2 Analysis Assumptions

The Planning Area boundary includes 8,124 acres. Acreages of the closures would be: Alternative A – 0, Alternative B – 893 and Alternative C – 3,450. The difference between Alternative B and C closure acreages would be 2,557 acres. The following assumptions were applied:

- This analysis would be completed and a DR (regardless of alternative selected) issued prior to the expiration of the temporary closure.
- Population growth would continue to increase at current rates in nearby communities and along the Wasatch Front.
- Recreation demand in the Planning Area would continue to increase.
- Funding for the BLM law enforcement program would not change. A maximum number of two BLM Rangers could be assigned to the Planning Area. Their patrol responsibilities would not change for the remaining parts of the SLFO.
- Funding for the BLM resource programs, including recreation and cultural, would not change. Program cost shortfalls would be expected.
- Any field efforts involved in recording/monitoring petroglyphs in the Planning Area would be limited to project specific cultural resources inventories. It is also anticipated that the nature and impact of unregulated shooting on petroglyphs in the future would be consistent with those observed in the past.

4.3 Direct, Indirect and Cumulative Impacts

Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and occur later in time or are farther removed in distance, but are still reasonably foreseeable.

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. Unless otherwise noted, the cumulative impact area is the Planning Area and the length of time is the life of the Pony Express ROD/RMP until replaced by a plan revision.

4.3.1 Alternative A – No Action

As presented in Section 2.2, under this alternative the current 893 acre temporary target shooting closure would be allowed to lapse. The only target shooting restrictions that would be enforced per administrative standard operating procedure are the BLM Utah Fire Prevention Order, WDD Fire Prevention Order, and Utah County Code 13-3-16. The BLM Utah Fire Prevention Order restricts the use of exploding targets statewide on BLM lands year round. The WDD Fire

Prevention Order restricts the use of steel ammunition from June 20-September 30 each year on lands managed by the BLM in the WDD. Utah County Code 13-3-16 prohibits the use of any targets except paper, cardboard and clay within Utah County.

4.3.1.1 Fire/Fuels Management

Under this alternative, an increased wildfire prevention/education, suppression, investigation, and post-fire (ESR) workload could occur because target shooters would be able to practice shooting in low-lying areas along the bench of the mountains which have been closed to target shooting since 2012. Target shooting wildfires would be expected due to the presence of boulder outcroppings and cheatgrass. In addition, it would be reasonable to expect that as populations increase, more individuals would visit the Planning Area, leading to increasing potential for wildfire starts from target shooting activities.

Wildfire starts and acres burned would be similar to rates experienced in 2012 and years prior. Wildfires could threaten nearby communities, residences, businesses, recreationists, and infrastructure such as communication sites and power lines. Repeated wildfires would negatively impact desired vegetation and increase the potential for invasive and non-native plant species to establish. Cheatgrass would continue to propagate wildfire with more frequency where established. Smoke from wildfires could cause road closures, evacuations, and air quality issues. Fire suppression costs would be expected to return to rates of over \$235,000 annually as experienced prior to the temporary closure.

In addition to “ricochet” caused wildfires (described in Target Shooting as a Cause of Wildfires in Section 3.3.1) and other shooting related causes, an increased risk of damage to the two major transmission power lines intersecting the lapsed temporary closure would occur that could start wildfires from the damaged structures and electrical hardware.

Implementation of existing fire management objectives would continue as directed by the SLDO FMP which requires suppression of all wildfires. Compliance with FMP objectives would be limited due to acreage objectives likely being exceeded. Response protocols to wildland fire would continue to follow cooperative interagency fire management agreements⁹. Post-fire actions would continue to adhere to the WDD NFRP 2010. Planning and implementation of fuel breaks would continue in accordance with the FMP and associated environmental analysis and interagency coordination. Investigation of all wildfires of human or unknown origin would continue.

Fire prevention orders implemented by BLM Utah (Order #UT910-14-001) and the district (Order #UTW002-15-01) covering target shooting related fire causes would continue to be in effect for this area. During times of high to extreme fire danger, additional fire prevention orders regarding specific fire problems, such as campfires, could be implemented according to

⁹ Northern Utah Annual Operating Plan for Fire Management 2015.

interagency agreements. Assistance and outreach to adjacent communities in fire preparedness and safety would continue with interagency partners.

Post-fire impacts include spread of invasive weeds, landslides, flooding, loss of wildlife habitat and reduced forage, and deferral of livestock grazing and reduced forage. When post fire actions are taken to stabilize an area, it could be closed to entry temporarily and a grazing resting period applied to ensure seeding or planting efforts are successful. Signing would be necessary under certain circumstances to protect post fire actions and allow for seeding or planting to succeed. Smoke impacting air quality could affect those with respiratory or other health conditions. Costs expended for suppression and ESR could return to pre-2012 levels and would be expected to increase with increased cheatgrass in the area coupled with increased costs associated with inflation.

Fuels treatments could be implemented within the Planning Area which would require additional NEPA and NHPA compliance for treatments conducted on BLM-administered public lands.

Target shooting would continue in the Planning Area on BLM lands and on adjacent private or state lands and wildfires could occur. Fire management objectives for acres burned within the entire fire management unit would be exceeded. Impacts from wildfires would include the threat to homes, businesses, infrastructure and natural resources. No additional funding is likely to manage fire or fuels but with any increase in fires, an increased workload in suppression, post-fire mitigations, and implementing fuels treatments on BLM, state and private lands to reduce fire severity and intensity would be necessary to protect values at risk in the entire Lake Mountains. Air quality could be negatively impacted in the local and adjacent airsheds, impacting the health of sensitive populations.

Strategically designed and located fuel breaks on BLM-administered public lands alone could provide some assistance to firefighters for suppression and protection for communities but cannot ensure that fire would not reach communities. Efforts by the fire agencies and the Governor's Catastrophic Fire Initiative would continue to plan and implement fuel breaks and other fuel treatments. Utah County has proposed to extend the Lake Mountains greenstrip farther north. In addition, targeted grazing has been proposed to continue adjacent to The City of Saratoga Springs. No additional treatments are planned at this time. A lapse in the temporary closure and subsequent increase in wildfire occurrence would create additional immediate need for fuels treatments in the Planning Area by all agencies and land owners due to the increased threat of wildfire. Additional NEPA and compliance with NHPA would be required for treatments conducted on BLM-administered public lands.

In April 2014, SITLA closed approximately 1,500 acres of state property adjacent to the west side of the current BLM temporary closure. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters to BLM lands. This led to an increase in shooters in a smaller area of federal land. However, if Alternative A is selected, the increased number of shooters will expand their use back into the lower areas where cheatgrass is prevalent. With a higher concentration of shooters in these lower areas than existed prior to the 2012 temporary closure, the number of fire starts and acres burned could be higher than previously experienced.

Soldier Pass Shooting Range would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. The shooting range is designed to eliminate vegetation along the shooting lanes. Removing the vegetation also eliminates the fuel loads reducing the

likelihood of fires starting from target shooting activities. Target shooting outside of the shooting range within Lake Mountains could be reduced and therefore could reduce target shooting related wildfires. However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Urban expansion into the Lake Mountains from the adjacent communities of The City of Saratoga Springs and Eagle Mountain City has created increased pressure on public lands that once were fairly remote and isolated and this urban expansion would be expected to continue. With a higher population center close to the Planning Area, as long as shooting closures do not exist, the use of Lake Mountains as a target shooting area would increase. This increase could increase the number of fire starts and acres burned from target shooting.

Protective Measures and Compliance

A fire prevention campaign would be implemented to assist target shooters with choosing appropriate ammunition and locations to shoot when fire danger exists. Fire prevention orders would require posting in the area to prevent wildfires from target shooting activities that had been prohibited by the temporary closure. Posting of orders would occur on existing bulletin boards. Additional fire prevention signing would be needed to provide fire safety and prevention information specific to target shooting. Increased fire prevention and law enforcement patrols would be necessary to ensure compliance with fire prevention orders.

Other protective measures beyond current law and BLM regulations would not be applied.

Fire occurrence and causes would be assessed both during the fire season and annually. Monitoring would follow fire ESR efforts after large wildfires occur.

4.3.1.2 Enforcement

Due to the proximity of large population bases, target shooting would become widespread throughout the Planning Area, with a corresponding increased need for law enforcement presence in the area. BLM law enforcement would emphasize conducting public health and safety patrols in the Lake Mountains because of the immediate threats to public safety, which are expected to be similar to pre-2012 needs and occurrences. BLM will ensure ongoing coordination with law enforcement officials from Utah County and SITLA occurs. The goals and needs of these agencies, however, could be in conflict with BLM's efforts. With the need for an increased BLM law enforcement presence in the Planning Area, the time and effort needed to manage public interactions would compete with the responsibilities and needs of the other areas within the SLFO.

Citations would not be issued for violating a closure order because that would be lifted. Other citations would be issued when warranted within the entire Planning Area. Illegal and unlawful activity, including theft and vandalism, would continue to be addressed through the procedures outlined in the SLFO Law Enforcement Plan, with penalties and fees for violations, in conjunction with the regulations listed in 43 CFR. Current target shooting restrictions would apply throughout the Planning Area, including within the lapsed temporary closure area. Current restrictions regarding illegal dumping and trigger trash on public lands also would continue to be enforced throughout the Planning Area. BLM would continue to have no jurisdiction on state or private property.

Under this alternative, target shooters would be dispersed throughout the 893 acres of the lapsed temporary closure and law enforcement officers patrolling the area would no longer have the de facto safety zone for staying out of the line of fire of target shooters in this area. In addition, the dispersed nature of target shooting in this area would again put the target shooters, general public land users, adjacent private landowners and Highway 68 traffic at risk again from errant gunfire.

Trigger trash would once again be spread over the entire area wherever the public chose to shoot.

Opportunity for violations could increase including safety concerns for the general public outside of the Planning Area. The sense of personal security of adjacent homeowners and other private property owners would decrease as incidents of direct or ricocheting gunfire increase within the Planning Area and especially within the area of the lapsed temporary closure. Emergency dispatch calls could increase dramatically and could revert to the pre-2012 levels to address safety issues for residents, businesses, travelers along Highway 68 and general public land users within the Planning Area.

Law enforcement actions on the BLM lands within the Planning Area are affected by the cumulative actions of urban sprawl and development, land access restrictions by neighboring land owners, and Utah County's proposed shooting range. As the populations continue to expand and push into the Lake Mountains from the north, additional target shooting pressure will likely lead to increased safety and violation concerns. In addition, the increased pressure on BLM lands to provide a place for recreational target shooters to shoot has increased, and therefore the law enforcement needs have increased, as other nearby private and state land owners have closed off their lands to public access. Although Utah County has proposed a shooting range in the vicinity, without a shooting closure in place, it is unclear how much of the pressure from shooting on BLM lands will be displaced into the shooting range. Increases in violations for safety concerns may increase.

Protective Measures and Compliance

Increased patrols and educational public contacts would be pursued within the Planning Area. Close coordination with the SLFO recreation staff and other resource specialists would be required to identify and protect vulnerable resources. A public education plan would be warranted. This would be prepared in coordination with SLFO specialists from recreation, fire prevention and cultural resources.

Other protective measures beyond current law and BLM regulations would not be applied.

Patrols by BLM Rangers would follow the Salt Lake Law Enforcement Plan. Coordination would continue with the Utah County Sheriff's office as well as the SITLA law enforcement. Patrol reports would be recorded and compiled within the BLM's Incident Management Analysis and Reporting System (IMARS) database.

4.3.1.3 Wildlife

Under Alternative A, the current 893 acre temporary closure would be allowed to lapse and the existing target shooting restrictions would be implemented. The entire 8,124 acre Planning Area provides habitat for migratory birds and special status species, 935 acres of the Planning Area is mule deer spring/fall crucial habitat, 4,914 acres of the Planning Area contains yearlong substantial habitat for mule deer, and 6,408 acres of the Planning Area contains substantial yearlong habitat for chukar. All of these areas would be open to target shooting. Alternative A

provides the least amount of protection to wildlife species and their habitat. Protection for wildlife species and their habitat would continue to be managed according to the Pony Express ROD/RMP (BLM 1990), where applicable.

Within the current 893 acre temporary closure, the reduction in impacts to wildlife habitat that has occurred would be lost under this alternative. With the 2012 and 2014 temporary closure orders, target shooting was prohibited within the temporary closure area and target shooters were displaced into other areas. Subsequently, much of the temporary closure area has been cleaned up; illegal dumping has been reduced; and the impacts to wildlife and their habitat from target shooters within the closure area have been reduced.

Under this alternative, wildlife species described in Section 3.3.3 could be impacted from increased human disturbances (target shooting and vehicle traffic) which could result in habitat avoidance or direct impacts on wildlife causing mortality or injury. Loud noise (such as from gunfire and vehicles) has been documented to cause physiological effects on multiple special status wildlife species. These effects include increased heart rate, altered metabolism, and changes in hormones, foraging, anti-predator behavior, reduced reproductive success, density and community structure (Radle 2007). In addition, noise can impact special status wildlife species through the disruption of communication and environmental cues (US Department of Transportation, FHA 2011). Different species and individuals have varying responses to noise, and certain species rely more heavily on acoustical cues than others making the effects of noise hard to quantify (Radle 2007). Survival rates for younger age classes could decrease because their parents may abandon them as they escape areas with gunfire noise. Mortality or injury would result from target shooters intentionally or unintentionally shooting wildlife species.

Similar to other areas of the SLFO, wildlife monitoring crews from BLM and volunteer organizations would be at risk of being in areas of gunfire. Some nest monitoring could not occur because of heavy use by the target shooting community.

Indirect impacts include wildlife habitat and vital rates¹⁰ alterations caused by direct impacts described above. Other indirect impacts expected to occur within the Planning Area are described in the next several paragraphs.

Within the Planning Area, some of the target shooters are using juniper trees and sage brush as targets or they are placing their targets within the vegetation. Either way, the vegetation is being shot to the point that trees and shrubs are cut down. Vegetation provides wildlife with cover, food, and nesting or breeding habitat. This important habitat component is degraded by these types of target shooters to the point that the habitat no longer supports many wildlife species in some areas.

¹⁰ Birth and death rates, fecundity rates, health conditions, and age composition of the population.

Additional coordination of federal, state, and local fire prevention actions due to wildland urban interface adjacent to the Planning Area could increase activity associated with wildfire suppression activities, ESR, and pre-suppression (fuels treatments).

Wildfires caused by target shooting activities could cause injury or mortality to wildlife species. Wildfire would reduce invertebrate food sources for many of the migratory bird species, small mammal food sources for raptor species, and plant food sources for herbivores. Shrub steppe burned by wildfire often requires many years to recover before returning to pre-fire conditions, especially after large wildfires. Before recovering, these burned sites are of limited use to many wildlife species found in the Planning Area. Because of its widespread impact on habitat, wildfire has been identified as a factor associated with golden eagle and burrowing owl population declines in the West Desert (ULRP 2012).

Management actions to prevent or control target shooting related wildfires can also affect wildlife and their habitat. Wildland fire management efforts due to target shooting activity would return to pre-2012 rates and could increase beyond those numbers/acreages as target shooting increases. Increased human activity and noise associated with fire suppression activity could affect sheltering, breeding, and foraging behaviors of wildlife. Important habitats and use of these habitats could be altered because of the use of heavy equipment, hand tools, and noise during suppression actions.

As described in the WDD NFRP, ESR treatments that would occur after wildfires may disrupt visual and vocal communications, remove habitat features, alter moisture regimes, displace individuals, disrupt reproduction behavior or cause mortalities. However, it is anticipated that any effects to species from the ESR would be short term and not cause or contribute to any long-term declines of populations. Overall, rehabilitation treatments would be designed to stabilize soils and restore ecological conditions and improve habitat functions for wildlife. However, with increased wildfire occurrence there could be long term negative effects to habitat condition due to poor recover of the ecological sites after treatment or failed ESR.

Fuels treatments are designed to reduce fuel loads and minimize fire size. These design features reduce wildlife habitat in the short-term. However, as the fuels treatments recover, the vegetation that returns to the fuels treatment area are usually more resilient to fire and can provide benefit for wildlife.

Within the Planning Area, invasive and noxious weeds are spread by target shooting related wildfires or by the high vehicle traffic related to target shooters. Invasive and noxious weeds have indirect impacts to wildlife. These weeds alter plant community structure and composition, productivity, nutrient cycling, and hydrology. Weeds may also cause declines in native plant populations, through such factors as competitive exclusion and niche displacement. Invasive and noxious plants reduce and may eliminate vegetation that wildlife use for food and cover. They fragment existing wildlife habitat and reduce habitat quality by competitively excluding vegetation essential to wildlife. Invasive and noxious weeds can also create long-term changes in ecosystem processes, such as fire cycles and other disturbance regimes that persist even after an invasive plant is removed. Increased invasive weeds, such as cheatgrass, decreases diversity of small mammal species and would affect raptor populations in the area depending on severity of the infestation. Although some species, like the long-billed curlew, have adapted and are known to nest in high-density cheatgrass habitat (UDWR 2011), other species, including golden eagle, burrowing owl and ferruginous hawks, are negatively affected by high cheatgrass cover

(ULRP 2012). Management under Alternative A would provide the least acres of protection for wildlife and their habitat within Lake Mountains. The potential for invasive weed spread and establishment would continue under this alternative, as would the effects on wildlife (e.g. reduction in quality of habitat).

Degradation of habitat due to large amounts of trigger trash could displace wildlife species. Since the temporary closure was put in place, most of the trigger trash removed by volunteer cleanup efforts has improved wildlife habitat. This benefit would be lost within the current temporary closure area.

Frequent target shooting activities and the resultant direct and indirect impacts to wildlife habitat could displace species resulting in increased competition for resources in adjacent habitats, increase predators or predation pressure on some of the species, and decrease survival or reproduction of some the species.

The cumulative impact area for wildlife is the entire Lake Mountains.

Wildlife and wildlife habitat on BLM lands within the Planning Area were impacted in April 2014 by SITLA's closure of roads and access points to 1,500 acres of state property adjacent to the west side of the current BLM 893 acre temporary closure. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters to BLM lands. This increase in shooters in a smaller area of federal land has led to an increase in habitat degradation due to the impacts associated with target shooting as discussed above.

The Soldier Pass Shooting Range, when constructed, would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. Target shooting outside of the shooting range within Lake Mountains could be reduced and therefore could benefit wildlife species by reducing human disturbances, wildfire, and habitat degradation in other locations of the Planning Area. However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Urban expansion into the Lake Mountains from the adjacent communities of The City of Saratoga Springs and Eagle Mountain City has created increased pressure on public lands that once were fairly remote and isolated and this urban expansion would be expected to continue. Converting wildlife habitat on private lands adjacent to BLM or SITLA lands to urban development causes a direct loss of available habitat for wildlife. Habitat loss also decreases the connectivity between seasonal habitats, increasing population isolation and fragmentation. In addition to reducing the land available to support wildlife, habitat loss and fragmentation also increase the likelihood of other disturbances, such as human traffic, wildfire, and invasive plant spread. Roads, power lines, and communications corridors surrounding and connecting urban centers also contribute direct and indirect impacts on wildlife and wildlife habitat, including direct mortality from collision or electrocution, increased predation, habitat degradation or loss and fragmentation, spread of invasive plants and noise.

As per the City of Saratoga Springs' zoning requirements "It is unlawful for any person, except peace officers in the pursuit of their lawful duties or private citizens acting in legitimate self-defense or other legally justified defense, to discharge any firearm within the municipal boundaries of the City of Saratoga Springs" (City of Saratoga Springs 2015). Similar zoning

requirements are in place for Eagle Mountain (Eagle Mountain 2015). Even though city limits expand due to urban development, target shooters would likely stay in the east side of the Lake Mountains. However, as populations continue to grow and popularity of the area for use as a target shooting area increases, new and displaced shooters would shoot in other areas on Lake Mountains affecting wildlife throughout the cumulative affects area.

Protective Measures and Compliance

Public outreach and education would be made to increase awareness of wildlife habitat needs.

Additional training would be given to RINS volunteer citizen scientists to improve their safety and awareness of target shooting activity.

Other protective measures beyond current law and BLM regulations would not be applied.

Reported wildlife injury or deaths would continue to be investigated by BLM, UDWR and/or USFWS law enforcement. Appropriate citations would be issued.

Dispersed recreation would continue to be monitored to identify where this use may be impacting nesting success of raptors (BLM 2006, Att 1 V. H).

The Planning Area would continue to be monitored for raptor nesting activities to determine the extent recreational target shooting is impacting them. RINS (volunteer citizen scientists) have been collecting and managing data regarding the nesting ecology of raptors in Utah. RINS has been and would continue to collect data within the Planning Area.

4.3.1.4 Lands

Alternative A includes twelve approved ROW grants (four power lines, two communication sites and six access roads). The power lines and communication facilities could be used as targets or could be in danger from stray bullets. BLM could continue to see documented incidences of wildfire starts caused by bullet strikes on transformers and wires creating sparks. The power company could be faced with more frequent and costly repairs associated with the increased shooting activities.

ROW holders would be repairing damages to their facilities on a regular basis due to target shooting related activities. Repairs could include replacing weakened poles, insulators and conductor wire on power lines that receive direct bullet impacts. Similarly, ROW holders of other facilities such as communication sites would continue to replace infrastructure that is damaged due to bullet strikes. Because of the high concentration of target shooting activity in the area, ROW holders would be replacing/maintaining the infrastructure on a higher frequency than those of similar function in other areas of the SLFO. Damages above and beyond normal wear and tear could continue to occur to all above-ground facilities.

The existing land uses directly benefit from the additional safety provided by the temporary closure. Under this alternative, these safety benefits would be lost.

Under this alternative, the power lines and communication facilities could be in indirect danger from wildfires due to target shooting related activities, increasing the potential for an interruption of electrical or telecommunications service for the population along the greater Wasatch Front, military operations at Camp Williams, Federal and State emergency radio communications, and the FAA's navigation system for aircraft.

Cumulatively, ROW holders would be repairing damages to their facilities on a regular basis due to target shooting related wildfires. Repairs could include replacing weakened poles, insulators and conductor wire on power lines that have been burned. In the past, ROW holders have borne the financial burden of these replacement costs. For example, in 2012, Rocky Mountain Power spent over 1 million dollars to replace distribution and transmission power lines. These costs included labor, materials and safety related expenses due to a wildfire in the Lake Mountains started by a target shooter (Rocky Mountain Power 2016).

Monitoring and inspection rates of ROWs by BLM realty staff could increase due to reported damages.

Electrical rates could increase in order to offset the financial investment needed to keep equipment maintained and operational.

Prior to the temporary closure, stray bullets crossing Highway 68 were a serious concern for travelers along that stretch of the highway ROW. Stray bullets also crossed Highway 68 and hit a nearby residence. These unsafe conditions would return to the Planning Area should this alternative be selected.

Increased cross country driving or use of existing primitive and improved roads as a result of target shooting activity could result in damage to roads. Substantially higher repair costs would be the responsibility of the authorized ROW holders. Utah County who maintains both Israel and Mercer Canyon roads would also bear the cost of repairing and maintaining these roads. Other primitive routes in the area would continue to be used and degraded by erosion due to continued use by the recreating public, including target shooters.

In the recent past, the height of certain poles within the power line has been raised to comply with regulatory ground clearance guidelines. The ROW holder has installed metal collars on these poles to secure and strengthen the pole's additional height. A side effect has been to strengthen their ability to withstand direct bullet impact. Similar benefits could be made for improving the pole's ability to withstand fast moving, low intensity wildfires. The poles would not survive a high intensity, slow moving wildfire.

Communication sites are being vandalized across the west, including those located within and adjacent to the Planning Area. While not associated with individuals participating in target shooting activity, it is expected that this vandalism would continue at present or increased rates.

The April 2014 SITLA road and access point closure concentrated the public onto the adjacent BLM land. This use led to an increase in the frequency and number of damages to ROW infrastructure on BLM outside of the temporary closures within the Planning Area. Under this alternative, the frequency and number of damages to ROW infrastructure on BLM lands would be expected to exceed the damages reported prior to the implementation of the 2012 temporary closure.

The Soldier Pass Shooting Range would provide an opportunity for safe, controlled and relatively clean target shooting opportunities. However, without a shooting closure in the immediate area, the public shooting range would experience competition from the dispersed target shooting nearby throughout the Lake Mountains area. Target shooters using the area around the shooting range would create a safety conflict. Under this alternative, the shooting range would not provide relief from damages, including public health and safety and protection of resources, incurred from target shooting throughout the Planning Area.

Urban expansion adjacent to Planning Area has created increased pressure on public lands by people visiting and recreating on the Lake Mountains. It is expected this pressure would increase the opportunity of damages to ROW infrastructure within and adjacent to the Planning Area.

Protective Measures and Compliance

Future ROW applicants would be notified that target shooting is allowed in the area and that any above ground facility may be impacted by stray bullets, possible wildfire and exploration by individuals visiting or recreating in the area.

BLM could recommend ROW holders install security cameras and alarm systems that provide an alert to emergency situations, or build in backup systems that would allow continued service. However, any new technology installed would be in danger of being damaged or destroyed by target shooters.

ROWs would be issued with contact information to local law enforcement, including BLM agents (program specialists including realty, fire investigation and rangers) for investigating infrastructure damages.

Outreach and education would include a discussion of the presence of existing ROWs within the Planning Area.

Other protective measures beyond current law and BLM regulations would not be applied.

Reported damages would be investigated by the Utah County Sheriff and/or BLM law enforcement officers. Appropriate citations would be issued.

4.3.1.5 Visual Resources

Visual resources within the Planning Area currently are impaired by target shooting and its impacts/effects—except within the current 893 acre temporary closure, where the target shooting prohibition has resulted in the reduction or elimination of most of these visual impairments. If this alternative is selected, target shooting impacts would occur throughout the Planning Area and would affect visual resources, including: trigger trash and illegal dumping; damaged natural and manmade features used as targets (including signs, power line poles, vegetation, and boulders—some with petroglyphs); the effects of numerous wildfires in the area (burned off and blackened vegetation and conversion of native vegetation to a landscape dominated by invasive cheatgrass); and the high impact public use, noise, vehicle traffic and visual presence of the target shooters themselves.

Under this alternative, the temporary 893 acre closure would be allowed to lapse and target shooting would no longer be prohibited in the area. With the previous high use from target shooters prior to the implementation of the temporary closure, the area likely would become very popular again. Target shooters displaced by the initial temporary closure would move back into the area—with the consequent accumulation of trigger trash, damage to natural resources on private and public property, increased risk from target-shooting caused wildfires, presence and noise of target shooters and their vehicle traffic, and impacts on visual resources. The temporary closure area (currently free of such impacts since the 2012 and 2014 temporary closures) would be re-impacted by target shooting activities and their visual impacts.

These visual impacts would create a moderate to strong contrast with the existing landscape, be visible to the casual observer and would constitute an impairment to visual resources. These impacts and the contrast would be consistent with the VRM Class IV objective of the area, which allows for major modification of the existing landscape that creates contrasts that dominate the landscape and the focus of the casual observer. However, the VRM Class IV objective also requires visual impacts to be minimized as much as possible and trigger trash creates highly visible and unsightly visual intrusions—that lead to more dumping and consequently greater impacts to visual resources.

Residual impacts include the accumulation of trigger trash, damage to natural resources, and the burned and blackened vegetation from target shooting caused wildfires. Most of the Planning Area already is impacted by these residual impacts. Within the temporary closure area, the trigger trash impacts that had been removed could occur again once shooters move back into the area. Also, with the increased risk from target shooting caused wildfires occurring again within the lapsed temporary closure area, the effects from these wildfires would result in residual visual impacts on a very large scale.

Any sign or structure within the Planning Area would continue to be used as a target. The damage to these signs and structures would be obvious to the casual observer in the Planning Area. BLM signs or kiosks used for informational or educational purposes would require routine maintenance and/or replacement.

There are visual intrusions from the many developments currently existing within and around the Planning Area: roads and trails (including Highway 68), fences, power lines, signs and bulletin boards, private residents, gravel pits, several large commercial sand/gravel/rock pit mining operations, and communication towers.

Target shooting is a recreational activity increasing in use on public lands due to the extreme popularity of the sport and population growth. The Lake Mountains are used extensively for target shooting due to its close proximity to urban areas, undeveloped and open public lands, and ease of access from Highway 68 for most vehicle types. Use within the Lake Mountains has always been high and continues to increase. With the increase in urban growth of the area, new shooters are expected to start using sites within the Planning Area (in addition to other locations within the Lake Mountains)—increasing the concentration of target shooters in popular locations and distributing them farther throughout the Planning Area (and the entire Lake Mountains) into new pristine or unimpacted areas farther in the backcountry. Visual resources within the Planning Area would be further impacted by these new target shooters.

Visual resources within the Planning Area were additionally impacted in April 2014 by SITLA's closure of roads and access points to 1,500 acres of state property adjacent to the west side of the current BLM 893 acre temporary closure. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters from an additional 1,500 acres of public land that was previously open to target shooting—further concentrating visual impacts in popular target shooting areas and creating new areas of visual disturbance.

Soldier Pass Shooting Range would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. Target shooting outside of the shooting range within Lake Mountains would be reduced and therefore could benefit visual resources by reducing trigger trash, damage to natural resources, and the burned and blackened vegetation from target shooting

caused wildfires in other locations of the Planning Area. However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Protective Measures and Compliance

Outreach and education measures would continue to be used to inform recreational target shooters about Tread Lightly and Leave No Trace principles (including cleaning up their trigger trash). Trigger trash cleanups would continue to be conducted by volunteer groups.

Other protective measures beyond current law and BLM regulations would not be applied.

Target shooting activities within the Planning Area would continue to be monitored and assessed annually for their impacts on visual resources.

4.3.1.6 Invasive Species/Noxious Weeds

Under Alternative A, the current temporary closure will expire. Invasive and non-native weed species are spread by vehicles. If the temporary closure is allowed to expire, the area would continue to experience high vehicle use by the recreating public, including target shooters, which would increase the probability of weed spread. This could spread these species to new locations that these plants do not currently inhabit and establish new populations or expand existing ones. Weeds, once established, out-compete the native vegetation.

Wildfires caused by target shooting could remove native and desirable plant species and have the potential to create or enhance habitat for cheatgrass and other invasive and undesirable plants. Plants such as cheatgrass are highly flammable and increase the frequency and potential for extreme and highly damaging wildfires. Since the temporary closure will no longer be in place, target shooting activities would likely increase dramatically to pre-2012 levels in areas that are lower in elevation and have higher densities of cheatgrass. The number of fires would be expected to increase, which could then in turn increase and spread cheatgrass throughout the Planning Area.

Herbicide treatments would increase because of increased establishment/spread of weeds due to wildfires and vehicular transport to and through the Planning Area and more costs would be anticipated. Biological control agents such as weevils or biopesticides (*Pseudomonas fluorescens* Strain D7) could also be used in the Planning Area to control weeds. Additional NEPA and approved PUPs would be required for treatments not already approved by the BLM.

Invasive species and noxious weeds on BLM lands within the Planning Area are affected by the cumulative actions of urban sprawl and development, land access restrictions by neighboring land owners, and Utah County's proposed shooting range. As the populations continue to expand and push into the Lake Mountains from the north coupled with the displacement of visitors who would have gone to areas now closed by neighboring land owners, visitation to the Planning Area would likely increase. The increased visitation also increases the potential for users of the public land to carry and deposit weed seeds. This would amplify the likelihood of noxious and invasive populations to increase within the Planning Area. Although Utah County has proposed a shooting range in the vicinity, without a shooting closure in place, it is unclear how much of the pressure from shooting on BLM lands will be displaced into the shooting range. Therefore it is difficult to assess whether the shooting range would have any reduction in the spread and proliferation of invasive and noxious weed species within the Planning Area.

Protective Measures and Compliance

Public outreach and education would be made to increase awareness that recreational vehicles are a vector for transporting noxious and invasive weed seeds.

SLFO would continue to coordinate weed control measures with Utah County within the Cooperative Weed Management Area.

Other protective measures beyond current law and BLM regulations would not be applied.

The Planning Area would continue to be treated with chemical applications on an annual basis. Applicators would follow approved PUPs.

4.3.1.7 Vegetation/Soil

Vehicle use in the Planning Area would continue by the general public, including individuals who are target shooting. Routine and regular use of the roads could cause soil compaction and opportunity for surface runoff. Soil types would continue to be erodible. This alternative increases the potential for target shooters using motorized vehicles to create new routes, pullouts, turnarounds and parking spots within the Planning Area. Excessive motorized vehicle use increases the potential of soil erosion from ruts and soil compaction. As erosion occurs, soil is lost and reduces the ability for restorative efforts, such as ESR activity, to be successful. If erosion rates increase due to vehicle travel, it may become necessary for BLM to install culverts to stabilize weaker areas within drainages.

Within the Planning Area, some of the target shooters are using juniper trees and sage brush as targets or they are placing their targets within the vegetation. Either way, the vegetation is being shot to the point that trees and shrubs are cut down. Bullet holes cause permanent damage to trees, may cause the tree growth to be stunted or altered, or may kill the tree. By allowing the temporary closure to expire, juniper trees and sagebrush currently within the 893 acre temporary closure would again be at risk of being damaged by target shooters.

Under this alternative, the entire Planning Area would be open to target shooting, increasing the potential for wildfire. Wildfire removes existing vegetation (temporarily and over the long term) and increases the likelihood for plant communities to convert from a desirable plant community to an undesirable invasive plant community, specifically cheatgrass. This conversion increases the potential for soil erosion and reduces the forage available to wildlife and livestock. After a wildfire event, the exposed soils are prone to wind and water erosion. Exposed soil can be easily transported in the wind which could affect visibility for passengers using Highway 68. Exposed and barren soils are prone to soil movement through overland mud flows and downcutting. This type of erosion decreases the likelihood for plants to reestablish, which causes the loss of soil. Mudflows have the potential to cause damage to nearby communities and roadways.

In April 2014, SITLA closed approximately 1,500 acres of state property adjacent to the west side of the current BLM temporary closure. This SITLA closure prohibits all forms of public access and displaced users to BLM lands. This led to an increase in target shooters in a smaller area of federal land. However, if Alternative A is selected, the increased number of shooters will expand their use back into the lower areas where cheatgrass is prevalent. With a higher concentration of shooters in these lower areas than existed prior to the 2012 temporary closure, the number of fire starts and acres burned could be higher than previously experienced. This

increase in fires would further exasperate the impacts on vegetation communities and soil erosion.

Soldier Pass Shooting Range would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. The shooting range is designed to eliminate vegetation along the shooting lanes. Removing the vegetation also eliminates the fuel loads reducing the likelihood of fires starting from target shooting activities. Target shooting outside of the shooting range within Lake Mountains could be reduced if shooters chose to shoot at the range. However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Urban expansion into the Lake Mountains from the adjacent communities of The City of Saratoga Springs and Eagle Mountain City has created increased pressure on public lands that once were fairly remote and isolated and this urban expansion would be expected to continue. With a higher population center close to the Planning Area, as long as shooting closures do not exist, the use of Lake Mountains as a target shooting area would increase. This increase could increase the number of fire starts and acres burned from target shooting affecting vegetation and soil as described above.

Protective Measures and Compliance

Public outreach and education would be made to increase awareness of Tread Lightly principles.

Other protective measures beyond current law and BLM regulations would not be applied.

Monitoring would be associated with any ESR activity.

4.3.1.8 Waste Materials

The 2012 and 2014 temporary closures reduced the number of recreational target shooters and the trigger trash (solid and hazardous waste) that they leave behind in the 893 acre closure area. The closure also had the effect of reducing illegal dumping. While illegal dumping still occurs, it tends to not be as concentrated as it had been prior to the 2012 temporary closure. Under Alternative A, the temporary closure would be allowed to lapse, and the entire Planning Area would again be open to recreational target shooting. The accumulation of solid waste and the releases of hazardous wastes would increase due to shooting activities being allowed here again and would likely be more severe than it was prior to the 2012 temporary closure due to the expected increase in use for recreational target shooting by growing populations. Illegal dumping would also likely begin to be concentrated once again in areas within the lapsed temporary closure area where trigger trash accumulates.

The closure has pushed recreational target shooters out into portions of the Planning Area not covered by the closure where they still leave trigger trash. Likewise, the release of hazardous substances in portions of the Planning Area not covered by the closure is likely higher as shooters have moved into these areas in greater quantities due to the temporary closure.

If the temporary closure is allowed to lapse and the entire Planning Area is open once again to target shooting, lead concentrations in the soil would increase within the lapsed temporary closure area. Recreational target shooting, by its very nature, deposits lead in the soil. Through geochemical processes, lead is adsorbed to soil particles and contaminates the soil. Allowing the temporary closure to lapse would result in increased recreational target shooting in the lapsed

temporary closure area, increasing the lead deposited in the soil and ultimately increasing the lead contamination in the soil.

Alternative A, if selected, would initially result in less impact from solid and hazardous waste releases on surrounding public lands both within the Planning Area outside of the temporary closure area and outside of the Planning Area. The temporary closure area is popular for recreational target shooting because of its proximity to population centers and easy access along a major roadway. Since the temporary closure has been in effect, recreational target shooters have had to travel farther to practice their sport, increasing the impact on surrounding public lands. Allowing the temporary closure to lapse would result, at least initially, in less shooting on the surrounding lands, thus reducing the accumulation of solid and hazardous wastes and the deposition of lead in those areas. Ultimately however, impacts from solid and hazardous waste and lead deposition to surrounding lands would occur as area populations increase and more individuals seek areas to participate in recreational target shooting sports.

The activity of shooting has historically taken place throughout the Planning Area; however there are usually a few spots that draw the bulk of this activity. These spots are usually chosen by conscientious shooters based on the presence of a backstop for bullets and then frequented by other shooters because of the presence of trigger trash. As these areas tend to be used with more frequency, they tend to have more lead deposited in the soil.

As lead is deposited in these areas, the soil becomes contaminated, potentially posing a threat to human and ecological health and the environment. As such, large scale clean-up projects may become necessary with the accumulation of lead and other hazardous substances in areas where excessive shooting takes place. If this alternative is selected, the potential for such clean-up projects within the Planning Area increase, especially as more shooters use the Planning Area due to increasing local populations.

Target shooting, and therefore deposition of solid and hazardous wastes, on BLM lands within the Planning Area were impacted in April 2014 by SITLA's closure of roads and access points to 1,500 acres of state property adjacent to the west side of the current BLM 893 acre temporary closure. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters to BLM lands. This increase in shooters in a smaller area of federal land has led to an increase in solid and hazardous wastes due to the impacts associated with target shooting as discussed above.

The Soldier Pass Shooting Range would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. Target shooting outside of the shooting range within Lake Mountains would be reduced and therefore would reduce solid and hazardous waste accumulations in other locations of the Planning Area. However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Protective Measures and Compliance

Outreach and education would include a discussion of non-hazardous targets.

Other protective measures beyond current law and BLM regulations would not be applied.

Monitoring would likely fall to BLM Rangers and local law enforcement. Volunteer groups would largely be relied on to clean-up solid waste. Hazardous material releases would be required to be cleaned up by BLM contractors.

4.3.1.9 Recreation

Under Alternative A, target shooting is the predominate recreational use (displacing many other types of recreationists) except within the current 893 acre temporary closure, where it has been prohibited for critical public health and safety issues since the implementation of the first temporary closure in 2012. Currently, this 893 acre temporary closure area has been free of target shooters and associated impacts since the 2012 temporary closure was implemented. The target shooting impacts include: trigger trash and illegal dumping; damaged natural and manmade features used as targets (including signs, power line poles, vegetation, and boulders—some with petroglyphs); the effects of numerous wildfires in the area (burned off and blackened vegetation and conversion of native vegetation to a landscape dominated by invasive cheatgrass); the high impact public use, noise, vehicle traffic, new routes, pullouts, turnarounds and parking spots; and the target shooters themselves.

Under this alternative, the temporary 893 acre closure would be allowed to lapse and target shooting would no longer be prohibited in the area. With the previous high use from target shooters prior to the implementation of the temporary closure, the area likely would become very popular again. Target shooters displaced by the 2012 and 2014 temporary closures would return to shoot in the area for the same reasons it originally became popular: close proximity to urban areas, undeveloped and open public lands, and ease of access for a wide variety of vehicles from Highway 68—although some of this would be obstructed by the private property barriers and the fence installed along the west side of Highway 68 subsequent to the temporary closure.

With the return of target shooting to the temporary closure area, the public would again be at risk from the same critical health and safety issues for which the temporary closure was originally implemented in 2012 and repeated in 2014 (until the completion of this LUP amendment). Incidents of errant gunfire reported to the BLM and Utah County Sheriff would likely reoccur and may increase. Target shooting within the temporary closure area would continue to endanger local residents and ranchers, their homes and livestock, motorists along Highway 68 and the general public. The probability of additional near-miss incidents similar to the ones occurring prior to 2012 would be very high.

Without a shooting closure, most other recreational activities within the Planning Area will be limited due to the inherent dangers and noise associated with target shooting. The area would once again become dominated, and used primarily, by target shooters.

Within the temporary closure area, the trigger trash impacts had been considerably reduced but under this alternative, trigger trash and illegal dumping would increase to pre-2012 levels.

As part of the implementation of this alternative, outreach and education measures would be continued—with the primary purpose of educating recreational target shooters in the regular use of safe shooting practices to reduce public health and safety issues and impacts from target shooting (although such measures were already used prior to the initial 2012 temporary closure with little effect, thereby making the closure critical). These measures would include the same public outreach actions taken prior to the implementation of the initial 2012 temporary closure: extensive signing (and re-signing) of the area, bulletin board postings, installation of new

bulletin boards with information postings, information booths at local gun shows, information flyers for local businesses, postings on BLM websites and social media, press releases, interviews with local news reporters, public service videos and cleanups with local target shooting and other volunteer groups.

Under this alternative, the only target shooting restrictions would be seasonal fire restrictions, a prohibition on the use of steel core and steel jacketed ammunition and exploding targets, and the Utah County ordinance requiring the use of paper, cardboard or clay targets. These are the same restrictions that were in place throughout the Planning Area prior to the 2012 temporary closure. There would be no other restrictions on target shooting and the area would continue to remain open to motorized vehicle use on existing roads and trails (Limited OHV designation), although some access has been obstructed by the private property barriers and fence along the west side of Highway 68.

With increased target shooting use, damage from target shooters would not rehabilitate/recover—boulders with painted targets, vegetation decimated by repeated rapid gunfire, power line poles riddled with bullet holes. Other damaged resources would never recover, such as petroglyphs panels destroyed by direct or ricocheted bullets. The risk and potential of these types of damages to occur will increase.

Recreational target shooters within the Planning Area were additionally impacted in April 2014 by SITLA's road and access points closure on state property. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters from an additional 1,500 acres of public land that was previously open to target shooting. Many of these target shooters already use the Planning Area.

Route designation within the Planning Area would be fully addressed in a separate process in the Southeastern Lake Mountains Route Designation effort. This would be fully vetted through the public participation process. Under this alternative (A), it would be expected that changes to public access points would not be made and coordination with adjacent landowners would not be conducted at this time. Routes would not be abandoned or treated in any way to obscure the locations of such routes within the Planning Area. Potential impacts would be to continue with existing motorized access within this area, but decreased benefits to Historic Properties (specifically petroglyphs), soils, and vegetation.

Soldier Pass Shooting Range would provide the shooting enthusiast with a safe place to practice shooting on the Lake Mountains. The range would serve the needs of certain target shooting activity; however, some needs would not be met (for example, long range shooters). However, without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Urbanization and population increases would continue adjacent to the Planning Area. The target shooting community would continue to increase in numbers and the type of public interests would change with any technological development and trends. The Planning Area would remain as a destination target shooting area within the SLFO. And with the increase in urban growth and popularity of the sport, new recreational target shooters would be drawn to the area too.

Protective Measures and Compliance

Outreach and education measures would continue to be used to inform recreational target shooters of safe shooting practices.

Other protective measures beyond current law and BLM regulations would not be applied.

Target shooting activities within the Planning Area would continue to be monitored and assessed annually. Shooting restrictions enacted under the BLM Utah and WDD Fire Prevention Orders and Utah County Code 13-3-16 Prohibited Targets would continue to apply to the Planning Area and compliance would be conducted by BLM Rangers and local law enforcement officers.

4.3.1.10 Cultural Resources

If no action is taken, damage to petroglyph sites from bullet impacts and paint (from targets and spatter) would likely continue resulting in the permanent loss of important cultural resources. Historic Properties (specifically petroglyphs) could be located within the potential bullet impact zone of any target shooter. In all likelihood, petroglyphs would still be intentionally used as a target or unintentionally because a shooter is unaware that they are located in the area within their particular line of site. Targets would still be set on or adjacent to the petroglyphs. Paint spatter could still land on the petroglyphs damaging the integrity of the patina and pitting done by the individual or artist. Although illegal, target shooters could still paint large silhouettes on boulder faces for long distance practice; this action could be done on or adjacent to petroglyphs.

In all likelihood, this loss would occur at a rate that is consistent with that currently observed. Over the course of the past several years entire petroglyph panels have been destroyed. It is reasonable to expect that in the absence of efforts to curtail target shooting in the Planning Area, entire sites would eventually be lost.

The potential for damage to petroglyph sites from target shooting would exist as long as this activity occurs within the Planning Area. Some cultural resources already have been driven over by vehicles, and it is reasonable to expect this kind of threat/damage to continue if not curtailed. There is potential for new sites to be driven on as new vehicle routes, pullouts, turnarounds and parking spots are made by recreationists including target shooters. Increased law enforcement patrols may reduce impacts to petroglyph sites through ARPA violation citations, but it is unreasonable to expect that these patrols would eliminate the impacts.

The cumulative impact area is the Planning Area which is also defined as the area of potential effect.

It is reasonable to expect that the kind of damage to petroglyph sites observed in the recent past, including the loss of an entire petroglyph panel would continue in the absence of some form of action curtailing or preventing it. This could result in the long term degradation/destruction of petroglyph sites within the Planning Area.

The No Action alternative would allow shooting in the Planning Area to continue unabated. This would enhance the danger to petroglyph sites associated with wildfires. A large proportion of wildfires in the Planning Area have been attributed to target shooting. Over the long-term wildfire danger would be increased (consistent with the high proportion of wildfires in the Planning Area that have been attributed to target shooting) as would the risk to petroglyph sites from damage associated with fire (spalling of boulder surface that might contain petroglyphs) and fire suppression.

It would be expected that wildfire numbers and acreages would return to pre-2012 levels (prior to the temporary closure). Wildfire (which may be started by target shooting activity) would continue to present multiple threats to petroglyph sites. The wildfire itself can cause spalling of boulder surfaces and consequent destruction of petroglyphs from intense heat. Fire suppression activities pose risks to petroglyphs as well. By virtue of their placement on small/low boulders scattered throughout the Planning Area, they can be damaged by heavy fire-suppression equipment driving across, or cutting fire suppression lines, in the ground surface.

ESR activity associated with wildfire restoration as well as other vegetation treatments although potentially damaging to other types of cultural resources, do not pose a major threat to known petroglyph sites as Historic Properties are routinely avoided. Consistent with the DR and FONSI issued for the WDD NFRP, all cultural resources would be avoided by any surface disturbing activity such as chaining or drill seeding. Historic sites, including petroglyphs that could be scratched, broken or overturned by heavy equipment used in completing ESR activity would be avoided.

Cultural resources on BLM lands within the Planning Area were impacted in April 2014 by SITLA's closure of roads and access points to 1,500 acres of state property adjacent to the west side of the current BLM 893 acre temporary closure. This SITLA closure prohibits all forms of public access and has further limited target shooting opportunities on the east side of the Lake Mountains and displaced target shooters to BLM lands. This increase in shooters in a smaller area of federal land has led to an increase in degradation of cultural resources.

If Alternative A is selected, the displaced shooters would return to locations within the 893 acre temporary closure area. Petroglyph damage may be reduced somewhat due to the opening up of this 893 acre area that is lower and easier to access by target shooters and by the opening of the planned target shooting range at Soldier Pass. The Soldier Pass Shooting Range could draw some shooters away from areas where petroglyph sites are located, but it would not capture the entire target shooting population. Without a target shooting closure in place, target shooting would still occur outside of the Soldier Pass Shooting Range and direct and indirect impacts described above would still occur.

Urban expansion into the Lake Mountains from the adjacent communities of the City of Saratoga Springs and Eagle Mountain City has created increased pressure on public lands that once were fairly remote and isolated and this urban expansion would be expected to continue. This growth and development could lead to more use of the Planning Area leading to an overall increase in the effects as described above. In addition, an increase in visitation by all users in the area could increase opportunity for theft of petroglyphs.

Protective Measures and Compliance

Potential protective measures include creation of a formal shooting range in the Planning Area (proposed under a separate action) and increased presence of law enforcement officers.

Increased law enforcement presence would assist in mitigating the impact of shooting-related damage to petroglyphs. If the No Action alternative is selected, and unregulated target shooting continues, additional damage to petroglyphs would occur. This damage represents a violation of the ARPA which carries both civil and criminal penalties. However, the effort required to effectively patrol the Planning Area might exceed the capabilities of law enforcement given current staffing.

Outreach and education would include a discussion of the importance of cultural resources.

Other protective measures beyond current law and BLM regulations would not be applied.

Limited monitoring, based on existing staffing levels within the cultural resources program, can and would be undertaken. This would provide baseline information regarding the overall and continued impact of target shooting on petroglyph sites in the Planning Area. Detailed and extensive monitoring would only occur within the context of project specific cultural resources inventories.

4.3.2 Alternative B – Temporary Closure Long-Term

As presented in Section 2.3, under this alternative the current 893 acre temporary target shooting closure would be made long-term and the only target shooting restrictions that would be enforced per administrative standard operating procedure are the BLM Utah Fire Prevention Order, WDD Fire Prevention Order, and Utah County Code 13-3-16. The BLM Utah Fire Prevention Order restricts the use of exploding targets statewide on BLM lands year round. The WDD Fire Prevention Order restricts the use of steel ammunition from June 20-September 30 each year on lands managed by the BLM in the WDD. Utah County Code 13-3-16 prohibits the use of any targets except paper, cardboard and clay within Utah County.

4.3.2.1 Fire/Fuels Management

A reduced fire suppression, prevention/education, investigation, and post-fire workload would occur as compared to Alternative A. Areas outside the 893 acre closure area but still within the Planning Area would experience a number and size of wildfires comparable to those experienced since the 2012 temporary closure was put in place. Should the temporary closure become long-term, a continued reduction in shooting related wildfires would be expected in the Planning Area. Fewer wildfires would have a beneficial impact on all values at risk including natural resources, public safety, and the urban interface and infrastructure. Less smoke would be produced that could impact airsheds. Fire management objectives could have a better chance of being met due to the reduction in wildfires. Fire suppression costs could be expected to remain at lower rates than those experienced prior to the temporary closure initiated in 2012.

Fewer impacts from wildfires would occur such as livestock grazing deferral or rest periods, loss of wildlife habitat and reduced forage, or increases in invasive weed species. Smoke effects on air quality would be less than under Alternative A due to the reduction in the number and size of wildfires. Fuels treatments could be implemented within the Planning Area. Additional NEPA would be conducted.

Costs expended for suppression and ESR would be similar to post-2012 levels (since the temporary closure was implemented).

Wildfires that start from target shooting outside of the closure but still within the Planning Area would occur because the same concerns described in Alternative A would continue to exist. Wildfires occurring outside the closure area could spread into it. Fuels treatments would continue within the Planning Area as described in Alternative A but with a reduced fire occurrence from a target shooting closure, the need for additional and immediate fuels treatments would be reduced.

Closing the 893 acres would continue to push target shooters to other areas outside of the target shooting closure and the concerns described under Alternative A could still occur in other areas outside of the closure which could potentially just move the problems to different or previously unused sites. This alternative would continue to displace target shooters to other nearby locations such as the Chimney Rock area, Soldier Pass, western Lake Mountains and other locations in western or southern Utah County. Some target shooters also use an area near Reformation Canyon at the north end of the Lake Mountains between Eagle Mountain City and The City of Saratoga Springs. Although this area could see additional use as a result of the closure, Reformation Canyon has been used historically as a target shooting location. Due to shooting restrictions within incorporated areas and large areas encompassed, it is unlikely that target shooters would move closer to the communities. A reduction in all fire agency suppression costs would be expected due to a reduction in wildfires within the Planning Area.

The impacts of SITLA's 2014 closure would be similar to Alternative A. However, if Alternative B is selected, target shooting won't occur in the lower areas where cheatgrass is prevalent thereby resulting in the direct and indirect effects already described above.

The impacts of the Soldier Pass Shooting Range would be similar to Alternative A. Target shooting outside of the shooting range within Lake Mountains could be reduced and therefore could reduce target shooting related wildfires. However, the 893 acre target shooting closure under this alternative does not allow for a shooting closure surrounding the shooting range. Therefore, the utilization of the shooting range is expected to be similar to Alternative A and less than Alternative C.

Urbanization impacts would be similar to that described under Alternative A.

Protective Measures and Compliance

No protective measures would be required for prevention of target shooting wildfires within the closure area due to the closure to target shooting. Fire prevention measures similar to Alternative A would occur in the Planning Area outside of the closure. Fuels treatments could occur within the Planning Area.

Other protective measures beyond current law and BLM regulations would not be applied.

Monitoring and compliance would be the same as Alternative A. Regular education/outreach patrols would be conducted outside the 893 acre closure area.

4.3.2.2 Enforcement

Law enforcement patrols by BLM Rangers and local law enforcement would continue at the same rate as it has since the 2012 temporary closure was put in place. Conducting public health and safety patrols would be reduced over Alternative A because of the lowered threats to public safety. Due to the proximity to large population bases, compliance of the closure would be monitored closely with public contacts and law enforcement patrols. Violations of the closure would be expected but the public has been used to the 893 acre area being temporarily closed since 2012. Appropriate signs would need to be maintained at regular intervals that inform the public of the closure.

Under this alternative, the increased safety provided to law enforcement officers, general public land users and target shooters by the temporary closure would be maintained. Target shooters would continue to be displaced and funneled to specific, easily patrolled locations along the

power line road forming the west boundary of the temporary closure, where they all shoot in the same direction—west toward the Lake Mountains hillsides. This would maintain the de facto safety zone for law enforcement officers patrolling the area and continue to make patrols more efficient.

Current target shooting restrictions would apply throughout the Planning Area, except within the 893 acre long-term closure where target shooting is prohibited. Current restrictions regarding illegal dumping and trigger trash on public lands would continue to be enforced throughout the Planning Area, including the 893 acre long-term closure. BLM would continue to have no jurisdiction on state or private property.

Indirect effects would be the similar to Alternative A, illegal and unlawful activity, including theft and vandalism, would continue to be addressed through the procedures outlined in the SLFO Law Enforcement Plan, with penalties and fees for violations, in conjunction with the regulations listed in 43 CFR. A closure does not stop illegal or unlawful activity; although it is hoped that it may be reduced within the closure area.

The displacement of target shooting due to the closure area, into other areas within the field office and including within the Planning Area, would increase the need for increased patrols of areas of public lands within easy access to population bases. In addition, other types of recreation could increase within the 893 acre closures, increasing the need for patrol in that area.

Enforcement needs of multiple agencies would be expected to increase over time due to increased target shooting and related issues. Opportunity for violations of the 893 acre closure area would remain at current levels; however, would increase in the areas immediately adjacent to the long-term closure. Security of adjacent homeowners and other private property owners would be retained as incidents of direct or ricocheting gunfire could be maintained at current numbers.

Ongoing coordination with law enforcement officers from Utah County and SITLA would continue. Goals and needs of these agencies could be in conflict with BLM's efforts.

Law enforcement actions on the BLM lands within the Planning Area are affected by the cumulative actions discussed under Alternative A. Under this alternative, however, there would be a continuing increase in target shooting west of the power line road, where petroglyphs occur. There would be an increasing need for law enforcement to investigate damage to public lands outside of the long-term closure and the need for more patrols and investigations of damage to petroglyphs, thefts of petroglyphs, and littering due to trigger trash in this area. As this alternative also does not contain a shooting buffer around the shooting range, it is unclear what the use of the shooting range will be. It is likely that safety violations adjacent to the shooting range could increase over Alternative A as target shooters are displaced from the closure area.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring and compliance would be the same as Alternative A, plus routine patrols of the 893 acre closure area would be completed.

4.3.2.3 Wildlife

Under alternative B, the current 893 acre temporary closure would be made long-term. BLM would issue a long-term closure order prohibiting target shooting on the 893 acres of BLM administered land. Under this alternative, one acre of mule deer substantial yearlong habitat, 35 acres of chukar substantial yearlong habitat, and 893 acres of potential habitat for migratory birds and special status species would be closed to target shooting.

Compared to Alternative A, Alternative B would provide for more habitat protection from target shooting activities by making the current 893 acre temporary closure long-term.

Direct impacts described under Alternative A would not occur or would be reduced within the long-term closed area. Mortality, injury, and displacement caused by shooting activities would not occur within the closed area. Noise or human disturbances caused by human and vehicle traffic would be decreased within the closed area. Direct impacts described under Alternative A would still occur outside of the closed area. Because the closed area would cover limited mule deer and chukar substantial yearlong habitat, direct positive impacts to those game species would be slight. Closing the 893 acres of potential migratory birds and special status species habitats would benefit these species and their habitats compared to Alternative A.

Similar to other areas of the SLFO which are heavily used by target shooters, wildlife monitoring crews could be at risk of being in areas of gunfire. Some nest monitoring could not occur outside of the 893 acre closure boundary due to the increase in target shooting in these areas.

The indirect impacts from habitat loss, target shooting related wildfires, wildfire suppression activities, ESR, fuels treatments, introduction of invasive and noxious weeds, and the accumulation of trigger trash could displace wildlife and alter their vital rates would be decreased within the closed area. However, closing 893 acres of the area for target shooting within the Planning Area would continue to push target shooters outside of closed areas on federal lands. Shooting activities that would occur outside the closed area would have the same impacts as described under Alternative A.

Wildfire impacts are similar to Alternative A, but occurrence of wildfire would be reduced compared to Alternative A. Habitat benefits would increase within the 893 acres.

Weed spread would be similar to described under Alternative A because the general public, including target shooters, would still be driving through the closure area. However, the impacts to wildlife habitat would be reduced under this alternative due to 893 acres of target shooting closure.

The cumulative analysis area for wildlife is the entire Lake Mountains range.

The impacts of SITLA's 2014 closure would be similar to Alternative A. However, if Alternative B is selected, target shooting is still likely to be concentrated west of the power line road affecting habitat quality.

The impacts of the Soldier Pass Shooting Range would be similar to Alternative A. Target shooting outside of the shooting range within Lake Mountains could be reduced and therefore could improve wildlife habitat throughout the Planning Area. However, the 893 acre target shooting closure under this alternative does not allow for a shooting closure surrounding the shooting range. Therefore, the utilization of the shooting range is expected to be similar to Alternative A and less than Alternative C.

Urbanization impacts would be similar to that described under Alternative A.

Protective Measures and Compliance

Same as Alternative A.

4.3.2.4 Lands

Under Alternative B, the 893 acre temporary closure would become long-term but the direct impacts described under Alternative A would remain mostly unchanged except for the portions of the ROWs that intersect the closed area.

ROWs within the proposed long-term closure would include:

- UTU-0115794 issued to Rocky Mountain Power – 345 kV Power Line Camp Williams-Nephi Segment
- UTU-0074806 issued to Federal Highway Administration (FHA) – State Highway 68
- UTU-001331 Rocky Mountain Power – 46 kV Line Saratoga to Eureka
- UTU-081920 Pabco Building Products – Access Road
- UTU-091092 Utah County – Access Road to Utah Lake

All of the existing ROWs have benefitted from the additional safety provided by the temporary closure area; and under this alternative, these safety benefits would likely continue. Portions of the ROWs outside of the closure area would remain at risk of direct damages from target shooting activity. Further evidence suggests that a substantial decrease in target shooting related wildfires has resulted from the temporary closure which directly impacts ROWs both within and outside of the closure area. However, damage to any ROWs outside of the long-term closure would continue and increase over time due to the increased pressure of target shooting adjacent to the long-term closure. The western boundary of the 893 acre closure area is defined by Rocky Mountain Power's 345 kV Saratoga to Eureka power line road. Target shooting would not be restricted west of the power line. The remaining ROWs within the Planning Area are outside of the long-term closure area but could still be affected by target shooting activities, including damages from bullet impacts.

ROWs outside of the proposed long-term closure would include:

- UTU-054892 Rocky Mountain Power – 7.2 kV Line
- UTU-001331 Rocky Mountain Power – 46 kV Line Saratoga to Eureka
- UTU-0017252 Rocky Mountain Power – 7.2 kV FAA Communication site
- UTU-0115794 Rocky Mountain Power – 345 kV Camp Williams-Nephi Segment
- UTU-0074806 FAA – State Highway 68
- UTU-054871 BLM – Communication Site Emergency Fire Radio
- UTU-070314 UTA – Communication Site Private Mobile Radio Service
- UTU-081920 Pabco Building Products – Access Road
- UTU-082941 Peck Rock & Prod. Inc. – Access Road
- UTU-0015661 FAA – Access Road and Storage Site
- UTU-89553 Utah County – Soldier Pass Shooting Range R&PP
- UTU-091438 Utah County – Access Road Soldier Pass Shooting Range

The same concerns in Alternative A would likely spread outside of the closure area or outside of the Planning Area into the nearby countryside.

Roads within the closed area would continue to be used by the recreating public including target shooters traveling through the closed area.

Closing 893 acres would likely result in the continued relocation of displaced target shooters and the concerns described under Alternative A would still occur and even increase in different parts of the Planning Area and nearby countryside due to a reduced area for target shooters to use.

Wildfires that start from target shooting outside of the closure area may still occur because the same concerns described in Alternative A would continue to exist. This may result in wildfires starting outside of the closure area but spreading into the closure area.

Damages above and beyond normal wear and tear to the ROWs infrastructure would continue to occur and would likely increase outside of the closure area. Monitoring and inspection rates of ROWs by BLM realty staff could remain at current levels due to reported damages.

Cumulative impacts would be similar to Alternative A.

A public shooting range would provide an opportunity for safe, controlled and relatively clean target shooting opportunities. However, with no shooting limitations in the immediate area, the public shooting range would experience competition from the unregulated target shooting nearby.

Protective Measures and Compliance

Same as Alternative A.

4.3.2.5 Visual Resources

Similar to Alternative A, visual resources within the Planning Area currently are impaired by target shooting and its impacts/effects—except within the current 893 acre temporary closure, where the target shooting prohibition has resulted in the reduction most of these visual impairments. Outside the current temporary closure, target shooting impacts affecting visual resources are similar to described in Alternative A.

Under this alternative, the temporary closure would be made long-term. With the conversion of the temporary closure to a long-term closure, the lack of target-shooting visual impacts within the closure area would be maintained. Removal of the trigger trash from the temporary closure area already has reduced some of the existing visual impacts in the area from target shooting. In the long-term, visual resources of the long-term closure area would be improved by the cessation of target shooting activities—halting the accumulation of, and allowing the cleanup of, the existing trigger trash and illegal dumping. In the temporary closure, this has already been done and would be maintained under this alternative, while under Alternative A, it would be undone. A long-term closure would facilitate a direct improvement in the natural and scenic resources of the closure area (including cultural features, wildlife habitat and vegetation), which would enhance visual resources. However, for the areas not in closure, there would be a continuing increase in the amount of target shooting resulting in more trigger trash and illegal dumping.

The current number and location of signs and bulletin boards would be maintained to identify the long-term closure boundary and provide the public with information about the long-term closure. These manmade features would continue to detract from visual resources in the area. These structures would help enforce the long-term closure, which would prevent target shooting damage and trigger trash in the long-term closure—reducing the current existing level of visual

contrasts and enhancing visual resources overall. Signs and bulletin boards would be maintained at current locations.

Outside the long-term closure area, target shooting impacts on visual resources would continue and new or increased areas of visual impacts from target shooting may occur. Displaced and new shooters may move to previously unused areas that are farther in the backcountry. This would result in new sites of visual resources degraded by target shooting damage. Visual resources within the Planning Area outside the closure would be further impacted by these displaced and new target shooters.

Within the characteristic urban interface landscape, the level of contrast with the existing environment, including the existing man-made features within the area, would be low. Overall, these visual impacts would be outweighed by the benefits provided by the long-term closure. Signs indicating the area is closed to target shooting would be evident and visually intrusive. And there would be an obvious difference in the visual resources of the closed area: visual intrusions from target shooters, their vehicles and trigger trash would be greatly reduced. These visual impacts would be consistent with and exceed the management objective for VRM Class IV, which allows for major modifications of the existing landscape that create contrasts that dominate the area and the focus of viewer attention.

Target shooting would be prohibited within the 893 acre (once temporary and now long-term) closure area. Target shooters previously temporarily displaced from the area would now be displaced over the long-term. Most have already found other places to shoot—many of which are within the Planning Area. Others relocated to other sites in the Lake Mountains or areas outside of the Lake Mountains; and some may have even chosen to stop practicing their sport. In these new or more heavily used areas, new or increased visual impacts from target shooting have occurred—many to cultural resources that are outside the current temporary closure. With the increase in target shooting within the area and new target shooters, more impacts to visual resources are expected to occur throughout the Planning Area outside the closure and the Lake Mountains—increasing the concentration of target shooters in popular locations and distributing them farther throughout the Planning Area (and the entire Lake Mountains) into new pristine or unimpacted areas possibly farther in the backcountry.

Residual impacts would be similar to Alternative A, except within the long-term closure area where some residual impacts may rehabilitate or recover. Some damage from target shooters would take a while to rehabilitate/recover, such as boulders with painted targets, vegetation decimated by repeated rapid gunfire, power line poles riddled with bullet holes. Other damaged resources would never recover, such as petroglyphs destroyed by direct or ricocheted bullets and paint spatter.

Within the 893 acre long-term closure area, residual impacts of trigger trash would continue to be alleviated. Under the temporary closure, most of this trigger trash was removed by many volunteer cleanups that occurred since the first temporary closure went into place in 2012. Maintenance/replacement of signs and bulletin boards would constitute another residual impact although these structures already occur within the area and would be necessary to enforce the long-term closure and target shooting prohibition.

Outside the long-term closure area, all of these residual impacts occur and are expected to increase with the increased use of the Planning Area by target shooters—both new and displaced shooters. With the increasing population of the Wasatch Front and the popularity of the sport,

the volume of recreational target shooting activity on public lands within the Planning Area (and throughout the Lake Mountains) would only get higher.

Any sign or structure within the Planning Area outside the long-term closure area would continue to be used as a target. The damage to these signs and structures would be obvious to the casual observer in the Planning Area.

Cumulative impacts would be similar to Alternative A.

The impacts of SITLA's 2014 closure would be similar to Alternative A. However, if Alternative B is selected, target shooting is still likely to be concentrated outside of the closure area impairing visual resources in those areas. However, the impairment would still meet the management objective for VRM Class IV.

The impacts of the Soldier Pass Shooting Range would be similar to Alternative A and less than Alternative C.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring and compliance will be the same as Alternative A; however, monitoring needs within the 893 acre closure boundary would be reduced.

4.3.2.6 Invasive Species/Noxious Weeds

Direct impacts described in Alternative A would potentially be reduced within the 893 acre closed area. However, the area would not be closed to motorized vehicle and other uses, so the concerns described in Alternative A may still occur. Herbicide treatments would still occur regardless of the closure. Under this alternative, there may be opportunities for new types of recreation activities to move into the area. Because of this, and because of increased public land users in the area outside of the long-term closure, vehicle use would continue to grow resulting in increased spread of invasive and noxious weeds.

The public, including target shooters, use the existing road system throughout the Planning Area, including within the proposed long-term closure under this alternative. Vehicles use still remains as a vector for transporting weed seeds to and from the entire Planning Area.

Wildfires that might start from target shooting outside of the closed area could still burn into the closed area. Displaced target shooters would move into other areas of the Planning Area and would continue to transport weed seed to and from the Planning Area. This would create the same circumstances as described in Alternative A.

Cumulative impacts would be similar to Alternative A.

Protective Measures and Compliance

Same as Alternative A.

4.3.2.7 Vegetation/Soil

Direct impacts described in Alternative A would potentially be reduced within the 893 acre closed area proposed in Alternative B. However, the area would not be closed to motorized vehicle use, and the concerns described regarding vehicle travel in Alternative A may still occur. Because of the narrow band of land that would be closed under this alternative, other types of

recreational use in the closed area would be limited and consistent with what is being observed with the temporary closure in place since 2012.

Compared with Alternative A, Alternative B would provide better long-term protection and management to soils and vegetation.

Closing the 893 acres could potentially push target shooters to other locations within the Planning Area. This could increase the potential for soil erosion and wildfire as described in Alternative A to areas outside of the long-term closure. Wildfire could still occur within the Planning Area and burn into the closure area. This would then create similar circumstances described in Alternative A.

Cumulative impacts would be expected to be similar to those discussed in Alternative A.

The impacts of the Soldier Pass Shooting Range would be similar to Alternative A. Target shooting outside of the shooting range within Lake Mountains could be reduced and therefore could reduce target shooting related wildfires. However, the 893 acre target shooting closure under this alternative does not allow for a shooting closure surrounding the shooting range. Therefore, the utilization of the shooting range is expected to be similar to Alternative A and less than Alternative C.

Protective Measures and Compliance

Same as Alternative A.

4.3.2.8 Waste Materials

Solid waste in the temporary 893 acre closure area is presently reduced. Under Alternative B, the temporary closure would be made long-term on 893 acres and we anticipate this trend would continue. The temporary closure has reduced the number of recreational target shooters and the trigger trash that they leave behind within the closure area. Illegal dumping still occurs, but tends not to be as concentrated in the closure area as it was prior to the 2012 temporary closure. The temporary closure has pushed recreational target shooters out into portions of the Planning Area not covered by the temporary closure where they still leave trigger trash. Likewise, the release of hazardous waste from inappropriate targets in the temporary closure area has been reduced, but the releases of hazardous substances in portions of the Planning Area not covered by the temporary closure are likely higher as shooters have moved into these areas in greater quantities due to the temporary closure. These effects would be continued under this alternative.

If this alternative is selected, trigger trash (both solid and hazardous) within the Planning Area would continue, with an overall reduction within the closure area from what it was prior to the temporary closure. Within the closure area the accumulation of solid waste and the releases of hazardous wastes would likely continue to decrease as the public becomes familiar with the long-term closure. Illegal dumping would likely continue to occur within the closure area, but in a dispersed manner as the areas of trigger trash accumulation would be considerably reduced. Outside of the closure area the accumulation of solid waste and the release of hazardous wastes would likely increase as target shooters and public land users continue to use these areas and population growth continues to increase.

If the temporary closure is made long-term under this alternative, lead concentrations in soil would remain at current levels within the closure area. Shooting, by its very nature deposits lead in the soil. Through geochemical processes, lead is adsorbed to soil particles and contaminates

the soil. Making the closure long-term would result in minimal to no additional lead deposition from shooting in the closure area, thus there would be no additional soil contamination.

Alternative B, if selected, would result in more impact from solid and hazardous waste releases on surrounding public lands both within the Planning Area outside of the long-term closure area and outside of the Planning Area. The long-term closure would continue to push recreational target shooters into surrounding public lands to shoot, increasing impacts on surrounding public lands from the accumulation of solid and hazardous wastes and the deposition of lead in those areas.

The cumulative impacts would be similar to Alternative A; however, if this alternative is selected, the potential for such clean-up projects within the long-term closure area decreases, but such future clean ups in the surrounding areas increases due to increased use of these areas as a result of the long-term closure as well as increasing local populations who participate in recreational target shooting activities.

The impacts of SITLA's 2014 closure would be similar to Alternative A. However, if Alternative B is selected, target shooting is still likely to be concentrated west of the power line road increasing concentrations of solid and hazardous waste.

The impacts of the Soldier Pass Shooting Range would be similar to Alternative A. Target shooting outside of the shooting range within Lake Mountains would be reduced and therefore would reduce solid and hazardous waste accumulations in other locations of the Planning Area. However, the 893 acre target shooting closure under this alternative does not include a shooting closure surrounding the shooting range. Target shooting would still occur outside of the Soldier Pass Shooting Range. Therefore, the utilization of the shooting range is expected to be similar to Alternative A and less than Alternative C and direct and indirect impacts described above would still occur.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring would likely fall to BLM Rangers and local law enforcement. Volunteer groups, who have been relied on to clean-up solid waste would likely not be needed as often within the long-term closure as less trigger trash would be present. These volunteer groups would still be needed, and probably more frequently, in the portions of the Planning Area not covered by the long-term closure, as increasing populations participating in recreational target shooting would undoubtedly result in additional trigger trash.

Hazardous material releases would still require clean up by BLM contractors, but this is expected to be less frequent within the long-term closure area due to fewer incidents. Likewise, hazardous material incidents are expected to increase in portions of the Planning Area not covered by the long-term closure as increased use results from increasing populations.

4.3.2.9 Recreation

Within the Planning Area, target shooting is the predominate recreational use (displacing many other types of recreationists) except within the current 893 acre temporary closure, where it has been prohibited for critical public health and safety issues since the implementation of the first temporary closure in 2012 (as discussed in Chapters 1 and 3). Currently, this 893 acre temporary closure area has been free of target shooters and their impacts since the 2012 temporary closure

was implemented and reissued in 2014. The target shooting impacts include: trigger trash and illegal dumping; damaged natural and manmade features used as targets (including signs, power line poles, vegetation, and boulders—some with petroglyphs); the effects of numerous wildfires in the area (burned off and blackened vegetation and conversion of native vegetation to a landscape dominated by invasive cheatgrass); and the high impact public use, noise, vehicle traffic, pullouts, turnarounds and parking spots and target shooters themselves. Outside the temporary closure, most other recreational activities within the Planning Area have yielded to target shooting due to the inherent dangers of the sport and its associated resource conflicts.

The prohibition against target shooting would continue within the 893 acre closure and the area would remain free of target shooters and their impacts of trigger trash, noise from the discharge of firearms, vehicle traffic and high impact public use. The intent of this long-term closure is to provide a protective measure for public safety from target shooting threats and damage—as evidenced by the success of the 2012 and 2014 temporary target shooting closures. This protective measure is critical for the general public visiting the area, private residents that live near the area, motorists traveling along Highway 68 and for the protection of private and government property.

The proposed 893 acre long-term closure is a relatively small area for the SLFO, as BLM-administered lands are generally open to target shooting unless administratively closed. Throughout the rest of the Planning Area, the only target shooting restrictions would be seasonal fire restrictions, a prohibition on the use of steel core and steel jacketed ammunition and exploding targets, and the Utah County ordinance requiring the use of paper, cardboard or clay targets. These are the same restrictions that were in place throughout the Planning Area prior to the 2012 temporary closure. There would be no other restrictions on target shooting and the area would continue to remain open to motorized vehicle use on existing roads and trails (Limited OHV designation), although some access has been obstructed by the private property barriers and the fence along the west side of Highway 68 (installed subsequent to the temporary closure).

With the elimination of high impact recreational target shooting in the temporary closure, the cleanup of trigger trash and the reduction of illegal dumping, some of this disturbed land may eventually recover. One of the unpredictable effects of the temporary closure was the displacement of target shooters to new areas within the Planning Area that are now being damaged and are at risk from target shooting impacts including shooting related wildfires, vegetation trampling and disturbance from vehicle parking and foot traffic, and new areas with high concentrations of trigger trash. All of these disturbances lower the area's scenic attractiveness. In addition, Alternative B leaves petroglyph sites outside the long-term closure at risk of being damaged and destroyed target shooting. People who visit the area to view petroglyphs would either be at risk from errant gunfire or would have to wait for target shooters to leave an area before viewing and cataloging damages incurred.

In order to implement the closure, signs and bulletin boards already on-site (along Highway 68 and in other locations) from the temporary closure would be maintained and replaced with long-term closure notifications to identify the long-term target shooting closure boundary and provide the public with information about the long-term closure and safe target shooting practices. Signs and bulletin boards would help enforce the long-term closure and assist with protecting public safety and natural and historic resources within the long-term closure.

As part of the implementation of this alternative, public outreach and education measures would be utilized—with the primary purpose of distributing information about the long-term closure, gaining support and voluntary compliance with the long-term target shooting prohibition, and continuing with the education of recreational target shooters about the need for and regular use of safe shooting practices to reduce public health and safety issues and impacts from target shooting. These measures would include similar public outreach actions as those taken prior to the implementation of the initial 2012 temporary closure: extensive signing (and re-signing) of the area, bulletin board postings, installation of new bulletin boards with information postings, information booths at local gun shows, information flyers for local businesses, postings on BLM websites and social media, press releases, interviews with local news reporters, public service videos and cleanups with local target shooting and other volunteer groups. Where outreach and education does not achieve voluntary compliance, local law enforcement officers from BLM and Utah County Sheriff would be contacted and the violators cited. Regulations governing closure orders and violations of closure orders are contained in Section 1.5.2.

Target shooters previously temporarily displaced from the area would now be displaced over the long-term. Opportunities for recreational target shooting still exist on more than 10,000 acres of BLM-administered public lands in the Lake Mountains outside the long-term closure area. Recreational target shooters also can take advantage of the numerous shooting opportunities available on more than three million acres of public lands open to target shooting outside of the Lake Mountains and within the SLFO. Recreational target shooters would have to explore the area to find a location that provides the physical landscape characteristics required for a safe shooting area. Access onto some of these alternate lands may be limited or restricted due to lack of roads, proximity to private land, or other obstructions, such as fencing and locked gates.

Most of the Planning Area is impacted by residual impacts, including trigger trash, damage to natural and cultural resources, the burned and blackened vegetation from target shooting caused wildfires signs and bulletin boards and vehicle pullouts, turnarounds and parking spots. Some damage from target shooters would take a while to rehabilitate/recover, such as boulders with painted targets, vegetation decimated by repeated rapid gunfire, power line poles riddled with bullet holes. Other damaged resources, such as petroglyphs, would never recover.

Within the 893 acre long-term closure area, residual impacts of trigger trash would continue to be alleviated. Under the temporary closure, most of this trigger trash was removed by many volunteer cleanups that occurred during the four years of the temporary closure. Signs and bulletin boards would constitute another residual impact although these structures already occur within the area and would be necessary to enforce the long-term closure and target shooting prohibition.

Outside the long-term closure area, all of these residual impacts occur and are expected to increase with the increased use of the Planning Area by recreational target shooters—both new and displaced shooters. With the increasing population of the Wasatch Front and the popularity of the sport, the volume of recreational target shooting activity on public lands within the Planning Area (and throughout the Lake Mountains) would only get higher.

Target shooting is a recreational target activity increasing in use in Utah on public lands—due to the extreme popularity of the sport and the continually increasing population growth. The Lake Mountains have historically been used as a target shooting area due to its close proximity to urban areas, undeveloped and open public lands, and ease of access for a wide variety of vehicles

from Highway 68. Use within the Lake Mountains has always been high and continues to increase. With the increase in urban growth of the area, new shooters are expected to start using sites within the Planning Area—in addition to other locations within the Lake Mountains. Recreation within the Planning Area would be further impacted by these new target shooters—increasing the concentration of target shooters in popular locations and distributing them farther throughout the Planning Area (and the entire Lake Mountains) into new pristine or unimpacted areas possibly farther in the backcountry.

Similar to Alternative A, recreational target shooters within the Planning Area were impacted by SITLA's April 2014 roads and access points closure. This SITLA closure further concentrates target shooters and their impacts in popular target shooting areas and possibly creating new areas of disturbance.

Similar to Alternative A, route designation within the Planning Area would be fully addressed in a separate process in the Southeastern Lake Mountains Route Designation effort. This effort would be fully vetted through the public participation process. Under this alternative (B), it would be expected that changes to public access points would be considered within the 893 acre closure area. Coordination with adjacent landowners would be initiated and completed through the NEPA process. Some routes could be abandoned or treated in any way to obscure the locations of such routes within the 893 acre closure area. Potential impacts would be less motorized access within this area, but increased benefits to Historic Properties (specifically petroglyphs), soils, and vegetation.

A public shooting range would provide an opportunity for safe, controlled and relatively clean target shooting opportunities. However, with no shooting limitations in the immediate area, the public shooting range would experience competition from the unregulated target shooting nearby.

Protective Measures and Compliance

Outreach and education measures would be used to distribute information about the long-term closure, gain support and voluntary compliance with the target shooting prohibition and continue to educate recreational target shooters in the use of safe shooting practices.

Other protective measures beyond current law and BLM regulations would not be applied.

Target shooting activities within the Planning Area would continue to be monitored and assessed annually. Compliance with the target shooting prohibition under the long-term closure and shooting restrictions enacted under the BLM Utah and WDD Fire Prevention Orders and Utah County Code 13-3-16 Prohibited Targets would be conducted by BLM Rangers and local law enforcement officers.

4.3.2.10 Cultural Resources

Making the 893 acre temporary closure long-term does not incorporate areas where petroglyph sites are located; as such it provides no protection for these cultural resources and in fact increases the potential damage to these sites by displacing target shooting into the areas where the most petroglyphs sites are located. Since the temporary target shooting closures have been put in place in 2012, damage to petroglyphs has increased as more target shooting has occurred west of the power line road. This closure has created desirable target shooting locations where gun fire is directed toward the petroglyphs. Under this alternative target shooting activities

would continue to increase as more target shooters become accustomed to shooting at these locations and into the areas farther upslope and into the areas occupied by the petroglyphs. Opportunity for damaging cultural resources is facilitated and increases dramatically because target shooters are concentrated into areas and locations outside of the closure boundary. Damages to and permanent loss of petroglyphs would increase in numbers greater than those expected under Alternative A or Alternative C.

Indirect impacts would be similar to Alternative A.

Cumulative impacts would be similar to Alternative A.

Visitation by other users of the public land, including those specifically interested in these petroglyphs within the Planning Area, would increase over the long-term. Safety and security of the individuals would be maintained within the closed area, however would be reduced outside of the closure area due to increased numbers of target shooters setting up along the western boundary of the long-term closure and shooting directly toward the petroglyphs along the mountainside. The safety and security of any individuals desiring to view the petroglyphs would be severely compromised due to target shooters shooting directly toward the petroglyph sites.

Protective Measures and Compliance

Same as Alternative A.

4.3.3 Alternative C – Expanded Closure

As presented in Section 2.4, under this alternative a 3,450 acre target shooting closure would be implemented and the only target shooting restrictions that would be enforced per administrative standard operating procedure include the BLM Utah Fire Prevention Order, WDD Fire Prevention Order, and Utah County Code 13-3-16. The BLM Utah Fire Prevention Order restricts the use of exploding targets statewide on BLM lands year round. The WDD Fire Prevention Order restricts the use of steel ammunition from June 20-September 30 each year on lands managed by the BLM in the WDD. Utah County Code 13-3-16 prohibits the use of any targets except paper, cardboard and clay within Utah County.

4.3.3.1 Fire/Fuels Management

This alternative would have similar effects to Alternative B but with substantially more impact to reduction in wildfires from target shooting due to expanding the closure to 3,450 acres. Areas outside the 3,450 acre closure, but still within the Planning Area, would experience a number and size of wildfires comparable to those experienced in 2012 and prior. Overall, however, the number of wildfires would be expected to decrease under this alternative. A further reduction in fire suppression costs could be expected in the Planning Area.

Indirect impacts would be similar to Alternative B. Costs expended for suppression and ESR since the 2012 temporary closure was implemented could be reduced further based on a larger/expanded closure area.

Cumulative impacts would be similar to Alternative B. Closing the 3,450 acres could push target shooters to other areas outside of the target shooting closure and the concerns described under Alternative A could still occur in other areas outside of the closure which could potentially just move the problems to different or previously unused sites. Wildfires that start from target shooting outside of the closure but still within the Planning Area would still occur because the

same concerns described in Alternative A would continue to exist. Wildfires occurring outside the closure area could spread into the closure area. Fuels treatments would continue within the Planning Area as described in Alternative A but with a reduced fire occurrence from a target shooting closure, the need for additional and immediate fuels treatments would be reduced even further than Alternative B. Due to shooting restrictions within incorporated areas and large areas encompassed, it is unlikely that target shooters would move closer to the communities. As compared to Alternative B, a further reduction in all fire suppression costs incurred by all fire agencies could be expected in the Planning Area.

Because closed areas would be interspersed with SITLA closed lands, the risk of wildfire starting from target shooting causes on neighboring properties and entering the closure area is reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county's shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. The shooting range under this alternative has the greatest potential to reduce wildfire starts throughout the Planning Area because recreational target shooting activities would be concentrated in an area where fuel loads are eliminated.

Urbanization impacts would be similar to that described under Alternative A.

Protective Measures and Compliance

Protective measures would be the same as Alternative B.

Monitoring and compliance would be the same as Alternative A. Regular education/outreach patrols would be conducted outside the 3,450 acre closure area.

4.3.3.2 Enforcement

The direct impacts would be similar to Alternative B except with the 3,450 expanded closure area, patrols and target shooter displacement would vary.

Patrols after the initial closure of the 3,450 acres would require increased coordination with local law enforcement. BLM could detail additional rangers to the area to improve contact and outreach with the recreating public. Opportunity for violations of the 3,450 acre closure could increase from current levels. Over time, conducting public health and safety patrols would be reduced because of the reduced opportunity for threats to public safety. Due to the proximity to large population bases, compliance of the closure would be monitored closely with public contacts and law enforcement patrols. The public would take additional time to be accustomed to a larger closure area than what was implemented in 2012 under the temporary closure by an additional 2,557 acres. Appropriate signs would need to be installed and maintained at regular intervals that inform the public of the closure.

With the expansion of the long-term closure, a new pattern of target shooter displacement would occur that is not known at this time. However, with a target shooting closure of 3,450 acres, there would be more areas free of target shooters for other general land users to safely recreate.

Law enforcement actions on the BLM lands within the Planning Area are affected by the cumulative actions discussed under Alternative A. Under this alternative, however, there would be no target shooting west of the power line road, where petroglyphs occur. With a larger closure area, including the area surrounding the proposed shooting range, more people would be anticipated to use the target shooting range. The BLM anticipates this would lead to a reduction in safety violations compared with the other two alternatives. The displacement of target shooting due to the expansion of the closure area, into other areas within the field office, would increase the need for increased patrols of areas of public lands within easy access to population bases. Other types of recreation could increase in the Planning Area, increasing the need for patrols in that area, however the safety violations are expected to be lower because of the nature of the other recreational activities.

Ongoing coordination with law enforcement officers from Utah County and SITLA would continue. Goals and needs of these agencies would be more consistent with BLM's efforts under Alternative C.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring and compliance would be the same as Alternative A, plus routine patrols of the 3,450 acre closure area would be completed.

4.3.3.3 Wildlife

Under Alternative C, the current 893 acre temporary closure would be expanded to include adjacent public lands to the north and to the west. The total acres that would be closed to target shooting is approximately 3,450 acres. Under this alternative, 1,382 acres of mule deer substantial yearlong habitat, 1,900 acres of chukar substantial yearlong habitat, and 3,450 acres of potential habitat for migratory birds and special status species would be closed to target shooting. The expanded closure area intertwines with 1,500 acres of closed lands on SITLA.

Direct impacts described under Alternative A would not occur or would be reduced within the closed area. Mortality, injury, and displacement caused by shooting activities would be reduced within the closed area. Noise or human disturbances caused by human and vehicle traffic would be decreased substantially. Direct impacts described under Alternative A would still occur outside of the closed area but to a lesser extent than Alternative B. The closed area would cover more mule deer and chukar substantial yearlong habitat and migratory bird and special status species potential habitats than Alternative B, and direct positive impacts to these species would be greater than with Alternative B.

Similar to other areas of the SLFO that are not closed to target shooting, wildlife monitoring crews could be at risk of being in areas of gunfire. Depending on how the displaced target shooters choose to utilize the rest of the Planning Area, some nest monitoring may not occur outside of the 3,450 acre closure boundary.

Compared to all of the other alternatives, Alternative C should have the least amount of direct and indirect impacts to wildlife and their habitat within the Planning Area and therefore would provide the greatest protection of wildlife and their habitat.

The indirect impacts from habitat loss, target shooting related wildfires, wildfire suppression activities, ESR, fuels treatments, introduction of invasive and noxious weeds, and the accumulation of trigger trash could displace wildlife and alter their vital rates would be decreased within the closed area. However, closing 3,450 acres of the area for target shooting within the Planning Area would continue to push target shooters outside of closed areas on federal lands. Shooting activities that would occur outside the expanded closed area would have the same impacts as described under Alternative A.

Wildfire impacts are similar to Alternative A, but occurrence of wildfire would be reduced compared to Alternative B. Habitat benefits would increase within the 3,450 acres.

Weed spread would be reduced compared to Alternative A because the target shooting component of the general public would not be driving through the closure area and the number of wildfires that are started because of target shooting would be reduced. The impacts to wildlife habitat would be reduced under this alternative due to 3,450 acres of target shooting closure.

Within the expanded closure area, residual impacts of trigger trash and disturbances to wildlife would be greatly reduced (or eliminated).

The cumulative analysis area for wildlife is the entire Lake Mountains Range.

Because closed areas would be interspersed with SITLA closed lands, the benefits to wildlife habitat would increase as direct and indirect effects of target shooting would be further reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county's shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. The shooting range under this alternative has the greatest potential for benefit for wildlife and their habitat by concentrating recreational target shooting activities.

Urbanization impacts could be similar to Alternative A, however with a shooting closure in place, the area would likely receive additional recreational pressure from other pursuits, such as OHV/ATV use, horseback riding, mountain biking, bird watching, or petroglyph viewing. These recreational activities could have short-term impacts to wildlife as wildlife may avoid areas where human activities are occurring. However, if properly managed, these activities would not degrade the habitat to the extent target shooting has.

The cumulative effects analysis would be similar to Alternative B except the closure would cover 3,450 acres.

Protective Measures and Compliance

Same as Alternative A.

4.3.3.4 Lands

Under Alternative C, an expanded closure area of 3,450 acres would be prohibited to target shooting activity. This alternative would directly reduce the damage to power lines within the expanded closure. This expanded closure would also reduce damage to private property, as target shooting would no longer be allowed on the public lands adjacent to the private lands.

ROWs within the proposed expanded closure area would include:

- UTU-0115794 issued to Rocky Mountain Power – 345 kV Power Line Camp Williams-Nephi Segment
- UTU-001331 Rocky Mountain Power – 46 kV Line Saratoga to Eureka
- UTU-0074806 FHA – State Highway 68
- UTU-081920 Pabco Building Products – Access Road
- UTU-082941 Peck Rock & Prod. Inc. – Access Road
- UTU-89553 Utah County – R&PP Soldier Pass Shooting Range
- UTU-091092 Utah County – Access Road to Utah Lake
- UTU-091438 Utah County – Access Road Soldier Pass Shooting Range

Since the power lines merely intersect the expanded closure area they would still be at risk from target shooting, stray bullets and wildfires outside of the expanded closure.

Roads within the closure area would likely continue to be used by the recreating public traveling through the closed area.

Monitoring and inspection rates of ROWs by BLM realty staff could be reduced due to an anticipated decline in reported damages.

The closure of 3,450 acres to target shooting would force recreational target shooters to other areas outside of the target shooting closure. The concerns described under Alternative A would likely occur in other areas outside of the closure as shooters search for other locations in which to practice their activity/sport.

Wildfires that start from target shooting outside of the closure area may still occur because the same concerns described in Alternative A would continue to exist. This may result in wildfires starting outside of the closure area but spreading into the closure area.

Damages above and beyond normal wear and tear to ROW infrastructure would continue to occur outside of the closed area.

Because closed areas would be interspersed with SITLA closed lands, the benefits to ROW infrastructure would increase as direct and indirect effects of target shooting would be further reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. This alternative is the only alternative that benefits the shooting range. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county's shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the

area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. Target shooters utilizing the range could benefit ROW infrastructure throughout the Planning Area as there will be less shooters on federal BLM lands.

Urbanization impacts could be similar to Alternative A, however with a shooting closure in place, the area would likely receive additional recreational pressure from other pursuits, such as OHV/ATV use, horseback riding, mountain biking, bird watching, or petroglyph viewing. Applications for ROWs for access roads and OHV/ATV trails could increase.

The remaining cumulative effects analysis would be similar to Alternative A.

Protective Measures and Compliance

Same as Alternative A.

4.3.3.5 Visual Resources

The direct impacts would be similar to Alternative B except for an additional 2,557 acres, which would be included within the long-term closure, cleaned up of trigger trash and closed to the visual presence of target shooters and their vehicles. Under this alternative, target shooting would be prohibited within a 3,450 long-term closure. The visual effects under the 893 acre temporary closure would be expanded within the additional 2,557 acres and improve visual resources. The additional signing and possibly bulletin boards to identify the closure boundary and inform the public about the long-term closure would have minimal impacts on visual resources. This expanded acreage would include those at-risk cultural resources outside the current temporary closure that would not be protected under Alternative B.

Outside the closure, target shooting impacts may increase with the increasing popularity of target shooting in the Lake Mountains and may be the same as described in Alternative B, except at-risk cultural sites within the additional closure area would be protected.

Within the characteristic urban interface landscape, the additional visual impacts from more signs and bulletin boards would not result in major alterations of the landscape. The level of contrast with the existing environment, including the existing man-made features within the area, would be low. Overall, these visual impacts would be outweighed by the benefits provided by the long-term closure. Signs indicating the area is closed to target shooting would be evident and visually intrusive. And there would be an obvious difference in the visual resources of the closed area: visual intrusions from target shooters, their vehicles and trigger trash would be greatly reduced. These visual impacts would be consistent with and exceed the management objective for VRM Class IV, which allows for major modifications of the existing landscape that create contrasts that dominate the area and the focus of viewer attention.

Indirect impacts would be similar to Alternative B but for an expanded long-term closure area of 3,450 acres. Within the expanded closure area, residual impacts of trigger trash would be greatly reduced (or eliminated) through subsequent cleanups. Within the Planning Area and outside the closure area, new or increased impacts to visual resources may occur from target shooters displaced from the expanded closure area. Under this alternative, more target shooters would be displaced—some of whom were already displaced by the temporary closure.

Cumulative impacts would be similar to Alternative A.

Because closed areas would be interspersed with SITLA closed lands, the visual resources would improve as the direct and indirect effects of target shooting, as described above, would be further reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters—including displaced shooters—in the area would be funneled to the county’s shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. The shooting range under this alternative has the greatest potential to improve visual resources throughout the Planning Area by concentrating recreational target shooting activities.

Urbanization impacts could be similar to Alternative A, however with a shooting closure in place, the area would likely receive additional recreational pressure from other pursuits, such as OHV/ATV use, horseback riding, mountain biking, bird watching, or petroglyph viewing. These recreational activities, if not managed properly, could impair visual resources. However, the impairment would still meet the management objective for VRM Class IV.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring and compliance would be the same as Alternative A, however, monitoring needs within the 3,450 acre closure boundary would be reduced.

4.3.3.6 Invasive Species/Noxious Weeds

The effects from this alternative would be similar to Alternative B, except the closure would cover 3,450 acres.

Displaced target shooters would move into other areas of the Planning Area and would continue to transport weed seed to and from the Planning Area. This would create the same circumstances as described in Alternative A.

Wildfires that might start from target shooting would be greatly reduced, and therefore the effects of wildfire spreading invasive species, such as cheatgrass, could be reduced. Because the proposed closure area under this alternative is interspersed with an existing closure on SITLA lands, the risk of wildfires starting from target shooting causes on neighboring properties and entering the closure area is reduced, thereby further potentially reducing the spread and proliferation of cheatgrass.

The impacts of the Soldier Pass Shooting Range could be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county’s shooting range. The shooting range under this alternative has the greatest potential to reduce wildfire starts throughout the Planning Area because recreational target shooting activities would be concentrated in an area where fuel loads are eliminated.

Cumulative impacts from urban development and sprawl would be similar to Alternative A.

Protective Measures and Compliance

Same as Alternative B.

4.3.3.7 Vegetation/Soil

This alternative would have similar effects to Alternative B but with substantially more protection to native vegetation from a reduction of wildfires from target shooting due to expanding the closure to 3,450 acres. Areas outside the 3,450 acre closure, but still within the Planning Area, would still be prone to target shooting related fires. Overall, however, the number of wildfires would be expected to decrease under this alternative. Therefore, changes in vegetation composition after fire would be reduced, the likelihood of exposed soils would be reduced, and the loss of soils would be reduced.

The direct impacts would be similar to Alternative B, except the closure area would include 3,450 acres. With a larger closure area, other recreational target activities would be expected to utilize the area, including OHV/ATV, horseback riding, hiking and petroglyph viewing. This increase in use can have local negative impacts to vegetation and soils in locations of the trails; however, with the reduction in target shooting, the quality of the vegetation is expected to improve.

Compared with Alternatives A and B, Alternative C provides long-term protection and management to vegetation and soils within the long-term closure area from target shooting but not from other recreational activity.

Because closed areas would be interspersed with SITLA closed lands, the risk of wildfire starting from target shooting causes on neighboring properties and entering the closure area is reduced. Therefore the negative effects to vegetation and soils from wildfire is also reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county's shooting range. The shooting range under this alternative has the greatest potential to reduce wildfire starts throughout the Planning Area because recreational target shooting activities would be concentrated in an area where fuel loads are eliminated.

Other cumulative impacts would be similar to Alternative A.

Protective Measures and Compliance

Same as Alternative A.

4.3.3.8 Waste Materials

The direct impacts would be similar to Alternative B but for an expanded closure area of 3,450 acres. As the area is closed to shooting, a corresponding reduction in trigger trash would occur on the 3,450 acres. Illegal dumping would likely continue to occur within the long-term closure area, but in a dispersed manner as the areas of trigger trash accumulation would be greatly reduced (or eliminated).

The indirect impacts would be similar to Alternative B, except the closure area would include 3,450 acres.

The cumulative impacts would be similar to Alternative B; however, if this alternative is selected, the potential for such clean-up projects within the expanded closure area decrease, but such future clean ups in the surrounding public lands increase.

Under Alternative C, because closed areas would be interspersed with SITLA closed lands, clean-up efforts within the closed area would be reduced while there could be a potential increase in clean-up efforts outside the closed area.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be funneled to the county's shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. The shooting range under this alternative has the greatest potential to reduce solid and hazardous waste on BLM public lands as those sources of waste material (trigger trash) would be concentrated at the range making clean-up efforts easier.

Protective Measures and Compliance

Protective measures would be the same as Alternative A.

Monitoring and compliance would be the same as Alternative B; however, volunteer groups, who have been relied on to clean-up solid waste would likely be needed initially to clean up trigger trash that exists in the expanded closure area.

4.3.3.9 Recreation

Direct impacts would be similar to Alternative B except for an additional 2,557 acres, which would be included within the long-term closure, cleaned up of trigger trash and closed to target shooters and their associated gunfire and vehicles. Under this alternative, target shooting would be prohibited within a 3,450 long-term closure—with a continuation of the same effects as under the 893 acre temporary closure and an improvement of resources within the additional 2,557 acres. This would include those at-risk cultural resources outside the current 893 acre temporary closure that would not be protected under Alternative B.

Under this alternative, an expanded closure area has the potential to create new recreational opportunities within the area for a broader spectrum of the population. The expanded closure would be most beneficial to the non-target shooting public that currently recreate within the temporary closure area, while the forced relocation of displaced target shooters to other public lands has increased (and would continue to increase) target shooting on lands outside the closure. New recreation opportunities include OHV/ATV use, equestrian riding, mountain biking, hiking, camping, nature photography, access to nearby Utah Lake, and development of an outdoor museum highlighting the many petroglyphs that exist in the area. The closure also has inspired the adjacent communities of Eagle Mountain City and The City of Saratoga Springs to express interest in developing a trail system in the Lake Mountains.

In order to implement the closure, additional signs and bulletin boards would be needed to identify the expanded long-term closure boundary and provide the public with information about the long-term closure and safe target shooting practices. These structures would add additional developments to this undeveloped yet highly impacted urban-interface area; however, they would be minimally impacting as there are signs and bulletin boards already throughout the Planning Area and within the temporary 893 acre closure. Additional signs and bulletin boards would be installed along Highway 68, Soldier Pass and in other locations to help enforce the long-term closure, assist with protection of public safety and natural and cultural resources, and prevent target shooting damage and trigger trash in the closure.

Outside the closure area, target shooting impacts may increase with the increasing popularity of target shooting in the Lake Mountains and would be the same as described in Alternative B, except at-risk cultural sites within the additional 2,557 acres would be protected.

The indirect impacts would be similar to Alternative B but for an expanded long-term closure area of 3,450 acres. Within the expanded closure area, residual impacts of trigger trash would be greatly reduced (or eliminated) through subsequent volunteer cleanups and displacement of recreational target shooters would occur from the additional 3,450 acres. Under this alternative, more target shooters would be displaced—some of whom were already displaced by the temporary closure.

The cumulative impacts would be the similar to Alternative B.

Similar to Alternative B, route designation within the Planning Area would be fully addressed in a separate process for the Southeastern Lake Mountains Route Designation effort. This would be fully vetted through the public participation process. Under this alternative (C), it would be expected changes to public access points would be considered within the 3,450 acre closure area. Coordination with adjacent landowners would be initiated and completed through the NEPA process. Some routes could be abandoned or treated in any way to obscure the locations of such routes within the 3,450 acre closure area. Potential impacts would be less motorized access within this area, but increased benefits to Historic Properties (specifically petroglyphs), soils, and vegetation.

Because closed areas to target shooting under this alternative would be interspersed with SITLA lands closed to access, target shooting will be displaced the most. However, with a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed Soldier Pass Shooting Range, recreational target shooters in the area would be funneled to the county's shooting range. The shooting range under this alternative has the greatest potential to capture displaced recreational target shooters. In addition, other forms of recreation would be more likely to happen within the Planning Area.

Protective Measures and Compliance

Same as Alternative B.

4.3.3.10 Cultural Resources

The area encompassed by Alternative C includes the locations of known petroglyph sites within the Planning Area.

Current data indicates that petroglyph sites in the 3,450 acre closure area exhibit substantial damage from unregulated target shooting in the form of bullet impacts and paint spatter. A large portion of this damage increased as a result of the 2012 temporary shooting closure (as described under Alternative B). Displaced target shooters moved to this area containing a larger percentage of the petroglyphs. The selection of Alternative C would eliminate unregulated target shooting and additional damage to these sites in the closure area. Damage from illegal target shooting could still occur within the closed area but would be dramatically reduced once the shooting public becomes accustomed to the new closure.

The area proposed for closure under Alternative C is heavily utilized by target shooters, especially west of the power line road. If Alternative C is selected and the area is closed, these shooters would be displaced. Some of them would make use of the Soldier Pass Shooting Range. However, many others could target shoot in those portions of the Planning Area that are not closed. These locations may contain petroglyph sites that would be put at greater risk. Since there is no comprehensive inventory of petroglyphs for the Lake Mountains, it is unknown how many additional petroglyphs are located in other areas of the Lake Mountains.

The proposed shooting range noted above would draw some shooters away from areas where petroglyph sites are located, but it would not capture the entire target shooting population. Increased law enforcement patrols may reduce impacts to petroglyph sites through ARPA violation citations, but it is unreasonable to expect that these patrols would eliminate the impacts.

By eliminating unregulated target shooting in the closure area, Alternative C would leave it open to use by other populations. By displacing target shooting from the closure area into previously under-utilized portions of the Planning Area, the negative cumulative impacts associated with Alternative A may become apparent in those places.

These populations include, but are not limited to, recreational hikers/campers, school groups interested in learning about petroglyphs, avocational archaeological groups interested in researching and recording petroglyphs, professional archaeologists interested in petroglyph research, and youth groups interested in observing and learning about petroglyphs. Safety and security of the individuals would increase within the closed area. There would be less interaction and possible conflicts between the different recreation experiences.

Alternative C would allow shooting in the Planning Area outside of the 3,450 acre closure area to continue.. Wildfires could still be ignited outside of the closure area by target shooting activity and burn into the closure boundary. Wildfires, regardless of cause, would continue to risk the integrity of petroglyphs (spalling of rock surface that might contain petroglyphs) and fire suppression.

ESR activity associated with wildfire restoration as well as other vegetation treatments although potentially damaging to other types of cultural resources, do not pose a major threat to known petroglyph sites as Historic Properties are routinely avoided.

Because closed areas would be interspersed with SITLA closed lands, the benefits to cultural resources would increase as direct and indirect effects of target shooting would be further reduced.

The impacts of the Soldier Pass Shooting Range would be substantially different than the other alternatives. With a shooting closure in place along the eastern slopes of Lake Mountains and surrounding the proposed shooting range, recreational target shooters in the area would be

funneled to the county's shooting range. The county does not propose to require fees for the use of the shooting range which will reduce opposition from some of the shooters that would like a free place to shoot. The shooting range is in the area that the shooters are accustomed to shooting in and would require at most a few minutes longer drive for some of the shooters to access. Finally, the area surrounding the shooting range would be closed to target shooting providing for the safety of the users in the range. The shooting range under this alternative has the greatest potential for benefit cultural resources by concentrating recreational target shooting activities. However, not everyone will utilize the shooting range. Target shooters will still be able to shoot outside the closure area within the Planning Area. Any unknown and unrecorded cultural sites could be damaged.

Urbanization impacts could be similar to Alternative A, however with a shooting closure in place, the area would likely receive additional recreational pressure from other pursuits, such as OHV/ATV use, horseback riding, mountain biking, bird watching, or petroglyph viewing. Similar to alternative A, visitation by all users in the area could increase opportunity for theft of petroglyphs.

Protective Measures and Compliance

Inventory and monitoring in areas outside the closure areas where petroglyph sites are likely to be found and impacted by target shooting outside the closure area would help ensure that damage to petroglyph sites from unregulated target shooting is not merely exported outside the closure area.

Increased law enforcement presence would assist in mitigating the impact of shooting-related damage to petroglyphs. If Alternative C is selected and unregulated target shooting is displaced to locations outside the closure area, additional damage to petroglyphs might occur. This damage does represent a violation of ARPA which carries both civil and criminal penalties. However, the effort required to effectively patrol locations outside the closure area might exceed the capabilities of law enforcement given current staffing.

Monitoring new petroglyph sites located outside the closure area for damage from displaced target shooters consistent with that previously documented in the closure area would be needed. If this monitoring reveals damage to petroglyph sites, increased law enforcement presence would be needed to ensure compliance with ARPA.

4.4 Summary

This chapter has considered the potential direct, indirect and cumulative environmental impacts resulting from the implementation of each alternative.

5 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The ID Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2 Persons, Agencies and Organizations Consulted

Individuals, agencies and organizations that were consulted or coordinated with during this EA are identified in Table 12.

Table 12 Individuals, agencies and organizations.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Senator Orrin Hatch	Coordination with Local Congressional Representative	<p>DM Oliver called on June 30, 2015 to follow-up on the NOI, provide general information about the plan amendment process and introduce the public scoping meetings.</p> <p>Utah State Office (UTSO) Public Affairs Meg Crandall emailed notification to Ron Dean and Sandra Kester on July 1, 2015.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Senator Mike Lee	Coordination with Local Congressional Representative	<p>DM Oliver called on June 30, 2015 to follow-up on the NOI, provide general information about the plan amendment process and introduce the public scoping meetings.</p> <p>UTSO Public Affairs Meg Crandall emailed notification to Derek Brown and Hannah Lockhart on July 1, 2015. Public scoping letter mailed on July 1, 2015.</p> <p>On July 2, 2015 DM Oliver contacted, Ryan Wilcox, Representative for Senator Lee in a conference call with Laurel Price.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Representative Rob Bishop	Coordination with Local Congressional Representative	<p>DM Oliver called on June 30, 2015 to follow-up on the NOI, provide general information about the plan amendment process and introduce the public scoping meetings.</p> <p>UTSO Public Affairs Meg Crandall emailed notification to Peter Jenks on July 1, 2015. Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Representative Chris Stewart	Coordination with Local Congressional Representative	<p>DM Oliver called on June 30, 2015 to follow-up on the NOI, provide general information about the plan amendment process and introduce the public scoping meetings.</p> <p>UTSO Public Affairs Meg Crandall emailed notification to Dell Smith and Abby Hunsaker on July 1, 2015.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Representative Jason Chaffetz	Coordination with Local Congressional Representative	<p>DM Oliver called on June 30, 2015 to follow-up on the NOI, provide general information about the plan amendment process and introduce the public scoping meetings.</p> <p>UTSO Public Affairs Meg Crandall emailed notification to Wade Garrett and Kelsey Berg on July 1, 2015.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Representative Mia Love	Coordination with Local Congressional Representative	<p>DM Oliver called and left messages on June 30 and July 1, 2015 and spoke with Laurel Price State Director for Mia Love on July 2, 2015 to follow-up on the NOI, provided general information about the plan amendment process and introduce the public scoping meetings. In this same call, DM Oliver also included, Ryan Wilcox, Representative for Senator Lee.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 2, 2015 DM Oliver and FM Hotze met with Laurel Price and Barry McLerran and completed a site visit and provided information about the public meetings and the planning effort.</p> <p>Laurel Price attended Cooperating Agency meeting on 7/28/15. Several conversations were held with Laurel Price and Barry McLerran regarding criteria for participating as Cooperating Agency and Consulting Party. Thereafter, Barry McLerran attended Consulting Parties meetings.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Utah State Governor's Office	Coordination with State Government	<p>DM Oliver contacted Alan Matheson, Environmental Advisor, and Cody Stewart, Energy Advisor on July 1-2, 2015 regarding start of planning effort and open houses.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA. A 60 day Governor's Review will be conducted.</p>
Utah Division of State History, State Historic Preservation Office (SHPO)	Consultation as required by NHPA (16 U.S.C. 470)	<p>FM Hotze contacted Lori Hunsaker, Assistant State Historical Preservation Officer, on July 1-2 to inform of planning effort and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Accepted invitation to be Consulting Party and attended Consulting Party meetings.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA. Section 7 consultation with the SHPO will be conducted prior to finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Public Lands Policy Coordinating Office (PLPCO)	Coordination with State Government	<p>Public scoping letter mailed on July 1, 2015. Accepted invitation to be Cooperating Agency, assisted in preparation and review of EA. Brian Nalder and Sindy Smith attended Cooperating Agency meetings. Signed MOU to work with BLM in development of EA.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
School and Institutional Trust Lands Administration (SITLA)	Coordination with agency that has jurisdiction by law.	<p>Worked with SITLA investigator in reporting incidents occurring on SITLA lands. Contacted Kim Christie, Deputy Director, to notify of planning effort and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 8, 2015 FM Hotze held a phone conference with Kim Christie to discuss planning issues, start of planning process and public meetings.</p> <p>August 4-5, 2015 Kim Christie and Deena Loyola staffed an information table at the BLM SLFO public open houses.</p> <p>Accepted invitation to be Cooperating Agency, assisted in preparation and review of draft EA. Kim Christie, Deena Loyola and Chris Fausett attended Cooperating Agency meetings. Signed MOU to work with BLM in development of EA.</p> <p>Joel Boomgarden attended Consulting Parties meeting on July 29, 2015. Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Utah Division of Wildlife Resources (UDWR)	Coordination with agency that has jurisdiction by law.	<p>On December 3 and 10, 2015, Biologist Wright e-mail conversations with UDWR's Tom Becker and Kim Hersey (respectively) regarding the presence and use of the Planning Area by big game species, chucker, and cougar..</p> <p>Formal coordination via PLPCO.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
US Fish and Wildlife Service (USFWS)	Coordination with agency that has jurisdiction by law.	<p>BLM has determined that there is no effect on the June sucker or its critical habitat.</p> <p>On November 23, 2015, Biologist Mellon contacted UTSO T&E Lead Bolander where it was discussed that the water chemistry would not be impacted and a follow-up discussion with USFWS would be appropriate. On November 23, 2015, Biologist Mellon contacted the USFWS, Paul Abate and discussed water chemistry and transportation distance to the Utah Lake shoreline.</p> <p>Between November 23 and 25, 2015, Biologist Mellon and USFWS George Weekly agreed that the June sucker and its critical habitat would not be impacted.</p>
Utah County Commission	Coordination with agency that has jurisdiction by law.	<p>County Commissioners Larry Ellertson, Bill Lee and Greg Graves were contacted and briefed on planning effort and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 21, 2015 DM Oliver and PAO Reid provided a formal presentation with the County Commission to discuss planning issues and inform of planning start and public scoping meetings.</p> <p>Accepted invitation to be Cooperating Agency, assisted in preparation and review of draft EA. Commissioner Larry Ellertson attended Cooperating Agency meetings. Signed MOU to work with BLM in development of EA.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Utah County, County Sheriff	Coordination with agency that has jurisdiction by law.	<p>Contacted Sheriff James O. Tracy, Spanish Fork office, and Lt. Eric McDowell, Eagle Mt. City office, to inform of planning process and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>FM Hotze emailed public scoping letters to Utah County Sheriff offices on July 8, 2015.</p> <p>Under Sheriff Mike Forshee attended Cooperating Agency meetings with Utah County Commissioner Larry Ellertson.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
City of Saratoga Springs, Police Department	Coordination with Local Government	<p>Contacted Chief of Police, Andrew Burton, on June 24, 2015 to inform of planning process and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>FM Hotze emailed public scoping letters to Chief of Police on July 8, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
<p>Jemez Pueblo, Goshute, Skull Valley Goshute, Paiute and Ute.</p>	<p>Consultation as required by the American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996) and NHPA (16 U.S.C. 470).</p>	<p>Consultation letters were sent to the identified Tribes via certified mail on June 29, 2015. These Tribes also were invited to participate as Cooperating Agency under NEPA and Consulting Party under NHPA; none accepted. Mailed Tribes public scoping letter on July 1, 2015 and contacted July 1-7 to schedule phone conference with FM, if desired. The Paiute tribe requested a follow-up face to face meeting.</p> <p>AFM Nelson and cultural resource specialist Sheehan attended a Paiute Tribal Council meeting at Cedar City on July 16, 2015. They indicated their support of the plan amendment.</p> <p>Tribal consultation letters were emailed by FM Hotze on July 8, 2015 regarding whether they would like to participate as cooperating agencies or consulting parties.</p> <p>AFM Nelson contacted tribal representatives Zelda Johny (Confederated Tribes of Goshute Reservation), Lori Bear (Skull Valley Band of Goshute Tribe), and Corrina Bow (Paiute Indian Tribe of Utah) on August 21, 2015 regarding whether they would like to be a cooperating agency for the development of the plan amendment. None of the 3 tribal representatives who were called answered the phone so messages were left explaining that on this project, we have both an opportunity for them to be a cooperating agency and also a consulting party on the project. It was mentioned that SLFO had not heard from them as to their desire to be a cooperating agency. They were asked to call FM Hotze if they wanted to be a cooperating agency on this project.</p> <p>FM Hotze, met with representative Zelda Johnny of Confederated Tribes of Goshute Reservation on October 1, 2015. In that meeting, the Eastern Lake Mountains Target Shooting Plan Amendment and shooting range projects were discussed. The Tribe had no comment.</p> <p>A second request for consultation letter was sent to Phil Pikyavit, chairperson of the Kanosh Band of Paiute Indians, when the original letter was sent back by the Post Office. This consultation letter was received by the Tribe on 12/8/2015.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
City of Saratoga Springs	Coordination with Local Government	<p>On June 30, 2015, DM Oliver contacted Mayor Jim Miller’s assistant to inform of planning process and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 6, 2015 FM Hotze held a phone conference with Mayor Miller and City Manager Mark Christensen to discuss planning issues and inform of planning start and public scoping meetings.</p> <p>Accepted invitation to be Cooperating Agency, assisted in preparation and review of the EA. Did attend Cooperating Agency meetings. Signed MOU to work with BLM in development of EA. Shelly Baertsch also attended the July 29, 2015 Consulting Parties meeting because she was unable to attend the July 28, 2015 Cooperating Agency meeting.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Lehi City	Coordination with Local Government	<p>Public scoping letter mailed on July 1, 2015.</p> <p>July 1-3, 2015 contacted Mayor Bert Wilson’s assistant to inform of planning process and public meetings.</p> <p>On July 8, 2015 FM Hotze held a phone conference with Mayor Wilson to discuss planning issues and inform of planning start and public scoping meetings.</p> <p>Declined invitation to be Cooperating Agency. Christie Hutchings attended July 29, 2015 Consulting Parties meeting.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Eagle Mountain City	Coordination with Local Government	<p>On June 30, 2015 DM Oliver contacted Mayor Chris Pengra to inform of planning process and public meetings.</p> <p>On July 1-3, 2015 Project Lead Pallette contacted Mayor Chris Pengra's assistant to inform of planning process and public meetings.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 8, 2015 FM Hotze held a phone conference with Mayor Pengra to discuss planning issues.</p> <p>Accepted invitation to be Cooperating Agency, assisted in preparation and review of the EA.</p> <p>Chris Pengra attend the July 29, 2015 Consulting Parties meeting in lieu of the Cooperating Agency meetings. Signed MOU to work with BLM in development of EA.</p> <p>Additional coordination is planned as SLFO progresses through public comment period and finalizing the EA.</p>
Utah Shooting Sports Council	Coordination with Target Shooting Public	<p>On July 1-2, 2015 FM Hotze contacted Clark Aposhian and Bill Pedersen to inform of planning process and public meetings. Follow-up emails were sent on 7/2/12.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 10, 2015 FM Hotze met with Bill Pedersen to discuss planning issues and inform of planning start and public scoping meetings.</p> <p>Accepted invitation to be Consulting Party and attended Consulting Party meetings.</p>
Long Range Shooters of Utah	Coordination with Target Shooting Public	<p>On June 16, 2015 Bryce Bergen emailed the SLFO regarding the plan amendment and FM Hotze called him on June 26, 2015 to discuss the plan amendment.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>Accepted invitation to be Consulting Party and attended Consulting Party meetings.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Shooting Sports Roundtable (SSRT)	Coordination with Target Shooting Public	<p>On February 10, 2015, FM Hotze made powerpoint presentation on proposed plan amendment to Susan Recce, SSRT representative, and Phil Walker, BLM representation to the group, and other group members. FM, Hotze attended June 16, 2015 phone conference meeting to introduce start of planning effort.</p> <p>Public scoping letter mailed on July 1, 2015.</p> <p>7/1-2/15 Project Lead, Palette contacted Susan Recce and Phil Walker to inform them of planning process start and public scoping meetings. Recce called Walker to let him know she will not need another phone meeting at this time. Walker called Palette on 7/7/15 to inform SLFO that Recce does not need any additional phone meetings with Hotze at this time.</p>
Rocky Mountain Power Company	Coordination with ROW holder	<p>Public scoping letter mailed on July 1, 2015.</p> <p>On December 16, 2015, Realty Specialists Higgins held a telephone conversation with Robert Hamilton, Environmental Services Dept. of Rocky Mtn. Power Co. Wildfire is company's No. 1 concern relating to target shooting and the costs associated with replacement of burned poles and conductor (wire).</p>
Lisa Lowery	Adjacent/Local private landowner	<p>Mailed and emailed public scoping letter July 1, 2015.</p> <p>On July 6, 2015 FM Hotze met with Lisa Lowery to discuss planning issues and inform of planning start and public scoping meetings.</p>
Dean Mitchell	Adjacent/Local private landowner	<p>Mailed and emailed public scoping letter July 1, 2015.</p> <p>On July 8, 2015 FM Hotze held a phone conference with Dean Mitchell to discuss planning issues and inform of planning start and public scoping meetings.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Lake Mountain Land and Livestock/Doyle Smith Family Living Trust - Blake Smith	Grazing Permittee for Lake Smith grazing allotment and adjacent/local private land owner	<p>Mailed and emailed public scoping letter July 1, 2015.</p> <p>On July 10, 2015 FM Hotze held a phone conference with Blake Smith to discuss planning issues and inform of planning start and public scoping meetings.</p> <p>Accepted invitation to be Consulting Party and attended Consulting Party meetings.</p> <p>Range Specialist Jerry Bullock phone conversation with Blake Smith, on January 12, 2016 regarding livestock grazing within and adjacent to the Planning area. His main concern was with wildfires started by target shooters and the damage to grazing forage and his private fences.</p>
Utah Resource Advisory Council (RAC)/Recreation Resource Advisory Council (RRAC)	Coordination with Utah RAC/RRAC	<p>Presentation made June 23, 2015 to joint meeting of RAC and RRAC. Discussion followed.</p> <p>July 1, 2015 public scoping letters were distributed to all members in attendance.</p>
Utah Rock Art Research Association (URARA)	Coordination for protection/management of cultural resources	<p>Public scoping letter mailed on July 1, 2015.</p> <p>On July 1, 2015 Project Lead Palette contacted Richard Jenkinson, President, who requested SLFO work with Steve and Diana Acerson.</p> <p>On July 6, 2015 FM Hotze held a phone conference with Steve and Diana Acerson to discuss planning issues and cultural resource protection and inform of planning start and public scoping meetings.</p> <p>Accepted invitation to be Consulting Party for URARA and attended Consulting Party meetings.</p> <p>Two additional meetings have also taken place with SD Whitlock on November 13, 2015 and February 4, 2016.</p>
Utah Archaeological Research Institute (UARI)	Coordination for protection/management of cultural resources	<p>Public scoping letter mailed on July 1, 2015.</p> <p>From July 1-15, 2015 FM Hotze held a phone conference with Steve Manning to discuss planning issues and cultural resource protection.</p> <p>During this same period of time, Cultural Resource Specialist Sheehan contacted Steve Manning about the cultural sites in the planning area.</p> <p>Accepted invitation to be Consulting Party for URARA and attended Consulting Party meetings.</p> <p>Two additional meetings have also taken place with SD Whitlock on November 13, 2015 and February 4, 2016.</p>

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
The Archaeological Conservancy	Coordination for protection/management of cultural resources	Public scoping letter mailed on July 1, 2015. Between June 15 – July 15, 2015 local representative Randal Griffin contacted and visited BLM SLFO office and met with BLM specialists, including FM Hotze, to discuss planning issues and cultural resource protection. Accepted invitation to be Consulting Party and attended Consulting Party meetings. Two additional meetings have also taken place with SD Whitlock on November 13, 2015 and February 4, 2016.
Utah County Chapter of Utah Statewide Archaeological Society (USAS, Utah County Chapter)	Coordination for protection/management of cultural resources	Public scoping letter mailed on July 1, 2015. Between June 15 – July 15, 2015 FM Hotze held a phone conference with Nate Horton to discuss planning issues and cultural resource protection and inform of planning start and public scoping meetings. Accepted invitation to be Consulting Party for USAS and attended Consulting Party meetings.
Utah Professional Archaeological Council	Coordination for protection/management of cultural resources	Public scoping letter mailed on July 1, 2015. On July 1-2, 2015 Project Lead Palette contacted Tim Riley, President. Declined invitation to be Consulting Party.
Nina Bowen, concerned citizen	Coordination for protection/management of cultural resources	Public scoping letter mailed on July 1, 2015. Concerned citizen who participated as a Consulting Party and attended Consulting Party meetings.

5.3 Preparers

An interdisciplinary team prepared the document and analyzed the impact alternatives on the various resources (Table 13).

Table 13 List of preparers.

Name	Title	Responsible for the Following Section(s) of this Document
Julee Palette	Outdoor Recreation Planner	Project Lead, Recreation and Visual Resource Management
Tamsen Johnson	Law Enforcement Ranger	Enforcement
Lisa Reid	External Affairs Specialist	Public Affairs
Cheryl Johnson	GIS Specialist	GIS
Jerry Bullock	Range Management Specialist	Vegetation and Soils
Masako Wright	Wildlife Biologist	Wildlife
Teresa Rigby	Fire Prevention Specialist	Fire and Fuels
Mike Sheehan	Archaeologist	Cultural, Archaeological Clearance

Name	Title	Responsible for the Following Section(s) of this Document
Alan Jones	Hazmat Specialist	Hazardous Materials
Mary Higgins	Realty Specialist	Lands
Pamela Schuller	Planning & Environmental Specialist	Planning and NEPA Compliance

Refer also to the specialists identified in the ID Team Checklist (Appendix A).

5.4 Summary of Public Participation

Opportunities for public participation have occurred at several steps in this planning process. These steps have included a scoping period and will include a comment period. SLFO has also worked with the Cooperating Agencies and Consulting Parties. Public outreach and notifications also included telephone calls, face to face meetings, news/media releases, webpages, and letters/emails. SLFO's public room is also open for the public to review documents associated with preparing this EA. This section will be updated after the Comment Period has concluded.

Scoping Period

The Scoping Period was conducted June 12, 2015 through August 20, 2015.

The Notice of Intent was published in the *Federal Register* on June 12, 2015.

Notice of the proposed Plan Amendment was posted on the Utah BLM ENBB, NEPA Register (e-planning) and project websites on June 12, 2015.

News release was issued to local media on June 12, 2015 notifying the start of the planning process.

On July 1, 2015 the Public Scoping letter was distributed to the project mailing list of approximately 318 addresses. [This included congressional representatives; state and local government officials and agencies; tribal leadership; national, state and local organizations; local business owners; private landowners; and interested individuals.]

On July 2, 2015 the Public Scoping letters were emailed to 35 recipients (individuals who had requested to be emailed, some of whom were duplicates on the project mailing list).

On June 6, 2015 a Scoping Period announcement appeared in Deseret News article.

On June 22, 2015, WDD DM Oliver and SLFO FM Hotze and Diana Acerson and Steve Acerson, members of URARA, met with Jed Boal from KSL news to discuss the damage to the petroglyphs from target shooting on Lake Mountains. KSL news video was aired on June 23, 2015.

On June 23, 2015, FM Hotze met with the Utah RAC/RRAC. This included a powerpoint presentation of Eastern Lake Mountains Target Shooting Plan Amendment planning issues, actions and timeline.

On February 10, 2015, FM Hotze met with Susan Recce of the Shooting Sports Roundtable (SSRT) and Phil Walker, BLM representation to the group, and other group members. This included a powerpoint presentation on the proposed plan amendment. FM Hotze also participated in a June 16, 2015 telephone conference call meeting to discuss the actual start of

planning effort. From June 29, 2015 through July 10, 2015 WDD DM Oliver and SLFO FM Hotze contacted and/or held phone conferences with the Utah Delegation/Congressional Field Representatives, Utah State and Local government officials (including county commissioners and local sheriff), SSRT, Utah Shooting Sports Council, Archaeological Conservancy, URARA, USAS, UARI, Utah Professional Archaeological Council and adjacent private landowners.

On July 1, 2015 UTSO Public Affairs Crandall emailed information about the start of the planning process, including the open houses, to the Washington DC Congressional Representatives. This included contacts with Ron Dean and Sandra Kester (Senator Hatch's Office), Hannah Lockhart and Derek Brown (Senator Lee's Office), Peter Jenks (Congressman Bishop's Office), Dell Smith and Abby Hunsaker (Congressman Stewart's Office), and Wade Garrett and Kelsey Berg (Congressman Chaffetz's Office).

On June 30 and July 1, 2015, DM Oliver contacted and emailed Congresswoman Mia Love's Office, information about start of the planning process, including the open houses. On July 2, 2015 DM Oliver and FM Bekee met with Laurel Price and Barry McLerran to discuss planning process and conduct a site visit.

Through July 2, 2015 DM Oliver contacted all of the Utah Delegation Field Representatives (including Senators, Congressmen/women, and Governor's Office), Utah County Commissioners and Utah County Sheriff.

From July 1, 2015 through July 3, 2015 Project Lead Palette contacted Tribal leaders of the Jemez Pueblo, Confederated Tribes of Goshute Reservation, Skull Valley Band of Goshute Tribe, Paiute Indian Tribe of Utah, Ute Indian Tribe, and Eastern Shoshone to schedule face-to-face meetings to discuss the planning effort. Only one tribe accepted, the Paiute Indian Tribe of Utah, and a meeting was scheduled for the Tribal Council meeting on July 16, 2015 in Cedar City with Assistant Field Manager Nelson.

From July 1, 2015 through July 3, 2015 Project Lead Palette contacted (via telephone and/or email) State of Utah and Local government officials (specifically Governor's Office, SITLA, PLPCO, SHPO, and Mayors of Lehi, Eagle Mountain City and the City of Saratoga Springs); SSRT; local shooting and cultural preservation organizations (specifically Utah Shooting Sports Council, Long Range Shooters of Utah, URARA, Utah Professional Archaeological Council, Archaeological Conservancy, USAS and UARI); and local private landowners (specifically Lisa Lowery, Dean Mitchell and Blake and Julie Smith).

On July 1, 2015 through July 2, 2015 FM Hotze mailed and emailed the public scoping letter to Susan Recce of SSRT and Phil Walker, WO BLM representative on SSRT. This information was emailed again by FM Hotze on July 6, 2015. Received communication from Phil Walker on July 7, 2015 stating that the SSRT did not need any more special meetings or phone communications and to just keep in touch with them on the same schedule as the general public.

From July 6, 2015 through July 10, 2015 FM Hotze placed telephone conference calls or met with: The City of Saratoga Springs Mayor Jim Miller and City Manager Mark Christensen; Lehi Mayor Bert Wilson; Eagle Mountain City Mayor Chris Pengra; SITLA Deputy Director Kim Christie; URARA representatives Steve and Diana Acerson; Utah Shooting Sports Council representative Bill Pedersen; and private landowners Lisa Lowery, Dean Mitchell and Blake Smith. Public scoping information was emailed to all meeting participants.

On July 8, 2015 FM Hotze emailed tribal consultation letters to tribes.

On July 8, 2015 FM Hotze emailed public scoping letters to the Utah County Sheriff offices and the City of Saratoga Springs Chief of Police.

On July 8, 2015 and July 9, 2015 Project Lead Palette posted public scoping flyers on Lake Mountains bulletin boards and distributed to the City of Saratoga Springs businesses.

On July 16, 2015 External Affairs Crandall issued a news release to local media announcing public scoping meetings.

On July 16, 2015 External Affairs Crandall conducted Congressional outreach with Utah Delegation members.

On July 21, 2015 DM Oliver and FM Hotze met with the Utah County Commission.

On July 24, 2015 a news release was issued to local media announcing the scoping open houses.

On July 28, 2015 DM Oliver briefed Senator Lee Representatives Derek Brown, State Director, and Ryan Wilcox, Deputy Director,

On August 4, 2015 and August 5, 2015 Open Houses were held in The City of Saratoga Springs, Utah and Sandy, Utah. Approximately 46 and 16 individuals signed the attendance rosters for The City of Saratoga Springs and Sandy Open Houses.

On August 4, 2015 FM Hotze conducted a media field tour with Brian Maffly of Salt Lake Tribune. Article published in Salt Lake Tribune on August 24, 2015.

On August 25, 2015 FM Hotze appeared on the Rod Arquette Show on KNRS to discuss the difficulties of controlling target shooting on Utah's public lands – which may lead to some areas being closed to target shooting. Link to radio show – <http://www.iheart.com/live/1057-knrs-2389/?autoplay=true&pname=666&callletters=knrs-fm&campid=local>.

On August 26, 2015, SITLA sent Issue Paper “Target Shooting on Trust Lands” to Utah County Commission, Utah County Sheriff, Congresswoman Mia Love, and Senator Margaret Dayton to seek legislative support to amend the Trust Lands Statute to clarify that it has the authority to withdraw specified land from target shooting, if a finding is made that such use would cause resource degradation on the identified lands, as an alternative course to entirely withdrawing such land from all surface use.

On October 1, 2015 FM Hotze met with representative Zelda Johnny of Confederated Tribes of the Goshute Reservation for quarterly tribal briefing meeting, in which the Eastern Lake Mountains Target Shooting Plan Amendment and Soldier Pass Shooting Range projects were discussed. The Tribe had no comment.

Comment Period

EA/Unsigned FONSI Comment Period offered April 15 through May 16, 2016.

Cooperating Agencies

On July 28, 2015 Cooperating Agencies and SLFO met to discuss the planning process, timeline, and issues.

On September 29, 2015 Cooperating Agencies and SLFO met to discuss and complete a MOU for each entity who would like to participate officially as a cooperating agency in the Eastern Lake Mountains plan amendment process.

On October 6, 2015 FM Hotze held a telephone conference call with Eagle Mountain City Mayor Chris Pengra to update him on the 9/29/15 meeting.

On October 14, 2015 Cooperating Agencies and SLFO met and signed the MOU to participate in preparation of the EA. The final signature was obtained on November 9, 2015.

On December 2, 2015 FM Hotze sent EA Chapters 1-2 to the Cooperating Agencies for review.

On February 1, 2016 FM Hotze sent EA Chapters 3-4 to the Cooperating Agencies for review.

Consulting Parties

On July 29, 2015 Consulting Parties and SLFO met to discuss the planning process, timeline, and Historic Properties (specifically petroglyphs) in the Planning Area's Area of Potential Effect.

On September 22, 2015 Consulting Parties and SLFO met to discuss Area of Potential Effect and inventory methods required to ensure compliance with Section 106 of the NHPA.

Outreach

NEPA Register published on June 12, 2015 and updated on April 15, 2016 (comment period)

ENBB published on June 12, 2015 and updated on April 15, 2016 (comment period)

Project Webpage published on June 12, 2015 and updated on April 15, 2016 (comment period)

News Releases issued on June 12, 2015 (begin scoping), July 16 and July 24, 2015 (announce public scoping open houses and extend scoping period), and April 15, 2016 (comment period).

Mailing List (scoping letters/emails sent on July 1-2, 2015 and comment period letters/emails sent on April 15, 2016).

Scoping Period Open Houses held on August 4, 2015 in the City of Saratoga Springs, Utah and on August 5, 2015 in Sandy, Utah.

5.4.1 Modifications Based on Public Comment and Internal Review

Reserved. To be updated based on the public comment period.

5.4.2 Response to the EA/unsigned FONSI Public Comments

Reserved. To be updated based on the public comment period.

5.5 Governor's Consistency Review

Reserved. To be updated based on the results of the Governor's review.

5.6 Summary

This chapter has summarized the consultation, coordination and public involvement process used in preparing this EA.

6 REFERENCES, ACRONYMS, GLOSSARY AND APPENDICES

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6.2 Acronyms

The following is a listing of acronyms used within this document.

Acronym	Term	Acronym	Term
ARPA	Archaeological Resource Protection Act	kV	Kilovolt
ATV	All-Terrain Vehicle	LA & SL RR	Los Angeles & Salt Lake Railroad Company
AVS	Avian Conservation Strategy	LUP	Land Use Plan
BCC	Birds of Conservation Concern	MBTA	Migratory Bird Treaty Act
BCR	Bird Conservation Region	MOU	Memorandum of Understanding
BLM	Bureau of Land Management	MS	Manual Section
BOR	Bureau of Reclamation	NAGPRA	Native American Graves Protection and Repatriation Act
CA	Conservation Agreement Species	NDA	National Defense Authorization Act
CCC	Civilian Conservation Corps	NEPA	National Environmental Policy Act
CFR	Code of Federal Regulations	NFRP or WDD NFRP	West Desert District Normal Fire Year Rehabilitation & Stabilization Plan
DM	District Manager	NHPA	National Historic Preservation Act
DOI	Department of the Interior	NOI	Notice of Intent
DR	Decision Record	NRCS	Natural Resource Conservation Service
EA	Environmental Assessment	OHV	Off-Highway Vehicle
EIS	Environmental Impact Statement	ORV	Off-Road Vehicle
ENBB	Environmental Notification Bulletin Board	P.L.	Public Law
EO	Executive Order	PERA	Pony Express Resource Area
EPA	Environmental Protection Agency	PLPCO	Public Land Policy Coordinating Office
EPS	Economic Profile System	PNVG	Potential Natural Vegetation Group
ESA	Endangered Species Act	PUP	Pesticide Use Proposal
ESD	Ecological Site Description	R&PP	Recreation and Public Purposes Act
ESR	Emergency Stabilization and Rehabilitation	RAC	Resource Advisory Council
FAA	Federal Aviation Administration	RRAC	Recreation Resource Advisory Council
FHA	Federal Highway Administration	RINS	Raptor Inventory Nest Surveys
FLPMA	Federal Land Policy and Management Act	RMIS	Recreation Management Information System
FM	Field Manager	RMP	Resource Management Plan
FMP	Fire Management Plan	ROD	Record of Decision
FMZ	Fire Management Zone	ROW	Right-of-Way
FONSI	Finding of No Significant Impact	RRAC	Recreation Resource Advisory Council
FPO	Fire Prevention Order	SHPO	State Historic Preservation Office
GIS	Geographic Information System	SITLA	School and Institutional Trust Land Administration
H	Handbook	SLDO	Salt Lake District Office
IB	Information Bulletin	SLFO	Salt Lake Field Office
IM	Instruction Memorandum		
IMARS	Incident Management and Analysis Reporting System		
KNRS	Local radio station		
KSL	Local television station		

Acronym	Term	Acronym	Term
SP, LA & SL RR	San Pedro, Los Angeles and Salt Lake Railroad Company	UPIF	Utah Partners in Flight
SRP	Special Recreation Permit	USAS	Utah Statewide Archaeological Society
SS	BLM Sensitive Species	USDA	U.S. Department of Agriculture
SSRT	Shooting Sports Roundtable	USFS	U.S. Forest Service
T&E	Threatened and Endangered	USFWS	United States Fish and Wildlife Service
UARI	Utah Archaeological Research Institute	UT	Utah
URARA	Utah Rock Art Research Association	UTA	Utah Transit Authority
U.S.C.	United States Code	UTSO	Utah State Office
UDWR	State of Utah Division of Wildlife Resources	UTTR	Utah Test and Training Range
UFFSL	State of Utah Division of Forestry, Fire and State Lands	VRI	Visual Resource Inventory
ULRP	Utah Legacy Raptor Partnership	VRM	Visual Resource Management
		WDD	West Desert District
		WO	Washington Office

6.3 Glossary

The following glossary defines terms used in this document.

Term	Definition
All-Terrain Vehicle	A wheeled or tracked vehicle, other than a snowmobile or work vehicle, designed primarily for recreational use or for the transportation of property or equipment exclusively on undeveloped road rights of way, open country, or other unprepared surfaces.
Environmental Assessment	A concise public document that analyzes the environmental impacts of a proposed Federal action and provides sufficient evidence to determine the level of significance of the impacts.
Geographic Information System	A system of computer hardware, software, data, people and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information.
Incident Management and Analysis Reporting System	Law enforcement database for recording incidents, violations, citations, etc.
Land Use Plan	A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed.
Area of Potential Effect	Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of Historic Properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. [36 CFR §800.16 Definitions.(d)]
Extensive Recreation Management Area	Areas where dispersed recreation is encouraged and where visitors have a freedom of recreational choice with minimal regulatory constraint. Significant public recreation issues or management concerns are limited and minimal management, consistent with the BLM's stewardship responsibility suffices in these areas. There may be one or several extensive recreation management areas in each resource area. Detailed planning is not usually required for these areas.
Federal Register	A daily publication, which reports presidential and Federal agency documents.
Interdisciplinary Team	A group of individuals with different training, representing the physical sciences, social sciences, and environmental design arts, assembling to solve a problem or perform a task. The members of the team proceed to a solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions. The number and

Term	Definition
	disciplines of the members preparing the plan vary with circumstances. A member may represent one or more disciplines or BLM program interests.
LR2000	Lands and realty actions database.
Amendment	The process for considering or making changes in the terms, conditions, and decisions of approved land use plans. Usually only one or two issues are considered that involve only a portion of the planning area (field office).
Avoidance	Preventing a potential adverse effect from occurring by the partial or complete redesign or relocation of a proposed land use.
Conformance	Means that a proposed action shall be specifically provided for in the land use plan or, if not specifically mentioned, shall be clearly consistent with the goals, objectives, or standards of the approved land use plan.
Consistency	Means that the proposed land use plan does not conflict with officially approved plans, programs, and policies of Tribes, other Federal agencies, and state and local governments (to the extent practical with Federal law, regulation, and policy).
Consulting Party/Parties	Consulting parties include representatives of local governments, applicants, and certain individuals and organizations with a demonstrated interest in the undertaking due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties (36 CFR 800.2(c)(3-5)). In consultation with the SHPO/THPO, the BLM shall identify consulting parties and invite them to participate in consultation and shall consider all written requests of individuals and organizations to participate as consulting parties (36 CFR 800.3(f)).
Cooperating Agency/Agencies	Assists the lead Federal agency in developing an EA or EIS. The CEQ regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, state, local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.
Cultural Resource	A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. (Cf. "traditional cultural property"; see "definite location".) Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of

Term	Definition
Historic Property/Properties	identifying, protecting, and utilizing for public benefit described in this Manual series. They may be but are not necessarily eligible for the National Register (See "historic property" or "historic resource".) Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.
Implementation Level Decision	An area or site-specific plan written to implement decisions made in a land use plan. Implementation plans include both activity plans and project plans (they are types of implementation plans).
Land Use Plan Decision	Establishes desired outcomes and actions needed to achieve them. Decisions are reached using the planning process in 43 CFR 1600. When they are presented to the public as proposed decisions, they can be protested to the BLM Director. They are not appealable to IBLA.
Limited OHV Designation	Specified area(s) where motorized vehicle travel is restricted to existing or designated routes, roads, vehicle ways, or trails with possible additional restrictions. The limited designation is used where OHV use must be restricted to meet specific resource management objectives. Examples of limitations include: number or type of vehicles; time or season of use; permitted or licensed use only; use limited to designated roads and trails; or other limitations if restrictions are necessary to meet resource management objectives, including certain competitive or intensive use areas that have special limitations (see 43 CFR 8340.05). In this EA, the Limited OHV Designation applies to existing roads and trails.
Plan Amendment	This refers to the Eastern Lake Mountains Target Shooting Plan Amendment.
Planning Criteria	The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision making, analysis, and data collection during planning. Planning criteria streamline and simplify the resource management planning actions.
Potential bullet impact zone	This varies based on the firearm, ammunition used in the firearm, angle at which the bullet is shot, trajectory of the shot bullet, wind conditions, and distance to the target.
Public land/lands	Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands located on

Term	Definition
	the Outer Continental Shelf, and land held for the benefit of Indians, Aleuts, and Eskimos.
Revision	The process of completely rewriting the land use plan due to changes in the planning area affecting major portions of the plan or the entire plan.
Section 106 Compliance	The requirement of Section 106 of the National Historic Preservation Act that any project funded, licensed, permitted, or assisted by the Federal government be reviewed for impacts to significant historic properties and that the State Historic Preservation Officer and the Advisory Council on Historic Preservation be allowed to comment on a project.
Tread Lightly	Tread Lightly! and its partners lead a national initiative to protect and enhance recreation access and opportunities by promoting outdoor ethics to heighten individuals' sense of good stewardship. Tread Lightly!'s goal is to balance the needs of the people who enjoy outdoor recreation with our need to maintain healthy ecosystems and thriving populations of fish and wildlife. The scope of our work includes both land and water, and is representative of nearly every form of outdoor recreation including, but not limited to hunting, recreational shooting, fishing and boating. We also have a niche in promoting safe and responsible use of motorized and mechanized vehicles in the outdoors.
Trigger Trash	Trash left by target shooters, consisting of empty shotgun shells, empty brass cartridges, and trashed/shot up targets, including but not limited to paper/cardboard/wood targets and a wide assortment of household objects used as targets, including but not limited to: household appliances, glass and plastic bottles, paint cans, mattresses, furniture, televisions, computers, etc.
Undertaking	Undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval (36 CFR 800 & NHPA, Sec. 106).
Planning Area	The geographic area within which the BLM will make decisions during a planning effort. A planning area boundary includes all lands regardless of jurisdiction; however the BLM will only make decisions on lands that fall under the BLM's jurisdiction (including subsurface minerals). Unless the State Director determines otherwise, the planning area for a RMP is the geographic area associated with a particular field office (43 CFR 1610.1(b)). State Directors may also establish regional planning areas that encompass several field offices and/or states, as necessary.

Term	Definition
Special Recreation Management Area	Recreation Management Areas where congressionally recognized recreation values exist or where there are significant public recreation issues or management concerns. Special or more intensive types of management are typically needed. Detailed recreation planning is required in these areas and greater managerial investment is likely (e.g., facilities, supervision, etc.). There may be none to several of these areas within a resource area. The size of these management units is typically more than 1,000 acres, but exceptions can occur for smaller sites (e.g., very large campground units, trail segments, historic sites, etc.)
Special Status Species	Includes proposed species, listed species, and candidate species under the Endangered Species Act; state-listed species; and BLM State Director-designated sensitive species (see BLM Manual 6840, Special Status Species Policy).
Off-Highway Vehicle	Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense.
Off-Road Vehicle	See OHV
Resource Advisory Council	A council established by the Secretary of the Interior to provide advice or recommendations to BLM management. In some states, provincial advisory councils (PACs) are functional equivalents of RACs.
Recreation Resource Advisory Council	A subcommittee of the RAC that focuses on recreation-related issues and projects.
Resource Management Plan	A land use plan as prescribed by the Federal Land Policy and Management Act which establishes, for a given area of land, land-use allocations, coordination guidelines for multiple-use, objectives and actions to be achieved.
Right-of-Way	A right-of-way grant is an authorization to use a specific piece of public land for a specific project, such as roads, pipelines, transmission lines, and renewable energy and communication sites. The grant authorizes rights and privileges for a specific use of the land for a specific period of time.
Recreation Resource Advisory Council	This is a subgroup of the RAC for focusing on recreation issues, specifically.
Threatened and Endangered	Threatened - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant

Term	Definition
	portion of its range.
	Endangered - any species that is in danger of extinction throughout all or a significant portion of its range.
Travel and Transportation Management	The on-the-ground management and administration of travel and transportation networks (both motorized and non-motorized) to ensure that public and administrative access are met, resources are protected, and regulatory needs are considered. It consists of implementation, education, enforcement, monitoring, easement acquisition, mapping and signing, and other measures necessary for providing access to public lands for a wide variety of uses (including uses for administrative, recreational, traditional, authorized, commercial, educational, and other purposes) as well as all forms of motorized and non-motorized access or use, such as foot, equestrian, mountain bike, off-highway vehicle, and other forms of transportation.
Travel Management Plan	The document that describes the process and decisions related to the selection and management of the Transportation Network. This plan can be integrated in an RMP or as a stand-alone implementation plan after development of the RMP.
Visual Resource Inventory	Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones of visual resources in the area. There are four classes.
Visual Resource Management	Categories assigned to public lands based on management objectives for visual resources in the area. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape and the level of contrast with the form, line, color and texture of the visual resources in the area.

6.4 Appendices

The following appendices are used in this EA:

Appendix A, Interdisciplinary Team Checklist

Appendix B, Cultural Context

Appendix A, Interdisciplinary Team Checklist

Project Title: Eastern Lake Mountains Target Shooting Plan Amendment

NEPA Log Number: DOI-BLM-UT-W010-2015-0023-EA

File/Serial Number: NA

Project Leader: JuLee Pallette

DETERMINATION OF STAFF:

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination	Assigned	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	The planning area is located entirely within the nonattainment airshed of Utah County (Division of Air Quality – 2014 Annual Report). National Ambient Air Quality Standards (NAAQS) would not be exceeded if PM emissions are minimized (R307. Environmental Quality, Air Quality. Rule R307-205. Emission Standards: Fugitive Emissions and Fugitive Dust.) There is some expectation that vehicle traffic, discharging of firearms and smoke associated with wildfires could impact air quality in localized areas. Mobile on road emissions is dispersed, sporadic, temporary, and not likely to cause or contribute to an exceedance of the NAAQS. Visible, fugitive dust may be created by target shooters traveling on dirt access routes; however, opacity limits (20%) would not be expected to be a concern based on the visitation rates. A Fugitive Dust Control Plan is not warranted.	Pamela Schuller	9/14/15
NP	Areas of Critical Environmental Concern	There are no ACECs within the planning area.	Pamela Schuller	6/22/15
PI	Cultural Resources	Historic Properties occur throughout the planning area. SHPO consultation is ongoing.	Mike Sheehan	4/28/15
NI	Environmental Justice	As defined in EO 12898, minority, low income populations and disadvantaged groups may be present within the county and use the planning area. The project would not cause any disproportionately high and adverse effects on minority or low income populations. Members of the public can access and use the planning area and can participate in the planning process.	Pamela Schuller	6/22/15
NI	Farmlands (Prime or Unique)	Soils that qualify as prime or unique farmlands could be present in the planning area. None of the planning area meets the requirements for prime farmland	Jerry Bullock	7/13/15

Determination	Resource	Rationale for Determination	Assigned	Date
		because the area is not irrigated nor is irrigation part of the alternatives.		
NP	Fish Habitat	There are no streams in the planning area that support fish.	Masako Wright	5/13/15
NI	Floodplains	Floodplains, as defined by EO 11988, FEMA, HUD, Corps of Engineers and the LUP, are not present. The project would not affect a county's ability to obtain and/or maintain Federal flood insurance.	Pamela Schuller	6/22/15
PI	Fire/Fuels Management	The planning area has an extensive wildfire history. The majority of wildfire causes are from human actions with target shooting being the primary human cause. Due to the high fire occurrence, acres burned annually on average exceed FMP objectives. Desired vegetation is at high risk of loss due to the expansion of invasive plants, in part from frequently recurring fire. Fires in this location move quickly in the abundant fine dead fuels, threatening human life and safety, utilities, communication sites, and incorporated and unincorporated communities. The proposed action would potentially decrease the number of wildfires and their impacts.	Teresa Rigby	7/15/15
NI	Geology / Mineral Resources/Energy Production	The proposed action would not affect current or any potential mineral resources or potential energy production. LUP and use plan decisions would not be changed. Valid and existing rights would be accommodated. Mining and other heavy equipment on private property has been damaged by target shooters on and off public lands.	Larry Garahana	3/30/15
NI	Greenhouse Gas Emissions	It is anticipated that greenhouse gas emissions associated with this action and its alternative(s) would be negligible.	Pamela Schuller	6/22/15
PI	Invasive Species/Noxious Weeds (EO 13112)	Invasive and noxious weed species are present in the planning area. Vehicles used by target shooters can transport seed and vegetative plant material to, from and within the planning area. Wildfires started by target shooting activity have potential to create or enhance habitat for cheatgrass, highly flammable vegetative community.	Jerry Bullock	7/13/15
PI	Lands	There is currently a variety of existing ROWs in the planning area, which include (but are not limited to) access roads, communication sites, power lines, and buried utilities. These authorizations have pre-existing rights to access and maintain their facilities. Target shooting activities could affect above ground ROWs such as power lines and communication facilities and associated maintenance. Future ROWs would most likely continue to be requested in this area due to the proximity of the growing urban interface. The proposed Plan Amendment should consider ROW avoidance or exclusion areas.	Mary Higgins	3/24/15

Determination	Resource	Rationale for Determination	Assigned	Date
PI	Roads/Access	Primitive roads are abundant in the area, but are not being addressed in this target shooting plan amendment. Only the Soldier Pass road and the Mercer Canyon/Ephraim Canyon roads are maintained by Utah County, the remainder of the roads in the study area are unmaintained and would be classified as primitive roads. Over time open target shooting, however, does result in the creation of new routes and cross country travel. Restricting target shooting would definitely help reduce the number of new illegal roads and routes being created by the public in this area.	Mike Nelson	11/10/15
NI	Livestock Grazing	The planning area intersects 4 grazing allotments (Lake Mountain North, Lake Mountain Davis, Lake Mountain Smith and Chipman). Livestock grazing will continue as permitted. Any changes to the permitted use due to target shooting would be analyzed during permit renewal and not within this document. The permittee file, allotment file and Range Improvement System (RIPS) were reviewed and no BLM resources or grazing schedules have been directly affected by target shooting.	Jerry Bullock	7/13/15
PI	Migratory Birds	Migratory birds are present throughout the planning area. Year round shooting activity can impact the temporal and spatial nesting requirements of migratory birds. Protective measures would need to be considered.	Masako Wright	5/13/15
NP	National Historic Trails	National historic trails are not present in the project area.	Ray Kelsey	4/27/15
PI	Native American Religious Concerns	<p>The following Tribes were consulted via certified letter on June 29, 2015: Confederated Tribes of the Goshute Reservation, Skull Valley Band of the Goshute Tribe, Paiute Tribe, Ute Indian Tribe and Jemez Pueblo. These Tribes were invited to participate as a Cooperating Agency under NEPA and Consulting Party under NHPA.</p> <p>A second request for consultation letter was received by Phil Pikyavit, chairperson of the Kanosh Band of Paiute Indians on 12/8/2015. (This second letter replaces the original letter. The USPS's track and confirm record shows that the original letter was not picked up and was sent back to the West Valley Post Office. The original letter and its certified green card were not returned or delivered back to the SLFO.)</p>	Pamela Schuller	11/20/15
NP	Paleontology	<p>There are no known significant paleontological resources within the planning area; therefore, the proposed plan amendment would not affect any paleontological resources.</p> <p>If paleontological resources are discovered, the authorized officer would be contacted immediately.</p>	Larry Garahana	3/30/15

Determination	Resource	Rationale for Determination	Assigned	Date
NI	Property Boundary Evaluation	The plan amendment does not require the survey of property boundaries. While state and private land exist alongside public land in the area, legal descriptions of proposed target shooting closures would be based on existing surveys for the area.	Mike Nelson	3/24/15
NI	Rangeland Health Standards	Wildfire starts and vehicle use associated with target shooting activity has potential to affect the BLM's ability to maintain and achieve rangeland health standards.	Jerry Bullock	7/13/15
PI	Recreation	Proposed project would directly impact recreational target shooting opportunities within the planning area, including social and cultural aspects, while possibly providing for increased opportunities of other non-target shooting related recreation opportunities.	JuLee Palette	4/24/15
NP	Sage Grouse Habitat	Greater sage-grouse habitats are not present in the planning area.	Masako Wright	5/13/15
NI	Economics	No quantifiable economic impact to the local area could be caused by the alternatives. The planning area would still receive use by recreationists regardless of alternative selected. Individuals could still purchase ammunition and targets at retail stores for use in adjacent areas including the Soldier Pass Shooting Range or other ranges in northern Utah. Referencing the Economic Profile System Reports prepared on 9/14/2015. Land uses in Utah County would still continue. Social and cultural aspects of target shooting activities are addressed under the recreation section.	Pamela Schuller	11/19/15
NP	Threatened, Endangered, Candidate or Special Status Plant Species	There are no known Threatened, Endangered, Candidate or Special Status Plant Species present within the planning area.	Rodd Hardy	3/24/15
PI	Threatened, Endangered, Candidate or Special Status Animal Species	There are no known Threatened, Endangered, or Candidate Animal Species present within the planning area. The endangered June sucker is found in Utah Lake and its critical habitat is located in the Provo River. Both of these areas occur outside of the planning area; however, portions of the planning area border the Lake. There are no perennial streams in the planning area that would supply run off that would impact June sucker or its habitat. Target shooting on lands adjacent to Utah Lake is not considered a threat to June sucker and is therefore considered not impacted. This planning effort may affect special status animal species such as raptors (golden eagle, burrowing owl, ferruginous hawks, etc).	Masako Wright Cassie Mellon	5/13/15 11/9/15
PI	Soil and Vegetation Excluding Special	Soil and vegetation stability would be affected by the overland uses of the area including wildfire and	Jerry Bullock	7/13/15

Determi- nation	Resource	Rationale for Determination	Assigned	Date
	Status Species	seeding efforts caused by shooting activity.		
PI	Visual Resources	Visual resources could be improved by better management of target shooting and trigger trash in the planning area.	JuLee Pallette	4/24/15
PI	Wastes (hazardous or solid)	Target shooting can create hazardous waste by shooters bringing items that may contain hazardous substances onto public land and shooting them thereby releasing the hazard onto the ground. Concentrated shooting areas become hazardous due to lead shot and other toxins impacting the surface from ammunition.	Mike Nelson	3/24/15
NI	Water Resources/Quality (drinking/surface/ ground)	Existing water rights and state identified beneficial uses would not be altered.	Jerry Bullock	7/13/15
NP	Wetlands/Riparian Zones	Wetlands and riparian zones are not present in the planning area.	Jerry Bullock	7/13/15
NP	Wild and Scenic Rivers	No designated wild or scenic rivers are present within the planning area.	JuLee Pallette	4/24/15
NP	Wilderness/WSA	No designated wilderness and WSAs are present within the planning area.	JuLee Pallette	4/24/15
NP	Lands with Wilderness Characteristics	No potential lands with wilderness characteristic units meeting the minimum size criteria of 5,000 acres are present within the planning area.	JuLee Pallette	4/24/15
PI	Law Enforcement	The proposed plan would directly impact the law enforcement strategy within the planning area. Possibly changing the type of law enforcement from target shooting related violation, to other types of recreation related violations as other forms of recreation occur within the planning area. Increased law enforcement may be necessary for target shooting in areas not currently being used for this type of recreation.	Tamsen Johnson	3/14/16
NP	Wild Horses and Burros	A wild horse herd management area is not present in the planning area.	Tami Howell	3/25/15
PI	Wildlife Excluding Special Status Species	Seasonal and spatial habitat requirements of multiple species (big game and upland game) are affected by the presence of shooting activity and alteration of habitat communities.	Masako Wright	5/13/15
NI	Woodland / Forestry	The project area is not part of an existing woodcutting area. Individual trees have been shot and destroyed by target shooting. Refer to the vegetation discussion.	Jerry Bullock	7/13/15

Determination	Resource	Rationale for Determination	Assigned	Date
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FINAL REVIEW

Reviewer Title	Signature	Date
Environmental Coordinator	----	----
Authorized Officer	-----	----

Appendix B, Cultural Context

The Planning Area for the proposed action lies within the Great Basin province. The Great Basin consists of approximately 400,000 square miles of western North America between the Sierra Nevada on the west and the Rocky Mountains on the east (D'Azevedo 1986:1). The area has been defined on the basis of hydrographic, physiographic, and floristic criteria as well as a culture area (Kelly 1997:1); all of these areas overlap but are not necessarily coterminous. The region is internally drained, as its rivers have no outlet to the sea. Physiographically, the Great Basin is characterized by similar topography to that of the larger Basin and Range Province, comprising about half of the total province (D'Azevedo 1986:6). That topography consists of generally north–south trending mountain ranges and long desert basins (D'Azevedo 1986:6). The Great Basin floristic region extends beyond the hydrographic and physiographic Great Basin. The flora varies depending on elevation and location within a general east–west moisture gradient (Kelly 1997:4–5). Sagebrush flats and pinyon-juniper woodland are the dominant vegetation groups, although the flora is more diverse than is often recognized (D'Azevedo 1986:7).

The Great Basin culture area was first defined by Kroeber in the 1930s (D'Azevedo 1986:9). Traditionally the culture area extends beyond the physiographic province and more closely approximates the Great Basin floristic area (D'Azevedo 1986:9; Fowler 1986:15) although more recent research has refined the culture area boundaries to more closely resemble those of the physiographic province (Kelly 1997:2). Ethnographically, all indigenous inhabitants of the Great Basin culture area speak Numic languages, with the exception of the Hokan-speaking Washoe who inhabit the western edge of the basin (D'Azevedo 1986:8). There are questions regarding the cultural continuity of the Great Basin between prehistoric and historic times, and although there is considerable internal variation, most anthropologists are comfortable projecting the Great Basin culture area back into prehistoric times (D'Azevedo 1986:8). Throughout prehistory, inhabitants of the Great Basin apparently followed a flexible and mobile subsistence and settlement strategy that allowed them to adapt to a variety of environmental conditions and climatic changes (Beck and Jones 1997; Coltrain 1996; Coltrain and Leavitt 2002; Jones *et al.* 2003; Kelly 1997, 2001; Madsen and Schmitt 2005; Madsen and Simms 1998).

Eastern Great Basin Chronology

The development of chronology has a long history in the eastern Great Basin (Aikens and Madsen 1986; Jennings 1957, 1978; Madsen 1982; Schmitt and Madsen 2002; Seddon and Reed 2005). The Seddon and Reed (2005) chronology is based on an eastern Great Basin-wide dataset of nearly all excavated sites, including approximately 350 sites and 900 components, and is most appropriate for the current review. Although they acknowledge major environmental change as a partial factor for defining some of the periods, they attempted to build the revised chronology largely on the basis of changes in material culture. Seddon and Reed (2005:5) note that their periods are primarily divisions of time, but they are distinguished by broad human adaptive changes. However, the changes were not synchronic across the region, and variation in their expression did occur. Each of the seven major periods (Paleoindian; Early, Middle, Late, and Terminal Archaic; Formative; and Late Prehistoric) represents a period when particular adaptations occurred most frequently.

Paleoindian Period (>9000–6000 B.C.)

The Paleoindian period of the Great Basin is slowly becoming better understood, although still relatively few Paleoindian sites are known (Beck and Jones 1997; Elston and Zeanah 2002; Jones *et al.* 2003; Graf and Schmitt 2007). Paleoindian sites in the eastern Great Basin primarily consist of isolated surface finds of diagnostic projectile points. These include Clovis and Folsom fluted projectile points and stemmed points such as the Great Basin Stemmed type (Pitblado 2003; Willig and Aikens 1988). Crescent knives and heavy core tools are often associated with these points.

Researchers long viewed fluted points as representative of the earliest people to have arrived in the Great Basin, with Great Basin Stemmed points believed to be dated slightly later. But a recent re-analysis of existing data has brought this proposition into question, indicating that of the very few diagnostic points that have been dated, stemmed points appear to be older than the fluted (Beck *et al.* 2004). Indeed, Beck and Jones (2010) argue that the technology related to the stemmed points reached the Great Basin first, via groups moving inland from the Pacific coast, and that Clovis technology was a late-comer to the region, representing the termination of a diffusion or migration process. Well documented petroglyphs have not been identified for this period. However, local avocational archaeologists have identified glyphs in the area around the Great Salt Lake that appear to represent proboscids suggesting that Paleoindian petroglyphs are indeed present in and around the area under consideration here (Steven Manning ca 2013).

The nature of Paleoindian subsistence in the Great Basin also has been a topic of interest to researchers. In neighboring areas such as the Great Plains and the Southwest, the prevailing view has been that Paleoindian subsistence was largely based on hunting of megafauna, particularly in the earlier portion of the period (Frison 1978; Haynes and Huckell, ed. 2007). For many years, it was believed that Great Basin Paleoindian subsistence was similar, but more recent work has indicated that there was likely more emphasis on adaptation to lake and marsh margins in the eastern Great Basin and the exploitation of a more diverse resource base (e.g., Beck and Jones 1997; Elston and Zeanah 2002; Jones and Beck 1999; Schmitt and Madsen 2002; Schroedl 1991; Willig and Aikens 1988). Beck and Jones (1997; Jones and Beck 1999; Jones *et al.* 2003) propose that the diversified subsistence strategy of the Great Basin at this time more closely resembles the later Archaic period than it does the classic Paleoindian period as defined elsewhere. Therefore, they propose that this cultural period in the Great Basin would more appropriately be called the Paleoarchaic. Holding out for more substantive evidence, Seddon and Reed (2005:7) prefer to retain the Paleoindian title, thereby continuing the analytical and chronological association with contemporary Paleoindian period occupations in other regions. The controversy continues even as additional data is gathered (Graf and Schmitt 2007).

Early Archaic Period (6000–3000 B.C.)

The Early Archaic period begins with a sudden and dramatic decrease in effective moisture throughout the Great Basin (Kelly 1997; Madsen *et al.* 2001; Schmitt and Madsen 2002). This climatic event, originally referred to as the altithermal, was identified in the study of geological sediments near Wendover, Utah (Antevs 1948/55). The change was even more pronounced in the western and Central Great Basin than in the east (Kelly 1997:8–9, 2001). In the eastern Great Basin, around 8000 years ago a significant drying phase occurred and the abundant streams and marsh systems of the Old River Bed disappeared, greatly reducing the diversity of plants and animals.

Important changes in material culture also occurred around this time. The projectile point technology changed as the use of fluted and stemmed points ceased. However, few projectile point types are confidently dated to this time period.

Early Archaic populations of the eastern Great Basin appear to have been highly mobile and relied on a generalized hunting and gathering strategy (Aikens and Madsen 1986:154–155; Schmitt and Madsen 2002; Seddon and Reed 2005:8). Ground stone artifacts become relatively common during this period, indicating intensification of seed processing (Aikens and Madsen 1986:155; Seddon and Reed 2005:8). Small thermal features primarily identified by small quantities of fire-cracked rock provide insights into cooking technology. Excavations of Early Archaic sites, which occur in a variety of environments at both low and high elevations, have recovered basketry, cloth, cordage, digging tools, snares, buckskin, and fire drills (Aikens and Madsen 1986:155; Jennings 1978:41, 49). Grinding implements for plant processing and implements such as atlatls and traps for hunting small game also have been recovered.

Middle Archaic Period (3000–1000 B.C.)

Seddon and Reed (2005:8) define the onset of the Middle Archaic period on the basis of the appearance of new diagnostic projectile points at about 5000 years ago. Reed and others (ed., 2005) determined that Humboldt points, once associated with the Early Archaic, were apparently used primarily after 3000 B.C., as were Gypsum points. There appear to have been few changes in other aspects of material culture. Like the Early Archaic, this period is characterized by small thermal features, ground stone, and a highly mobile, generalized hunting and gathering strategy (McGuire and Hildebrandt 2005). The change in diagnostic projectile point types is posited to indicate a change in adaptation, and therefore to justify a period distinct from the Early Archaic (Justice 2002), though there is little discussion of how a change in projectile point style is linked to adaptation in any significant way (e.g., Seddon and Reed 2005:8). The climate continued to be relatively hot and dry through most of this period (Kelly 1997, 2001; Madsen *et al.* 2001).

Petroglyphs belonging to the Rectilinear Style have been attributed to the Early Archaic timeframe. Glyphs comprised of dots, rectangular grids, bird tracks, rakes, and cross-hatching, are typical of the Rectilinear Style (Schaafsma 1986:216).

There is an increased frequency of radiocarbon dates around 3500 B.P., possibly suggesting a population increase (Seddon and Reed 2005:8). Although radiocarbon date frequencies could reflect investigators' research foci or formation processes, the possibility of increasing populations should not be discounted. There also is an increase in site frequency throughout the Great Basin at this time (Aikens and Madsen 1986:157–158). This population increase along with a concurrent cooling trend is used to explain the increased frequency of archaeological sites at higher elevations at roughly this time, presumably reflecting a population movement into the uplands to take advantage of resources in pinyon-juniper vegetative communities, including mountain sheep and deer (e.g., Aikens and Madsen 1986:158).

Late Archaic Period (1000 B.C.–A.D. 1)

With the onset of a major cooling period and a significant increase in effective moisture at approximately 750 B.C., lake levels rose, leading to related changes in available vegetation and fauna (Aikens and Madsen 1986:158; Madsen *et al.* 2001; Schmitt and Madsen 2002).

Archaeological changes include an increase in the size of thermal features, an increase in the amount of associated fire-cracked rock, and a decline in ground stone frequency, although this has not been precisely dated (Seddon and Reed 2005:9). Continuing the Middle Archaic trend, there is an increase in the frequency of radiocarbon dates, possibly indicating an increase in the number of sites and a population increase. There is also an apparent increase in the use of upland resources (Aikens and Madsen 1986:158–160). Humboldt and Gypsum points decrease in frequency. Gatecliff points first appear (Holmer 1986; Thomas and Bierwirth 1983) and may be diagnostic of this period (Seddon and Reed 2005:9). Elko points, a series of stylistically related subtypes, also can be found in earlier and later time periods, but become more frequent in the Late Archaic (Seddon and Reed 2005:9).

Schaafsma (1986) reports that petroglyphs belonging to the Curvilinear Style may be attributed to this period. The Curvilinear Style is comprised mainly of “circles, concentric circles, circle chains, sun disks, the curvilinear meander, wavy lines or snakes, and star figures” (Schaafsma 1986:216).

Terminal Archaic (A.D. 1–500)

This period marks the transition between the strictly foraging Archaic and the mixed horticultural and foraging Formative. At this time, the Archaic pattern of mobile hunting and gathering continues while new artifact types, subsistence strategies, structures, and features are introduced (Seddon and Reed 2005:9). It should be noted that the changes that occurred during this period were not absolute; during the succeeding Formative period, some populations continued to make their living by foraging, while others were dependent to varying degrees on horticulture (Madsen and Schmitt 2005; Madsen and Simms 1998; Talbot 2004; see below). By the end of the Terminal Archaic period at A.D. 500, ceramics, cultigens (including domesticated maize), and residential structures were all present, indicating the adoption of horticulture and sedentism. Projectile points had diminished in size, marking the adoption of the bow and arrow (Justice 2002).

Formative Period (A.D. 500–1200)

The beginnings of cultivation and sedentism that first appeared during the Terminal Archaic were most fully developed during the Formative period. The Formative period includes the Fremont Complex found in the northern and central portions of Utah (Madsen and Schmitt 2005; Madsen and Simms 1998; Marwitt 1970, 1986; Steward 1933; Talbot 2004), and the Virgin Anasazi Complex associated with the southwestern corner of the state (Lyneis 1995; Westfall *et al.* 1987). Madsen and Simms (1998) advocate the use of the term “complex” to include the wide range of variable adaptations associated with the Formative period, including full-time mobile foraging, sedentary foraging, seasonal farming/foraging, and full-time sedentary farming. The existence of a range of different site types suggest that different groups of people followed different subsistence and settlement strategies, or that the same groups of people were able to change subsistence and settlement strategies and move between different lifestyles. Both alternatives were likely true in some times and places during the Great Basin Formative (Madsen and Simms 1998).

Fremont Complex (A.D. 500–1200)

The Fremont complex is composed of both farmers and foragers who occupied the Great Basin and neighboring areas during the Formative period (Janetski *et al.* 2000; Madsen and Simms 1998; Marwitt 1970; 1986; Talbot and Richens 2004). The Fremont complex includes full-time farmers, full-time foragers, and people who may have moved between these subsistence strategies (Janetski 1997; Madsen and Simms 1998; Talbot and Richens 1996; but also see Allison 2008). At some Fremont sites, there is clear and abundant evidence for sedentary occupations, with scattered farmsteads (or rancherias) and small village occupations (Janetski *et al.* 2000; Marwitt 1986:161; Talbot 1997; Talbot and Richens 1996), while other sites appear to reflect a highly mobile lifestyle (Madsen and Schmitt 2005; Madsen and Simms 1998). Storage features are frequent elements of archaeological sites (Talbot 1997; Yoder 2005). Projectile points indicative of the adoption of the bow and arrow include the Rose Springs Corner-notched, Eastgate, Bear River Side-notched, Nawthis Side-notched, Uinta Side-notched, Parowan Basal-notched, and Bull Creek points. Ceramics are more widely distributed across archaeological sites of all types, from the most sedentary to the more mobile. Madsen (ed., 1977), Marwitt (1970, 1986), and more recently Watkins (2009) provide comprehensive discussions of ceramic types associated with the Fremont Complex.

Petroglyphs belonging to the Great Basin Representational Style are often associated with the Fremont. Important elements in the Great Basin Representational Style include, but are not limited to, spirals, birds, tracks, hand and footprints, solidly pecked zoomorphs, and most distinctively, extremely stylized triangular or trapezoidal horned anthropomorphs (Schaafsma 1986:218).

Various geographic classification schemes based on a trait-list approach have been used to divide the Fremont into separate variants (e.g. Berry 1974; Gunnerson 1962; Jennings *et al.* 1956; Madsen and Lindsay 1977; Marwitt 1970, 1986; Wormington 1955). One of the most referenced is Marwitt's (1970, 1986), which proposes five geographic variants: Great Salt Lake, Sevier, Parowan, Uinta, and San Rafael. The Sevier variant is located in central and western Utah (including the Planning Area), south of the Great Salt Lake to roughly Kanosh, Utah. Marwitt reports that the Sevier Fremont settlements tend to be smaller and occupied for shorter periods than is the case with, for example, the Parowan Fremont (Madsen and Lindsay 1977; Marwitt 1986:166). Sevier Fremont sites are often located near wetlands (Marwitt 1986:167), and the architecture tends to be quite variable, ranging from slab masonry to adobe. Sevier Gray pottery is common at sites, but other Fremont grayware types are often present (Marwitt 1970; 1986:167). Since Marwitt's work, scholars have shifted their focus away from the definition of regional variants and toward a study of Fremont behavior (Madsen and Simms 1998:276; Madsen and Schmitt 2005).

Late Prehistoric Period (A.D. 1200–Contact)

The beginning of the Late Prehistoric period is marked by the decline of maize agriculture in the Great Basin, as well as of the material correlates that marked both the Virgin Anasazi and Fremont cultures. New diagnostic artifacts appeared, including brown-ware pottery and small triangular arrow points. The pottery is often referred to as Intermountain Brown ware or Shoshonean ware, and the points include Desert Side-notched and Cottonwood Triangular. These, together with linguistic evidence, may represent the movement of Numic-speaking peoples into the area from the Mojave Desert (Bettinger and Baumhoff 1982; Madsen 1975;

Madsen and Rhode 1994; Rhode 1994). Other archaeologists argue that the appearance of the artifacts could represent trade and influence rather than population movement (Aikens and Witherspoon 1986; Lyneis 1982; Madsen and Rhode, ed. 1994).

Around A.D. 1250, Numic-speaking groups began to migrate into Utah from Nevada and the Mojave Desert. Although various scholars have postulated that Numic speakers were responsible for the decline and eventual abandonment of the area by the Virgin Anasazi and Fremont cultures, archaeological evidence during this period is scant and variable, possibly indicating coexistence or perhaps the sharing of material culture between the groups and or the complete replacement of one culture by another (Madsen and Rhode 1994; Madsen and Simms 1998:316-319; Marwitt 1986:172). The reasons for the decline of the Fremont and Virgin Anasazi traditions are therefore ambiguous, and it is uncertain whether these groups abandoned the area, either before or after the arrival of the Numic-speakers, or were assimilated into the new population(s) (Madsen and Rhode, ed. 1994; Marwitt 1986:171–172).

Scholars generally infer the expansion of the Numic groups into the Great Basin based on both linguistic and ethnographic evidence, as archaeological evidence in the form of diagnostic artifacts and settlement remains is rare (Kelly 2001:289). Steward (1997[1938]) studied Shoshonean groups who practiced a mobile hunting-and-gathering subsistence strategy, using resources on a seasonal basis and traveling in bands of varying size. Although Steward's work is highly respected and often referenced, it is important to note that he observed and interviewed traditional peoples living after sustained Euroamerican contact and the introduction of significant elements such as horses, Euroamerican artifacts (e.g., trade beads, money, guns), and infectious diseases (Kelly 1997).

In the mid-1800s, at the time of Euroamerican contact with native groups in the eastern Great Basin, the Gosiute occupied the Planning Area (Steward 1997 [1938]; Thomas *et al.* 1986:263). The Gosiute, who are linguistically and culturally related to the Western Shoshone, inhabited a marginal and semi-arid environment with small populations concentrated within the Tintic, Tooele, Skull, Rush, and Deep Creek Mountain valleys (Steward 1997 [1938]:135–137; Thomas *et al.* 1986:264). Following a seasonal cycle, they utilized a fairly mobile and diverse hunting-and-gathering subsistence strategy, eating seeds, berries, plants, nuts, rodents, rabbits, birds, insects, fish, and concentrating their settlements in areas with springs or other permanent water sources. Antelope were also procured through community drives in narrow canyons (Steward 1997 [1938]:138).

Steward (1997 [1938]:135) reported that Gosiute bands inhabited Rush, Tooele, and Cedar valleys, to the northwest and west of the Planning Area. The Tooele Valley Gosiute are little known, and are thought to have lived together with a community of Weber Ute, while the Rush Valley Gosiute were referred to as the Mormon Snakes, Southern Snakes, and Salt Lake Snakes, who raided immigrant trains from horseback (Steward 1997 [1938]:135, citing Lander 1860). Steward also remarked that Gosiute likely lived in Cedar Valley, but was unsure whether to more properly refer to these people as Weber Ute or Gosiute (Steward 1997 [1938]:136, citing Gottfredson 1919). The seemingly destitute nature of the Gosiute recorded by some early travelers is likely a direct result of the harsh environment in which they lived. Steward stated, “The Gosiute habitat is one of the least favorable in the entire Shoshoni area. Lying between the fertile piedmont of the Wasatch to the east and the relatively high terrane [sic] of central Nevada to the west, it is an area of true desert and semidesert” (Steward 1997 [1938]:134).

Historic Context

The historic context is presented in a set of four headings: Exploration and the Fur Trade (1776–1846), Early Settlement of Utah (1847–1859), Development of Communities and Industries (1860–1919), and Decline, Depression, and World War II (1920–1945). The majority of the historic context is focused on north-central Utah and Utah County generally.

Exploration and Fur Trade Period (1776–1846)

As with other counties in Utah, Utah County's history begins with early government expeditions, fur trappers, and the establishment of the California emigrant trails. While the Gosiute, Shoshone, and their ancestors had inhabited the Tooele, Rush, and Cedar valleys for centuries, the first recorded contact between Europeans and the native peoples in the area was the Spanish Dominguez-Escalante expedition of 1776. Specifically, this expedition, which was under the direction of the Spanish authorities in New Mexico, would pass through central Utah east to west before turning south toward Arizona. Fray Francisco Atanasio Dominguez was the leader of the ten man group, but it was Fray Silvestre Velez de Escalante who kept the records of the expedition (Hill 1921:450; Warner 1995:xiv, 1978:36). The main purpose of the expedition was to establish a route between the Spanish colonies of Santa Fe in New Mexico and Monterey in California. The Spanish government felt that an overland route would strengthen their claims in northern California and check Russian advances into the region north of Monterey (Hill 1921:449; Warner 1995:47). A secondary goal was to establish relations with local natives and locate suitable sites for missions (Hill 1921:450; Warner 1995:ix).

According to Warner's (1995) reconstruction of their route, on July 29, 1776, the party left Santa Fe heading northwest (Bradley 1999:37; Escalante 2007 [1777]; Hill 1921:451; Seegmiller 1998:30; Warner 1995:52-62). After marching north through eastern Colorado, the party turned west and crossed the Green River near Jensen, Utah, on September 13 (Bradley 1999:37; Escalante 2007 [1777]; Hill 1921:452-453; Warner 1995:43). By September 23, the small company entered Utah Valley from the southeast through Spanish Fork Canyon, where they climbed a small hill at the mouth of the canyon to look out across the valley (Bradley 1999:37; Warner 1995:52-54, 1978:40). Members of the expedition provided the first detailed account of the Timpanagos Ute Indians they encountered in the area surrounding Utah Lake (Bradley 1999:37; Warner 1995:53-56). After spending a few days on the shores of Utah Lake, the party moved south through the valley continuing their search for a route between the Spanish colonies (Escalante 2007 [1777]; Hill 1921:454–455; Warner 1995:52-62).

In the years immediately following the explorations of Dominguez and Escalante, the area was visited by other Spanish explorers and traders who left no primary record of their travels (Moffitt 1975:6). Trails also led north into Utah Valley, the Uinta Basin, and along the Sevier River, which allowed the Spanish and Mexicans to trade with the local Indians for furs, gold, horses, and Indian slaves (Malouf and Malouf 1945:381; Miller 1980). The trading expeditions appear to have been limited in scope and operation. Utah did not become the focus of widespread Euroamerican interest until the expansion of the fur trade in the early nineteenth century.

When members of the Lewis and Clark expedition returned to St. Louis in 1806 from their exploration of the Louisiana Purchase, they brought back reports of abundant beaver in the rivers and streams of the region. With beaver fur in demand as a material for making hats, entrepreneurs formed fur companies to exploit the vast, untapped beaver supply in the North American West (Bartlett and Goetzmann 1982:26–30). Trappers were the first Euroamericans,

other than the Spanish and Mexican explorers and traders, to enter Utah, frequenting the area from the 1820s into the early 1840s. The numerous streams emanating from the western slopes of the Wasatch Mountains provided fertile hunting grounds for those attempting to exploit the resources of the valley. Trappers and explorers like Jedediah Smith, John C. Fremont, and Jim Clyman, among others, are known to have traveled through areas near the Planning Area (Morgan 1953). By the early 1820s, traders from New Mexico licensed by the Mexican government, British companies based in Oregon, and American interests based in St. Louis, were trapping in present-day Utah (Eldredge and Gowans 1994:209). Numerous trappers and traders worked the streams and rivers of northern Utah during the 1820s and 1830s, including Americans Jedediah Smith, William Sublette, and Etienne Provost (Moffitt 1975:11).

Early Settlement (1847–1859)

In 1847, the first non-Native American settlers arrived in the Territory of Utah. In late July of that year, a small advance group of Mormon pioneers (members of the Church of Jesus Christ of Latter- Day Saints) led by Brigham Young, their President and Prophet, entered the Salt Lake Valley. Over the next several years, Mormon immigrants continued to arrive and were sent to various parts of the territory to begin new settlements. Many of these early settlements were located along the north–south Mormon Corridor, which extended through the stream-fed valleys of central Utah, including in Utah County. The first settlement in Utah County was Fort Utah, along the Provo River where the modern city of Provo is located, established in 1849; other settlements quickly followed, and by 1850 the county’s population rivaled that of Davis and Weber counties combined, which had been established a year earlier than Utah County, in 1848 (Holzapfel 1999:56–57).

Shortly after the occupation of the region by the new arrivals from the east, bands of Native Americans began to clash with the pioneers. Hostilities between Indians and whites steadily increased as the settlers took up more land. At the same time, conflict arose between Mormon settlers and the federal government over the issues of polygamy and disregard of federal authority (MacKinnon 2003:102; Merrell 2006:83-85), culminating during the Utah War of 1857 and 1858, when Brigham Young ordered thousands of Cache and Salt Lake Valley residents south into Utah, Juab, Millard, Sanpete, Sevier, and Iron counties. This exodus was ordered by Young in order to seek refuge from the advancing army under the command of Colonel Albert S. Johnston, as well as prepare defenses in case of open conflict (Hull and Avery 1980:50; Merrell 2006:85-86).

In June of 1858, Johnston’s army, numbering some 2,500 soldiers and another 1,000 civilian employees, entered the Salt Lake Valley. From there they proceeded through Salt Lake City, crossed the southern edge of the Oquirrh Mountains, and continued on to Cedar Valley, on the west side of the Lake Mountains, where they established Camp Floyd, named for the U.S. Secretary of War, John B. Floyd, near present-day Fairfield (Holzapfel 1999:87). Camp Floyd immediately became the largest military installation in the Intermountain region, and the third largest city in Utah Territory. The fort was a boon for the local economy, providing jobs and cheap surplus goods to county residents. Indeed, local Mormon laborers and artisans helped to build the fort. However, the contemporaneous town of Fairfield became a hotbed of gambling, prostitution, and crime, and a source of aggravation to the local Mormon farming communities and eventually to the army itself. In 1860, after Secretary Floyd was dismissed from the U.S. Cabinet for having southern sympathies, Camp Floyd was renamed Fort Crittenden. The fort was

short-lived, however; when the Civil War began in 1861 all federal military interests shifted to the east, and Fort Crittenden was abandoned.

Community and Industry Development (1860–1919)

The first Euroamerican industries to develop in Utah County were farming, ranching, and fishing. The earliest Mormon settlers in the area worked cooperatively to build and maintain irrigation systems, especially in the valley east of Utah Lake. Livestock grazing, particularly of cattle and sheep, was historically and continues to be practiced in modern times. The lake and its tributaries were recognized by settlers as early as 1847 as an abundant source of lake trout, suckers, and Utah chubs, and the 1849 settlement of Provo was approved with the express purpose of exploiting these resources (Holzapfel 1999:129–131). Later, cottage industries such as mills, machineries, and potteries were born. Also, Brigham Young University was founded in Provo in 1875, and is one of the major universities in the state of Utah today.

By far the largest economic boon for the county was the development of the mining industry in the latter part of the nineteenth century, following the discovery of ore deposits in the 1860s. Some of the earliest mining in Utah County began in American Fork Canyon, where a mining district was established in 1870 to extract silver, lead, and gold. Mining in the American Fork District continued over the next several decades, eventually stripping the area of much of its natural resources and potential tourist attractions. Finally, in 1922, after the Duke-Onyx Company mined Hansen's Cave, destroying many of its beautiful formations, the federal government stepped in and created Timpanogos Cave National Monument, invalidating all mining claims in the area (Holzapfel 1999:136–137).

Another important mining area in Utah County was the Tintic District, which was also located partly in Juab County. The principal mining community in Utah County was Dividend, which was established in 1907 and persisted until 1949, when the mine closed and the town was all but abandoned (Holzapfel 1999:137–140). Other mining communities in the Tintic District included Manning, Homansville, and Harold. The development of the Tintic Mining District was closely tied to the establishment of railroads in the area. The Tintic mines did not develop rapidly in their early years due to poor transportation facilities. In the 1870s, only rich ores were exploited, and were processed in San Francisco, Reno, Baltimore, and later, in the Salt Lake City area. The ore was hauled by wagon to the closest railhead, 38 miles north of Stockton in Tooele County. By 1875, the terminus at York in northern Juab County was available, and in 1878, the Salt Lake and Western Railway was built from Lehi Junction to Ironton, 5 miles southwest of Eureka. The closer railheads allowed the economic exploitation of lower-grade ores and increased Tintic District production (Notarianni 2006).

Construction of the first railroad into Utah County began in 1871, when the Utah Southern Railroad was organized to extend service from Salt Lake City. Other railroad lines followed: the American Fork Railroad Company (1872–1878); Utah & Pleasant Valley Railway Company (1875–1882); Salt Lake & Western Railway Company (1881–1889); Denver & Rio Grande Western Railway Company (1881–1889); Rio Grande Western Railway Company (1889–1908); Tintic Range Railway Company (1891–1908); Utah Eastern Railway Company (1897–1908); Utah Railway Company (1912–present); Los Angeles & Salt Lake Railroad Company (1916–present); Oregon Short Line & Utah Northern Railway Company (1889–1897); and Salt Lake & Mercur Railroad Company (1894–1913).

The last major railroad route to be built in the American West was the line from Salt Lake City to Los Angeles, commonly referred to as the Salt Lake Route. Recognizing a need and the potential advantages of constructing a more direct, all-weather route between Salt Lake City and Los Angeles, business and U.S. Congressman William A. Clark from Montana proposed and promoted the connection in the 1890s (Hill, Hibbitts, and Clarke 1991:I-17–18). In addition to connecting the two major population and trade centers, the envisioned route would be instrumental in bringing an end to the relative isolation of a vast, empty desert landscape, including portions of the Great Basin and Mojave Desert. In late 1897, E. H. Harriman took control of the Union Pacific and in 1898 established the Utah & Pacific Railroad to lay the 75 miles of rails between Milford and Uvada, which was completed on July 24, 1899. Harriman chartered the Utah, Nevada and California Railroad in 1899 to construct lines across Nevada from Uvada to the California state line. However, the rival Southern Pacific then threatened to build its own line if the Union Pacific went ahead, and stalemate ensued (Hill, Hibbitts, and Clarke 1991:I-17–18; Lyman 1991).

Senator Clark purchased the Los Angeles Terminal Railway in 1900 and began surveys for an independent railroad to Salt Lake City. On March 20, 1901, Clark formed the San Pedro, Los Angeles and Salt Lake Railroad Company (SP, LA & SL RR), folding his other company into it. Construction on the line began in the San Pedro and Los Angeles areas. While the construction of the line began in parts of California and Nevada, the company began purchasing existing sections of the line (Robertson 1998:224). In July 1903, the company purchased the assets and track of the Utah and Pacific Railroad Company, as well as the assets and track of the Oregon Short Line Railroad between Salt Lake and Milford (Robertson 1998:224). The Oregon Short Line Railroad had come into existence in March 1897, renamed from the Oregon Short Line & Utah Northern Railway Company. It had been formed in August 1889 from seven different companies, including the Salt Lake & Western Railway Company, the Utah Central Railroad Company, the Utah & Nevada Railway Company, and the Utah & Northern Railway Company (Robertson 1986:274). Construction on the Utah end of the line could not begin, however, because of disputes over the ownership of ROWs between Harriman and Clark. In July 1902, Clark agreed to sell a half-interest in the SP, LA & SL in return for all Union Pacific properties south of Salt Lake City (Hill, Hibbitts, and Clarke 1991:I-18–19; Lyman 1991).

A large workforce was needed to construct the railroad. The construction force was ethnically diverse. For example, Spaniards were hired to work for the Utah Construction Company and Mexicans were hired in California to build the railroad from Daggett toward Nevada (Blair *et al.* 2001:29). In 1905, the SP, LA & SL RR began running its train(s) between Salt Lake City and Los Angeles (Robertson 1998:224). The railroad route across Utah included published stops at Salt Lake City (4:15 p.m.), Tintic Junction (7:14 p.m.), Black Rock (10:35 p.m.), and Milford (11:25 p.m.). The train arrived in Los Angeles at 4:45 p.m. the next day. The slow train took nine hours longer and made a total of 112 stops along the way (Robertson 1998:224–225).

Originally an independent railroad, by 1911 the SP, LA & SL RR had become a subsidiary of the Union Pacific in the Interstate Commerce Commission Statistics. On August 25, 1916, the company changed names to the Los Angeles & Salt Lake Railroad Company (LA & SL RR), due to the annexation of San Pedro by the growing city of Los Angeles, which seized San Pedro to be its port (Robertson 1998:224). In 1921 the Union Pacific acquired Clark's half interest in the LA & SL RR and became an integral part of the Union Pacific system, even though the LA & SL

continued to exist on paper until 1987 (Hill, Hibbitts, and Clarke 1991:I–19; Lyman 1991; Utah Rails 2010).

Rail transportation continued to grow in the area with the 1903 incorporation of the Western Pacific Railway to build a rail line between Salt Lake City and Oakland, California. The Railway began construction of the line in early 1906, constructing east from Oakland on January 2, 1906, and west from Salt Lake City on May 24, 1906. Construction of the line was completed on November 1, 1909, and freight service began at that time. Passenger service began in August 1910. In 1916, the Western Pacific Railway was reorganized as the Western Pacific Railroad Company. First Class Passenger service continued until 1970. In 1982, the Union Pacific purchased the Western Pacific and consolidated operations of the companies' lines (Robertson 1986:165; 1998:299–303).

The community of Mosida, located on the western shores of Utah Lake, was begun by three men, R. F. Morrison, Joseph A. Simpson, and J. E. Davis, as an entrepreneurial project (Brough 1974). The name Mosida derives from the first two letters of the investors' last names. In 1909, they purchased a sum of 9,500 acres of land along the southwest side of Utah Lake from the state of Utah to develop a peach- and apple-producing community. They built a water pump house near the water's edge to extract water from Utah Lake and pipe it into the fruit tree fields via extensive canals. Barges were utilized to ship construction materials across the lake from Provo to the new townsite of Mosida. The success of the Mosida Fruit Lands Company/Mosida Irrigation Company prompted investors and settlers to flock to the area over the next few years. A hotel, a school, a post office, a general store, and several houses were all constructed within four years of the town's inception. The hotel was large, with bathrooms and a telephone in every room, making it the nicest hotel to be found west of Utah Lake. Unfortunately, the Mosida project was short-lived due to poor financial planning, the drought-induced recession of the lake shore and subsequent water price hikes, and a grasshopper blight. The Utah Power and Light Company supplied power to the water pump at Mosida until 1921, when the Mosida Irrigation Company could no longer pay for the service. The few local farmers that remained in Mosida subsisted by irrigating small crops with hand-dug wells. B. R. Redman acquired the company in 1924, contracting power from Utah Power and Light Company to the pump house for one month. In July of 1924, the transformers burned out and the main irrigation pipe out of the plant broke. Too costly to repair, the Mosida irrigation works were abandoned. Most of the homes and buildings were either torn down by the early 1930s or moved to other nearby communities, and the irrigation pipes were removed in the 1930s by the Works Projects Administration and used as road culverts throughout Utah County. During the 1970s, 5,000 acres of the northernmost portion of the original Mosida land was owned by Delbert Chipman and Son, and was used largely for grazing sheep.

Decline, Depression, World War II, and Modern Times (1920–Present)

Economic conditions in Utah, including Utah County, worsened during the 1920s as a post-World War I agricultural depression was felt across the state and prices for many agricultural products dropped precipitously. Although some economic recovery occurred in the late 1920s, conditions worsened again during the 1930s as the Great Depression settled over the nation. However, a variety of local, state, and federal programs, most notably the Civilian Conservation Corps (CCC), launched by Roosevelt and approved by Congress in 1933, provided some relief to residents. At its height, the CCC employed 500,000 men in 2,500 camps. A total of 116 CCC camps existed at one time or another in Utah over the nine years the CCC existed. The first CCC

camp in Utah was in Utah County established on May 17, 1933, at American Fork Canyon and in July, 75 men from Salt Lake County were brought in to lead the projects there. Utah did well under the program, and there were usually 30 to 35 camps operating at any one time. In all, 22,074 Utah residents were provided employment in Utah by CCC, plus another 23,833 from out of state who worked on Utah projects. Activities came to an end in July 1942 (Badger 1989; Baldrige 2008; Biles 1991; Lowitt 1984).

Another problem confronting the region between 1931 and 1935 was drought. Utah Lake fell from 850,000 acre-feet to only 20,000 acre-feet, making it apparent that additional water had to be found. The Provo River project, which had been under study since 1922 by the BOR, was considered to be the answer. The project was to supply water to Provo and five other cities in Utah County, as well as Salt Lake City. The project was approved in 1935, and construction began on the Deer Creek Dam in 1938, which was completed in 1941. The Provo Reservoir Canal takes water from the Provo River at the Murdock Diversion Dam. This 23-mile-long canal serves 46,609 acres and the Jordan Narrows Siphon and Pumping Plant which furnishes water from the Provo Reservoir Canal and Jordan River to lands on the west side of Utah Lake and the Jordan River. It was constructed in the 1950s (BOR 2008; Sutton 1949).

Full economic recovery in Utah did not come until the massive mobilization effort brought on by American involvement in World War II, and employment in the area increased due to large federal war related projects. In particular, the creation of the Dugway Proving Ground in nearby Tooele County in 1942, following the Japanese bombing of Pearl Harbor, was a major economic stimulus in the region (Zier 1984:29). The facility was created for chemical weapons testing and was expanded to include biological warfare research in 1943. Today, farming, ranching, and limited mining activities continue in Utah County, and Brigham Young University in Provo is a strong economic force in the county.