



U.S. Department of the Interior  
Bureau of Land Management  
Black Rock Field Office

March 2019

# Burning Man Event Special Recreation Permit

## Draft Environmental Impact Statement: Volume 2



## **MISSION STATEMENT**

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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# Appendix A

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# Appendix A. Figures

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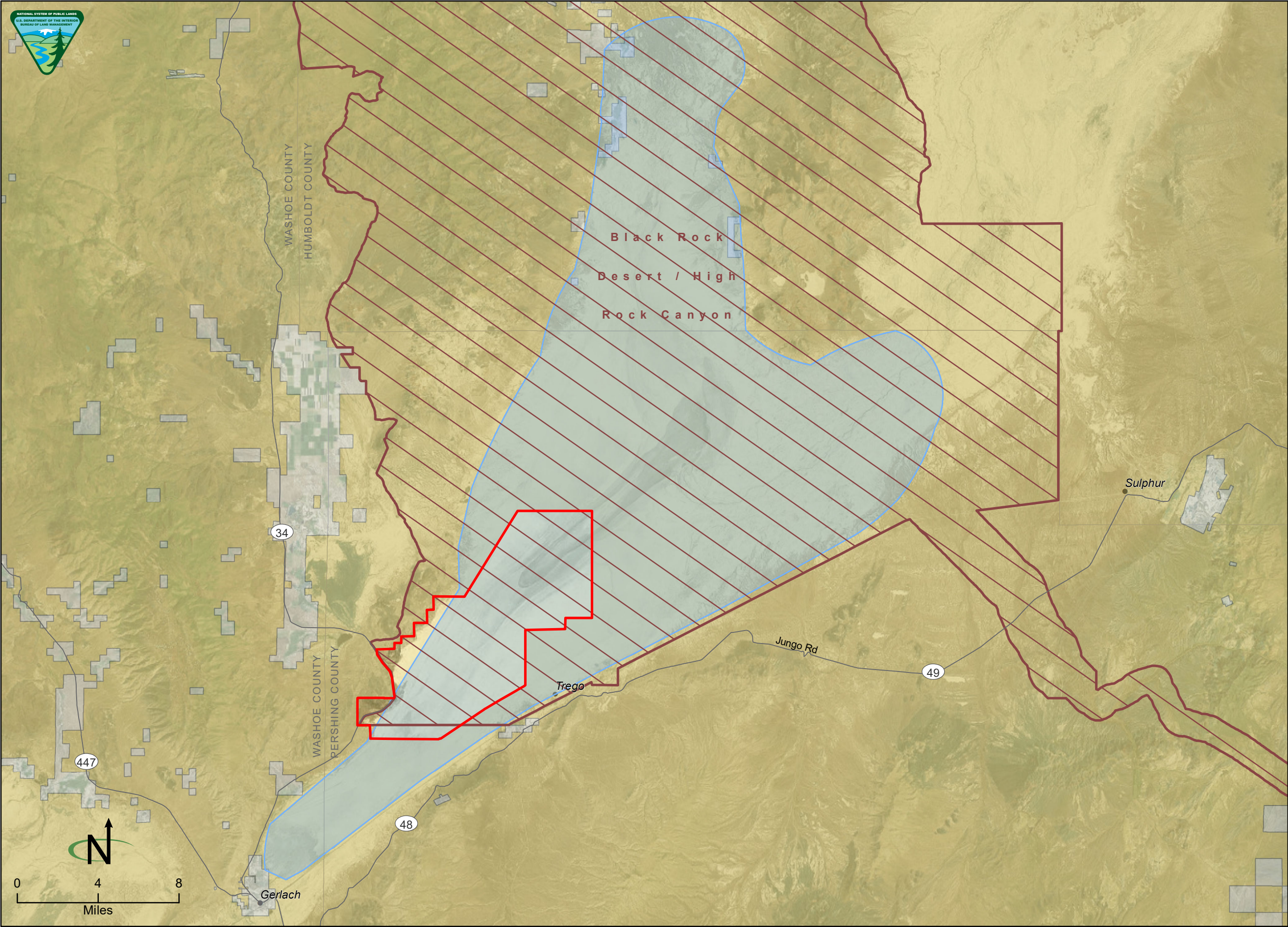
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**Figure 1-1**  
**Black Rock Desert Playa**

- Alternatives analysis area
- National Conservation Area
- Playa
- Bureau of Land Management
- Private (includes county and city)

**PURPOSE OF AND NEED FOR FEDERAL ACTION**

The purpose of the federal government (BLM) action is to respond to a request for an SRP under 43 Code of Federal Regulations (CFR), Part 2930 to conduct the Event on the Black Rock Playa annually for 10 years on public lands administered by the BLM Winnemucca District.

The need for action is established by the BLM's responsibility under the Federal Land Policy and Management Act of 1976 (FLPMA) (Section 103(c)), which requires public lands to be managed on the basis of multiple use and to take any action necessary to prevent unnecessary or undue degradation of lands, while providing for public health and safety (Section 302(b and c)). In addition, the need for action is established by the Federal Lands Recreation Enhancement Act (REA), which authorizes the BLM to issue SRPs for group activities and recreation events.

Source: BLM GIS 2017  
January 2019  
Bureau of Land Management  
Humboldt River Field Office, NV  
No warranty is made by the BLM  
as to the accuracy, reliability, or  
completeness of these data for  
individual use or aggregate use  
with other data.







**Figure 2-1  
Comparison of Alternatives**

**Alternative A (Proposed Action)**

- Closure area, phase 1
- Closure area, phase 2, including a 490-acre proposed addition in the northeast corner of phase 2
- Event area
- Event entrance road (Gate Road)

**Alternative B (Reduced Population Alternative)**

- Closure area: the same as Alternative 2 in the Burning Man EA
- Event area
- Event entrance road (Gate Road)

**Alternative C (Alternate Site Alternative)**

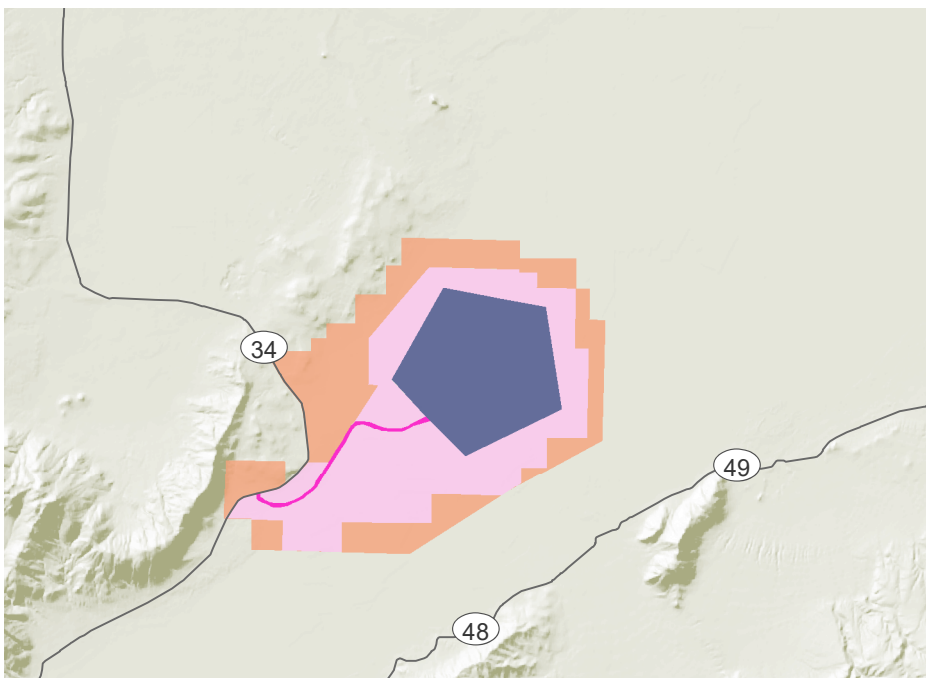
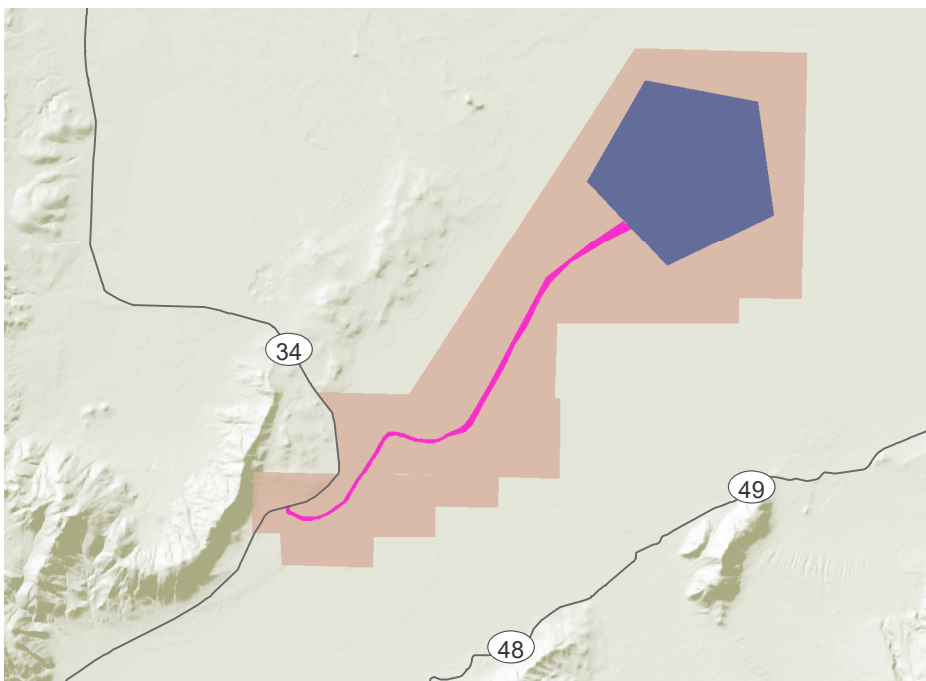
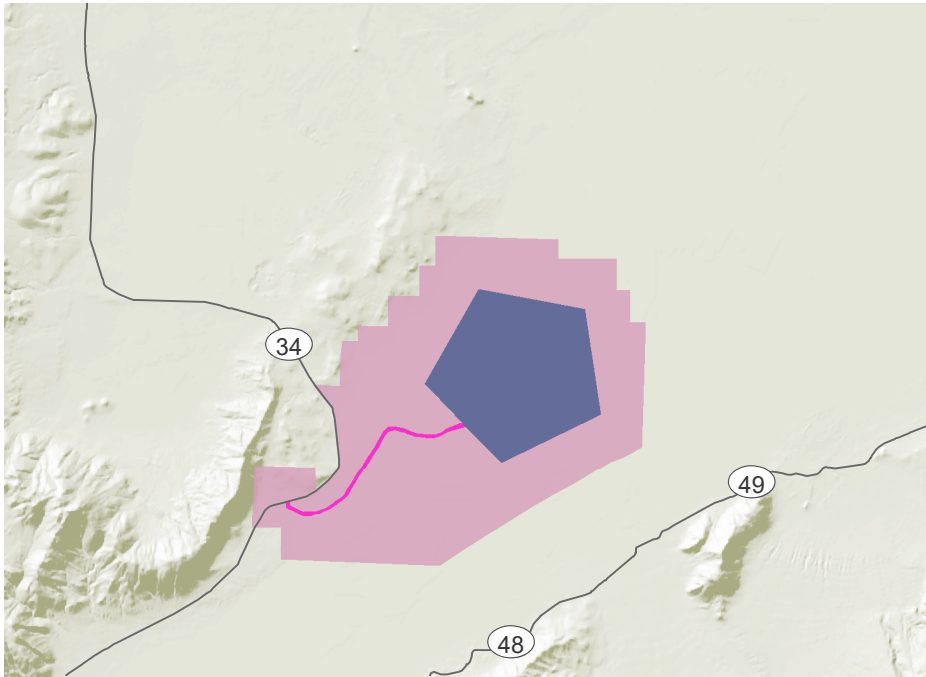
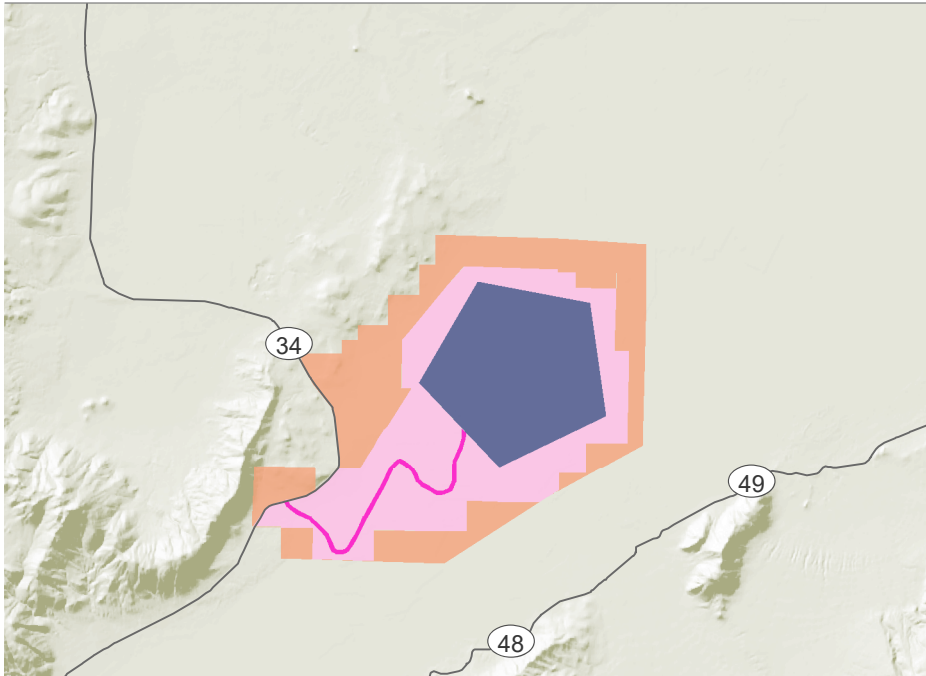
- Closure area
- Event area
- Event entrance road (Gate Road)

**Alternative D (No Action Alternative, same as 2018 event)**

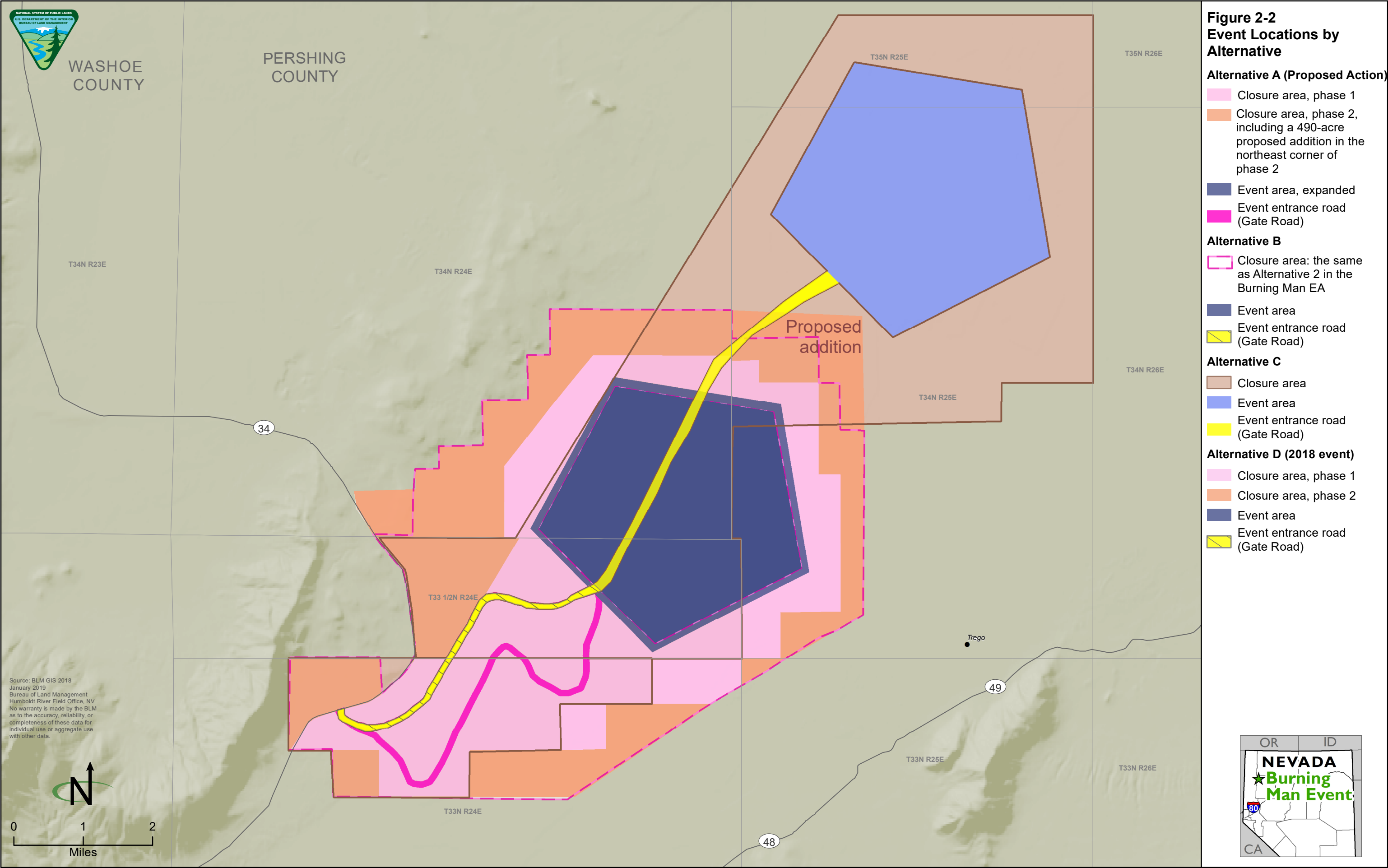
- Closure area, phase 1
- Closure area, phase 2
- Event area
- Event entrance road (Gate Road)

**Alternative E (No Permit)**

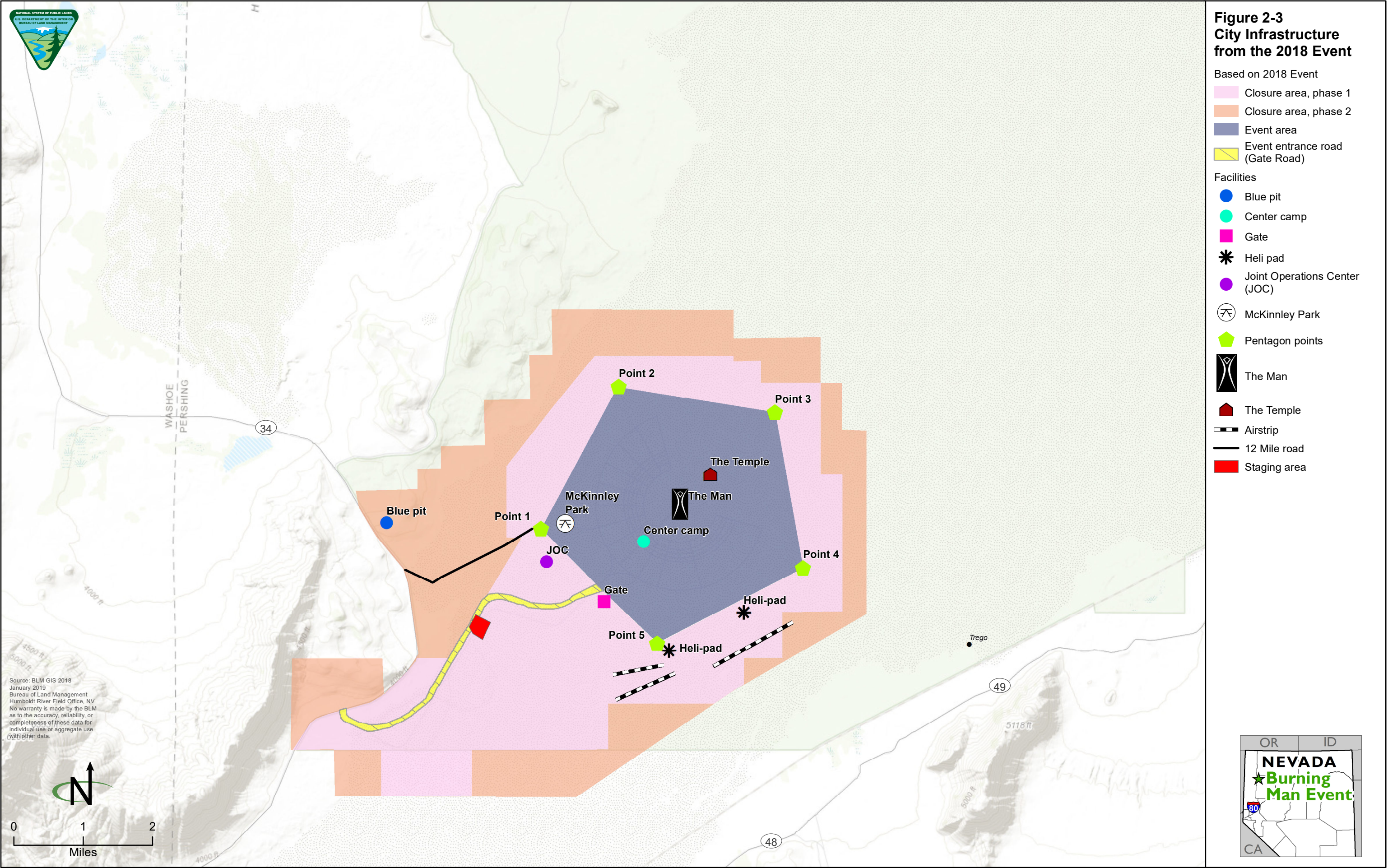
The BLM would not issue a Burning Man Event SRP. Due to the historic nature of the event and the commitment from event participants, a no event alternative would likely result in an unauthorized gathering of thousands of people.



Source: BLM GIS 2018, January 2019  
Bureau of Land Management  
Humboldt River Field Office, NV  
No warranty is made by the BLM as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.









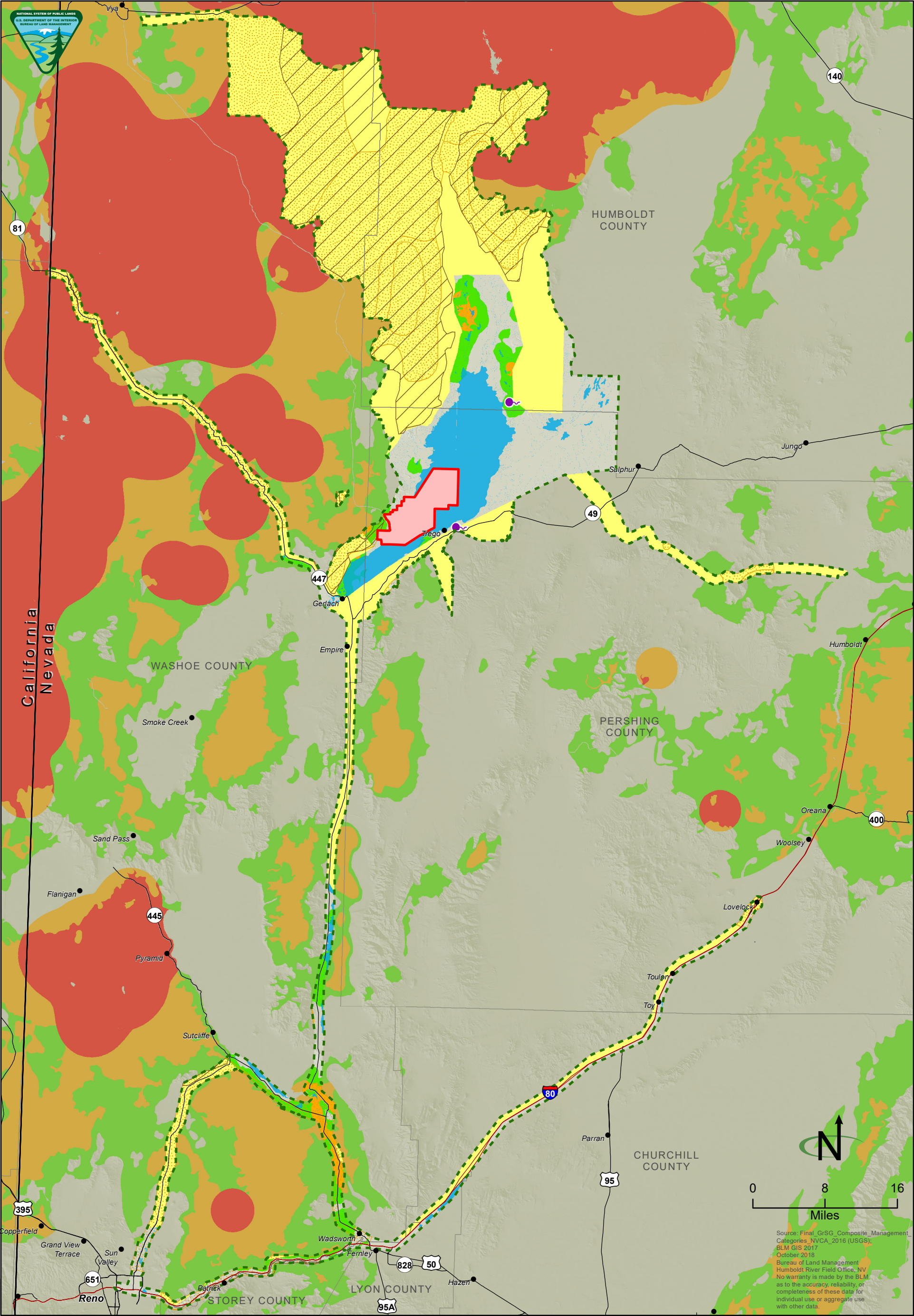
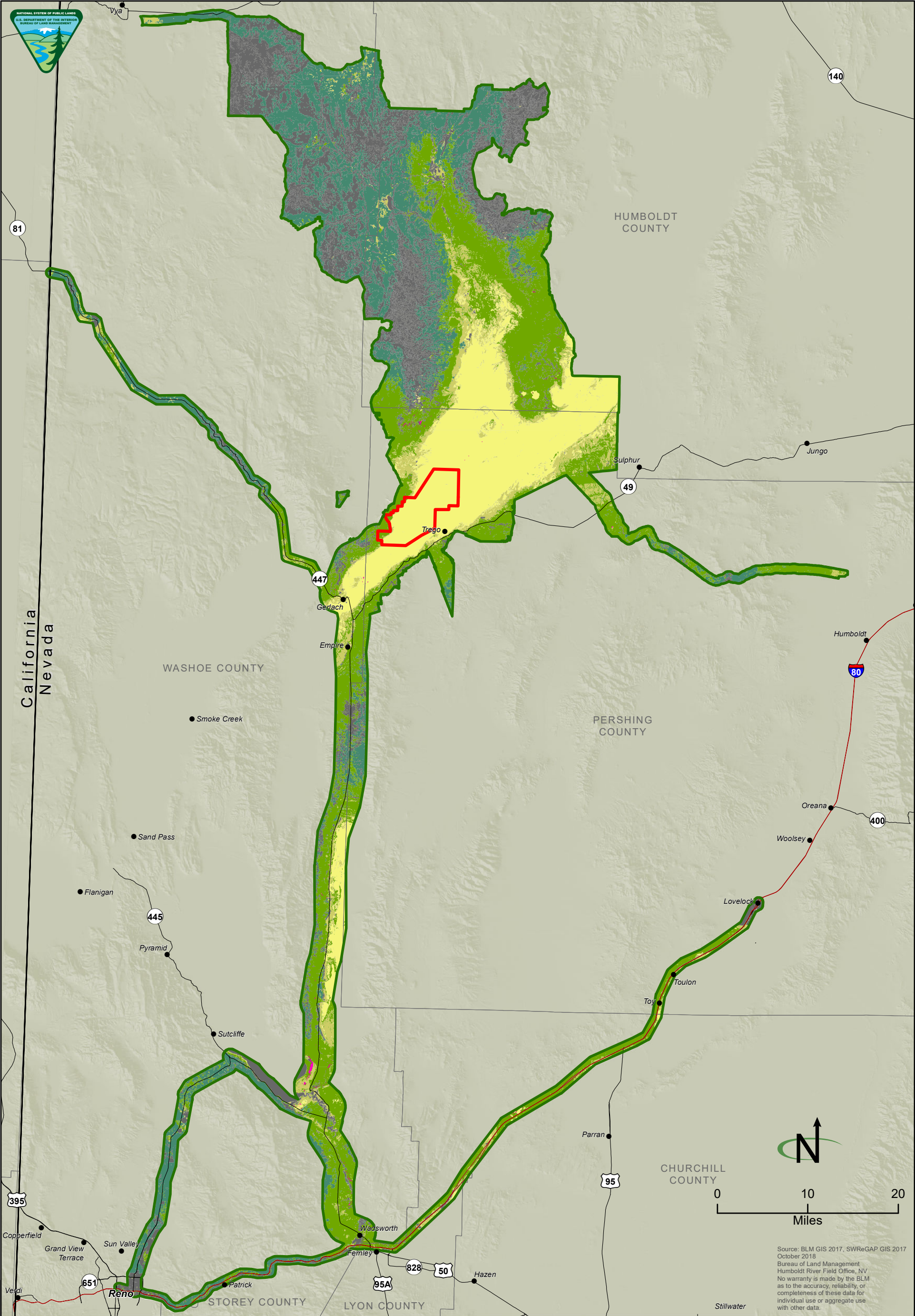


Figure 3-1  
Biological Resources

- |                                      |                     |                     |
|--------------------------------------|---------------------|---------------------|
| Biological resources assessment area | Bighorn sheep range | Sage Grouse Habitat |
| Alternatives analysis area           | Mule deer range     | Core                |
| Hot spring                           | Pronghorn range     | Priority            |
|                                      | Wetland             | General             |





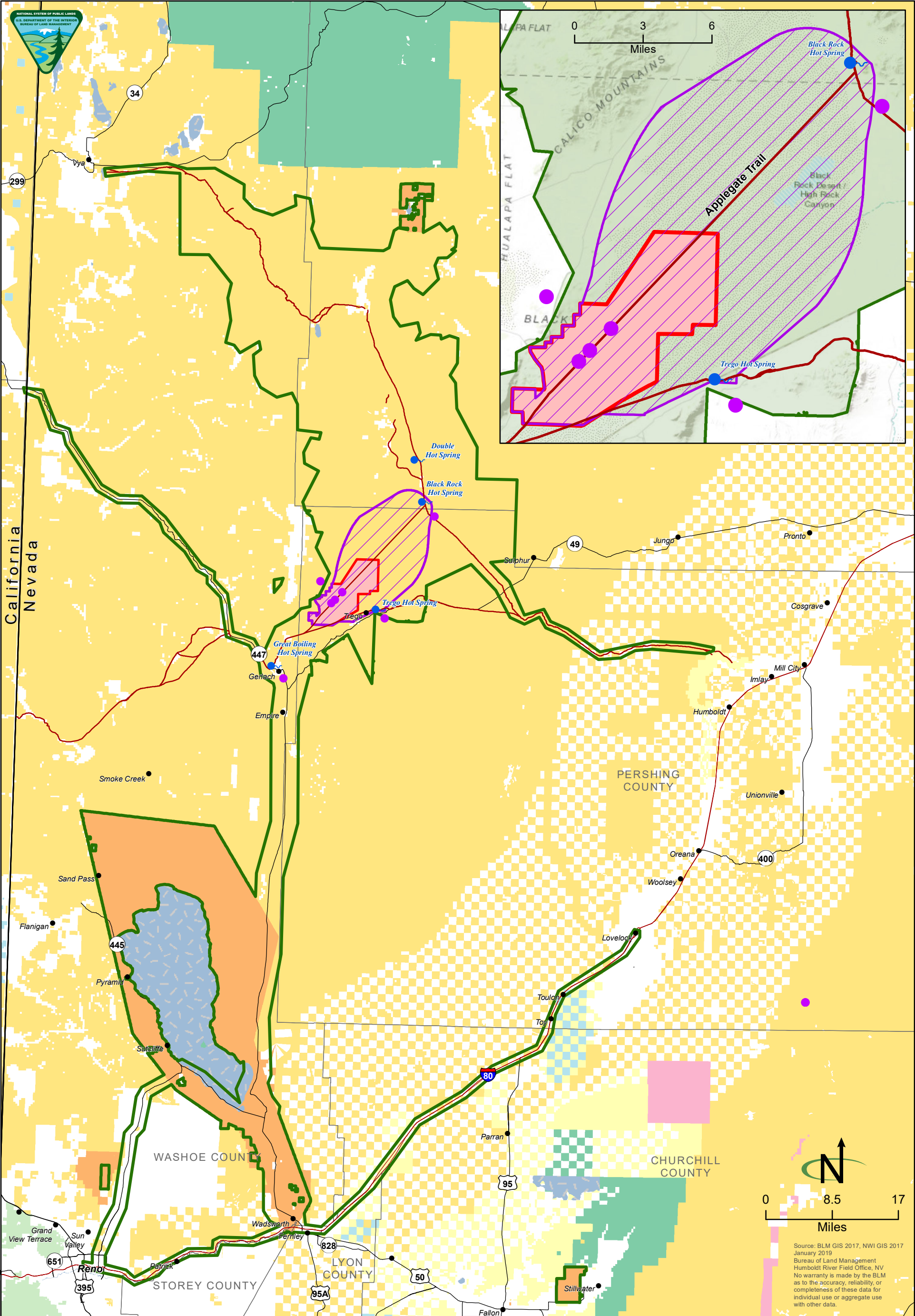


**Figure 3-2**  
**Vegetation Types**

- |   |   |  |
|---|---|--|
| Biological resources assessment area          | Inter-Mountain Basins Big Sagebrush Shrubland | Inter-Mountain Basins Playa                      |
| Alternatives analysis area                    | Inter-Mountain Basins Greasewood Flat         | Inter-Mountain Basins Active and Stabilized Dune |
| Inter-Mountain Basins Mixed Salt Desert Scrub |   | Other  |







**Figure 3-3**  
**Cultural, Paleontological, and Native American Religious Concerns**

- Native American religious concerns assessment area

Alternatives analysis area

Cultural resource indirect assessment area

Cultural KOP

Hot spring
- Applegate Trail

Bureau of Land Management

Private (includes county and city)

Bureau of Indian Affairs

Bureau of Reclamation

Fish and Wildlife Service

Water

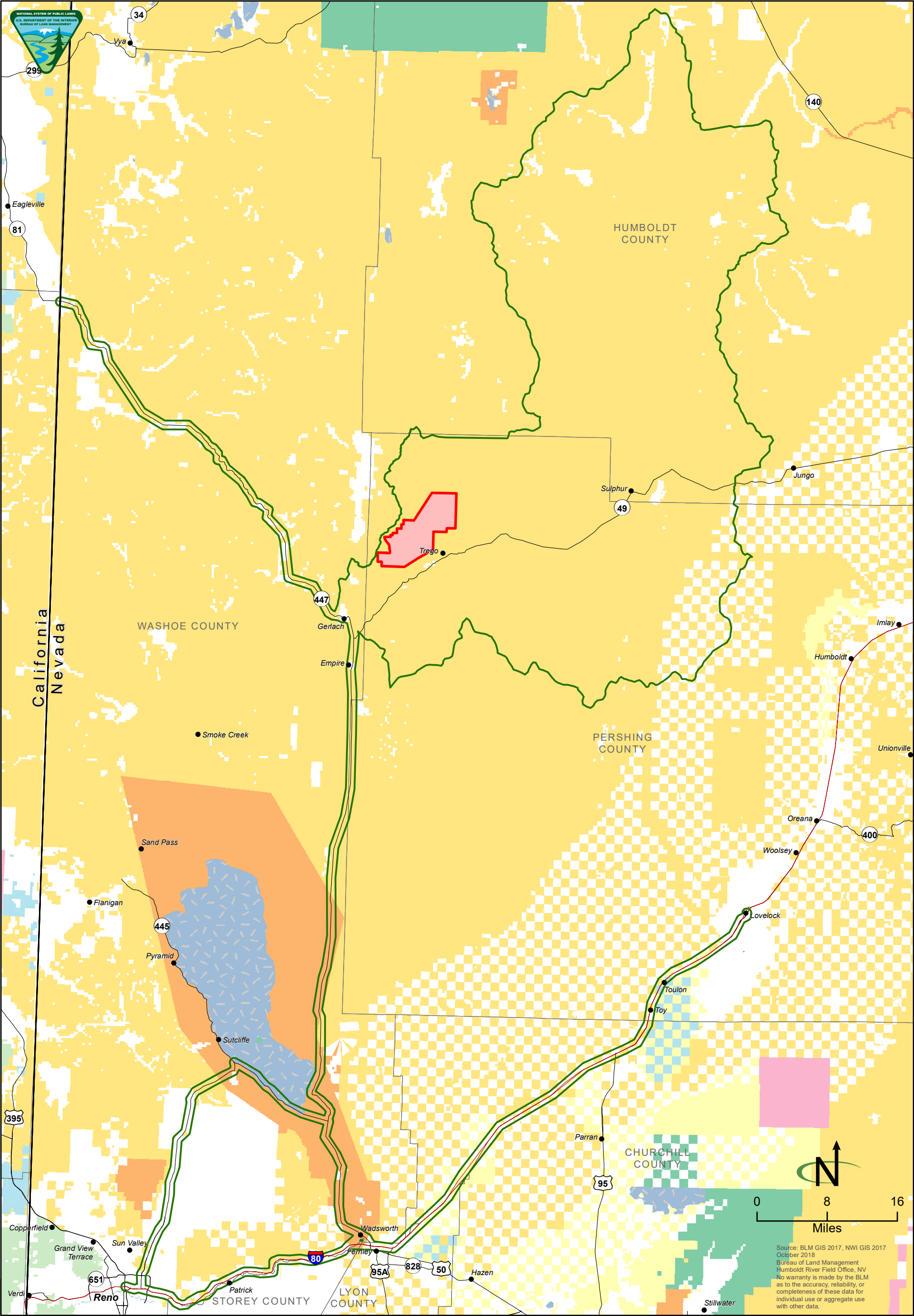
Department of Defense

Forest Service

State or regional
- 
- March 2019

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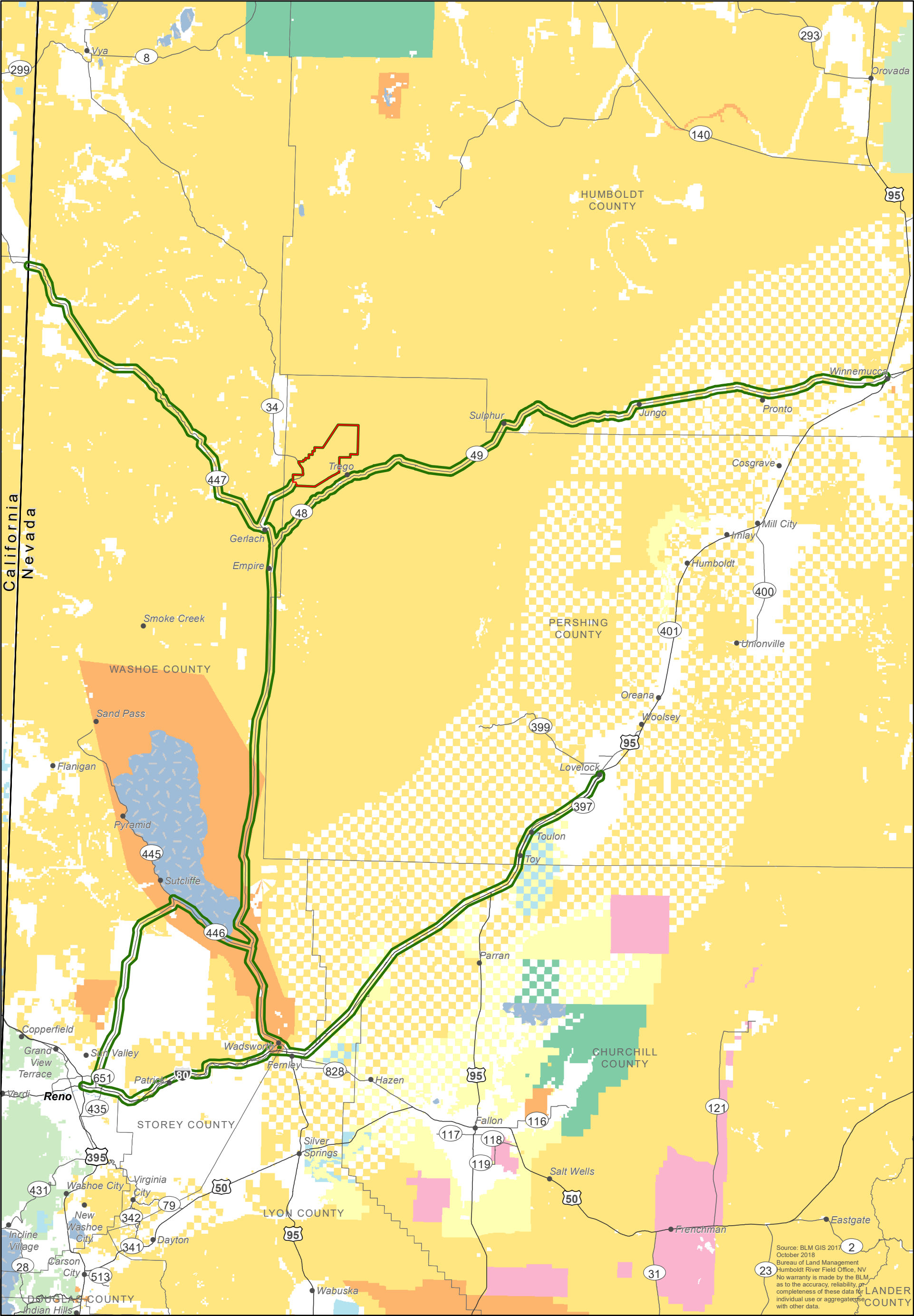
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**Figure 3-4**  
**Air Quality, Climate, and Public Health and Safety**

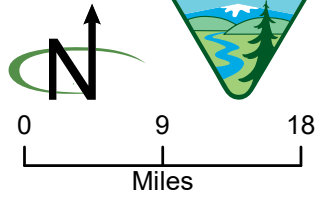
- |  |                                    |                       |
|--|------------------------------------|-----------------------|
| Air quality, climate, and public health and safety assessment area | Private (includes county and city) | Water                 |
| Alternatives analysis area   | Bureau of Indian Affairs           | Department of Defense |
| Bureau of Land Management  | Bureau of Reclamation              | Forest Service        |
|  | Fish and Wildlife Service          | State or regional     |





**Figure 3-5**  
**Wastes, Hazardous or Solid**

- |  |                                    |                       |
|--|------------------------------------|-----------------------|
| Wastes, hazardous or solid assessment area | Private (includes county and city) | Water                 |
| Alternatives analysis area                 | Bureau of Indian Affairs           | Department of Defense |
| Bureau of Land Management                  | Bureau of Reclamation              | Forest Service        |
|  | Fish and Wildlife Service          | State or regional     |





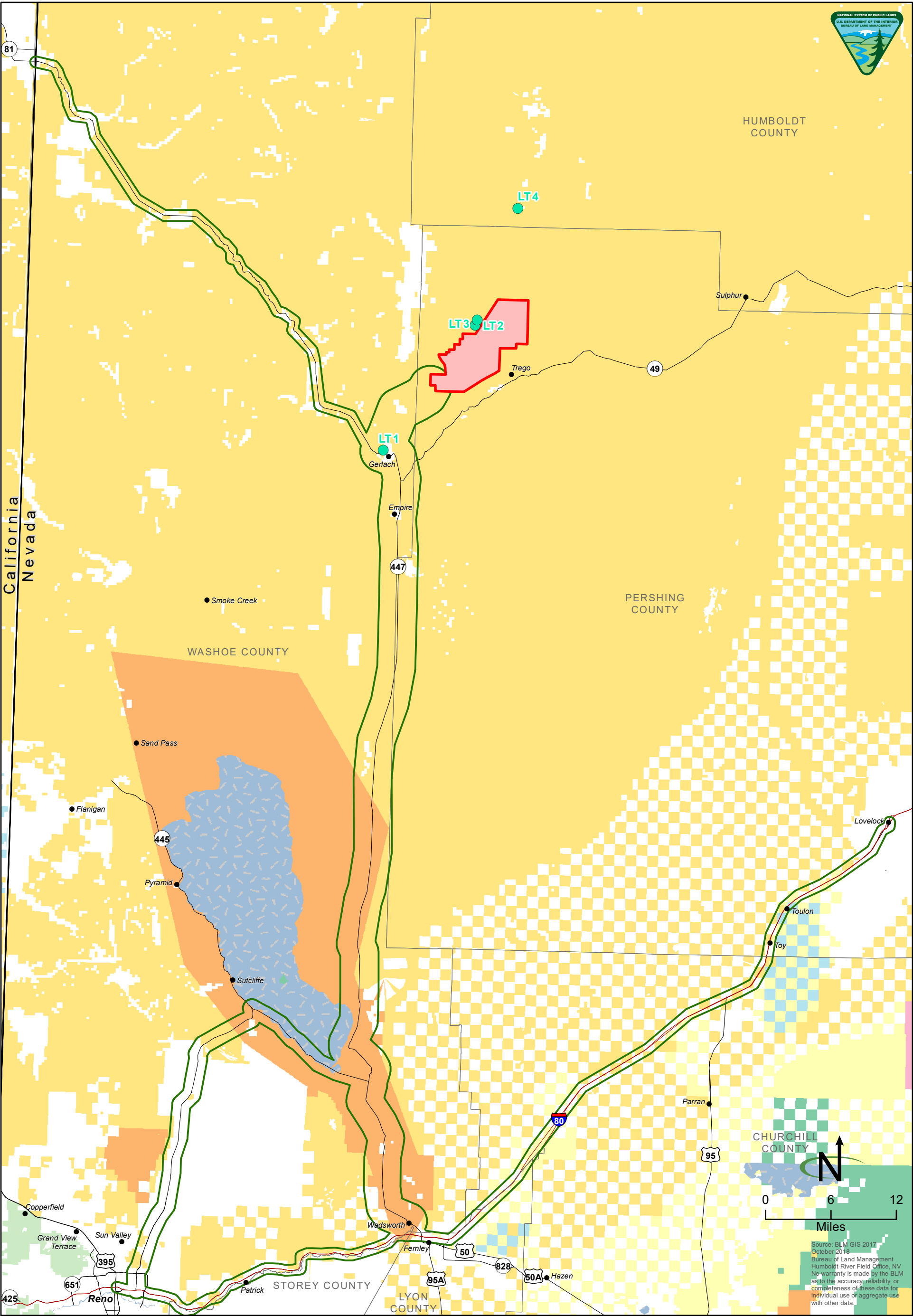
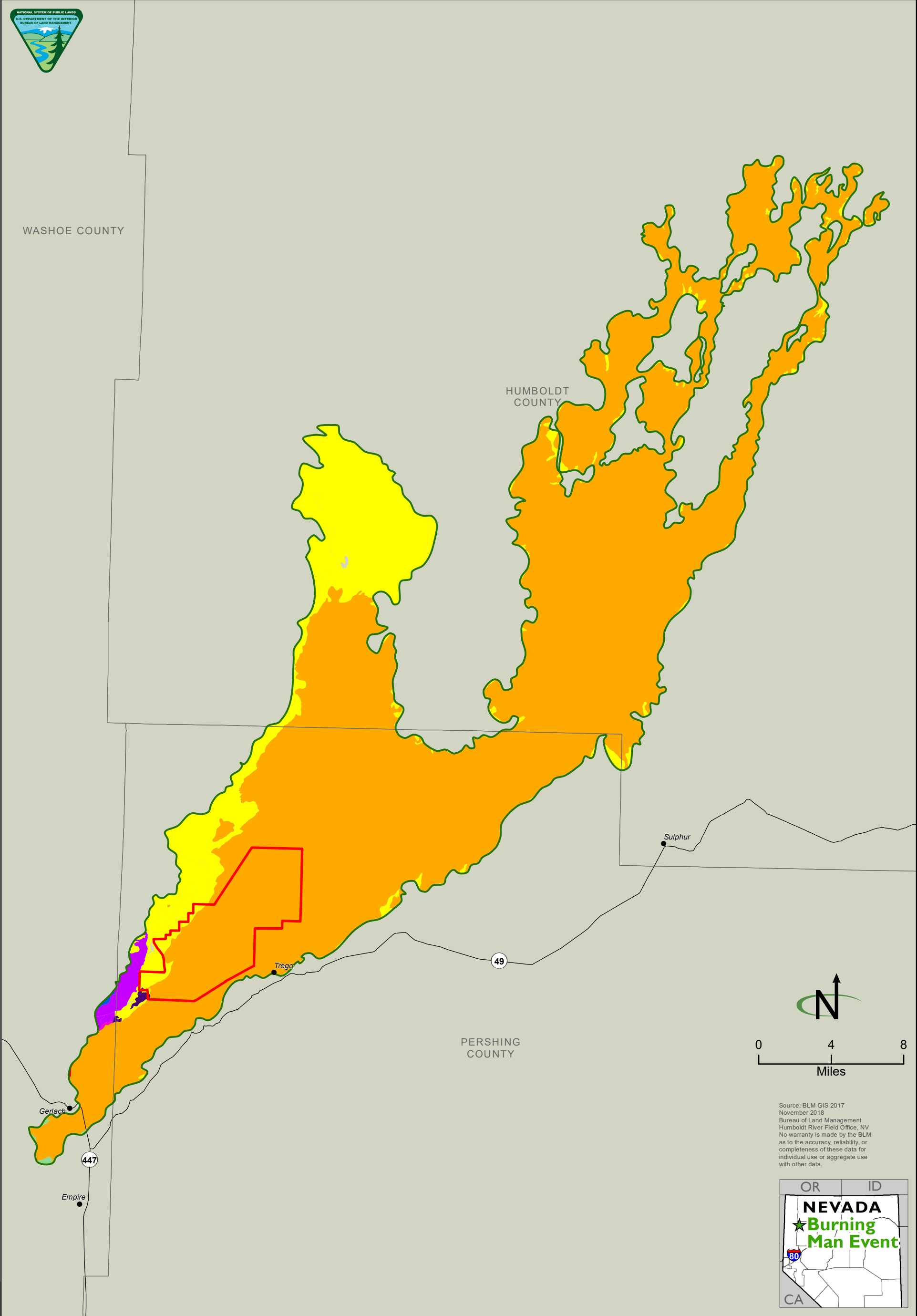


Figure 3-6  
Noise

- |                                      |                                    |                       |
|--------------------------------------|------------------------------------|-----------------------|
| Noise assessment area                | Private (includes county and city) | Water                 |
| Alternatives analysis area           | Bureau of Indian Affairs           | Department of Defense |
| Long-term (LT) noise monitoring site | Bureau of Reclamation              | Forest Service        |
| Bureau of Land Management            | Fish and Wildlife Service          | State or regional     |

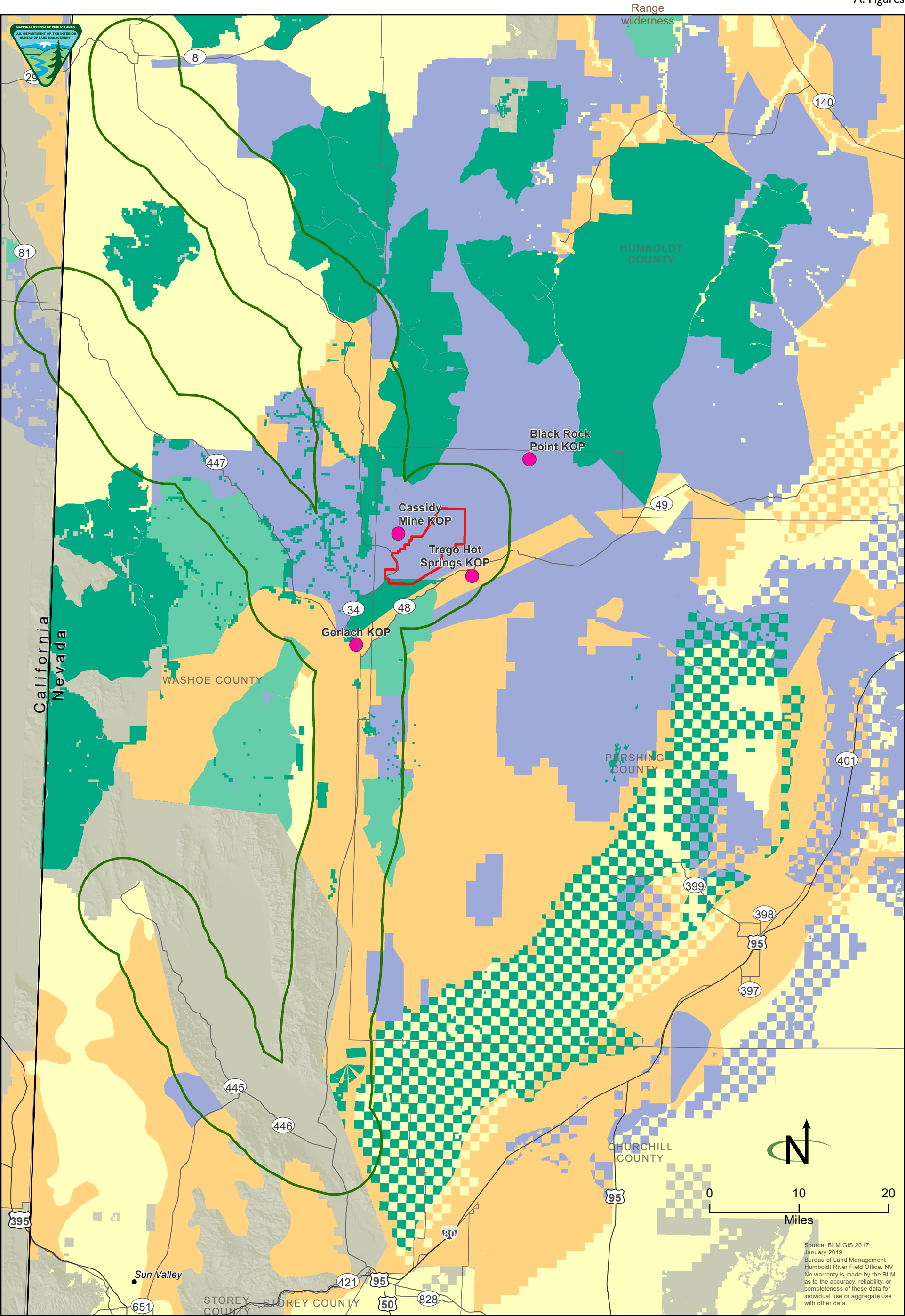




**Figure 3-7**  
**Ecological Site Descriptions**

- |                            |                       |                       |                         |
|----------------------------|-----------------------|-----------------------|-------------------------|
| Soils assessment area      | Indian ricegrass      | Inland saltgrass      | Other perennial grasses |
| Alternatives analysis area | Thurber's needlegrass | Iodinebush            | Shadscale               |
|                            | Basin big sagebrush   | Other perennial forbs |                         |



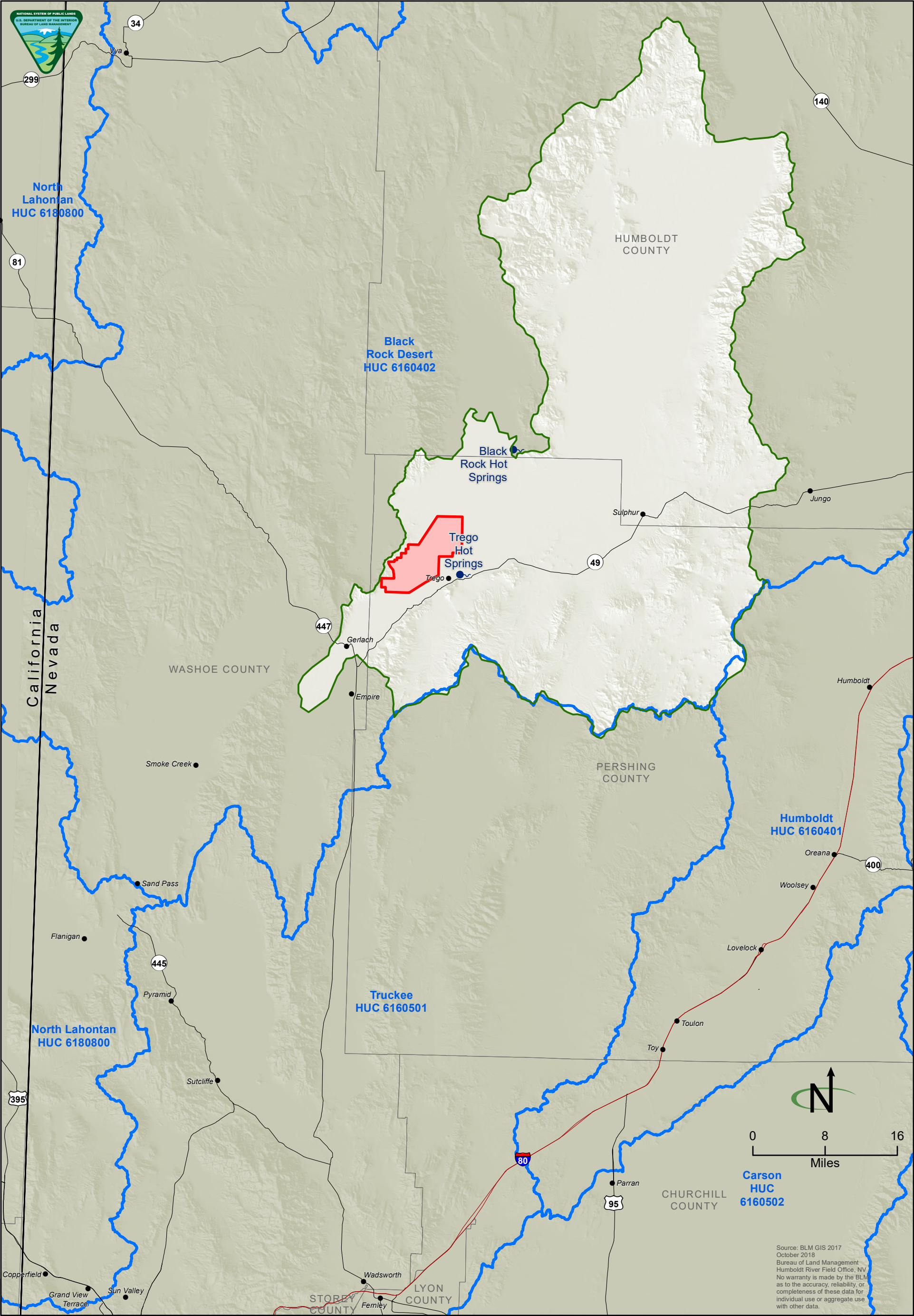


**Figure 3-8**  
**Visual Resources**

- |                                  |  |                         |
|----------------------------------|--|-------------------------|
| Visual resources assessment area | Visual resource management VRM Class I | VRM Class III           |
| Alternatives analysis area       | VRM Class II                           | VRM Class IV or no data |
| Key observation point (KOP)      |  |                         |













**Figure 3-9**  
**Water Resources**





- Water resources assessment area
- Hydrologic unit code (HUC) level 6
- Alternatives analysis area
- Hot spring







 Economics, environmental justice, and social values assessment area
  Alternatives analysis area

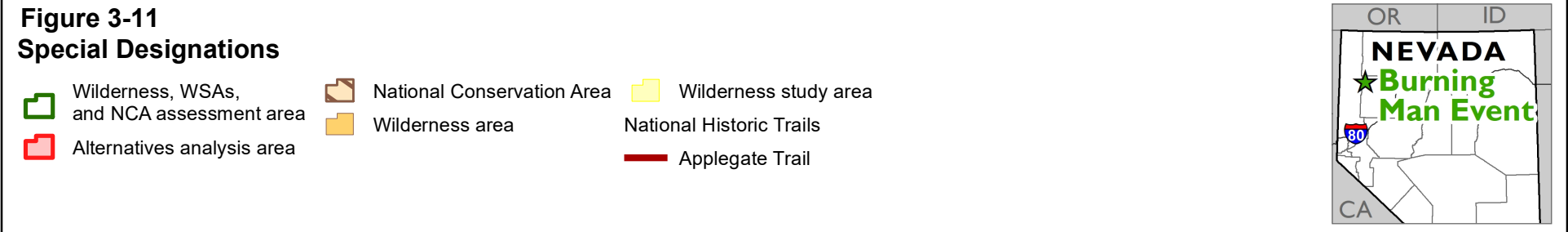
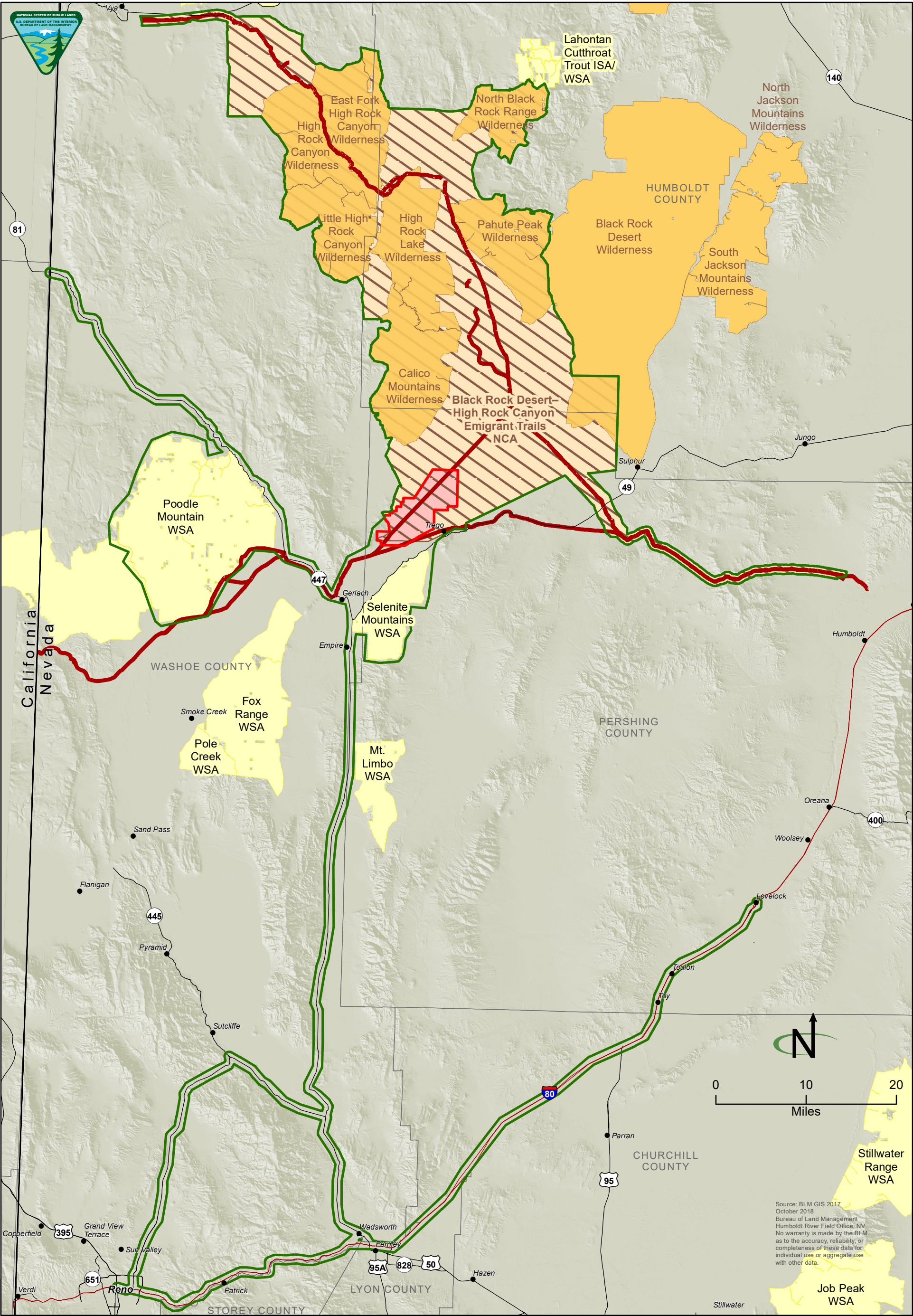
 Participant stop
  Bureau of Land Management
  Private (includes county and city)
  Bureau of Indian Affairs

 Bureau of Reclamation
  Fish and Wildlife Service
  Water
  Department of Defense

 Forest Service
  State or regional









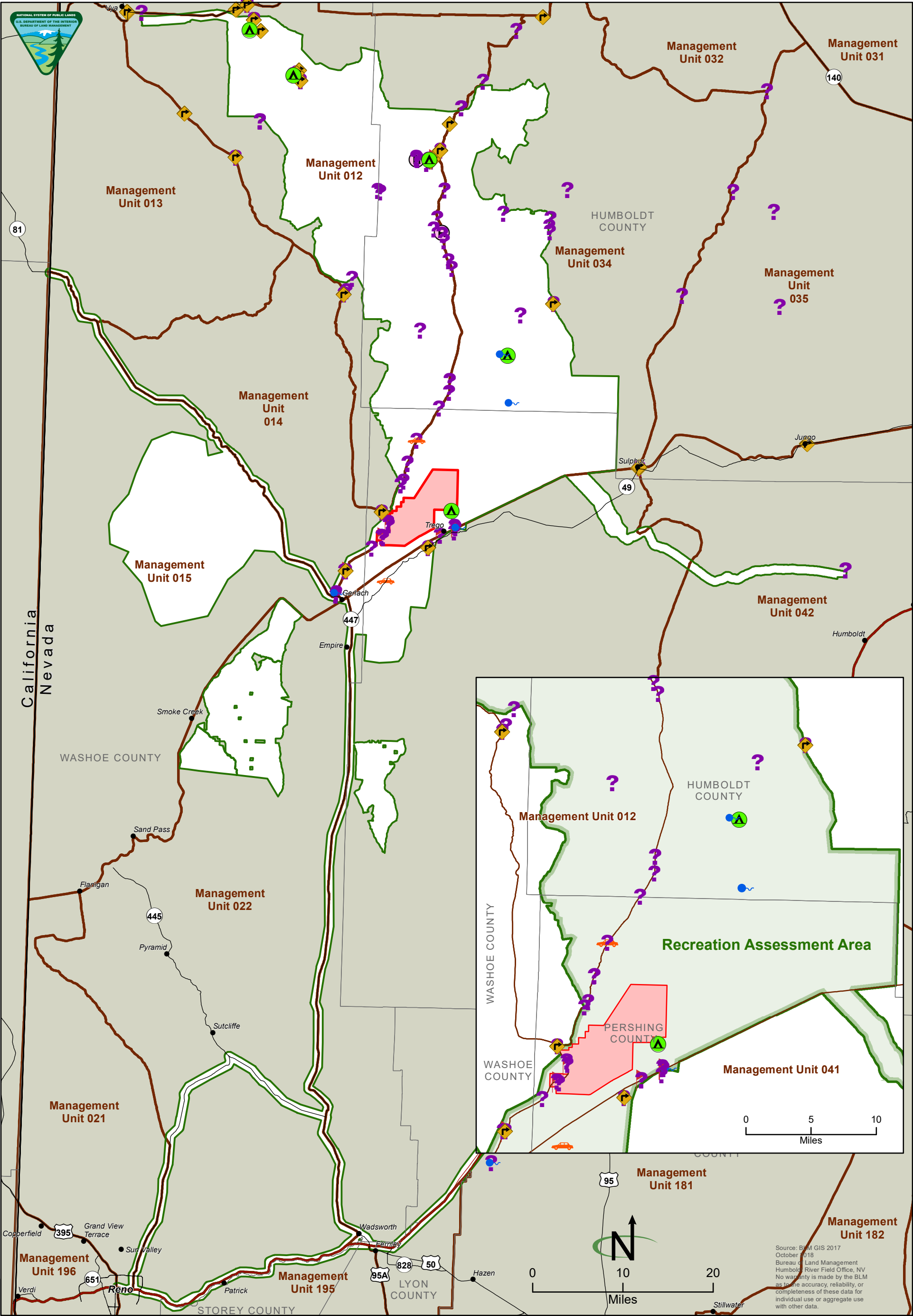













Figure 3-12  
Recreation

- |                            |                               |                    |              |
|----------------------------|-------------------------------|--------------------|--------------|
| Recreation assessment area | Traffic counter               | Directional sign   | Safety sign  |
| Alternatives analysis area | Hot spring                    | Informational sign | Register box |
| NDOW Management Units      | Campground or recreation site |                    |              |





 Transportation and traffic assessment area	 Private (includes county and city)	 Water
 Alternatives analysis area	 Bureau of Indian Affairs	 Department of Defense
 Bureau of Land Management	 Bureau of Reclamation	 Forest Service
	 Fish and Wildlife Service	 State or regional



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# Appendix B

## Special Recreation Permit and Stipulation Information

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# Appendix B. Special Recreation Permit Guidelines and Stipulations

## **B.I SPECIAL RECREATION PERMIT GENERAL TERMS AND CONDITIONS**

- A. The permittee shall comply with all Federal, State, and local laws; ordinances; regulations; orders; postings; or written requirements applicable to the area or operations covered by the Special Recreation Permit (SRP or permit). The permittee shall ensure that all persons operating under the authorization have obtained all required Federal, State, and local licenses or registrations. The permittee shall make every reasonable effort to ensure compliance with these requirements by all agents of the permittee and by all clients, customers, participants, and spectators.
- B. An SRP authorizes special uses of the public lands and related waters and, should circumstances warrant, the permit may be modified by the BLM at any time, including modification of the amount of use. The BLM Authorized Officer may suspend or terminate an SRP if necessary to protect public resources, health, safety, the environment, or because of non-compliance with permit stipulations. Actions by the BLM to suspend or terminate an SRP are appealable.
- C. No value shall be assigned to or claimed for the permit, or for the occupancy or use of Federal lands or related waters granted thereupon. The permit privileges are not to be considered property on which the permittee shall be entitled to earn or receive any return, income, price, or compensation. The use of a permit as collateral is not recognized by the BLM.
- D. Unless expressly stated, the permit does not create an exclusive right of use of an area by the permittee. The permittee shall not interfere with other valid uses of the federal land by other users. The United States reserves the right to use any part of the area for any purpose.
- E. The permittee or permittee's representative may not assign, contract, or sublease any portion of the permit authorization or interest therein, directly or indirectly, voluntarily or involuntarily. However, contracting of equipment or services may be approved by the BLM Authorized Officer in advance, if necessary to supplement a permittee's operations. Such contracting should not constitute more than half the required equipment or services for any one trip or activity and the permittee must retain operational control of the permitted activity. If equipment or services are contracted, the permittee shall continue to be responsible for compliance with all stipulations and conditions of the permit.
- F. All advertising and representations made to the public and the BLM Authorized Officer must be accurate. Although the addresses and telephone numbers of the BLM may be included in advertising materials, official agency symbols may not be used. The permittee shall not use advertising that attempts to portray or represent the activities as being conducted by the BLM. The permittee may not portray or represent the permit fee as a special federal user's tax. The permittee must furnish the BLM Authorized Officer with any current brochure and price list if requested by the BLM Authorized Officer.

- G. The permittee assumes responsibility for inspecting the permitted area for any existing or new hazardous conditions, e.g., trail and route conditions, landslides, avalanches, rocks, changing water or weather conditions, falling limbs or trees, submerged objects, hazardous flora/fauna, abandoned mines, or other hazards that present risks for which the permittee assumes responsibility.
- H. In the event of default on any mortgage or other indebtedness, such as bankruptcy, creditors shall not succeed to the operating rights or privileges of the permittee's SRP.
- I. The permittee cannot, unless specifically authorized, erect, construct, or place any building, structure, or other fixture on public lands. Upon leaving, the lands must be restored as nearly as possible to pre-existing conditions.
- J. The permittee must present or display a copy of the SRP to an authorized officer's representative, or law enforcement personnel upon request. If required, the permittee must display a copy of the permit or other identification tag on equipment used during the period of authorized use.
- K. The BLM Authorized Officer, or other duly authorized representative of the BLM, may examine any of the records or other documents related to the permit, the permittee or the permittee's operator, employee, or agent for up to three years after expiration of the permit.
- L. The permittee must submit a post-use report to the BLM Authorized Officer according to the due dates shown on the permit. If the post-use report is not received by the established deadline, the permit will be suspended and/or late fees assessed.
- M. The permittee shall notify the BLM Authorized Officer of any incident that occurs while involved in activities authorized by these permits, which result in death, personal injury requiring hospitalization or emergency evacuation, or in property damage greater than \$2,500 (lesser amounts if established by State law). Reports should be submitted within 24 hours.

## **B.2 2018 BURNING MAN EVENT SPECIAL STIPULATIONS**

### **B.2.1 Permit Administration**

In addition to the 13 general terms and conditions listed on the back of the Special Recreation Permit Form 2930-2, the following Special Stipulations shall apply to the 2018 Burning Man Event.

### **B.2.2 General**

- I. The maximum authorized population (also referred to as the "population cap") at any point in time during the 2018 event is 70,000 paid participants. The population cap does not include volunteers, government personnel, emergency service providers, vendors, and contractors. Black Rock City, LLC (BRC) is required to keep the maximum population of the event from exceeding this population cap. Consequences to BRC for exceeding the population cap may include, but are not limited to, a finding of non-compliance; suspension or cancellation of this permit per 43 C.F.R. § 2932.56; a monetary or other penalty per 43 C.F.R. § 2932.57; denial of subsequent application(s) for a SRP per 43 C.F.R. § 2932.26; and/or imposition of additional terms and conditions in subsequent years' permits (if granted) that are designed to keep the event population within the maximum authorized population, consistent with 43 C.F.R. §§ 2932.26 and 2932.41. The Bureau of Land Management (BLM) reserves the right to assess



additional cost recovery for any costs the BLM incurs as a result of any population exceedances, per 43 C.F.R. § 2932.31.

2. If during the event it appears that the number of participants arriving to enter Black Rock City is likely to exceed the population cap, then BRC must promptly notify the BLM and provide a detailed Contingency Plan explaining how it plans to manage the additional air and ground traffic. The BLM's acceptance of such a contingency plan does not constitute approval for BRC to exceed the population cap under Special Stipulation 1, nor does it constitute any form of cure for noncompliance with Special Stipulation 1. The purpose of this Special Stipulation 2 is to ensure that BRC will follow specific procedures to address the safety and health of arriving and departing participants when participants may be made to wait upon arrival before they are allowed to enter Black Rock City.

If during the event it appears that the camping area is insufficient to accommodate the number of participants, then BRC must promptly notify the BLM and provide a detailed Contingency Plan explaining how it plans to accommodate the additional participants.

3.
  - A. During the period of site occupancy, and according to an agreed-upon reporting standard with the BLM, BRC shall provide the BLM with daily population statistics and information on participant arrivals, ticket scanning, and participant departures. The population statistics will include and break out separately, the number of paid participants, staff, and total persons on site and will account for all entrance and departure through all event access points, namely the Main Gate, Airport, and Point 1. In addition, BRC must provide the BLM with event population statistics at any other time upon request.
  - B. BRC will notify the BLM immediately if the population exceeds 69,000 paid participants, and will manage operations per BRC's Population Overage plan.
  - C. For historical purposes and press inquiries, BRC shall also provide the BLM with the recorded maximum population for the entire event (otherwise known as peak population).
  - D. Within 60 days after the event, BRC shall provide the BLM with detailed information regarding the number of staff and participants at the event site for the period of site occupancy. This information shall include daily counts for both the non-event and event period.
  - E. Starting on August 25, 2018, and ending on September 4, 2018, BRC will provide the total number of government personnel, emergency service providers, vendors, "work access" passes and contractors (e.g., service providers, staff, infrastructure contractors, art contractors, maintenance and operational personnel)
4. These Special Stipulations incorporate, by reference, information included in the 2018 Burning Man Event Operations Plan (Operations Plan). If there is a conflict between the Operations Plan and the Special Stipulations, the Stipulations shall control. BRC shall provide its latest version of the Operations Plan to the BLM before the BLM will issue the permit for the 2018 Event. BRC shall provide a final Operations Plan to the BLM 45 days prior to the event. Modifications to the final Operations Plan concerning the stipulations and compliance with them will be coordinated with the BLM and may be accepted or denied by the BLM Authorized Officer.

5. The location of the 2018 Burning Man Event is limited to the public Closure Area, with ingress and egress from the 8-Mile or event playa entrance, the 12-mile or vendor playa entrance, and the playa airport. The specific location of the event site will be identified and requested by BRC and approved by the BLM prior to the commencement of event setup.
6. The event is authorized to last 192 hours starting on the Sunday that falls eight days before Labor Day and ending on Labor Day. Event activities may officially commence at 6:00 PM on Sunday, August 26, 2018 and shall end at 6:00 PM on Monday, September 3, 2018 (Labor Day). For the purposes of participant ingress, the main gate may be opened as early as 12:01 AM on Sunday, August 26, 2018. For the purposes of participant egress the main gate will be opened until 12:00 PM on Tuesday, September 4, 2018. During the extended ingress and egress hours, participants are required to focus their activities on camp location setup and breakdown. Pre-event surveys and site layout (including use of the communications tower) may begin on Friday, July 27, 2018. Site occupancy, including construction of facilities and structures, may occur no earlier than Sunday, July 29, 2018 (the start of the event closure order). Removal of all aboveground material (i.e., items that could pose a hazard to other playa users) will be completed no later than Monday, October 1, 2018 (the end of the event closure orders). The exception to this requirement is the communications tower, which may remain on-playa throughout the cleanup period for safety purposes. The dates, calendar and procedures for event set up and cleanup will be outlined in the 2018 BRC Operations Plan.
7. The final phase of cleanup and restoration will be completed no later than Monday, October 1, 2018 in accordance with the last day the authorized 2930-2 (SRP). If unforeseen weather conditions arise, minor adjustments to the post-event cleanup deadlines may be granted by the BLM Authorized Officer.
8. Upon advance notice to BRC, the BLM reserves the right to alter the terms, conditions, and stipulations of the permit for significant changes in BLM policy or administrative procedure, to prevent use conflicts, prevent resource damage, or protect public safety as provided in 43 C.F.R. § 2932.56.
9. BRC shall post a copy of its permit, these Special Stipulations, and the Federal Register Closure and Restriction Orders in prominent view at Center Camp Playa Info where cooperators and participants have an opportunity to read them. Additionally, the documents referenced above shall also be available for participants and staff on the Burning Man website within 15 days of the BLM's issuance of the permit.
10. Except as otherwise noted in Special Stipulation I, violation of the permit terms, conditions and stipulations may be subject to penalties prescribed in 43 C.F.R. Part 2930. Additionally, such violations may result in permit revocation, suspension, or probation. Violations may also be cause for the BLM to deny approval of a subsequent Permit or Operating Authorization (43 C.F.R. § 2932).
11. Commercial use is prohibited within the Black Rock City Closure Area unless specifically authorized by BRC and/or the BLM. Commercial use is defined by 43 C.F.R. § 2932.5, and includes, but is not limited to, commercial film production, food services, waste disposal,

recreational/trailer rental and/or air carrier services. BRC and/or the BLM will monitor the compliance of all commercial operators entering the event via the Point I Gate and the Airport.

A. Prior to the event:

- i. BRC shall notify potential vendors and air carrier services in writing that they must obtain a BLM SRP in order to enter into contract with BRC.
- ii. BRC shall also provide the BLM with a list of known vendors, commercial film/still photography production companies, and air carrier services that BRC recommends be granted a BLM SRP to operate at the event.
- iii. The BLM will immediately notify BRC if any recommended vendors and air operators do not meet the BLM's SRP requirements at 43 C.F.R. § 2932 and cannot be authorized to operate on public lands during the event.
- iv. BRC will immediately notify the BLM if BRC terminates any authorized vendors or air carrier services contract/agreement.
- v. BRC will describe the procedure for BRC and BLM coordination of authorizing vendors, commercial film/still photography production companies, and air carrier services in the 2018 BRC Operations Plan.
- vi. BRC will manage commercial filming per the Commercial Filming Compliance Protocol in the BRC Operations Plan.

B. During the event:

- i. BRC shall require all authorized vendors, commercial film/still photography production companies, and air carrier services to display identification as proof of their authorization to operate at the event by BRC and the BLM.
- ii. Any vendors and air carrier services must show proof of their SRP within a reasonable amount of time (no more than 8 hours) when asked by authorized BLM and BRC personnel, as required by the Closure Order(s) and BRC's Outside Services or air carrier contracts. Commercial film/still photography production companies must show proof of their permit or notice that they do not need one within a reasonable amount of time.
- iii. BRC will inform the BLM's Vendor Compliance Lead of unauthorized vendors, commercial film/still photography production companies and air carrier services discovered at the event.
- iv. Any vendors and air carrier services found operating without a contract with BRC and unpermitted by BLM at the event, will be found to be in noncompliance and may face eviction, and/or receive citations for noncompliance with 43 C.F.R. § 2932, or be required to obtain a BRC contract and a BLM SRP, if required.
- v. If BLM finds any commercial film/still photography production companies operating at the event without a BLM permit or BLM notice that one is not necessary, it will coordinate with BRC as outlined in the Commercial Filming Compliance Protocol in the BRC Operations Plan.

- vi. BRC will provide a copy of the 2018 Closure Orders to all vendors, commercial film/still photography production companies, and air carrier services prior to the start of the event.
12. BRC staff and volunteers shall comply with all applicable supplemental regulations as promulgated in the Closure Order(s) published in the Federal Register prior to the 2018 event.
13. In regard to historical and archeological resources:
- A. All participants and support staff will be informed that collection, excavation or vandalism of historical and archaeological artifacts or sites is illegal on public land. If BRC learns of the discovery of archaeological artifacts (objects greater than 50 years old) or human remains, BRC shall notify the BLM immediately.
  - B. BRC shall comply with 43 C.F.R. § 7.18 and shall not make available to the public any information concerning the nature and location of any archaeological resource.
  - C. Should BRC discover an archaeological resource, it must stop all activities in the discovery vicinity and protect the site until event completion or until notified otherwise by the BLM Authorized Officer.
14. BRC shall provide the appropriate identification to its authorized personnel (i.e., staff decals, designated camping areas, etc.) and will inform the BLM of the nature and appearance of such identification prior to the event.
15. All mounted lasers on registered mutant vehicles, placed art projects and placed theme camps must be inspected and approved by BRC.
16. The use of unmanned aircraft systems (UAS) is prohibited, unless the operator is registered through and complies with the Remote Control BRC program and operates the UAS in accordance with Federal laws and regulations.
17. With regard to mutant vehicles and art cars:
- A. Mutant Vehicles more than 13 feet wide are issued "Playa Only" driving licenses, restricting operation within the city streets. BRC shall locate known "Playa Only" car camps on the outside streets of the city.
  - B. Art cars with flame effects shall not carry additional gasoline or diesel fuel tanks when in operation. Propane tanks are allowed on art cars with flame effects upon inspection from the Fire Art Safety Team (FAST) team at the Department of Mutant Vehicles (DMV) registration.
  - C. For vehicles with limited visibility as determined by BRC DMV, easily identifiable walkers and/or spotters are required. Examples of easily identifiable clothing include: reflective safety vests, brightly colored or reflective hats, bandanas or shirts.
  - D. BRC shall notify BLM immediately when there is an art car related injury requiring medical treatment and transport to Rampart
18. BRC's propane shall be dispensed at identified refueling stations by a licensed professional.



19. BRC shall cooperate with the BLM when requested, to assist in removing individuals from the event as provided in 43 C.F.R. § 2932.57(a)(7). If BRC evicts anyone under BRC's internal procedures BRC will notify the BLM of the eviction and identify the evicted individuals.
20. BRC shall develop the following policies and procedures in their Operations Plan:
  - A. Must Reports - to include prompt notification to BLM when additional BRC resources are required to reduce the intensity of a potential conflict or developing situation involving Burning Man participants
    - i. BRC will immediately report all received reports of sexual assault to law enforcement including the day, time, and location in the city of the reported incident. Black Rock Rangers will facilitate law enforcement in locating the victim unless the victim requests anonymity. Notification must include a Tier I notification.
  - B. Evacuation Plan
  - C. Sanitation, medical, fire protection, security, participant camping, traffic management, drones, lasers, burn perimeters, and safety.
21. Regarding Burns:
  - A. BRC shall include BLM at the 1600 briefing on the Thursday before the Man Burn.
  - B. BRC shall provide BLM a "Daily Burn Sheet" that shall include information on each burn, the perimeter size, the FAST Lead for the burn, image and location of the perimeter.
  - C. At large scale burns, participants who are stopped by Black Rock Rangers for repeatedly violating established burn perimeters shall be promptly turned over to BLM Law Enforcement.
  - D. All structures to be burned must meet BRC engineering standards for burnable structures, or they shall not be burned.
22. BRC shall provide forward deployment of appropriate Emergency Services Department assets during large planned events including large scale burns. BRC shall ensure Basic Life Support and Advanced Life Support care, and medical transport, are available during large unplanned events, including music events in the mobile sound zone.
23. BRC will provide the Winnemucca District a phone number to contact the Burning Man Airport during hours of operation and a point of contact who may be reached before, during and after the event. The phone number must be provided to the Winnemucca District no later than 24 hours before the Burning Man Airport (88NV) opens.
24. In the event of a fire within 100 nautical miles of the Burning Man 88NV airport, and with the issuance of a Temporary Flight Restriction, a BLM Division Office and Aviation Air Space Coordinator may be assigned to the Burning Man airport. The air space coordinator will partner with 88NV management to record tail numbers of inbound and outbound flights at 88NV, notify departing pilots of active Temporary Flight Restrictions and regulate departures of traffic to and from event.

25. Single Entry Commercial Aircraft Services, known as Singleton's, will be required to show proof of insurance to BRC via the Burner Express Air charter program. Carriers who do not show proof of insurance may not land.

### **B.2.3 Coordination**

1. BRC personnel shall meet with BLM staff and representatives from the various cooperators during the event period at such other times and places as needed. At these meetings, BRC shall provide daily attendance figures (as required in Special Stipulation I) and exchange other information necessary to allow all parties to effectively administer and assess the event daily. BRC and BLM will have a daily meeting plan for the purposes of communication and exchange of information. Details will be included in the 2018 BRC Operations Plan.
2. BRC shall make a member of its Board, or authorized representative(s), available to the BLM prior to the event for planning coordination. This member of its Board, or authorized representative(s) will also be available to the BLM after the event for After Action Review coordination. BRC's Board member or authorized representative(s) must be authorized to represent and act on BRC's behalf to coordinate as needed with the BLM, law enforcement, and other event cooperators on issues requiring action. BRC must provide BLM with its authorized representative(s)/point of contact(s) by 07/29/2018.

The BLM's representatives are the following:

Mark Hall - Incident Commander (AO)

Mark Pirtle - Compliance & Support Branch Chief

Logan Briscoe - Law Enforcement Branch Chief

(Note: The BLM representatives may use designees to represent them for certain functions)

3. BRC and BLM, and other agencies as shall be mutually deemed appropriate, shall cooperate in the development of a Unified Command (UC) structure, including designation of "Tier I" leadership positions, for the management of available safety, security and infrastructure resources during an emergency incident. UC operations will be managed from the Joint Operations Center unless it is deemed more appropriate by Tier I leadership to have an incident-specific UC location. During the event, and during the immediate pre- and post-operating period, Tier I members will coordinate daily to review and discuss operating procedures and outcomes. Tier I members will coordinate in the event of an emergency threshold incident as defined in the BRC Ops Plan. BRC will ensure there is appropriate BRC representation in the Tier I leadership, available 24 hours a day 7 days a week during the event and will provide the name(s) of BRC representation to BLM by July 30, 2018.
4. Meetings required with affected parties:
  - A. BRC shall confer with the following entities prior to the event to address local issues and concerns: Washoe County Sheriff's Office, Nevada Department of Transportation (NDOT), Federal Aviation Administration, Washoe County Roads Department, Nevada Highway Patrol and the Gerlach Volunteer Fire Department.
  - B. A representative from BRC will meet with representatives from the BLM prior to the event to coordinate logistics for operation of the communication compound.

- C. BRC shall meet with the Pyramid Lake Paiute Tribe to address concerns and impacts on tribal reservation resources anticipated from the Burning Man Event.
  - D. BRC shall keep the BLM informed regarding progress on formal agreements/memorandums of understanding with affected parties.
5. BRC will develop and implement a plan to address the potential for minors at the event to be exposed to adult activities. The plan should include placement of themed camps and measures such as educating parents and guardians that they are legally responsible for supervising the minor children in their care and advising adult-oriented theme camps to post a gatekeeper during times when the camp's activities might not be suitable for minors. BRC will make a diligent effort to enforce actions identified in the plan. A copy of the plan shall be provided to the BLM and the Pershing County Sheriff's Office before or within 10 days of the BLM's grant of the permit.
6. BRC shall develop and cooperate in the implementation of contingency plans for operations of critical health and safety services under adverse conditions, including those that could cause cancellation or temporary suspension of the event. Such causes may include adverse weather, natural or human caused disaster, or social unrest. This effort shall apply to participants within the Closure Area and en route to and leaving the event.
- A. Prior to the event, BRC shall disseminate emergency information to participants via the Burning Man website, the Burning Man Survival Guide, and any other appropriate media.
  - B. During the event:
    - i. Should event cancellation be necessary, critical health and safety systems must be as operational as reasonably possible during the duration of any temporary suspension, or until participants are able to leave the event site and the Gerlach/Empire area.
    - ii. BRC and the BLM will monitor forecast weather conditions. If weather forecasts suggest a high probability of adverse weather conditions that may result in disruptions to the event, both parties in conjunction with other appropriate agencies and cooperators will follow response plans and maintain appropriate strategies and actions to deal with potential impacts on participants. In the event of natural disaster or civil unrest, response plans, appropriate strategies and actions will be initiated immediately after any disaster or unrest occurs.
    - iii. BRC shall cooperate with the BLM and county law enforcement to warn participants headed into the event of event closure or other restrictions.
    - iv. BRC shall provide participants with current and projected conditions, allowed and prohibited actions deemed necessary for public health and safety as well as protection of the environment, and other appropriate public service announcements via Burning Man Information Radio,(BMIR), flyers, or loud speaker broadcasts as needed.
    - v. If event termination is required, an appropriate time frame will be established by the Tier I group and other cooperators to facilitate safe removal of people and property.
7. In cooperation with emergency services providers and law enforcement agencies, BRC shall within a reasonable time after learning of them, notify the BLM and appropriate agencies of all

accidents related to the event that occur before, during, and after the event that result in death or personal injury requiring hospitalization. Accident reports involving death or injury will be coordinated with the Pershing County Sheriff's Office and the BLM.

8. BRC's medical contractor shall report daily to the BLM, and the Nevada Division of Public and Behavioral Health, providing a numerical breakdown of patient categories and transports, including a breakdown of reasons for transport; and no later than 60 days after the event shall provide to the BLM a written final statistical report of such medical cases.
9. Within 12 hours upon learning of any incident that occurs before, during or after the event that could possibly result in a liability claim, BRC shall confer with the BLM and as deemed necessary by either party, submit a written incident report to the BLM.
10. BRC shall manage fire suppression operations in Black Rock City in accordance with their annual Operating Plan to include operations pre, during, and post-event. BRC shall provide a minimum of two fire suppression apparatus (Type 6) and a Special Operations Response Apparatus. All personnel staffing apparatus shall comply with Firefighter I Certification from their home state, or NWCG Firefighter 2 Qualification. The fire suppression apparatus will be strategically placed within Black Rock City as determined necessary by BRC, including one fire tender and one apparatus (Type I) dedicated to coverage for the airport during hours of operation.

#### B.2.4 Fee Schedule

- I. The BLM shall collect a commercial use fee from BRC for the use of public lands for the event. The fee, as set by regulation 43 C.F.R. § 2930 and BLM Handbook H-2930-I Special Recreation Permits, will be equal to 3 percent of the adjusted gross income derived from the use authorized under the SRP, plus any applicable assigned site fee and/or exclusive use fee, plus cost recovery, including application fees. Through the Collections and Billing System (CBS), the BLM will invoice BRC for a payment of at least 25 percent of the estimated commercial use fee (i.e., 3 percent of estimated gross receipts). Payment must be received by the BLM prior to the start of the event. Determination of gross income will be based on all payments received by BRC and its employees or agents for goods or services provided in connection with commercial activities authorized by the SRP. BRC shall provide BLM with an itemized detailed gross revenue report, prepared by a Certified Public Accountant, including, but is not limited to, ticket sales, authorized contractors operating under the Burning Man SRP, coffee and ice sales, revenue from filming and photography, Plug- and-Play camps, fees associated with outside services and private donations received by BRC for management of the event on public lands.

The following schedule for payments will be used (**Table B-1**):

**Table B-1**  
**Fee Schedule**

<b>Payment</b>	<b>Due Date</b>	<b>Amount Due</b>
1	10 days after permit is issued by BLM; generated in CBS.	25% of estimated commercial use fees
2	January 31 <sup>st</sup> , 2019 due date in CBS.	The remaining balance of commercial use fees

2. BRC shall provide BLM with an itemized gross revenue report for all ticket sales and event entry sales. The report will include the number of tickets sold in each category and the price per ticket for the following categories as listed in the BRC "2018 Ticket Structure" :
  - PRE-SALE
  - DIRECTED GROUPSALE
  - MAIN SALE
  - LIMITED \$1,200 TICKETS
  - LOW INCOME TICKET PROGRAM
  - KID'S TICKETS
  - OMG SALE
3. BRC is responsible for the cost recovery payment, consisting of the actual costs of administering the Special Recreation Permit, including all direct and indirect costs, in addition to the commercial use fees. BRC must sign a Cost Recovery Agreement within 10 days of the issuance of the permit. 100 percent of the cost recovery fee estimate shall be received prior to the start of the event as provided in the 2018 Cost Recovery Agreement.
4. Any commercial vendors supplying goods or services directly to Burning Man participants at the event must have a permit from the BLM.
5. Per 43 CFR 5.2 and Public Law 106-206, commercial film producers/companies and commercial still photographers may need a permit from the BLM before they film/capture images on the playa.

#### **B.2.5 Sanitation**

1. BRC shall ensure there are an adequate number and suitable placement of toilets as needed throughout Black Rock City according to BRC's Operations Plan and the Nevada Division of Public and Behavioral Health's Mass Gathering permit requirements, in conjunction with the Nevada Revised Statute sanitation requirements. Throughout the event, restrooms shall be placed in strategic locations to accommodate participant's needs. Sufficient portable toilets must be supplied at areas likely to be used after dark. BRC shall ensure the toilets in the open playa are adequately lit and visible during nighttime activities. In conjunction with mutant vehicle mass gathering producers, BRC will stage sanitation resources in the deep playa. BRC will manage restrooms near the Temple according to the BRC Operations Plan.
2. BRC will educate participants about pumping limits, portable toilet locations, and best practices in desert camping. BRC shall continue to educate the event participants regarding the importance of appropriate disposal of human waste prior to the 2018 Burning Man Event. BRC shall include a page on the Burning Man website that specifies the appropriate disposal of human waste for participants using personal portable toilets and provides information regarding the risks to human health of improperly disposed of human wastes, BRC shall inform the event participants on the legal ramifications to the individual and to the applicant of inappropriately disposed human waste including the possible revocation of permits, see NAC 444.5466 Disposal

of Sewage; Plumbing (for camping) and NAC 444,5492 (regarding provision of toilet facilities for mass gatherings), BRC will place portable toilets near the Temple throughout Sunday night.

### **B.2.6 Traffic Management**

1. BRC's Traffic Management Plan will include detail on Burning Man's traffic controls during ingress and egress, this plan will be approved by the BLM Authorized Officer.
2. No more than 1,000 vehicles per hour shall be released from Black Rock City during Exodus to avoid deterioration of the external roadway system to an unacceptable level of service (LOS E or F) (Note: Transportation engineers and planners commonly use the term level of service (LOS) to measure and describe the operational status of a roadway network). The NDOT strives to maintain LOS D or better on all of its roadways. LOS levels E and F are considered unacceptable by NDOT.
3. BRC shall allow any dispatched tow truck that is licensed to operate in the State of Nevada. To access the event through the 12-mile access vendor's gate for the purpose of removing vehicles in need of repair, and/or to carry out minor repairs to allow inoperable vehicles to be driven away from the event.
4. BRC shall manage highway clean-up operation in accordance with their annual Operations Plan to include litter and debris collection along the roads and highways surrounding the event. Operations shall focus on:
  - County Road 34 from the "12-Mile" entrance to State Road (SR) 447
  - State Route (SR) 447 from County Road 34 to Wadsworth
  - Gerlach to the California state line, and
  - SR 446 from Nixon to SR 445 near Sutcliffeand may include as necessary CR 34 north of the event site to Jackson Lane.

Weather, traffic, and other safety concerns permitting, BRC will begin this cleanup effort on Wednesday post-event, and complete the effort by October 1, 2018. BRC representatives will also meet and confer with local entities that have reported concerns about event participants leaving trash, and BRC will work to mitigate these issues in order to prevent a reoccurrence of complaints, and to promote Leave No Trace® ethics outside of the event.

BRC shall coordinate with NDOT and the Freeway Service Patrol to ensure that debris removal is conducted according to NDOT standards and protocols, BRC shall coordinate with Washoe County as needed to identify county roads impacted by event related trash and debris, BRC shall make best efforts to collect all event related trash that can be safely collected and will notify and coordinate with the appropriate agencies for any remaining items.

BRC shall coordinate with NDOT and the Washoe County Roads Department regarding the appropriate type of traffic control devices and shall use such devices in accordance with both agency's requirements, A copy of all necessary permits for encroachment within NDOT and Washoe County Roads Department rights-of-way for temporary traffic control measures (i.e., speed limit trailers, etc.) shall be provided to the BLM and to appropriate agencies/jurisdictions by BRC prior to the start of operations.



5. Flaggers shall be used at the intersection of SR-447 and SR-427 to provide for greater public safety within the Pyramid Lake Paiute Reservation.
6. BRC shall cooperate with Washoe County Sheriff's Office and NDOT to request a temporary speed limit reduction through the town of Empire. The BLM recommends a posted maximum speed limit of 25 mph. A reduced speed limit would improve the safety of parking along SR-447 through Empire and pedestrians crossing the roadway.
7. BRC shall provide traffic control, using traffic control devices as determined by Washoe County Roads Department and NDOT, at County Road 34 entrances/exits to the Burning Man Event, the "y" intersection of SR-447, County Road 34, and in the towns of Gerlach and Empire during heavy traffic periods.
8. To reduce impacts on the Pyramid Lake Paiute Reservation located along the access routes, BRC shall coordinate with the Pyramid Lake Paiute Tribe. BRC shall work with the Pyramid Lake Tribe in developing the applicant's plan to increase public awareness and educational campaigns about Leave No Trace® on tribal land, including for example, signage on roads, Public Service Announcements on BMIR, blog-posts, etc. Also, BRC shall continue to support and promote tribal enterprises that are setup to collect participant trash and recycling for a fee, which also helps with economic benefits of the region.
9. Event speed limits shall be posted on both Gate Road and the 12-Mile Point I Road. BRC will provide clearly identifiable mileage markers on Gate Road to facilitate emergency response. Will-call area shall have an organized layout including signage.
10. BRC shall delineate the perimeter edges and ends of the NV-88 runways, with visible safety cones, as specified in the annual BRC Event Operation Plan.

### **B.2.7 Compliance Inspections**

1. BRC's operation and compliance with the terms, conditions and stipulations of the SRP, Form 2930-2, and BRC's Operation Plan will be evaluated through performance inspections before, during, and following the event. All campsites, vendor operating areas, commercial film/still photography production areas, and permittee operating areas are subject to compliance checks to monitor environmental, vending and film/still photography compliance-related stipulations. This includes the Department of Public Works, First Camp, Heavy Equipment Yards, and the United Site Services Operation Area, among others.
2. BRC shall coordinate with the BLM and any other relevant agency to monitor environmental protection measures identified in these Special Stipulations, the temporary closure order, and BRC's Operations Plan. BRC will manage operations in accordance with their annual Operations Plan. BRC will document and mitigate all violations of environmental protection measures within 24 hours of the violation being brought to BRC's attention. The 2018 BRC Operations Plan shall describe the monitoring, communication, and mitigation protocols for Environmental Compliance, including but not limited to:
  - A. Trash fence integrity;
  - B. Appropriate campfire containment measures and prohibitions;

- C. Protection of archaeological resources ~
  - D. Camping within designated areas only;
  - E. Grey and black water dumping prohibitions;
  - F. Proper trash removal and cleanup;
  - G. Mitigation of vehicle oil dripping;
  - H. Hazardous materials;
  - I. Promotion of Leave No Trace® ethics;
  - J. Motorized vehicle, motorcycle and ATV limitations and prohibitions as they relate to environmental compliance and possible impacts;
  - K. Appropriate disposal of human waste; and
  - L. Burn containers raised off the playa.
3. BRC shall make personnel available immediately after the end of the post-event cleanup period, and if deemed appropriate by the BLM, during the spring following the event, to inspect the site with the BLM to determine any latent adverse impacts, such as pit depressions, bumps, depressions from roadways, ruts from vehicular traffic, or surfacing buried materials, to ensure that the site is returned to pre-event condition. Inspections of the event site, in the fall post-event, will be coordinated by the BLM using randomly placed transects on the site and a measurable cleaning standard. The inspecting party will intensively collect debris found on the ground within each transect. A follow-up spring inspection will be conducted only when deemed necessary by the BLM. The Post-Event Cleanup Standard shall be the average total surface area of debris collected from either the fall or spring transects will not exceed the equivalent of an average of 1 square foot per acre from identified inspection areas. BRC may make a written request for an extension of time for the completion of the cleanup if weather or some other catastrophic event interferes with access to the site for cleanup purposes. The BLM Authorized Officer may consider such a request. If cleanup studies indicate the Post-Event Cleanup Standard has been or is likely to be exceeded, the permit will be suspended until the site has been cleaned up to a level not to exceed 50 percent of the standard and the Operations Plan includes reasonable measures to assure that the Post-Event Cleanup Standard will not be exceeded during the life of the permit.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**SPECIAL RECREATION PERMIT**  
(43 U.S.C. 1201; 43 U.S.C. 1701; 16 U.S.C. 460L-6(a); and 43 CFR 2930)

Permit No.  
NVW03500-18-01

BLM Issuing Office  
Black Rock Field Office  
Winnemucca District BLM

Permittee Black Rock City LLC.

Authorized Representative Charlie Dolman - Event Operations Director

Address 660 Alabama St.  
4th Floor  
San Francisco, CA 94110

Phone Number 415-865-3800  
Email Address charlie.dolman@burningman.org  
Web Site www.burningman.org

Permit is for (check all that apply): ☒ Commercial ☐ Competitive ☐ Organized Group ☐ Vending

Date Issued 07/29/2018 Date Expires 10/01/2018 (Terms greater than one year subject to annual authorization)

Seasonal or other period of use limitations See 2018 Burning Man Operations Plan

Permit Fee Formula Commercial: Greater of \$110/year or 3% of gross revenue

Assigned Sites (commercial only): ☒ None No. of Assigned Sites subject to fees \_\_\_\_\_

Special Area Fees Apply: ☒ Yes ☒ No Special Area Fee \_\_\_\_\_

Minimum insurance coverage requirements High Risk: \$1,000,000 per occurrence, annual aggregate

Permit is valid only if a current Certificate of Insurance, listing the United States as additional insured, is on file with the issuing BLM Office.

Post use report due date(s) 1/31/2019 Bond Requirement: ☒ None Bond Amount \_\_\_\_\_

Purpose and activities authorized  
2018 Burning Man Event

Approved Area of Operation

2018 Burning Man Event - Closure Area within Black Rock Desert - High Rock Canyon, Emigrant Trails NCA

Certification of Information: I certify use of this permit will be as per the operations plan on file with BLM. I acknowledge I am required to comply with any conditions or stipulations required by the BLM including the General Terms listed on page two of this form and any additional stipulations which may be attached.

Additional Stipulations are attached: ☒ Yes ☒ No

Mark E. Hall  
(Permittee Signature)

7-27-18  
(Date)

Approved and issued for the conduct of permitted activities and locations shown on this permit and in conformance with the operating plan. Permit is subject to General Terms and any additional stipulations attached.

Mark E. Hall Ph.D.  
(BLM Authorized Officer Printed Name)

Mark E. Hall  
(BLM Authorized Officer Signature)

27 July 2018  
(Date)

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## **General Special Recreation Permit Form**

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Print

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Form 2930-2  
(January 2017)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**SPECIAL RECREATION PERMIT**

(43 U.S.C. 1201; 43 U.S.C. 1701; 16 U.S.C. 460L-6(a); and 43 CFR 2930)

Permit No. \_\_\_\_\_

BLM Issuing Office \_\_\_\_\_

Permittee \_\_\_\_\_

Authorized Representative \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

Email Address \_\_\_\_\_

Web Site \_\_\_\_\_

Permit is for (*check all that apply*): ☐ Commercial ☐ Competitive ☐ Organized Group ☐ Vending

Date Issued \_\_\_\_\_ Date Expires \_\_\_\_\_ (*Terms greater than one year subject to annual authorization.*)

Seasonal or other period of use limitations \_\_\_\_\_

Permit Fee Formula Other, specify: \_\_\_\_\_

Assigned Sites (*commercial only*): ☐ None No. of Assigned Sites subject to fees \_\_\_\_\_

Special Area Fees Apply: ☐ Yes ☐ No Special Area Fee \_\_\_\_\_

Minimum insurance coverage requirements \_\_\_\_\_

Permit is valid only if a current Certificate of Insurance, listing the United States as additional insured, is on file with the issuing BLM Office.

Post use report due date(s) \_\_\_\_\_ Bond Requirement: ☐ None Bond Amount \_\_\_\_\_

Purpose and activities authorized \_\_\_\_\_

Approved Area of Operation \_\_\_\_\_

Certification of Information: I certify use of this permit will be as per the operations plan on file with BLM. I acknowledge I am required to comply with any conditions or stipulations required by the BLM including the General Terms listed on page two of this form and any additional stipulations which may be attached.

Additional Stipulations are attached: ☐ Yes ☐ No

\_\_\_\_\_  
(Permittee Signature)

\_\_\_\_\_  
(Date)

Approved and issued for the conduct of permitted activities and locations shown on this permit and in conformance with the operating plan. Permit is subject to General Terms and any additional stipulations attached.

\_\_\_\_\_  
(BLM Authorized Officer Printed Name)

\_\_\_\_\_  
(BLM Authorized Officer Signature)

\_\_\_\_\_  
(Date)

## GENERAL TERMS

- a. The permittee shall comply with all Federal, State, and local laws; ordinances; regulations; orders; postings; or written requirements applicable to the area or operations covered by the Special Recreation Permit (SRP or permit). The permittee shall ensure that all persons operating under the authorization have obtained all required Federal, State, and local licenses or registrations. The permittee shall make every reasonable effort to ensure compliance with these requirements by all agents of the permittee and by all clients, customers, participants, and spectators.
- b. An SRP authorizes special uses of the public lands and related waters and, should circumstances warrant, the permit may be modified by the BLM at any time, including modification of the amount of use. The authorized officer may suspend or terminate an SRP if necessary to protect public resources, health, safety, the environment, or because of non-compliance with permit stipulations. Actions by the BLM to suspend or terminate an SRP are appealable.
- c. No value shall be assigned to or claimed for the permit, or for the occupancy or use of Federal lands or related waters granted thereupon. The permit privileges are not to be considered property on which the permittee shall be entitled to earn or receive any return, income, price, or compensation. The use of a permit as collateral is not recognized by the BLM.
- d. Unless expressly stated, the permit does not create an exclusive right of use of an area by the permittee. The permittee shall not interfere with other valid uses of the federal land by other users. The United States reserves the right to use any part of the area for any purpose.
- e. The permittee or permittee's representative may not assign, contract, or sublease any portion of the permit authorization or interest therein, directly or indirectly, voluntarily or involuntarily. However, contracting of equipment or services may be approved by the authorized officer in advance, if necessary to supplement a permittee's operations. Such contracting should not constitute more than half the required equipment or services for any one trip or activity and the permittee must retain operational control of the permitted activity. If equipment or services are contracted, the permittee shall continue to be responsible for compliance with all stipulations and conditions of the permit.
- f. All advertising and representations made to the public and the authorized officer must be accurate. Although the addresses and telephone numbers of the BLM may be included in advertising materials, official agency symbols may not be used. The permittee shall not use advertising that attempts to portray or represent the activities as being conducted by the BLM. The permittee may not portray or represent the permit fee as a special federal user's tax. The permittee must furnish the authorized officer with any current brochure and price list if requested by the authorized officer.
- g. The permittee assumes responsibility for inspecting the permitted area for any existing or new hazardous conditions, e.g., trail and route conditions, landslides, avalanches, rocks, changing water or weather conditions, falling limbs or trees, submerged objects, hazardous flora/fauna, abandoned mines, or other hazards that present risks for which the permittee assumes responsibility.
- h. In the event of default on any mortgage or other indebtedness, such as bankruptcy, creditors shall not succeed to the operating rights or privileges of the permittee's SRP.
- i. The permittee cannot, unless specifically authorized, erect, construct, or place any building, structure, or other fixture on public lands. Upon leaving, the lands must be restored as nearly as possible to pre-existing conditions.
- j. The permittee must present or display a copy of the SRP to an authorized officer's representative, or law enforcement personnel upon request. If required, the permittee must display a copy of the permit or other identification tag on equipment used during the period of authorized use.
- k. The authorized officer, or other duly authorized representative of the BLM, may examine any of the records or other documents related to the permit, the permittee or the permittee's operator, employee, or agent for up to three years after expiration of the permit.
- l. The permittee must submit a post-use report to the authorized officer according to the due dates shown on the permit. If the post-use report is not received by the established deadline, the permit will be suspended and/or late fees assessed.
- m. The permittee shall notify the authorized officer of any incident that occurs while involved in activities authorized by these permits, which result in death, personal injury requiring hospitalization or emergency evacuation, or in property damage greater than \$2,500 (lesser amounts if established by State law). Reports should be submitted within 24 hours.

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# Appendix C

## Impacts Analysis Methodology

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# Appendix C. Impacts Analysis Methodology

## C.1 INTRODUCTION

For organizational purposes, **Chapter 3** was divided into sections by supplemental authorities (**Table 3-1**) and additional affected resources (**Table 3-2**). Though they are described and analyzed in discrete sections, these subjects are dynamic and interrelated. A change in one resource can have cascading or synergistic impacts on other resources. As a result, there was some overlap among the resource sections in **Chapter 3**, and the impacts described in one section may depend on the analysis from another section. During the writing process, resource specialists shared data and discussed interrelated aspects of the analyses to better capture the interrelated nature of environmental resources.

A description of direct and indirect impacts methodology is provided in **Section C.2**. The analysis methods, including a description of the Assessment Areas, types of impacts, indicators, and assumptions, used for each resource analysis are detailed below under **Section C.3**. Assessment Areas represent the locations where direct, indirect, or cumulative impacts could occur under the alternatives. Assessment Area maps are in **Appendix A**. The information contained in this appendix provides the context for the resource analysis by topic area presented in **Chapter 3**.

## C.2 DIRECT AND INDIRECT IMPACTS

Direct and indirect impacts are considered in **Chapter 3**, consistent with direction provided in 40 CFR 1502.16. **Appendix D** evaluates potential cumulative effects.

**Direct Effects**—Effects that are caused by the proposed action and occur at the same time and place (40 CFR 1508.8).

**Indirect Effects**—Effects that are caused by the proposed action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects “may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (40 CFR 1508.8).

**Cumulative Effects**—Effects on the environment that result from implementing any one of the alternatives, in combination with other actions outside the scope of this EIS, either in the Closure Area or within the Assessment Area.

Effects are quantified where possible using GIS and other applications; in the absence of quantitative data, best professional judgment prevailed. Impacts are sometimes described using ranges of potential impacts or in qualitative terms. Actions may have either adverse or beneficial effects, or both, on a particular resource. The standard definitions for terms used in the effects analysis are as follows, unless otherwise stated:

**Context**—Describes the area or location (site-specific, local, program area-wide, or regional) in which the impact would occur. Site-specific impacts would occur at the location of the action, local impacts would occur in the general vicinity of the Assessment Area, Assessment Area-wide impacts would affect

most or all of the Assessment Area, and regional impacts would extend beyond the Assessment Area boundaries.

**Duration**—Describes the length of time an effect would occur, either short term or long term. Short term is anticipated to begin and end within the first 5 years after the action is implemented. Long term lasts beyond 5 years to the end of or beyond the 10-year SRP time frame.

**Intensity**—Impacts are discussed using quantitative data where possible.

### C.3 RESOURCE ASSESSMENT AREAS, TYPES OF IMPACTS, INDICATORS, AND ASSUMPTIONS

#### C.3.1 Biological Resources

##### *Migratory Birds*

##### *Analysis Methods*

The analysis for migratory birds is based on a review of the Wildlife Effects Synthesis in the Biological Resources Baseline Report (EMPSi 2018a), Burning Man Noise Baseline and Modeling Reports (Salter 2018), Burning Man Air Quality Reports (Strohm 2018a-c), Night Sky Analysis (Craine and Craine 2018), BLM Post-Event Inspection (BLM 2015a), GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-I** summarizes the Assessment Areas, types of impacts on migratory birds, indicators, and the assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where human presence and traffic, light, noise, and dust associated with human activity on the playa and surrounding areas, combined with the actions in **Table D-I**, could foreseeably affect migratory birds.

**Table C-I**  
**Impact Analysis Methods for Migratory Birds**

<b>Assessment Area</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa and points of interest (hot springs) in Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• <b>Figure 3-I</b>, Biological Resources, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Migratory birds displacement or avoidance of areas due to noise from human presence, traffic, and Event activities</li> <li>• Migratory birds displacement, adverse health effects, and avoidance of areas due to emissions and dust</li> <li>• Migratory birds displacement, disorientation, and avoidance of areas due to light effects and light pollution from Event activities</li> <li>• Degradation and ground disturbance to stopover habitat and potential feeding grounds on the playa surface from Event traffic and activities</li> <li>• Migratory birds displacement, impact injury, and avoidance of areas due to Event-associated structures, motor vehicles, and aircraft</li> <li>• Migratory birds avoidance of areas and degradation of habitat used by migratory birds due to human waste, fuel, and garbage</li> <li>• Migratory birds disturbance or injury due to human presence and potential harassment</li> </ul>



**Table C-1 (continued)**  
**Impact Analysis Methods for Migratory Birds**

<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes to migratory bird habitat and stopover sites</li> <li>• Potential for migratory bird displacement</li> <li>• Potential for migratory bird injury</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Increased recreational hot spring use would increase the potential for impacts on migratory birds associated with hot springs.</li> <li>• Existing BLM and Nevada Revised Statute restrictions regarding camping in the vicinity of hot springs would be followed.</li> <li>• Within the Closure Area, Event participants would be limited to the Event entrance road and Event area.</li> <li>• The playa provides critical food and water for migratory birds during periods of inundation.</li> <li>• The availability of resources and suitable habitat would vary seasonally and yearly.</li> <li>• Climate change is expected to alter precipitation, evaporation, and inundation cycles.</li> <li>• The magnitude and intensity of impacts would correspond to the number of Event participants.</li> <li>• Ingress and egress to the Closure Area would be limited to designated locations.</li> <li>• Vehicle density would be limited to 1,000 vehicles per hour on CR 34 during Exodus.</li> <li>• BRC would conduct post-Event highway trash cleanup.</li> <li>• All environmental protection measures would be implemented, including maintenance of the trash fence and post-Event trash cleanup.</li> </ul>

### **Special Status Species**

#### *Analysis Methods*

The analysis for special status species is based on a review of the Burning Man Noise Baseline and Modeling Reports (Salter 2018), results of coordination with the NDOW and (Nevada Natural Heritage Program) NNHP, BLM GIS data (BLM GIS 2018), the Wildlife Effects Synthesis in the Biological Resources Baseline Report (EMPSi 2018a), and other relevant scientific literature. The Wildlife Effects Synthesis includes a list of numerous relevant scientific literature articles that were reviewed during its preparation and that were used in this analysis.

**Table C-2** summarizes the Assessment Areas, types of impacts on special status species, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where human presence and traffic, light, noise, and dust associated with human activity on the playa and surrounding areas, combined with the actions in **Table D-1**, could foreseeably affect special status species.

**Table C-2**  
**Impact Analysis Methods for Special Status Species**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa and points of interest (hot springs) in Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• <b>Figure 3-1</b>, Biological Resources, in <b>Appendix A</b></li> </ul>
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**Table C-2 (continued)**  
**Impact Analysis Methods for Special Status Species**

<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts discussed in <b>Section 3.3.1</b> also apply to avian special status species.</li> <li>• Anthropogenic light sources can alter wildlife foraging and breeding behavior, and some high-intensity lights can cause wildlife injury.</li> <li>• Anthropogenic noise can alter wildlife foraging and breeding behavior. Noise can render habitat unsuitable.</li> <li>• Air pollution can cause adverse physiological effects in wildlife species and alter behavior.</li> <li>• Vehicles and traffic can affect special status wildlife in a number of ways, including injury from collision, habitat degradation along routes from weed spread and fugitive dust deposition, and habitat degradation off routes from cross-country travel (e.g., crushing vegetation, weed spread, soil disturbance, and burrow collapse).</li> <li>• Trash and pollution from human activities can elevate predation on wildlife species by attracting predators. Wildlife can be injured by ingesting trash or becoming entangled in it.</li> <li>• Human presence can disturb wildlife, causing habitat avoidance and other adverse effects.</li> <li>• Temporary structures may attract wildlife use, increasing the potential for adverse effects, as described above.</li> <li>• Depending on impact intensity, any of the impacts described above could result in the increased likelihood of, or need to, list BLM sensitive species under the Endangered Species Act.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in the acres of suitable or occupied habitat</li> <li>• Changes in the potential for direct disturbance to, or injury of, individuals</li> <li>• Changes in the amount of recreational hot spring use</li> <li>• Changes in the likelihood of, or need to, list BLM sensitive species under the Endangered Species Act</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Assumptions discussed in <b>Section 3.3.1</b> also apply to avian special status species.</li> <li>• Increased recreational hot spring use would increase the potential for impacts on special status species associated with hot springs.</li> <li>• Existing BLM and Nevada Revised Statute restrictions regarding camping in the vicinity of hot springs would be followed.</li> <li>• All BLM management, regardless of alternative, would be in conformance with BLM's policy under Manual 6840, Special Status Species Management. This is to ensure that the actions that the BLM authorizes would further the conservation and recovery of federally listed species and conservation of BLM sensitive species.</li> <li>• Within the Closure Area, Event participants would be limited to the Event entrance road and Event area.</li> <li>• The availability of resources and suitable habitat would vary seasonally and yearly.</li> <li>• The magnitude and intensity of impacts would correspond to the number of participants.</li> </ul>

### **Threatened and Endangered Species**

#### *Analysis Methods*

The analysis for threatened and endangered species is based on the Wildlife Effects Synthesis in the Biological Resources Baseline Report (EMPSi 2018a), GIS data (BLM GIS 2018), BLM Post-Event Inspection (BLM 2015a), and other relevant scientific literature. **Table C-3** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where

**Table C-3**  
**Impact Analysis Methods for Threatened and Endangered Species**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa and points of interest (hot springs) in Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• <b>Figure 3-1</b>, Biological Resources, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Threatened and endangered species displacement from or avoidance of habitat due to noise from traffic and Event activities</li> <li>• Threatened and endangered species displacement from or avoidance of habitat due to emissions and dust from Event activities</li> <li>• Threatened and endangered species displacement from or avoidance of habitat, or injury, caused by Event-associated traffic</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes to habitat used by threatened or endangered species</li> <li>• Displacement of threatened and endangered species</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Vehicles would be limited to existing, designated routes in the Closure Area.</li> <li>• Habitat disturbance could result in displacement of threatened and endangered species.</li> </ul>

human presence and traffic, light, noise, and dust associated with human activity on the playa and surrounding areas, combined with the actions in **Table D-I**, could foreseeably affect threatened and endangered species.

### ***Vegetation (Including Invasive, Nonnative Species)***

#### *Analysis Methods*

The analysis for vegetation is based on a review of existing vegetation communities in the Assessment Area (SWReGAP GIS 2005), a review of noxious weeds and nonnative, invasive species documented in the Assessment Area (BLM 2009, 2012a, 2015b; CISEH 2017), and a review of relevant scientific literature. The analysis for invasive, nonnative species assesses the risk that the alternatives would spread noxious weeds. **Table C-4** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where human activity on the playa and surrounding areas, combined with the actions in **Table D-I**, could foreseeably affect vegetation.

**Table C-4**  
**Impact Analysis Methods for Vegetation**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• <b>Figure 3-2</b>, Vegetation Types, in <b>Appendix A</b></li> </ul>
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**Table C-4 (continued)**  
**Impact Analysis Methods for Vegetation**

<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Event participants may contribute to noxious weed and invasive, nonnative species establishment and spread, particularly along vehicle travel routes.</li> <li>• Increases in the amount of noxious weeds and invasive, nonnative species can decrease the quantity and quality of native vegetation communities.</li> <li>• Event participant vehicles may cause fire starts when they pull over to the road shoulder.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in the amount or quality of general vegetation</li> <li>• Changes in the potential for noxious weed and invasive, nonnative species establishment and spread</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The Event area is devoid of vegetation, including noxious weeds and invasive, nonnative species, so no impacts on vegetation would occur in the Event area.</li> <li>• Vehicles would be limited to existing, designated routes in the Closure Area.</li> <li>• Noxious weeds and invasive, nonnative species would continue to be introduced and spread in the Assessment Area as a result of ongoing vehicle traffic, recreation, wildlife and livestock grazing and movements, and other surface-disturbing activities.</li> <li>• Noxious weeds and invasive, nonnative species would also continue to be introduced and spread as a result of natural processes, such as wind, flowing water, and wildfire.</li> <li>• Noxious weeds and invasive, nonnative species would continue to be controlled in coordination with the appropriate county weed and pest control districts and adjacent property owners, as applicable.</li> <li>• Activities that disturb soils could cause or exacerbate soil erosion, loss, or compaction, which could affect the ability of soils to support native vegetation. This could indirectly facilitate noxious weed and invasive, nonnative species infestation.</li> <li>• Within the Closure Area, Event participants would be limited to the Event entrance road and Event area.</li> <li>• Impact intensity would generally be commensurate with the number of Event participants; intensity would likely increase with the number of Event participants.</li> </ul>

### **Wetlands and Riparian Areas**

#### *Analysis Methods*

The analysis for wetlands and riparian areas is based on a review of wetlands and riparian areas in the Assessment Area (SWReGAP GIS 2005; USFWS GIS 2017), anticipated hot spring recreational use by Event participants, BLM GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-5** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes known riparian areas in the NCA where human presence, combined with the actions in **Table D-1**, could foreseeably affect those areas.

**Table C-5**  
**Impact Analysis Methods for Wetlands and Riparian Areas**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road and identified hot springs and wetlands in the NCA</li> <li>• Indirect Impacts: Identified hot springs and wetlands in the NCA</li> <li>• Cumulative Impacts: Identified hot springs and wetlands in the NCA</li> <li>• <b>Figure 3-1</b>, Biological Resources, in <b>Appendix A</b></li> </ul>
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**Table C-5 (continued)**  
**Impact Analysis Methods for Wetlands and Riparian Areas**

<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Recreational hot spring use would result in the potential for localized wetland and riparian vegetation trampling in and around these features.</li> <li>• Recreational hot spring use would increase the potential for noxious weed and nonnative, invasive species to become established at these features, or for existing infestations to grow in size, decreasing the quantity or quality of wetland and riparian vegetation that grow there.</li> <li>• Event participants would use hot springs in the Event vicinity before and after the Event. This would increase the use level at these features, increasing the potential for impacts on wetland and riparian vegetation.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in the amount or quality of wetlands and riparian areas</li> <li>• Changes in hydrological conditions supporting wetlands and riparian areas</li> <li>• Changes in the amount of recreational hot spring use</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The amount of recreational hot spring use would be proportional to the total number of Event participants. Hot springs that are relatively easy to access would experience the greatest amount of relative recreational use by Event participants.</li> <li>• Recreational hot spring use may be increased outside of the Event period, as Burning Man Event participants return to the area for other recreational opportunities.</li> <li>• Increased recreational hot spring use would increase the potential for impacts on riparian vegetation associated with hot springs. Recreational hot spring use would not affect the hydrological conditions that support riparian vegetation.</li> <li>• Existing BLM and NRS restrictions regarding camping in the vicinity of hot springs would be followed.</li> <li>• The Black Rock Playa is classified as a lake in the National Wetlands Inventory; in years when the playa ponds, it would be completely dry before the Event occurs.</li> <li>• Within the Closure Area, Event participants would be limited to the Event entrance road and Event area.</li> </ul>

## **Wildlife**

### *Analysis Methods*

The analysis for wildlife is based on the Wildlife Effects Synthesis in the Biological Resources Baseline Report (EMPSi 2018a), Burning Man Noise Baseline and Modeling Reports (Salter 2018), Burning Man Air Quality Reports (Strohm 2018a-c), Night Sky Analysis (Craine and Craine 2018), BLM Post-Event Inspection (BLM 2015a), GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-6** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where human presence and traffic, light, noise, and dust associated with human activity on the playa and surrounding areas, combined with the actions in **Table D-I**, could foreseeably displace or injure wildlife.

**Table C-6**  
**Impact Analysis Methods for Wildlife**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa and points of interest (hot springs) in the Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, and points of interest (hot springs) in the NCA, access roads, and travel routes (with a distance of 0.5 miles on each side of the route)</li> <li>• <b>Figure 3-1</b>, Biological Resources, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Wildlife displacement or avoidance of areas from noise due to human presence, traffic, and Event activities</li> <li>• Wildlife displacement or avoidance of areas due to emissions and dust</li> <li>• Wildlife displacement or avoidance of areas due to light effects and light pollution from Event activities</li> <li>• Wildlife displacement, injury, or avoidance of areas due to Event-associated structures, motor vehicles, and aircraft</li> <li>• Wildlife habitat degradation and avoidance of areas due to human waste, fuel, and garbage</li> <li>• Wildlife disturbance or injury due to human presence and potential harassment</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes to the quality and amount of habitat used by wildlife</li> <li>• Potential for displacement of wildlife from Event-associated disturbances</li> <li>• Potential for wildlife injury from Event-associated disturbances</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The playa provides critical food and habitat for wildlife, particularly during periods of inundation.</li> <li>• Areas surrounding the playa provide critical food and habitat for wildlife species year-round.</li> <li>• The availability of resources for wildlife may vary seasonally and from year to year.</li> <li>• Greenhouse gases would alter precipitation, evaporation, and inundation cycles.</li> </ul>

### C.3.2 Cultural Resources

#### **Cultural (Including National Historic Trails)**

##### *Analysis Methods*

The cultural resources analysis is based on a Class I inventory (records review and literature search) of five cultural resources Assessment Areas that was conducted in December 2017. Assessment Areas where impacts are possible are the Closure Area, including the Event access road, the playa due to increased visitation, at adjacent dunes, and at the springs (each with the record search extending 1 mile around the location) within the NCA. **Table C-7** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where surface disturbance from human activity or limits on access, combined with the actions in **Table D-1**, could cumulatively affect cultural resources (including National Historic Trails).

**Table C-7**  
**Impact Analysis Methods for Cultural Resources**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa; adjacent mounds; points of interest (hot springs) in the NCA, access roads, and travel routes (with 0.5-mile buffer); and the Nobles Trail</li> <li>• Cumulative Impacts: Playa; adjacent mounds; points of interest (hot springs) in the NCA, access roads, and travel routes (with 0.5-mile buffer); the Nobles Trail; and Applegate Trail</li> <li>• <b>Figure 3-3</b>, Cultural, Paleontological, and Native American Religious Concerns, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts on cultural sites from any new ground or setting disturbance associated with the Event footprint, including roads, parking, closure, airstrip, or staging areas</li> <li>• Impacts from direct disturbance to, or alterations to setting on, cultural resources and uses associated with hot springs</li> <li>• Impacts on the public's ability to access and experience NHTs from the Closure Order, Event activities, noise, lights, traffic, crowded conditions, and Event-associated displacement</li> <li>• Direct disturbance impacts on the portion of the Nobles Trail within the Closure Area</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Physical destruction, ground disturbance, or damage to all or part of cultural resources that are or may be eligible for listing on the NRHP</li> <li>• Introduced visual, atmospheric, or audible elements that diminish the integrity of a historic property's significant historic features or the setting of the NHTs</li> <li>• Reduced opportunities to access historic trails to experience the historic setting, feeling, and association</li> <li>• Increased access to, or activity in, areas where cultural resources are present or anticipated, thereby increasing the risk of vandalism or unauthorized collection</li> <li>• Reduced availability of cultural resources for appropriate uses, including access to Native American spiritual sites or traditional use areas</li> <li>• Disturbance of any human remains, including those interred outside of formal cemeteries</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• This analysis provides a broad overview of estimated potential effects, based on available information.</li> <li>• Cultural resource inventories and consultations appropriate to the scale and level of disturbance will occur in advance of permit approval, and the results will be used to determine the need for avoidance or other mitigation.</li> <li>• A Class III cultural resource survey is not necessary for the Event alternatives, except Alternative C due to the geologic nature of the playa included in the Closure Area and the previous disturbance.</li> <li>• Large events could increase visitation and access to off-site resources.</li> <li>• BLM-permitted undertakings would be subject to cultural resources review and compliance with Section 106 of the NHPA in accordance with the National Programmatic Agreement between the Advisory Council on Historic Preservation and the BLM, the Nevada State Protocol Agreement, and guidelines in the BLM 8100 Manual and Handbook before site-specific permits are authorized.</li> <li>• The term "historic properties" refers to cultural resources that are archaeological sites, districts, or TCPs that have known or suspected significance under the NRHP, also termed "historic properties," as defined in 36 CFR 63 and TCPs as defined in NRHP Bulletin 38.</li> <li>• Other significant cultural resources include important historic or traditional places, landscapes, or resources with significance to Native American tribes and other cultural groups, according to regulations and guidance discussed in BLM Manuals and Handbooks 8100 and 1780.</li> </ul>

## Native American Religious Concerns

### Analysis Methods

The Native American religious concerns analysis is based on the BLM's past and ongoing consultation with potentially affected tribes and a confidential literature and archival review conducted in 2018. **Table C-8** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes tribal reservations and primary travel routes to those reservations where high levels of human activity associated with the Event, combined with the actions in **Table D-I**, could disturb, displace, interfere with, or change the level of access to important Native American religious or cultural resources.

**Table C-8**  
**Impact Analysis Methods for Native American Religious Concerns**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Black Rock Playa, Pyramid Lake Paiute Reservation, Summit Lake Reservation, Fallon and Reno-Sparks Reservations, travel routes to Event via Summit Lake Reservation and via Pyramid Lake</li> <li>• Indirect Impacts: Black Rock Playa, Pyramid Lake Paiute Reservation, Summit Lake Reservation, Fallon and Reno-Sparks Reservations, travel routes to Event via Summit Lake Reservation and via Pyramid Lake</li> <li>• Cumulative Impacts: Black Rock Playa, Pyramid Lake Paiute Reservation, Summit Lake Reservation, Fallon and Reno-Sparks Reservations, and travel routes to the Event via Summit Lake Reservation and via Pyramid Lake</li> <li>• <b>Figure 3-3</b>, Cultural, Paleontological, and Native American Religious Concerns, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts from changes in access, setting, privacy, or interference with Native American religious or cultural practices resulting from the Closure Order, Event activities, noise, lights, traffic, crowded conditions, and displacement</li> <li>• Impacts on the aspects of integrity of feeling or association and setting of cultural resources, sacred sites, Native American TCPs, or landscape features</li> <li>• Direct disturbance of cultural sites, topographic features, or hot springs</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• The extent, duration, and location(s) of activities that may be incompatible with maintaining the physical integrity and/or setting, feeling, or association of sensitive cultural resources, including springs and other culturally important sites and traditional-use areas</li> <li>• Changes in access to traditional-use areas or culturally important locations</li> <li>• Loss or visual interference of topographical features and other important landscape elements that may define an area of traditional use or cultural importance</li> </ul>



**Table C-8 (continued)**  
**Impact Analysis Methods for Native American Religious Concerns**

<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Native Americans have indicated concerns about impacts on cultural resources, religious practices, and important natural resources that may occur because of federal permit actions.</li> <li>• Large events could increase visitation and access to springs and off-site areas that are important to tribal users.</li> <li>• There may be areas of importance to contemporary Native Americans that are not readily identifiable outside of those communities; potential impacts are difficult to determine or quantify because aspects of tribal interest in the Assessment Area may not be specified or mapped.</li> <li>• Further site-specific research and consultation may be needed to determine whether treaty-based rights or other federal-tribal agreements are applicable and could be affected.</li> <li>• The BLM's ongoing and future consultation would be conducted according to guidance set forth in BLM Manual and Handbook 1780 and relevant authorities to identify and address potential concerns.</li> <li>• The impacts and the severity of impacts depends on the perspective and context of the affected tribe(s); in other words, individual tribes would have to consider whether impacts may occur based on what is culturally or spiritually important to them and communicate that to the BLM.</li> </ul>
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### ***Paleontology***

#### *Analysis Methods*

The paleontology analysis is based on referencing the PYFC mapping and locality information that the BLM maintains. The Assessment Area is the Closure Area and adjacent playa margins. **Table C-9** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where human activity associated with the alternatives, combined with the actions in **Table D-I**, could physically damage paleontological resources.

**Table C-9**  
**Impact Analysis Methods for Paleontology**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa, adjacent mounds, points of interest (hot springs) in the NCA, access roads, travel routes (with 0.5-mile buffer), and the Nobles Trail</li> <li>• Cumulative Impacts: Playa, adjacent mounds, points of interest (hot springs) in the NCA, access roads, and travel routes (with 0.5-mile buffer), the Nobles Trail, and Applegate Trail</li> <li>• <b>Figure 3-3</b>, Cultural, Paleontological, and Native American Religious Concerns, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Physical damage to, destruction of, vandalism of, or unauthorized collection of fossils</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Potential for physical damage or destruction of fossils or exposures of fossil-bearing rock units</li> <li>• Increased access or activity where fossils may be present, increasing the risk of vandalism, unauthorized collection, or inadvertent damage or loss</li> </ul>

**Table C-9 (continued)**  
**Impact Analysis Methods for Paleontology**

<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Occurrences of paleontological resources are closely tied to the geologic units (e.g., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Most of the Closure Area in the playa is a very low potential area.</li> <li>• The need for a paleontological inventory will be determined based on criteria set forth in BLM Instruction Memorandum 2016-124 using PFYC mapping, geologic characteristics, and previous study data from known localities.</li> <li>• Large events could increase visitation and access to springs and off-site fossil localities.</li> </ul>
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### **C.3.3 Health and Safety**

#### **Public Health and Safety (Including Law Enforcement)**

##### *Analysis Methods*

The public health and safety analysis is based on BLM literary review of Department of Homeland Security Protective Measures for the US Outdoor Venues Industry (2011); Burning Man Event After Action Reports; Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, National Crime Victimization Survey (2011); and internal BLM statistics. A detailed literature review list and statistics are located in the BLM Public Health and Safety Baseline Report (BLM 2018b).

Factors derived from indicators and assumptions are the alternatives and Proposed Action effects on public health and safety relative to the existence of aircraft activity, civil disobedience, disease vectors, emergency response, law enforcement, evacuation, explosives, fire safety, flooding, human health concerns, hygiene and food safety, respiratory concerns, structure collapse, and terrorism. **Table C-10** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. In addition to the Closure Area and travel routes, the cumulative impacts Assessment Area includes the air basin. Activity on the playa associated with the alternatives, combined with the actions in **Table D-1**, could affect public health and safety, including respiratory concerns from poor air quality.

**Table C-10**  
**Impact Analysis Methods for Public Health and Safety**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Closure Area, travel routes (with 0.5-mile buffer), and air basin</li> <li>• Cumulative Impacts: Closure Area, travel routes (with 0.5-mile buffer), and air basin</li> <li>• <b>Figure 3-4, Air Quality, Climate, and Public Health and Safety, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Changes to public health and safety on BLM-administered lands</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Change in air quality-affected public and employee safety</li> <li>• Proximity, capacity, and response time of nearby fire, medical, and police services</li> <li>• Change in public health and safety factors (aircraft activity, civil disobedience, disease vectors, emergency response, law enforcement, evacuation, explosives, fire safety, flooding, human health concerns, hygiene and food safety, respiratory concerns, structure collapse, and terrorism)</li> </ul>

**Table C-10 (continued)**  
**Impact Analysis Methods for Public Health and Safety**

<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Alternative C (alternate site location) could increase user conflicts due to the proximity to wilderness and 12-Mile Playa highway.</li> <li>• Under Alternative E (no permit/action), participants may still congregate in unauthorized groups, and a closure order temporarily closing the playa to overnight use may be necessary.</li> <li>• The Event proponent could apply for an increase in vehicle passes if roads are improved; numbers are unspecified.</li> <li>• Event growth from the existing environment could surpass the capacity of Gerlach to provide adequate housing and laundry facilities to government staff assigned to administer the SRP.</li> <li>• Size, loading, and implementation of art would not create undue public health and safety concerns.</li> </ul>
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### **Waste, Hazardous or Solid**

#### *Analysis Methods*

The wastes, hazardous and solid, analysis is based on BRC's event SRP regulations and stipulations, the Hazardous Materials Incidence Response Plan, Fuel Safety Brochure, and other relevant literature. **Table C-11** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes the primary locations where activity associated with the alternatives, combined with the actions in **Table D-1**, could result in hydrocarbons, wastewater, solid waste, or other hazardous materials being released into the environment.

**Table C-11**  
**Impact Analysis Methods for Wastes, Hazardous and Solid**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• Indirect Impacts: Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-5, Wastes, Hazardous or Solid, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Solid waste releases can attract vermin, cause a fire, harm or kill wildlife, contaminate soil or water, or be a public health concern from contact with sharp or contaminated waste.</li> <li>• Hydrocarbon releases can contaminate soil or water. With respect to contaminated soil, it can be a public health concern if fugitive dust contaminated with oil is inhaled.</li> <li>• Wastewater releases can attract insects, harm or kill wildlife, contaminate soil or water, or be a public health concern from contact.</li> <li>• Hazardous materials releases can cause a fire or explosion, harm or kill wildlife, contaminate soil or water, or be a public health concern from contact or inhalation.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Creation of a hazard to the public or the environment through the transport, use, or disposal of hazardous or solid wastes</li> <li>• Creation of a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous or solid wastes into the environment</li> </ul>

**Table C-11 (continued)**  
**Impact Analysis Methods for Wastes, Hazardous and Solid**

<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• “Solid waste” is any discarded or abandoned materials. For this analysis, solid waste is restricted to garbage, trash, and litter.</li> <li>• “Hazardous waste” is a solid waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste is generated from many sources, ranging from automotive or generator engines to batteries, and may come in many forms, including liquid, solid, gas, and sludge.</li> <li>• Larger participant numbers are likely to generate larger waste quantities.</li> </ul>
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### C.3.4 Physical Resources

#### Air

##### *Analysis Methods*

The air quality analysis is based on data included in the Revised Baseline Technical Report–Air Resources (Strohm 2018a), the atmospheric dispersion modeling protocol (Strohm 2018b), the AERMOD Modeling Report to Assess Ambient Air Quality Impacts (Strohm 2018c), and a stand-alone Air Quality Technical Support Document that details the results of atmospheric dispersion modeling completed for the EIS (Strohm 2018c). These documents are available online on the BLM e-Planning website at: <https://go.usa.gov/xnBTu>.

**Table C-12** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. For air quality impacts, these roughly break down into emissions-generating processes, the resulting emissions, and the dispersion of the generated emissions beyond the boundaries of the Event site and Closure Area.

**Table C-12**  
**Impact Analysis Methods for Air Quality**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)</li> <li>• Indirect Impacts: Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-4, Air Quality, Climate, and Public Health and Safety, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• An increase in fugitive dust and criteria air pollutant emissions from vehicle travel and participant activity on the playa during the Event dates and during preparation and cleanup</li> <li>• Increased greenhouse gas emissions from generator use, vehicle travel to and from the Event, and miscellaneous combustion during the Event</li> <li>• An increase in HAPs created by combustion emissions (all sources including vehicle, generator, and art installation).</li> </ul>



**Table C-12 (continued)**  
**Impact Analysis Methods for Air Quality**

<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Concentrations of atmospheric particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) recorded at playa air monitoring sites present in the Assessment Area during the data collection period (August 15, 2017 to September 6, 2017)</li> <li>• Concentrations of atmospheric particulates (PM<sub>10</sub>, and PM<sub>2.5</sub>) recorded at nearby air monitoring sites</li> <li>• An increase in air pollution during Event days (August 27, 2017 to September 4, 2017) compared with non-Event days</li> <li>• Calculated emissions of criteria air pollutants (carbon monoxide, lead, sulfur dioxide, nitrogen dioxide, volatile organic compounds, PM<sub>10</sub>, and PM<sub>2.5</sub>) present in the Assessment Area</li> <li>• Concentration of metals collected in the Assessment Area during the data collection period</li> <li>• Calculated levels of greenhouse gas emissions resulting from Event activities in the Assessment Area</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The majority of the Class I areas within 180 miles of the Event site are upwind of the Event site and are therefore unlikely to be affected by the Event.</li> <li>• The one Class I area that is downwind from the Event site is Jarbidge Wilderness in Elko County, Nevada, approximately 180 miles from the Event site; Event activities are unlikely to affect this site.</li> <li>• The two stationary sources of air pollutants within 30 miles of the Event site are minor sources of emissions and are expected to have minimal impacts on the Assessment Area.</li> <li>• Data collected in 2017 for the Baseline Technical Report (Strohm 2018a) are representative of the typical conditions in the Assessment Area; this enables a model that utilizes these data to generate outputs that accurately depict potential impacts of the Event on air quality in the future.</li> </ul>

The impact Assessment Area is defined as the airshed in which the Burning Man Event takes place and the location where primary atmospheric emissions impacts occur. The airshed is bounded by the Granite Range to the west, the Jackson Mountains to the east, the Trinity Range to the south, and the Black Rock Range to the north. The Event site occurs in the Black Rock Desert and is surrounded on all sides by peaks between 500 and 2,000 feet above the playa floor, resulting in entrapment of the majority of Event emissions. The cumulative impacts Assessment Area is the air basin because activity on the playa associated with the alternatives, combined with the actions in **Table D-1**, would cumulatively contribute to air quality conditions in the basin.

Air quality specialists from Trinity Consultants collected ambient data on atmospheric particulate concentrations and metal concentrations in 2017 to create a baseline understanding of air quality in the Assessment Area (see the Revised Baseline Technical Report–Air Resources [Strohm 2018a]). The specialists used this information collected to generate a detailed dispersion modeling evaluation for criteria pollutants for each of the defined action alternatives. The model protocol used to define the atmospheric dispersion modeling is available in the Revised AERMOD Modeling Protocol to Assess Ambient Air Quality Impacts (Strohm 2018b).

The analysis quantified emissions rates for hourly and Event-long emissions-generating processes for all significant on-site emission sources. The dispersion modeling then used these emissions rates to assess the Event's short- and long-term emissions impacts on air quality. The purpose of the dispersion modeling was to determine whether emissions from the Proposed Action would cause NAAQS

exceedances. Model outputs are available in the Air Quality Technical Support Document (Strohm 2018c).

## Noise

### Analysis Methods

The analysis for noise is based on a noise impact assessment generated from information collected during the 2017 Burning Man Event Closure Order period (Salter 2018) and other relevant literature. **Table C-13** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. In addition to the Closure Area, the cumulative impacts Assessment Area includes travel routes and areas directly adjacent to the Closure Order boundary. These are areas where noise associated with proposed activities under the alternatives, combined with the actions in **Table D-I**, could cumulatively affect ambient sound levels.

**Table C-13**  
**Impact Analysis Methods for Noise**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Direct line of sight to the Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• Indirect Impacts: Direct line of sight to the Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Direct line of sight to the Closure Area and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-6, Noise, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Hearing discomfort or damage</li> <li>• Disturbance to daily activities, such as work or sleep</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• A permanent increase in ambient sound levels in the Assessment Area above levels existing without the action</li> <li>• A temporary or periodic increase in ambient sound levels in the Assessment Area above levels existing without the action</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Because noise attenuates with distance, receptors located further from a noise source are less affected by that noise than those located closer to the noise source.</li> <li>• Depending on the decibel level of the noise source, other ambient noise sources, and topography, at a certain distance it becomes impossible for the human ear to differentiate a specific noise source from the ambient noise conditions.</li> <li>• Individuals react differently to changes in ambient noise levels and to various types of sound; therefore, the perceived level of impact varies by receptor. Noise levels that meet maximum permissible noise levels may still be perceived as an impact on noise for some sensitive receptors. For this analysis, the assumption is that all sensitive receptors react the same to changes in noise levels.</li> <li>• Sustained noise is more disruptive than short-duration noise events of the same decibel level. Similarly, people react less favorably to frequent noise events compared with infrequent noise of the same decibel level.</li> <li>• Noise that occurs at night is viewed as more disruptive than daytime noise, mostly because the actual and expected ambient sound levels are lower at night.</li> </ul>

## Soils (Playa Sediments)

### Analysis Methods

The analysis for soils (playa sediments) is based on the Air Baseline Report, NASA poster on playa deformation, GIS data, and other relevant scientific literature. Including soil units overlapped by the Closure Order as the Assessment Areas allows each of those units to be analyzed for direct, indirect,

and cumulative impacts. **Table C-14** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-14**  
**Impact Analysis Methods for Soils (Playa Sediments)**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Soil units that intersect the Closure Area, including the Event access road</li> <li>• Indirect Impacts: Soil units that intersect the Closure Area, including the Event access road</li> <li>• Cumulative Impacts: Soil units that intersect the Closure Area, including the Event access road</li> <li>• <b>Figure 3-7, Ecological Site Descriptions, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Erosion and loss of biological surface crust from surface disturbance</li> <li>• Playa deformation from Event activities</li> <li>• Dune formation</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Acres of BLM-administered land protected from or open to surface-disturbing activities</li> <li>• Amount of surface disturbance that would occur in the Closure Area</li> <li>• Amount of wind erosion and loss of playa material and subsequent intermittent dune deposition</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Design measures, such as limiting excavation of pits and holes, dust suppression, and other mitigation measures, would be implemented in order to protect playa sediments.</li> <li>• The Event would occur during the period when the playa is most likely to be subject to wind erosion.</li> <li>• The intensity and volume of use would disturb and loosen sediments, where the surface crust is disturbed, due to motorized vehicles, walking, biking, art cars traveling between art pieces, and other movement inside the closure boundary fence.</li> <li>• As populations increase, the percentage of crust broken would also increase.</li> <li>• The quantity of wind erosion and subsequent intermittent dune deposition associated with the playa varies depending upon surface moisture and the amount of strong winds that occur.</li> <li>• Air quality is correlated with playa deformation.</li> </ul>

### **Visual Resources (Including Night Skies)**

#### *Analysis Methods*

The analysis for visual resources (including night skies) is based on a site visit to conduct a visual resource contrast rating using BLM Form 8400-4, Visual Contrast Rating Worksheet, according to BLM Handbook H-8431-I, Visual Resource Contrast Rating (BLM 1986b); night sky report; and other relevant literature. Including the viewshed and key observation points as the Assessment Areas allows for the analysis of direct, indirect, and cumulative impacts at defined locations. **Table C-15** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-15**  
**Impact Analysis Methods for Visual Resources (including Night Skies)**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Viewshed and key observation points</li> <li>• Indirect Impacts: Viewshed and key observation points</li> <li>• Cumulative Impacts: Viewshed and key observation points</li> <li>• <b>Figure 3-8, Visual Resources, in Appendix A</b></li> </ul>
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**Table C-15 (continued)**  
**Impact Analysis Methods for Visual Resources (including Night Skies)**

<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Changes to the form, line, color, and texture of land/water, vegetation, or structures</li> <li>• Changes to nighttime light levels due to artificial light</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Conformance to VRM class objectives</li> <li>• Changes to dark skies</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Visual resources in the area will become more sensitive to visual change; in other words, they will increase in value over time.</li> <li>• Visual resources will become increasingly important to residents of and visitors to the area.</li> <li>• Residents and visitors to the area are sensitive to changes in visual quality and to the overall scenic quality of the area that contributes to living conditions and the visitor experience.</li> <li>• Activities that cause the most contrast and are the most noticeable to the viewer will have the greatest impact on scenic quality.</li> <li>• As the number of acres of disturbance increases, the amount of impacts on visual resources also increases.</li> <li>• The severity of a visual impact depends on a variety of factors, including the size of an activity (such as the area disturbed), the location, physical size, and design of structures and travel ways, and the overall visibility of disturbed areas and structures.</li> <li>• The more protection that is associated with the management of other resources and special designations, the greater the benefit to the visual resources of the surrounding viewsheds.</li> <li>• Best management practices and project design, avoidance, or mitigation can reduce but not entirely prevent impacts on visual resources.</li> <li>• Due to the slow rate of recovery of vegetation and surface conditions, all impacts on visual resources from surface disturbances will be long term.</li> <li>• Impacts on dark skies from artificial light sources will only occur during the use of the artificial light sources.</li> </ul>

## **Water Resources**

### *Analysis Methods*

The water resources analysis is based on State Engineer's reports, GIS data, and other relevant scientific literature. **Table C-16** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes known surface water bodies in the NCA where human presence, combined with the actions in **Table D-1**, could foreseeably affect those water resources.

**Table C-16**  
**Impact Analysis Methods for Water Resources**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Surface water: Black Rock Playa, Fly Ranch, springs of interest</li> <li>• Groundwater: Black Rock Desert Hydrographic Basin</li> <li>• Indirect Impacts: Surface water: Black Rock Playa, Fly Ranch, springs of interest</li> <li>• Groundwater: Black Rock Desert Hydrographic Basin</li> <li>• Cumulative Impacts: Surface water: Black Rock Playa, Fly Ranch, springs of interest</li> <li>• Groundwater: Black Rock Desert Hydrographic Basin</li> <li>• <b>Figure 3-9, Water Resources, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Surface water contamination from Event activities</li> <li>• Groundwater contamination from Event activities</li> </ul>



**Table C-16 (continued)**  
**Impact Analysis Methods for Water Resources**

<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>Quantity of hazardous materials applied on the playa surface (e.g., oil leaks and wastewater)</li> <li>The inability to meet state and federal water quality standards for surface water and groundwater</li> <li>Changes in water quality that have detrimental effects on wildlife or special status species</li> <li>Alteration of the physical characteristics of springs and groundwater aquifers that affect the use and sustainability of these resources</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>With the exception of those roads that the BLM authorizes in advance, dust palliatives would not be used to control fugitive dust, and water without additives would be used for fugitive dust control within the Assessment Area.</li> <li>The estimated quantity of oil dripped onto the playa is directly proportional to the population size of the Event.</li> <li>No local groundwater resources would be pumped to meet water supply requirements associated with the Event.</li> <li>The water table associated with the playa changes on a seasonal basis related to the amount of surface runoff and precipitation.</li> <li>Groundwater is actively discharged to the atmosphere due to evaporation and capillary forces.</li> <li>Potential increased human visitation to hot springs by Event participants before or after the Event may cause impacts from human use.</li> </ul>

### C.3.5 Social Values and Economics

#### Economics

##### Analysis Methods

The analysis for economics is based on participant data as reported in the 2017 BRC Census (BRC 2017c), operational expenditures from the 2017 Event as provided by BRC (BRC 2017b), information provided by local community representatives and other stakeholders in interviews, and other relevant literature. Full details of the methodology used and impacts on environmental justice are provided in the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b). **Table C-17** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-17**  
**Impact Analysis Methods for Economics**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>Direct Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>Indirect Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>Cumulative Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li><b>Figure 3-10, Economics, Environmental Justice, and Social Values, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>An increase or decrease in economic activity in the Assessment Area attributable to the Event</li> <li>An increase or decrease in community service demand (at the Event and as a result of the Event)</li> <li>Cost (increase or decrease) to and capacity of public agencies to meet demands for services</li> <li>Federal, state, county, and/or local tax revenue increase or decrease</li> </ul>

**Table C-17 (continued)**  
**Impact Analysis Methods for Economics**

<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes to the direct level of local spending by participants, and indirect and induced spending, jobs, and economic output generated by these expenditures in the socioeconomic Assessment Area and Nevada</li> <li>• Changes to the direct level of operational expenditures made to hold the Event, and indirect and induced spending, jobs, and economic output generated by these expenditures in the socioeconomic Assessment Area and Nevada</li> <li>• Changes to direct employment levels supported by Event operations</li> <li>• Change to the cost and/or availability of community services as a result of the Event</li> <li>• Change to the revenue collected by local, county, state, and/or federal agencies as a result of taxes collected due to Event activity</li> <li>• Change to regional economic indicators, such as employment and income, based on Event expenditures</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Based on BRC census data from 2017, total Event spending was a median of \$1,500. Spending in Nevada was approximately \$666.60 per Event attendee. Based on the reported stops at Nevada communities, it is estimated that approximately \$576.66, or 86.5 percent of spending, occurred within the six-county Assessment Area.</li> <li>• The same participant spending estimates are utilized for Event participants, BRC volunteers, and BRC staff. Total spending in the Assessment Area by BRC staff and volunteers may be substantially higher depending on the length of stay, location of lodging, and other factors. Those data were not available; therefore, for the purpose of this analysis, it is assumed their spending associated with participation in the Event is similar to other participants.</li> <li>• Participant spending is assumed to scale with permitted participant levels (i.e., each additional participant will be assumed to spend \$576.66 in the local region).</li> <li>• For BRC operational expenditures where the specific location of spending was not provided, the analysis will assume 50 percent of spending occurs within the six-county Assessment Area.</li> <li>• The tax analysis model assumes food, fun, and survival are all retail purchases subject to a sales tax. An average sales tax was taken from the six counties in the Assessment Area.</li> <li>• The tax analysis model assumes each participant only lodged once in the Assessment Area with a lodging tax of 13 percent and a \$2 surcharge per room.</li> <li>• The tax analysis model takes the average Nevada gas price for August 2017 and September 2017 to calculate the average gallons purchased per participant. The average gallons purchased is used to determine the county fuel tax (\$0.1535 per gallon) contribution for the Assessment Area.</li> </ul>

#### *Event Economic Contributions*

This assessment utilizes the economic contribution approach. This analysis does not distinguish between money brought into the area from nonlocal visitors and local resident spending; however, based on the fact that less than 5 percent of total participants reside in Nevada, it is likely that much of the spending represents that from nonlocal visitors.

To calculate the economic contribution of the Event, an input-output model, IMPLAN, was used to calculate the increases in jobs, incomes, and output statewide that happen as money from BRC operational expenditures and Event participants are spent in Nevada's economy. The IMPLAN model provides estimates of the effects of the expenditures on income and employment that follow from direct, indirect, and induced impacts, as discussed in detail in The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b). Taken together, these combined economic effects

(direct + indirect + induced) describe the Event's total contribution to the economy based on spending in the Assessment Area. Effects are described in terms of output, income, and jobs.

It should be noted that economic modeling examines the effects of Event economic activity in two regions: the six-county Assessment Area and the state of Nevada as a whole. As discussed in the Affected Environment section, this local and state spending represents only one portion of the spending and economic contributions from the Event and should not be considered a comprehensive representation of all economic contributions. Broader economic impacts from the Event occur throughout the region and are discussed on a qualitative basis as appropriate.

Inputs to the model for direct operational spending in the Assessment Area and Nevada include Nevada-based nonlabor expenditure data provided by BRC, including goods and services spending on the Event, social contributions, and property-related costs. The amount also excludes monetary transfers to government agencies in the form of taxes, permit fees, and payment for services. These transfer payments are discussed under the Fiscal Analysis section.

#### *Fiscal Analysis and Demand and Capacity of Community Services*

Information on the source of revenue and demands and costs of services with the potential to be affected by the Event are discussed in the Affected Environment.

The effects analysis provides a qualitative assessment of the impacts on local government revenues associated with the Event based on permitted levels of participants under each alternative and discusses the BLM-associated SRP permit fees. The effects analysis provides a qualitative assessment of the impacts on local government revenues associated with the SRP permit fees. To determine tax contributions from participant spending, the level of participant-reported spending was examined in coordination with local tax rates for sales, lodging, and gas taxes to define an approximate tax contribution per participant in the Assessment Area. Tax contributions from nonlabor operational expenditures were analyzed based on estimated vendor costs provided by BRC and special event taxes collected. Details are provided in The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b). The total tax contribution was then based on the total number of participants by alternatives to estimate Assessment Area tax contributions.

### ***Environmental Justice***

#### *Analysis Methods*

The analysis for environmental justice is based on US Census Bureau population and ethnicity and racial data, and other relevant literature. Full details of the methodology used and impacts on environmental justice are provided in the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b). **Table C-18** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-18**  
**Impact Analysis Methods for Environmental Justice**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• Indirect Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• Cumulative Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• <b>Figure 3-10</b>, Economics, Environmental Justice, and Social Values, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts would result from how the varying alternatives would affect resources important to local communities and populations that have been identified for further environmental justice consideration, such as air quality, soils and playa resources, transportation and traffic, public health and safety, and visual resources. Specific impacts on these resources are discussed in relevant resource sections. The potential for adverse and disproportionate effects on identified minority and/or low-income populations is discussed in this section.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in access to resource and resource uses, which could potentially limit the ability for traditional, subsistence, cultural, or economic use, thereby affecting the social and economic well-being of environmental justice populations</li> <li>• Changes to the level of surface-disturbing or disruptive activities allowed under each alternative, which could affect the social and economic well-being of environmental justice populations, including the potential human health and safety concerns</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• No unique assumptions have been identified for the environmental justice analysis.</li> </ul>

### **Social Values**

#### *Socioeconomic Assessment Area Demographic Conditions*

#### Analysis Methods

The analysis for social values is based on information provided by BRC, socioeconomic interviews with local community representatives and stakeholders, and other relevant literature. Full details of the methodology used and impacts on social values are provided in the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b). **Table C-19** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-19**  
**Impact Analysis Methods for Social Values**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• Indirect Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• Cumulative Impacts: Churchill, Humboldt, Lyon, Pershing, Storey, and Washoe Counties</li> <li>• <b>Figure 3-10</b>, Economics, Environmental Justice, and Social Values in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts on temporary or permanent population changes, interaction of participants with communities, or other event management that alters the real or perceived impacts of the Event on local communities' social values</li> <li>• Impacts on other land uses (i.e., recreation) that affect residents' quality of life</li> <li>• Impacts on Event size or management that alters perception of the Event for Event attendees</li> <li>• Impacts on resources on the playa that provide nonmarket values for local residents and/or Event attendees</li> </ul>



**Table C-19 (continued)**  
**Impact Analysis Methods for Social Values**

<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Change to the social setting or values for area communities are a result of Event activities</li> <li>• Change to the social setting or values for Event participants, including the adherence to the 10 principles of Burning Man</li> <li>• Changes to nonmarket values, including but not limited to air quality, visual setting, and noise, as a result of Event activities</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• No specific assumptions have been identified for social values.</li> </ul>

### C.3.6 Special Designations

#### **National Conservation Areas**

##### *Analysis Methods*

The analysis for national conservation areas is based on a review of the alternatives for the Event summarized in **Chapter 2**; the Resource Management Plan for Black Rock Desert–High Rock Canyon Emigrant Trails NCA and Associated Wilderness, and other Contiguous Lands in Nevada (BLM 2004c); Recreation Management Information System data (BLM RMIS 2017a), the Revised Baseline Technical Report–Air Resources (Strohm 2018a), the artificial light at night assessment (Craine and Craine 2018), the noise impact assessment (Salter 2018), the traffic analysis (Solaegui Engineers 2018), GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-20** summarizes the Assessment Areas, types of impacts, indicators, and assumptions for determining the nature and types of impact under each alternative.

**Table C-20**  
**Impact Analysis Methods for National Conservation Areas**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-11</b>, Special Designations, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts would result from how the varying alternatives would affect resources within the NCA, such as air quality, soils and playa resources, cultural resources (including NHTs), recreation, transportation and traffic, visual resources, and wildlife.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Management actions that allow uses and activities within the NCA that diminish or enhance the historical, cultural, scenic, scientific, biological, educational, and recreational values and resources associated with the Applegate-Lassen and Nobles Trails corridors</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Where multiple special designations overlap, the BLM must comply with all applicable statutes. In order to do so, the more protective management requirements apply. For example, where designated wilderness overlaps with the NCA, no motorized vehicles or equipment may be used in the area of overlap unless they are the minimum necessary to administer the area under the Wilderness Act.</li> <li>• Multiple uses may be allowed in the NCA to the extent they are consistent with the applicable designating authority, other applicable laws, and the applicable land use plan.</li> <li>• The NCA would continue to be available for a variety of recreational opportunities, consistent with the purposes for which the NCA was designated.</li> </ul>

## Wilderness

### Analysis Methods

The analysis for wilderness areas is based on the Black Rock Desert–High Rock Canyon RMP (BLM 2004c), Recreation Management Information System data (BLM RMIS 2017a), the Revised Baseline Technical Report–Air Resources (Strohm 2018a), the artificial light at night assessment (Craine and Craine 2018), the noise impact assessment (Salter 2018), the traffic analysis (Solaegui Engineers 2018), GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-21** summarizes the types of impacts on wilderness areas and indicators and assumptions for determining the nature and types of impact under each alternative.

**Table C-21**  
**Impact Analysis Methods for Wilderness Areas**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-11</b>, Special Designations, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Those that either diminish or enhance the values and resources for which the wilderness area was designated</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in untrammeled areas or apparent naturalness resulting from actions in the range of alternatives</li> <li>• Impacts on opportunities for solitude or primitive and unconfined recreation, as measured by the amount and type of visitor use</li> <li>• The severity of disturbances or changes in unique and supplemental values or cultural resources</li> <li>• Changes in traffic levels on routes leading to wilderness areas and flight paths of aircraft above wilderness areas</li> <li>• Changes in air quality that could degrade a visitor's scenic experience while in wilderness areas</li> <li>• The amount of noise from Event-related activities that could be heard in wilderness areas</li> <li>• The levels, duration, and intensity of light affecting wildlife and primitive recreation activities</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Wilderness areas would continue to be managed according to BLM Manual 6340, Management of Designated Wilderness Areas (BLM 2012c).</li> </ul>

## Wilderness Study Areas

### Analysis Methods

The WSAs analysis is based on the Black Rock Desert–High Rock Canyon RMP (BLM 2004c), the Nevada BLM Statewide Wilderness Report (BLM 1991), Recreation Management Information System data (BLM RMIS 2017a), the Revised Baseline Technical Report–Air Resources (Strohm 2018a), the artificial light at night assessment (Craine and Craine 2018), the noise impact assessment (Salter 2018), the traffic analysis (Solaegui Engineers 2018), GIS data (BLM GIS 2018), and other relevant scientific literature. **Table C-22** summarizes the types of impacts on WSAs and indicators and assumptions for determining the nature and types of impact under each alternative.

**Table C-22**  
**Impact Analysis Methods for Wilderness Study Areas**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road</li> <li>• Indirect Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• Cumulative Impacts: Playa, adjacent mounds, points of interest in the NCA (with 0.5-mile buffer), access roads, Selenite Mountains WSA and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs, and travel routes (with 0.5-mile buffer)</li> <li>• <b>Figure 3-11</b>, Special Designations, in <b>Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Impacts on WSAs are those that either diminish or enhance the values and resources for which the WSA was designated.</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Changes in the inventoried wilderness characteristics (naturally appearing, opportunities for solitude or primitive and unconfined recreation, and unique or supplemental values) within the WSAs resulting from actions in the range of alternatives</li> <li>• Impacts on opportunities for solitude or primitive and unconfined recreation, as measured by the amount and type of visitor use</li> <li>• The severity of disturbances or changes in unique and supplemental values or cultural resources</li> <li>• The amount of noise from Event-related activities that could be heard in WSAs</li> <li>• The levels, duration, and intensity of light affecting wildlife and primitive recreation activities</li> <li>• Changes in traffic levels on routes leading to wilderness areas and flight paths of aircraft above WSAs</li> <li>• Changes in air quality that could degrade a visitor's scenic experience while in WSAs</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The WSAs in the Assessment Area would continue to be managed according to BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012b [Manual 6330]), until Congress either designates or releases all or portions of the WSAs from further consideration.</li> <li>• Managing the WSAs according to BLM policy would protect their wilderness characteristics in a manner that would not "impair the suitability of WSAs for preservation as wilderness" (FLPMA Section 603[c]). This is the "non-impairment standard."</li> </ul>

### C.3.7 Visitor Uses

#### Recreation

##### Analysis Methods

The recreation analysis is based on information in the Burning Man 2012–2016 SRP EA (BLM 2012a), GIS data, and relevant scientific literature. **Table C-23** summarizes the types of impacts on recreation and indicators and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential locations where recreation, traffic, noise, light, and air quality conditions associated with the Event, combined with the actions in **Table D-1**, could foreseeably affect the recreation setting and associated experiences, or displace visitors.

**Table C-23**  
**Impact Analysis Methods for Recreation**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Closure Area, including the Event access road, playa, adjacent mounds, and points of interest within the NCA (with 0.5-mile-radius buffer)</li> <li>• Indirect Impacts: Selenite Mountains WSA and Poodle Mountains WSA; High Rock Canyon and Soldier Meadows ACEC; and a 0.5-mile buffer around SR 447 between Gerlach and Wadsworth, CR 34 from Gerlach to Soldier Meadows Road, and Jungo Road from Gerlach to approximately the Hycroft Mine</li> <li>• Cumulative Impacts: Selenite Mountains WSA and Poodle Mountains WSA; High Rock Canyon and Soldier Meadows ACEC; and a 0.5-mile buffer around SR 447 between Gerlach and Wadsworth, CR 34 from Gerlach to Soldier Meadows Road, and Jungo Road from Gerlach to approximately the Hycroft Mine</li> <li>• <b>Figure 3-12, Recreation, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Change in the quality of the recreation setting or experience due to a change in the quality of recreation amenities or the physical, social, and operational settings that contribute to positive recreation outcomes</li> <li>• Change in the number, type, or ability to access recreational opportunities</li> <li>• Physical displacement of visitors from designated sites and areas that provide for dispersed recreational use</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• Extent of the Closure Order boundary</li> <li>• Maximum population of the Event</li> <li>• Number and location of annual visitors to the Assessment Area</li> <li>• Number and type of recreational opportunities, including SRPs</li> <li>• Total acres of physical disturbance to the playa surface associated with the Event site and Gate Road</li> <li>• Traffic congestion affecting access</li> <li>• Noise</li> <li>• Air Quality</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• The number of persons on the playa would be equivalent to the maximum population.</li> <li>• Access to the Event would be through established routes (<b>Figure 3-13, Transportation and Traffic, in Appendix A</b>); there would be no new routes created.</li> <li>• The Event would increase visitation to the Assessment Area.</li> <li>• The playa would continue to be popular for other permitted users.</li> <li>• The Closure Order would preclude other recreation users from accessing the closed area for any purpose other than participating in the Event.</li> </ul>

### **Transportation and Traffic**

#### *Analysis Methods*

The transportation and traffic analysis is based on observed and recorded conditions during the 2017 Burning Man Event, GIS data, and BRC operations data. **Table C-24** summarizes the types of impacts on transportation and traffic and indicators and assumptions for determining the nature and types of impact under each alternative. The cumulative impacts Assessment Area includes potential travel routes leading to and from the playa where congestion associated with the Event, combined with the actions in **Table D-I**, could foreseeably affect levels of access and travel times on those routes.

**Table C-24**  
**Impact Analysis Methods for Transportation and Traffic**

<b>Assessment Areas</b>	<ul style="list-style-type: none"> <li>• Direct Impacts: Playa routes to and within the Closure Area, including SR 447 (from Interstate 80 to Gerlach), SR 447 (from the California-Nevada border to Gerlach), CR 34 in the Closure Area, and Jungo Road (from Winnemucca to Gerlach), BRCMA, and flight paths</li> <li>• Indirect Impacts: Playa routes to and within the Closure Area, including SR 447 (from Interstate 80 to Gerlach), SR 447 (from the California-Nevada border to Gerlach), CR 34 in the Closure Area, and Jungo Road (from Winnemucca to Gerlach), BRCMA, and flight paths</li> <li>• Cumulative Impacts: Playa routes to and within the Closure Area, including SR 447 (from Interstate 80 to Gerlach), SR 447 (from the California-Nevada border to Gerlach), CR 34 in the Closure Area, and Jungo Road (from Winnemucca to Gerlach), BRCMA, and flight paths</li> <li>• <b>Figure 3-13, Transportation and Traffic, in Appendix A</b></li> </ul>
<b>Types of Impact</b>	<ul style="list-style-type: none"> <li>• Change in the level of access to the playa for Event participants during the Closure Order period</li> <li>• Change in the level of access to the playa and surrounding recreation areas for non-Event populations during the Closure Order period</li> <li>• Increase or decrease in the amount of traffic and congestion during the Closure Order period on major roadways near the Event</li> </ul>
<b>Impact Indicators</b>	<ul style="list-style-type: none"> <li>• The total population of the Event</li> <li>• Total number of people on the playa during build week and after the Event</li> <li>• The number of vehicle passes issued for the Event</li> <li>• LOS for major roadways used to access the Event</li> <li>• The number of attendees arriving by Burner Express Bus</li> <li>• The number of attendees arriving by Burner Express Air</li> <li>• The number or type of vehicle access points for Event populations to the Event site</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Within the Closure Order boundary, access is restricted to Event participants, volunteers, vendors, and government personnel.</li> <li>• There is a direct relationship between the Event population size and the number of private vehicles entering and leaving the Event, subject to vehicle pass limits.</li> <li>• BRC and the BLM would discourage private vehicle access to the Event via Jungo Road, Soldier Meadows Road, and other unpaved roadways.</li> <li>• The number of theme camps influences the number and timing of participant arrivals, particularly during build week.</li> </ul>



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# Appendix D

## Detailed Cumulative Assessment

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# Appendix D. Detailed Cumulative Assessment

## **D.I CUMULATIVE IMPACTS: PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS IN THE ASSESSMENT AREA**

Cumulative impacts are effects on the environment that result from implementing any one of the alternatives, in combination with other actions outside the scope of this EIS, either in the Closure Area or within the Assessment Area. CEQ regulations (CEQ 1997) require a cumulative impact analysis because environmental conditions result from many different factors that act together. The total effect of any single action cannot be determined by considering it in isolation; it must be determined by considering the likely result of that action in conjunction with many other actions.

Evaluating potential impacts includes considering incremental impacts that could occur from the alternatives, as well as impacts from past, present, and reasonably foreseeable future actions. **Table D-I** identifies past, present, and reasonably foreseeable future actions used in the cumulative analysis for the supplemental authorities and other affected resources.

**Table D-I**  
**Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas**  
**Recreation**

<b>Action/Project Name; Agency ID</b>	<b>Location (Nevada)</b>	<b>Ownership/ Applicant</b>	<b>Status</b>	<b>Acres/ Length</b>	<b>Project Description</b>	<b>Resource(s) Affected</b>
Black Rock Desert–High Rock Canyon Emigrant Trails NCA Recreation	Black Rock Desert–High Rock Canyon Emigrant Trails NCA	Various	Ongoing	Various	Activities within the NCA that have required an SRP include: <ul style="list-style-type: none"> <li>• Burning Man Event</li> <li>• Hunting outfitters and guides</li> <li>• Jeep tours (4-wheel drive) that charge participants</li> <li>• Equestrian tours and wagon train rides</li> <li>• Cattle drives that charge individuals to ride along</li> <li>• Filming or photography for profit, even if associated with recreational use</li> <li>• Unique activities, such as rocket launching and land sailing</li> <li>• World land speed record events</li> <li>• Amateur altitude record rocket launches</li> <li>• Large scout campout</li> <li>• Fraternity activity</li> <li>• Large family reunion</li> <li>• OHV race</li> <li>• Horse endurance rides</li> <li>• Mountain bike races</li> <li>• Fourth of July</li> <li>• Weddings</li> </ul>	Air Quality ACECs Cultural Resources Environmental Justice Invasive, Nonnative Species Migratory Birds Native American Religious Concerns Public Health and Safety Threatened and Endangered Species Waste Water Quality Wilderness Wilderness Study Areas
Granite Creek Ranch – Recreational Cabins	16 miles north of Gerlach on CR 34	Granite Creek Partners, LLC	Hearing Date 12/2011	1.5 acres	Construction of five permanent cabins under the classification of a destination resort	Air Quality Economics Environmental Justice Public Health and Safety Recreation Social Values



Table D-I. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Recreation

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Black Rock Station Outdoor Visitor Kiosk	Gerlach	Black Rock City, LLC	Categorical Exclusion signed 2/5/2018	Adjacent to the BLM's Black Rock Station in Gerlach	Includes interactive, topographic map, walkway, shade structure, and picnic table; ADA compliant	Recreation Social Values Traffic

**Communications, Energy, and Minerals**

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
San Emidio Geothermal Plant Expansion	San Emidio Desert	Ormat Technologies, Inc.	Exploration Decision Record 8/10/2014  Installation Well Decision Record 1/10/2018	21.5 acres	The BLM Black Rock Field Office issued a decision in 2014 to allow a proposal by US Geothermal Nevada for the San Emidio Geothermal Exploration and Development project. Ormat Technologies, Inc. proposed the installation of one new production well in 2018.	Air Quality Economics Environmental Justice Social Values
New York Canyon Geothermal Utilization and Interconnect Project	25 miles east southeast of Lovelock	Ormat Technologies, Inc.	Exploration Decision Record 10/14/2010  Utilization and Interconnect Decision Record 6/03/2013	81.8 acres	The exploration project includes drilling up to 15 exploration wells, 1 temporary water well, and the construction of on-lease access roads and well pads, surface pipelines, and associated ancillary facilities for the purpose of geothermal exploration. Also authorized under the decision record is FLPMA ROW NVN-88195 to provide lease-to-lease roadway and pipeline access. Proposed development included a 70-megawatt utility-grade geothermal power plant, 45 production and injection wells, pipelines, and a 230-kilovolt transmission line in Churchill and Pershing Counties.	Economics Environmental Justice Social Values

Table D-I. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Communications, Energy, and Minerals

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Blue Mountain Geothermal Development Project	Blue Mountain, 25 miles west of Winnemucca	Nevada Geothermal Power Company	Decision Record 12/18/2007 Ongoing	35 acres	The project included development of a geothermal power plant, a geothermal well field, and a 20-mile 120-kilovolt transmission line in Humboldt and Pershing Counties.	Air Quality Economics Environmental Justice Social Values
Sandman Exploration Project	North of Interstate 80, 7.5 miles west of Winnemucca	Newmont Mining Corporation	Decision Record 4/30/2010	441 acres	The decision record added 441 acres of exploration activities to Newmont Mining Corporation's existing 58.8 acres of notice-level disturbance.	Air Quality Economics Environmental Justice Social Values
Pyramid Lake Energy Project Geothermal Assessment	Pyramid Lake Paiute Reservation, 40 miles north of Reno	PLPT	Drilled seven gradient wells and one slim hole well, initiated target resource testing, and performed scoping for EA by January 2016	125,000 surface acres (Pyramid Lake)	The Pyramid Lake Energy Project is to identify geothermal resources, preserve cultural and spiritual sites, and provide tribal economic opportunities in the Pyramid Lake Paiute Reservation.	Air Quality Economics Environmental Justice Native American Religious Concerns Social Values

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Communications, Energy, and Minerals

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Salt Wells Energy Projects	15 miles east of Fallon	BLM	Record of Decision September 2011	24,152 acres	Three separate geothermal energy and transmission projects proposed by Sierra Pacific Power Company, Ormat Technologies, Inc., and Vulcan Power Company; Sierra Pacific Power Company proposed building two switching stations, one 230-kilovolt transmission line, two 60-kilovolt electric line folds, and one substation. Ormat Technologies, Inc. proposed developing the Carson Lake Binary Power Plant and Substation, the Macari Switching Station, a 230-kilovolt transmission line between the Carson Lake Substation and the Macari Switching Station, and an electric line fold for the Sierra Pacific Power Company 230-kilovolt transmission line. Vulcan proposed developing up to four power plants and associated substations at five possible locations for a	Economics Social Values
Salt Wells Energy Projects <i>(continued)</i>	<i>(see above)</i>	<i>(see above)</i>	<i>(see above)</i>	<i>(see above)</i>	maximum production of 120 megawatts.	<i>(see above)</i>
ROW – Telephone and Telegraph	33N, 24E, parts of Sec. 5 and 8	Nevada Bell	Authorized	126.15 acres	Fiber optic facilities	All
Free Use Permit	0340N 0240E 033	BLM	Authorized	4.999 acres	Sand and gravel	Public Health and Safety Recreation Transportation
Shamrock Communications Facility	22 miles northeast of Fernley, north of Interstate 80	Shamrock Communications, Inc.	Decision Record 3/11/2012	93.18 acres	Communications facility, including a transmitter building, tower and beacon, and electrical distribution line	Air Quality Economics Environmental Justice Noise Social Values Transportation

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Communications, Energy, and Minerals

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Hycroft Mine	55 miles west of Winnemucca, on the western flank of the Kamma Mountains	Hycroft Resources and Development, Inc.	Most recent Decision Record 3/30/2013  EIS in progress for subsequent mine expansion	14,909 acres	Hycroft Resources and Development, Inc. is authorized to disturb 6,144 acres, permitted in 2013. The mine submitted proposed changes to the plan of operations, including expanding the plan boundary to the east, extending mining activities, increasing the rate of process water pumping, constructing and operating storage and leach facilities, expanding and dewatering the existing Brimstone pit, expanding the South Waste Rock Facility, modifying land use, expanding roads, creating storm water diversion, and constructing a solar installation after closure.	Air Quality Cultural Resources Economics Environmental Justice Public Health and Safety Social Values Soils Transportation Visual Resources Water Quality
Mineral Materials Free Use Permit Renewals; Community Pit Designations and Expansions Projects	Throughout Pershing and Washoe Counties	Pershing and Washoe Counties' Road Departments	Pershing County Decision Record 12/19/2012  Washoe County Decision Record 6/27/2018	Pershing County: 490 acres  Washoe County: 160.5 acres	Pershing County: Proposed renewing 29 free use permits to Pershing County Road Department and designating 10 of these sites as community pits  Washoe County: Proposed authorizing seven free use permits in northern Washoe County and establishing six community pits at existing gravel pit sites	Air Quality Economics Environmental Justice Social Values
Open Market Aggregate Facility	North of Interstate 80 along SR 427 in Wadsworth	Wade/Logan, LLC	Approved Hearing Date 10/6/2011	129 acres	Aggregate facility (sand removal and screening operation); outside sales to commercial trucks only	Air Quality Economics Environmental Justice Noise Social Values Transportation

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Transportation

<b>Transportation</b>						
<b>Action/Project Name; Agency ID</b>	<b>Location (Nevada)</b>	<b>Ownership/ Applicant</b>	<b>Status</b>	<b>Acres/ Length</b>	<b>Project Description</b>	<b>Resource(s) Affected</b>
Road ROW	Township 33 North, Range 24 East, portions of Section 5	Washoe County	Authorized	163.640 acres	Roads	All
Interstate 80 from West Lovelock Viaduct to 1.61 miles west of Torey Pines	Interstate 80 PE 16.96 to 26.18	Nevada Department of Transportation	Under construction	9 miles	Pavement rehabilitation: 1.5-inch cold mill; 2-inch plant mix bituminous surface with open grade	Transportation
Interstate 580 Freeway Extension	Interstate 580 between US Highway 395 and SR 431	Nevada Department of Transportation	Construction completed	8.5 miles	<ul style="list-style-type: none"> <li>• 8.5 miles of new 6-lane controlled access freeway</li> <li>• Completed Mt. Rose Interchange (SR 431) and construct a new interchange at Bowers Mansion Road (SR 429)</li> <li>• Constructed Kelly Canyon Road (frontage road) and Parker Ranch Road to maintain local access at south end of project</li> <li>• Completed ten water quality basins for treating storm water runoff</li> </ul>	Economics Environmental Justice Social Values
SR 445 Pyramid Highway Improvements	Sparks	Nevada Department of Transportation	Environmental clearance 2010–2013; project pending	Estimated 9.6 miles	<ul style="list-style-type: none"> <li>• Calle de la Plata to La Posada – transition from 4-lane arterial to 6-lane freeway</li> <li>• La Posada to Sparks Boulevard – Develop Pyramid alignment into 6-lane freeway with frontage roads</li> <li>• Continue 6-lane freeway from Sparks Boulevard to Disc Drive, either on the Pyramid alignment with frontage roads or on a separate alignment to the west</li> <li>• Extend 6-lane freeway through Sun Valley to US Highway 395</li> </ul>	Air Quality Economics Environmental Justice Noise Social Values Transportation



Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Transportation

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
SR 445 Pyramid Highway Improvements (continued)	(see above)	(see above)	(see above)	(see above)	<ul style="list-style-type: none"> <li>Widen and improve Pyramid highway from Disc Drive to Queen Way</li> <li>Widen and extend Disc Drive to Vista Boulevard</li> </ul>	(see above)
USA Parkway Extension SR-439	Between Interstate 80 west of Fernley and US Highway 50 near Silver Springs	Nevada Department of Transportation	Construction completed	18-mile roadway extension	The roadway extends USA Parkway by 12 miles to reach US Highway 50 at Silver Springs; the final product is an 18-mile, 4-lane SR 439	Economics Environmental Justice Public Health and Safety Social Values Transportation
US Highway 50 Roy's Road to Silver Springs Widening (associated with US Parkway Extension)	From Roy's Road to US Highway 50A/US Highway 95A in Silver Springs	Nevada Department of Transportation	Scheduled for construction in 2018	9.54 miles	Expand US Highway 50 from 2 to 4 lanes and improve drainage	Transportation
Pyramid Highway/US 395 Connector – Package I	From Queen Way to Golden View Drive	Nevada Department of Transportation	Proposed in 2018	2.4 miles	Widen Pyramid Highway from 4 to 6 lanes	Transportation
SouthEast Connector (Veterans Parkway)	From South Meadows Parkway to Clean Water Way in Reno/Sparks	Nevada Department of Transportation	Construction completed	4.5 miles	Constructed 4-lane roadway connecting south Reno to Sparks	Transportation

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Land Use and Resource Management Plans

**Land Use and Resource Management Plans**

<b>Action/Project Name; Agency ID</b>	<b>Location (Nevada)</b>	<b>Ownership/ Applicant</b>	<b>Status</b>	<b>Acres/ Length</b>	<b>Project Description</b>	<b>Resource(s) Affected</b>
Winnemucca District Office Resource Management Plan	Winnemucca District	BLM	Decision Record 5/21/2015 Plan Maintenance Change I signed 9/7/2016	All Winnemucca District-administered lands outside of the Black Rock Desert–High Rock Canyon Emigrant Trails NCA	RMP for the 8,448,130 acres of federally owned lands within the jurisdiction	All
Wilderness Management Plan	Black Rock Desert	BLM	Decision Record 12/21/2012	Black Rock Desert–High Rock Canyon Emigrant Trails NCA	Wilderness Management Plan for ten wilderness areas associated with the Black Rock Desert–High Rock Canyon Emigrant Trails NCA	Invasive, Nonnative Species Migratory Birds Recreation Threatened and Endangered Species Vegetation Visual Resources Wilderness Wilderness Study Areas
Vegetation Management Plan	Winnemucca District	BLM	Decision Record 11/03/2017	Winnemucca District-wide	Winnemucca District-wide vegetation management plan	ACECs Invasive, Nonnative Species Migratory Birds Threatened and Endangered Species Vegetation Wilderness Wilderness Study Areas

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Land Use and Resource Management Plans

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Black Rock City Station Plan	88 Jackson Lane	Black Rock City, LLC	Property purchased in 2016; application submitted to Washoe County for zone change; hearing on 4/6/2016	200 acres	A specific plan for the Burning Man work ranch located within the Hualapai Valley	Air Quality Economics Environmental Justice Noise Public Health and Safety Social Values Transportation Visual Resources

***Land Transfers and Designations***

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Wilderness Designation	Township 33 North, Range 24 East, portions of Sections 8-11	BLM	Authorized	797,100 acres	Wilderness designation	Wilderness
Pine Forest Range Recreation Enhancement Act	Blue Lakes, Alder Creek Wilderness Study Areas	Humboldt County; BLM	Designated in December 2014	26,000 acres	Designated 26,000 acres within the Blue Lakes and Alder Creek Wilderness Study Areas as the Pine Forest Range Wilderness Area; released 1,000 acres of existing wilderness study area land	Recreation Special Designations
Lyon County Economic Development and Conservation Act	Yerington	City of Yerington; Lyon County	Wilderness designated in December 2014	58,000 acres	Allowed the City of Yerington to develop 10,000 acres of BLM-administered land surrounding Pumpkin Hollow project site for industrial, recreational, and infrastructure purposes; 48,000 acres in Lyon County were designated as the Wovoka Wilderness Area	Economics Recreation Social Values

Table D-1. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Other

<b>Other</b>						
<b>Action/Project Name; Agency ID</b>	<b>Location (Nevada)</b>	<b>Ownership/ Applicant</b>	<b>Status</b>	<b>Acres/ Length</b>	<b>Project Description</b>	<b>Resource(s) Affected</b>
Climate change	All	N/A	Ongoing	N/A	Factors associated with climate change include increased temperatures, more intense precipitation events, earlier snowmelt, and increased wildfire potential (IPCC 2018).	All
Wildfire	Gerlach and Northern Nevada	Various	Ongoing	94,783 acres	<p>The Tohakum 2 Wildfire reached 94,221 acres and affected traffic on SR 447 for Burning Man Event attendees in August and September 2017. In the summer 2017, the Twin Buttes fire burned 562 acres.</p> <p>There has been an increasing trend of wildfires in northern Nevada, and warming temperatures and drying conditions increase this risk, potentially affecting transportation and public health and safety.</p>	All
Grazing	Black Rock Desert–High Rock Canyon Emigrant Trails NCA	Allotment permittees	Ongoing	3,131 acres	Three grazing allotments are within the cultural resources Assessment Area. The Buffalo Hills allotment overlaps with the Closure Area (3,131 acres).	Cultural Resources Soils Vegetation
Smoke Creek Complex Wild Horse and Burro Gather	Fox Lake and Buffalo Hills Herd Management Areas	BLM	Decision Record 4/18/2018	434,353 acres	The gather, treatment, and removal of wild horses within and adjacent to the Fox Lake and Buffalo Hills herd management area. The BLM has determined that approximately 613 excess wild horses need to be removed for compliance with the Wild Free Roaming Horses and Burros Act of 1971.	Transportation

Table D-I. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Other

Action/Project Name; Agency ID	Location (Nevada)	Ownership/ Applicant	Status	Acres/ Length	Project Description	Resource(s) Affected
Water Sources and Riparian Enhancement Projects	Twin Peaks Grazing Allotment	BLM	Decision Record 5/18/2018	0	Enhance six spring and riparian resources within the Twin Peaks grazing allotment; projects include Horse Corral Springs, Porcupine Spring, Spur Spring, Byers Spring, Sage Hen Spring, and Wilcox Spring.	Water Resources Wetlands and Riparian Areas
Virginia Mountains Vegetation Treatment Project	North of Reno, West of Pyramid Lake	BLM	Decision Record 2/14/2017	22,388 acres	Implement vegetation treatments in strategically located treatment units based on vegetation condition and management objectives. Proposed treatments include mechanical mastication of trees and brush, mechanical thinning/removal of trees, hand thinning of trees, application of herbicide, application of prescribed fire (pile burning), and seeding.	Vegetation
Pyramid Lake Wetland Program	Pyramid Lake Paiute Reservation	PLPT	Ongoing	477,000 acres	The PLPT Wetland Program continues its goal toward protecting and restoring wetland resources for their economic, cultural, environmental, and human health benefits. The Wetland Program will use the products of this work to continue to enhance protection of wetland resources within the Pyramid Lake Paiute Reservation boundaries by continuing to develop the monitoring and assessment, regulatory, and restoration and protection elements of the program.	Native American Religious Concerns Wetlands and Riparian Areas



Table D-I. Past, Present, and Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas—Other

<b>Action/Project Name; Agency ID</b>	<b>Location (Nevada)</b>	<b>Ownership/ Applicant</b>	<b>Status</b>	<b>Acres/ Length</b>	<b>Project Description</b>	<b>Resource(s) Affected</b>
Nonpoint Source Management Plan	Pyramid Lake Paiute Reservation	PLPT	Ongoing	477,000 acres	The goal of the PLPT Nonpoint Source Program is to protect water quality that is required to maintain and restore aquatic life, wildlife, human health, and riparian habitat. This includes the protection of water quality required for ceremonial, cultural, and traditional uses of the Kooyooe Tukada (Paiute people) within the Pyramid Lake Paiute Tribe Indian Reservation.	Native American Religious Concerns Water Resources
Water Quality Control Plan	Pyramid Lake Paiute Reservation	PLPT	Ongoing	477,000 acres	The PLPT continues its active role in regional dialogue on related water quality and water quantity issues.	Public Health and Safety Soils Water Resources

## D.2 BIOLOGICAL RESOURCES

### D.2.1 Migratory Birds

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-1** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, migratory birds in the Assessment Area. Actions include various recreation, transportation and communication rights-of-way, geothermal and minerals development, wildlife habitat improvement projects, wildfire suppression and fuels reduction treatments, livestock grazing, land use planning, and the effects of climate change. Reasonably foreseeable future actions are in **Table D-1**.

The types of impacts on migratory birds from past, present, and reasonably foreseeable future actions are wide-ranging. Recreational uses, such as motorized activities within the NCA, have affected migratory birds through habitat avoidance and disturbance. Motorized vehicle use increases the incidence of mortality from collisions, the spread of noxious weeds, and noise above ambient levels, which may disturb migratory birds. Development, including for rights-of-way, energy, and minerals, has caused habitat loss and fragmentation. These types of activities are expected to increase in the future as populations in northern Nevada increase.

Past, present, and reasonably foreseeable future actions have also resulted in habitat improvements for migratory birds. Vegetation and wildlife management plans have increased the availability of high-quality habitat for birds. Additionally, the wilderness management plan for the Black Rock Desert may have positive impacts on migratory bird habitat by limiting the amount of human disturbance. Protection and conservation of nearby important bird areas, the High Rock Resource Area, and the Sheldon National Wildlife Refuge (National Audubon Society 2017) will continue to provide high-priority habitat for migratory birds.

Climate change will contribute to impacts on migratory birds across all alternatives. Warming temperatures can alter birds' temporal activities such as migration, breeding, and reproduction (Walther 2002). For instance, delays in spring migration may increase competition for nesting sites or result in desynchronization of migration and food availability. Additionally, due to climate change, wildfires are becoming more frequent and intense (IPCC 2018). There is an increasing trend of wildfire in northern Nevada, and large fires such as the Tohakum 2 and Twin Buttes fires of 2017 have contributed to habitat loss and/or alterations for migratory bird species. Warming temperatures and drier climates will increase the probability of habitat-removing wildfires, thus negatively affecting migratory birds.

All alternatives analyzed in this document have the potential to contribute to cumulative impacts on migratory birds in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D).

However, the differences in contribution to cumulative effects between these alternatives would be minor. This is because all Event alternatives would incorporate the same protective measures to reduce impacts on migratory birds. These measures include dust abatement, trash pickup post-Event, discouraging recreational hot spring use, ALAN reduction, and pollution prevention, as described in **Chapter 2**, the 2018 SRP stipulations (**Appendix B**), and **Appendix E**.

Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa. The relative contribution from the extra 20,000 bodies on the playa, however, would likely be minor compared with the level of impacts from the 80,000 population Event.

Under Alternative E, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Burning Man Event. The types of cumulative impacts on migratory birds described under Alternative A (Proposed Action) would likely still occur, but the cumulative impact would likely decrease compared with other alternatives because of BLM management strategies and protection measures that would be applied. Over the long term, the cumulative impact would decrease as word of the Event closure spreads, and cumulative impacts would be more like those that occur during non-Event time periods.

### D.2.2 Special Status Species

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-2** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, special status species in the Assessment Area. They include recreation in the NCA (e.g., motor vehicle tours, OHV races, hunting, and other motorized and nonmotorized recreation), transportation and communication rights-of-way, geothermal and minerals development, wildlife habitat improvement projects, wildfire suppression and fuels reduction treatments, livestock grazing, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

The types of impacts on special status species from past, present, and reasonably foreseeable future actions are wide-ranging. Recreation in the NCA has affected special status species by increasing human-wildlife encounters, resulting in disturbance and habitat avoidance. Motorized recreation has increased incidence of vehicle strike, spread weeds that alter habitat conditions, and generated noise that can disturb individuals or cause habitat avoidance. Development, including for rights-of-way, energy, and minerals, has caused habitat loss and fragmentation, and vehicle strike on Assessment Area roads is a past and ongoing source of injury or mortality. Livestock grazing, and wild horses and burros, have altered habitat conditions in rangelands, especially in springs, where these animals congregate for shade and succulent forage during the warm season. Wildfires alter large swaths of habitat; the effects of wildfires are exacerbated by widespread infestation of nonnative annual grasses, and drier and warmer conditions created by climate change (IPCC 2018).

Past, present, and reasonably foreseeable future actions have also resulted in habitat improvements for special status species. Habitat improvement projects, including vegetation treatments, restoration, and fencing riparian areas, have increased habitat quality in both rangelands and riparian areas. Wildfire fuels reduction projects may affect special status species in the short term but improve habitat conditions in the long term and lessen the chances of catastrophic wildfire. Comprehensive resource planning has formalized resource protection measures, resulting in fewer impacts from development projects.

All alternatives analyzed in this document have the potential to contribute to cumulative impacts on special status species in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively

greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D).

However, the differences in the contribution to the cumulative effects between these alternatives would be minor. This is because all Event alternatives would incorporate the same protective measures to reduce impacts on the environment, including on special status species. These measures include traffic controls, dust abatement, trash pickup after the Event, and discouraging recreational hot spring use. All Event alternatives would incorporate 2018 SRP stipulations (**Appendix B**) and mitigation measures (**Appendix E**), which would further reduce impacts on special status species.

Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 population Event.

Under Alternative E, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Burning Man Event. The types of cumulative impacts on special status species described under Alternative A (Proposed Action) would likely still occur, but the cumulative impact would likely decrease compared with other alternatives because of BLM management strategies and protection measures that would be applied. Over the long term, the cumulative impact would decrease as word of the Event closure spreads, and cumulative impacts would be more like those that occur during non-Event time periods.

### D.2.3 Threatened and Endangered Species

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-3** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, threatened and endangered species in the Assessment Area. Impacts include dams and water diversions; nonnative species; urban, commercial, agricultural, and other development; minerals exploration and development; wildfire; and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

Dams and water diversions are primary threats to listed fish species in the Assessment Area, causing physical barriers that prevent spawning migration, increases in low water conditions, and habitat alterations. Storage and diversion in the Truckee River watershed have reduced flows in the lower Truckee River and inflow to Pyramid Lake, causing habitat alteration and fragmentation, water temperature increases, sediment aggradation, salinity increase (in Pyramid Lake), spawning habitat and habitat complexity and diversity reduction, and microhabitat loss. Population centers in the Assessment Area are anticipated to continue to grow, and corresponding water storage and diversions could increase. Altered habitat has favored nonnative fish species, which compete with listed fish for resources, increase predation, and alter genetics through hybridization.

Roads and ROWs have led to impacts on water quality, primarily through sedimentation and pollutant inputs to streams via stormwater runoff. Accidents or spills could contribute additional pollutants to waterways supporting listed fish.

Climate change may affect habitat for listed fish in the Assessment Area, though impacts from climate change are not completely understood. Spring systems in Nevada are supplied mainly through aquifers, which are fed by snowmelt and precipitation in the mountains (Abele 2011). Climate change could affect habitat by reducing suitable habitat, changing distributions, and altering food webs and water quality, including temperatures. Additional effects of climate change may include severity and frequency of droughts, floods, and wildfires and changes in the timing of snowmelt and peak flows (Isaak et al. 2012; Haak et al. 2010; Rieman and Isaak 2010; Wenger et al. 2011). Wildland fire can destroy riparian habitat and degrade water quality; this may be exacerbated by climate change.

All alternatives analyzed as part of this EIS have the potential to contribute to the cumulative impacts on threatened and endangered species within the Assessment Area. This would come about particularly from traffic increases on travel routes near the lower Truckee River, and associated increased potential for water quality impacts in listed fish habitat. Alternatives that increase the Event attendance would contribute to cumulative impacts at a greater degree than those that reduce or maintain the Event size; however, the contribution to cumulative impacts is likely to be minor under all Event alternatives, given the potential for traffic-related impacts outside of the Event period.

#### **D.2.4 Vegetation (Including Invasive, Nonnative Species)**

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-4** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, vegetation and weeds in the Assessment Area. They include recreation in the NCA (e.g., motor vehicle tours, OHV races, and other motorized and nonmotorized recreation), transportation and communication rights-of-way, geothermal and minerals development, wildlife habitat improvement projects, wildfire suppression and fuels reduction treatments, livestock grazing, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

The types of impacts on vegetation from past, present, and reasonably foreseeable future actions are wide-ranging. Recreation in the NCA, both motorized and nonmotorized, has affected vegetation by spreading weeds along routes and trails. Motorized recreation has directly removed vegetation from unauthorized off-road use, while spreading weeds into these areas that degrade vegetation quality. Development, including for rights-of-way, energy, and minerals, has directly removed vegetation and contributed to weed spread. Linear rights-of-way have dispersed weeds across large distances. Livestock grazing, and wild horses and burros, have altered the vegetation quality through selective grazing; these animals also spread weeds on their fur and hooves, and via their digestive tract.

Wildfires have altered large swaths of vegetation. Nonnative, annual species such as cheatgrass worsen the impacts from wildfire by increasing fire frequency, intensity, and extent. The altered fire regimes favor cheatgrass and other annual grass regeneration over native shrubs and perennial grasses, facilitating steppe vegetation conversion to annual grasslands. The effects of climate change are expected to make these impacts worse.

Impacts on vegetation have also occurred from vegetation and weed management activities. Federal, state, and local governments will continue to monitor and treat noxious weed populations in their jurisdiction. Habitat improvement projects, including vegetation treatments and restoration, and wildfire Emergency Stabilization and Restoration treatments, have restored or increased vegetation quality

where conducted. Wildfire fuels reduction projects remove vegetation in the short term but protect vegetation quality in the long term by lessening the chances of catastrophic wildfire. Comprehensive resource planning has formalized resource protection measures, resulting in fewer impacts on vegetation from development projects.

All alternatives analyzed in this document have the potential to contribute to cumulative impacts on vegetation in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D).

However, the differences in the contribution to the cumulative effects between the Event alternatives would be minor. This is because all Event alternatives would incorporate the same protective measures to reduce impacts on the environment, including enforcing designated routes to prevent off-road vehicle use in the Closure Area. Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 population Event. All Event alternatives would incorporate 2018 SRP stipulations (**Appendix B**) and mitigation measures (**Appendix E**), which would further reduce impacts on vegetation.

Under Alternative E, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Burning Man Event. The types of cumulative impacts on vegetation described under Alternative A (Proposed Action) would likely still occur, but the cumulative impact would likely decrease compared with other alternatives because of BLM management strategies and protection measures that would be applied. Over the long term, the cumulative impact would decrease as word of the Event closure spreads, and cumulative impacts would be more like those that occur during non-Event time periods.

### D.2.5 Wetlands and Riparian Areas

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-5** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, riparian areas and wetlands in the Assessment Area. They include recreation in the NCA (e.g., camping and recreational spring use), geothermal development, livestock grazing and wild horse and burro management, transportation rights-of-way and other development, wildlife habitat improvement projects, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

Past, present, and reasonably foreseeable future impacts on wetlands and riparian areas have occurred from recreation in the NCA, as well as on surrounding BLM-administered lands. There are developed and informal campsites at several area hot springs. Informal spring modifications include small-scale impoundments to create soaking “tubs,” wooden benches and “docks” extending into soaking pools, and informal pathways along pools and spring brooks. These activities have removed some riparian vegetation at these locations. Though the intensity of these impacts is generally low, such impacts are widespread and affect many hot springs in the Assessment Area.



As discussed in **Chapter 3**, Section 3.3.4, Vegetation, both motorized and nonmotorized recreation has spread weeds along roadways and trails in the Assessment Area. This impact has also affected riparian areas, which are highly invisible, especially when disturbed by other activities like recreation, livestock grazing, wild horse and burro use, and channel modifications as discussed above. Saltcedar (*Tamarix* spp.), Canada thistle (*Cirsium arvense*), knapweeds (*Centaurea* spp.), and perennial pepperweed (*Lepidium latifolium*) are the most common weeds affecting western wetlands (Sada et al. 2001; Abele 2011); all of these species are present in the Assessment Area.

Hydrological modifications, including surface water diversions, channel modifications, and dams or impoundments (e.g., Mud Meadows Reservoir in Soldier Meadows), have affected riparian areas and wetlands in the Assessment Area. These features have been installed for a variety of reasons, including to supply agricultural water and to support livestock grazing operations. These modifications have created functional changes in riparian systems at springs by decreasing or diverting water volume and altering soil moisture and removing riparian vegetation due to drying or inundation. Geothermal developments have, in cases, reduced groundwater availability that supports riparian and wetland vegetation at springs. This has occurred at the Jersey Valley Geothermal Plant in Pershing County. Other types of development, including for transportation rights-of-ways and mineral extraction, have also affected riparian areas and wetlands from vegetation removal and weed spread.

Domestic livestock and wild horses and burros tend to congregate in riparian areas for water and succulent vegetation. Spring use by these animals has been linked to increased invasive plant cover, erosion, and sediment loads in spring systems (Sada et al. 2001; Abele 2011). As a result, where these animals are not excluded from these systems, the quantity and quality of riparian vegetation has been reduced.

Impacts on wetlands and riparian areas have occurred and will occur from restoration activities and resource planning. For example, the Water Sources and Riparian Enhancement projects in the BLM Twin Peaks livestock grazing allotment will conduct restoration at riparian areas degraded by historic livestock grazing. The Winnemucca District RMP and Vegetation Management Plan, as well as the PLPT Pyramid Lake Wetland Program, Nonpoint Source Management Plan, and Water Quality Control Plan, have formalized resource protection measures and guided restoration projects that protect and enhance wetlands and riparian areas.

Finally, climate change may affect wetlands and riparian areas in the Assessment Area, though impacts from climate change are not known with certainty. Spring systems in Nevada are supplied mainly through aquifers, which are fed by snowmelt and precipitation in the mountains (Abele 2011). Groundwater recharge is spatially and temporally variable and can be affected by air temperature and precipitation, among other factors (Flint et al. 2004). Climate change is expected to alter temperature and precipitation (IPCC 2018). This may affect groundwater recharge or discharge and thus alter water quantity in springs habitat. Reduced flows and warmer water temperatures may favor nonnative riparian vegetation that has higher drought and salt tolerance, such as tamarisk (*Tamarix* spp.; Stromberg et al. 2013; Glenn and Nagler 2005).

All alternatives analyzed have the potential to contribute to cumulative impacts on wetlands and riparian areas in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively greater

contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D).

However, the differences in the contribution to the cumulative effects between the Event alternatives would be minor. This is because all Event alternatives would incorporate the same protective measures to reduce impacts on wetlands and riparian areas from recreational use during the Event, such as discouraging hot spring use by Event participants. All Event alternatives would also incorporate 2018 SRP stipulations (**Appendix B**) and mitigation measures (**Appendix E**), which would further reduce impacts on wetlands and riparian areas. Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 population Event.

Under Alternative E, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Burning Man Event. The types of cumulative impacts on wetlands, riparian areas, and hot springs described under Alternative A (Proposed Action) would likely still occur, but the cumulative impacts would likely decrease compared with other alternatives because of BLM management strategies and protection measures that would be applied. Over the long term, the cumulative impacts would decrease as word of the Event closure spreads, and cumulative impacts would be more like those that occur during non-Event time periods.

#### D.2.6 Wildlife

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-6** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, wildlife in the Assessment Area. Impacts include various recreation, transportation and communication rights-of-way, geothermal and minerals development, wildlife habitat improvement projects, wildfire suppression and fuels reduction treatments, livestock grazing, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1** and the 2012 EA (BLM 2012).

The types of impacts on wildlife from past, present, and reasonably foreseeable future actions are wide-ranging. Recreational uses, such as motorized activities within the NCA, have affected wildlife through habitat alteration, avoidance, and disturbance. Motorized vehicle use increases the incidence of mortality from collisions, the spread of noxious weeds, and noise above ambient levels, which may disrupt wildlife communities. Development, including for rights-of-way, energy, and minerals, has caused habitat loss and fragmentation.

Past, present, and reasonably foreseeable future actions have also resulted in habitat improvements for wildlife. Vegetation and wildlife management plans have increased the availability of high-quality habitat. Additionally, the wilderness management plan for the Black Rock Desert may have positive impacts on habitat by limiting the amount of human disturbance.

Climate change will contribute to impacts on wildlife across all alternatives. Warming climates can alter the temporal activities of wildlife, such as migration, breeding, and reproduction (Walther 2002). Additionally, due to climate change, wildfires are likely to become more frequent and intense (IPCC

2018). There is an increasing trend of wildfire in northern Nevada, and large wildfires such as the Tohakum 2 and Twin Buttes fires of 2017 have led to habitat loss and alterations. Warming temperatures and drier climates will increase the probability of habitat-removing wildfires, thus negatively affecting wildlife.

All alternatives analyzed in this document have the potential to contribute to cumulative impacts on wildlife in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in Event size (Alternative A and Alternative C) would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D).

However, the differences in contribution to cumulative effects between these alternatives would be minor. This is because all Event alternatives would incorporate the same protective measures to reduce impacts on wildlife. These measures include dust abatement, trash pickup post-Event, discouraging recreational hot spring use, ALAN reduction, and pollution prevention, as described in **Chapter 2**, the 2018 SRP stipulations (**Appendix B**), and **Appendix E**. Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 population Event. For Alternative E, see the special status species cumulative analysis.

### D.3 CULTURAL RESOURCES

#### D.3.1 Cultural (Including NHTs)

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-7** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and may continue to affect, cultural resources. The reasonably foreseeable future actions and BLM-authorized actions may affect historic properties, other cultural resources, and the NHTs through the loss or disturbance of resources that are not protected, changes in setting, pressure from incremental and/or repeated uses, changes in access, and vandalism. Within and around the Assessment Area there are prior and actively occurring impacts on cultural resources as a result of erosion and weathering. The potential for impacts from extreme weather events and wildfire will likely increase with climate change (IPCC 2018).

NCA recreation, such as motor vehicle tours, OHV races, and other motorized and nonmotorized recreation, may have the potential for affecting cultural resources. BLM-authorized actions and those of other federal agencies that could affect cultural resources within the direct impact Assessment Area would be subject to project and compliance review. Other reasonably foreseeable activities described in **Table D-1** include transportation and communication rights-of-way, geothermal and minerals development, wildfire suppression and fuels reduction treatments, and livestock grazing. These have affected cultural resources in the past and may contribute to future cultural resources impacts.

All of the alternatives have the potential to contribute to cumulative effects on historic properties and the NHTs. Although no physical traces of the trails or trail artifacts have been found, ongoing and repeated surface disturbance along trail routes, playa margins, and other access point, and vehicle use have the potential for causing adverse effects on historic properties. Likewise, the potential for

unauthorized collection, vandalism, and inadvertent damage to archaeological sites, trail segments, and hot springs from the large populations of participants may occur. Temporary, annual closures; Event activities; lights; traffic; crowded conditions; and displacement adversely affect access to, and the visual and historic setting and feeling of, NHTs.

With the implementation of industry BMPs and proposed mitigation measures, and the development and implementation of a memorandum of agreement with the Nevada SHPO, the potential contribution to cumulative effects of each of the alternatives would be minimized. The differences between the alternatives would be minor. Alternatives A and C would increase the Event size and possibly increase the potential for cumulative impacts more than Alternative D, which would not change the size of the Event, and Alternative B, which would reduce it. Alternative E would reduce the potential for cumulative impacts in the long term, as the large Event would not occur.

### **D.3.2 Native American Religious Concerns**

The Assessment Area for cumulative effects is the same as the Assessment Area for direct and indirect effects (see **Appendix A** and **Table C-8** in **Appendix C**). Past, present, and reasonably foreseeable future actions have likely affected, and may continue to affect, Native American religious concerns; however, no sacred sites have been identified within the playa, but cultural sites and traditional use areas are known to be associated with springs, sites located on playa margins, and reservation lands on the playa. Native American concerns include access, traditional uses, artifact looting, vandalism, changes to the setting, litter, and damage to reservation roads.

The reasonably foreseeable future actions that have the potential for affecting Native American religious concerns include NCA recreation, geothermal and other energy projects, mining, transportation projects, and land use planning. BLM-authorized actions and those of other federal agencies that could cause impacts within the Assessment Area would be subject to compliance review and tribal consultation review. Impacts could result from actions in jurisdictions or areas where consideration of the impacts may not occur. Most of the reasonably foreseeable activities would be outside of the direct impact Assessment Area.

All of the alternatives have the potential to contribute to cumulative effects on Native American concerns regarding access, traditional uses, artifact looting, vandalism, changes to the setting, litter, and damage to reservation roads. With the implementation of BMPs and the proposed mitigation measures, each of the alternatives' potential contribution to cumulative effects would be minimized. The differences between the alternatives would be minor. Alternatives A and C would increase the Event size and possibly increase the potential for cumulative impacts more than Alternative D, which would not change the size of the Event, and Alternative B, which would reduce it. Alternative E would reduce the potential for cumulative impacts in the long term, as the large Event would not occur.

### **D.3.3 Paleontology**

The Assessment Area for cumulative effects is the same as the Assessment Area for indirect effects (see **Appendix A** and **Table C-9** in **Appendix C**). Past, present, and reasonably foreseeable future actions may have affected or could affect paleontological resources in the Assessment Area. The types of impacts on paleontological resources that may have occurred include destruction, collection, or damage without the benefit of scientific study or interpretation. Within the Assessment Area, reasonably foreseeable future actions could include impacts from excavations and ground disturbance from

recreation, transportation and energy facilities, erosion, and increased human access. BLM-authorized actions and those of other federal agencies that could cause impacts within the direct impact Assessment Area would be subject to compliance review. Impacts could result from actions in jurisdictions or areas where consideration of the impacts may not occur.

All of the alternatives have some potential to contribute to cumulative effects on fossils and fossil localities. The potential for impacts would be limited to increased human activity at springs, PFYC Class 3 areas, and off-site fossil localities; impacts could lead to damage, unauthorized collecting, or loss. Exclusion would reduce the potential for surface disturbance impacts in sensitive areas. Exposed fossils can be damaged incrementally by natural processes, exacerbated by concentrating human use and activity.

With the implementation of best management practices and the proposed mitigation measures, each of the alternatives' potential contribution to cumulative effects would be minimized. The differences between the alternatives would be minor. Alternatives A and C would increase the Event size and possibly increase the potential for cumulative impacts more than Alternative D, which would not change the size of the Event, and Alternative B, which would reduce it. Alternative E would reduce the potential for cumulative impacts in the long term, as the large Event would not occur.

## **D.4 HEALTH AND SAFETY**

### **D.4.1 Public Health and Safety (Including Law Enforcement)**

Reasonably foreseeable future actions that could cumulatively affect public health and safety in the Assessment Area (see **Appendix A** and **Table C-10** in **Appendix C**) include the Granite Creek Ranch recreational cabins, the Fly Ranch development, the Hycroft Mine expansion, and the Black Rock Station development.

The Hycroft Mine expansion project is the most significant of known potential cumulative impacts on all resources, specifically air quality and traffic. Cumulative air quality modeling for both Hycroft and the Event reveals that the impacts from Hycroft on the Event are minor (Strohm 2018c). The BLM's analysis in the pending Hycroft Mine expansion EIS will have expanded discussions of that project's direct, indirect, and cumulative impacts related to air quality and traffic. Increased Hycroft traffic, likely in the form of employee transport via bus, will increase traffic concerns for Event participants traveling along Jungo Road.

#### ***Cumulative Impacts Specific to Alternative A (Proposed Action)***

The impacts from each of the actions listed in **Table D-1**, above, would increase incrementally from the affected environment. Please refer to the BLM Burning Man Event Public Health and Safety Baseline Report to reference the existing environmental impacts for the public health and safety indicators and the assumptions related to Alternative A (Proposed Action).

#### ***Cumulative Impacts Specific to Alternative B***

Aircraft activity, disease vectors, explosives, evacuation, fire safety, hygiene and food safety, structure collapse, and terrorism may decrease in concern with a decreased population due to reduced exposure for each impact. Reducing the Event population allows for success in mitigations with the assumption that the proponent's mitigation programs retain the level of integrity and participation historically implemented.

Emergency response, flooding, human health concerns, and respiratory concerns remain concerns for a reduced population. Law enforcement resources are better positioned to provide for public health and safety and reduce illegal substance incidents and sexual assaults by nearly 40 percent (BLM 2018b). The potential for civil unrest may decrease with a reduced population as law enforcement resources and the proponent's staff would be better poised to address an issue before momentum is gained. The potential for civil unrest may also increase due to the lack of available tickets for participants.

The Reduced Population Alternative would contribute to cumulative impacts associated with playa dust during the Closure Order, though less impactful than described in the affected environment.

Alternative B would allow the BLM to provide adequate law enforcement Event staffing while maintaining a reasonable law enforcement presence across the BLM nationwide. Impacts from each of the actions listed in **Table D-I**, above, would be lessened under Alternative B.

#### ***Cumulative Impacts Specific to Alternative C***

The impacts of each of the actions listed in **Table D-I**, above, would be increased incrementally from the affected environment as the population of the Event increases, as discussed in the Alternative A (Proposed Action) discussion.

#### ***Cumulative Impacts Specific to Alternative D***

Concerns for public health and safety, including but not limited to illegal substance activity, sexual assaults, terrorism, mass casualty incidents, respiratory impacts, and adequate staffing of emergency response resources, at the Event would remain as captured in the baseline report.

#### ***Cumulative Impacts Specific to Alternative E***

The potential for sustained unauthorized gatherings with the No Permit/Event Alternative is low, and the risk of civil unrest and all other referenced public health and safety impacts would likely dissipate over time.

### **D.4.2 Waste, Hazardous or Solid**

The cumulative impacts analysis Assessment Area for wastes encompasses areas within 0.5 miles of the Closure Area, CR 34, and SRs 445, 446, and 447 (see **Appendix A** and **Table C-11** in **Appendix C**). **Table D-I** lists the past, present, and reasonably foreseeable future actions and the area associated with the actions. Wastes at the Event site would be influenced by activities on BLM-administered land, because the BLM administers the NCA where the Event would occur. Wastes beyond the Event site would be influenced by activities on mostly private, state, county, and other lands.

Past, present, and reasonably foreseeable future actions that have affected or can affect wastes in the cumulative impacts analysis Assessment Area involve recreation; communications, energy, and minerals projects; transportation; and land management plans. These actions involve opportunities for wastes to be released, intentionally and unintentionally. Depending on the location and scale of the actions, the wastes can create a hazard to the public or the environment through the transport, use, or disposal of hazardous or solid wastes, or through reasonably foreseeable upset and accident conditions involving the release of hazardous or solid wastes into the environment. For the most part, the actions do not involve large numbers of people in specified areas, but rather smaller groups in numerous areas, which can influence the dispersal of wastes. It is likely that only a few of the actions would promote waste minimization.



Under all alternatives, all BLM-administered lands would continue to be managed in a manner that would minimize the release of wastes. When combined with past, present, and reasonably foreseeable future actions, the Event alternatives could contribute to cumulative impacts on wastes from the release of solid waste in the form of litter. The cumulative impacts would increase as the Event participant numbers increase. Alternative E would have similar cumulative impacts, but to a lesser extent because there would eventually be no permit/Event. The cumulative impacts, however, are highly influenced by the likelihood of litter associated with past, present, and reasonably foreseeable future actions, which is unknown.

## **D.5 PHYSICAL RESOURCES**

### **D.5.1 Air**

The Assessment Area for cumulative effects is the same as the Assessment Area for direct and indirect effects (see **Appendix A** and **Table C-12** in **Appendix C**). This Assessment Area is appropriate because pollutants of concern from the Event are limited to particulate emissions, which have a localized rather than a regional impact on air quality. Past and present actions in the Assessment Area have not had a significant effect on air quality in the Assessment Area; as described in **Section 3.6.1**, air quality in the Assessment Area is in attainment with all national ambient air quality standards.

NCA recreation that would continue to release pollutants into the atmosphere include rocket launches, jeep tours, and OHV races. The construction of five Granite Creek Ranch recreational cabins would increase vehicle travel in the area to a small degree, contributing a small amount of additional tailpipe-related emissions. These activities all produce temporary and intermittent pollutant emissions, including producing fugitive dust.

Energy, communication, and mining projects, such as the San Emidio Geothermal Plant expansion, Blue Mountain Geothermal Development Project, Sandman Exploration Project, Pyramid Lake Energy Project geothermal assessment, Shamrock Communications Facility, Hycroft Mine, minerals materials free use permit renewals, community pit designations and expansions projects, and the Open Market Aggregate Facility, would have short-term emissions during construction and long-term emissions from operations, particularly from mining and minerals facilities. Construction and operation of these reasonably foreseeable future projects would be subject to permit conditions, including fugitive dust control during surface disturbance and emissions limits on equipment and processes, such as drill rigs, generators, and crushing operations.

Road ROWs, the SR 445 Pyramid Highway improvements, and other road construction projects would have temporary impacts during infrastructure construction and long-term emissions associated with traffic on these roadways.

Surface-disturbing activities from the Event would cause localized impacts by entraining particulate matter in the air at levels above the 24-hour national ambient air quality standards for PM<sub>2.5</sub> and PM<sub>10</sub>. The maximum impacts would be temporary, occurring during the time of the Event. Limited ongoing impacts are possible during periods of high winds until the playa experiences a wetting event. Because these impacts are localized, particulate emissions caused by the Event would not combine with other past, present, or reasonably foreseeable future sources of particulate matter in the Assessment Area to produce a cumulative effect on air quality.

In order to accurately assess the cumulative impacts on air quality, the BLM requested that quantitative AERMOD modeling be produced that incorporates detailed model sources for the Hycroft Mining Corporation's Hycroft Mine (based on their current EIS) and that total cumulative modeling impacts be disclosed as part of the Burning Man EIS. The Hycroft Mine represents the most significant source of cumulative emissions impacts in the cumulative effects Assessment Area. As a result, it was the only source selected for inclusion in the quantitative assessment of emissions dispersion impacts. Due to the parameters in the Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area Act of 2000, all other emissions sources previously described occur on a limited or intermittent basis or produce a limited emissions signature within the cumulative effects Assessment Area; they are unlikely to significantly contribute to cumulative emissions impacts.

In May 2018, Hycroft performed cumulative impacts modeling for its Phase II Expansion EIS. The cumulative modeling included all permitted sources within 31.1 miles (50 kilometers) of the Hycroft Mine. All Hycroft sources described in Hycroft's analysis were included in the Burning Man cumulative effects evaluation.

The BLM provided the final Hycroft cumulative modeling files. The Hycroft dispersion model sources and relevant model components were directly incorporated into the Burning Man cumulative modeling files. The AERMOD dispersion model was then executed to assess the cumulative impacts from the Hycroft Mine and the Burning Man ambient impacts. Only direct Hycroft model sources were included in the cumulative impacts analysis. All other "cumulative" model sources from the Hycroft modeling analysis exist outside of the Event air resource impact Assessment Area and were, therefore, not included in the Event cumulative modeling analysis.

**Table D-2**, below, presents the maximum modeled concentration and the total combined impact, including the ambient background concentrations (provided by NDEP). The cumulative modeled impacts for each action alternative indicate that the NAAQS could be exceeded for atmospheric particulates ( $PM_{10}$  and  $PM_{2.5}$ ) for the short term (24-hour) standards. The NAAQS for nitrogen oxides, Sulphur dioxide, and carbon monoxide, as well as the annual NAAQS standards for  $PM_{10}$  and  $PM_{2.5}$ , are unlikely to be exceeded as a result of the Event emissions, although these impacts also rise and fall with population and vehicle passes. The direct emissions impacts from the Event dominate the NAAQS compliance in the analysis, and maximum impacts in the cumulative modeling continue to occur at the SRP Closure Area Boundary.

The cumulative modeling indicates modeled emissions impacts that considerably exceed the NAAQS standards for the atmospheric particulate species ( $PM_{10}$  and  $PM_{2.5}$ ). The influence of the Hycroft sources do not significantly influence the maximum concentrations, but they do increase the modeled impacts, particularly in the region immediately surrounding their facility.

Cumulative modeled NAAQS compliance and noncompliance are non-bolded for compliance and bolded for noncompliance in **Table D-2**, below. All impacts listed were assessed at modeling receptors along the SRP Closure Area Boundary, and the inclusion of the Hycroft sources increased impacts less than 2.5 micrograms per cubic meter for all pollutants, with most averaging standards being affected less than 0.1 microgram per cubic meter. Ambient concentration impacts for the nitrogen oxide NAAQS decreased as part of the cumulative analysis because of the introduction of refined modeling methods

that were not included in the direct impact modeling. The cumulative modeling did not change the compliance or noncompliance with the NAAQS for any pollutant or averaging period.

**Table D-2**  
**AERMOD Cumulative Maximum Model Impacts at Event Closure Area Boundary\***

Pollutant/ Time Average	Alternative A (Proposed Action)		Alternative B (Reduced Population)		Alternative D (No Population Change)		NAAQS (micrograms per cubic meter)
	Modeled Impact	Total Impacts (Including Background)	Modeled Impact (micrograms per cubic meter)	Total Impacts (Including Background; micrograms per cubic meter)	Modeled Impact (micrograms per cubic meter)	Total Impacts (Including Background; micrograms per cubic meter)	
PM <sub>10</sub> 24-Hour	<b>1,581.97 **</b>	<b>1,592.17 **</b>	<b>790.99 **</b>	<b>801.19 **</b>	<b>1,532.24 **</b>	<b>1,542.44 **</b>	150
PM <sub>2.5</sub> 24-Hour	<b>126.97 **</b>	<b>134.97 **</b>	<b>63.62 **</b>	<b>71.62 **</b>	<b>122.93 **</b>	<b>130.93 **</b>	35
PM <sub>2.5</sub> Annual	8.45	10.8	4.23	6.53	7.37	9.67	12
Nitrogen dioxide 1-Hour	58.84	58.84	29.42	29.42	57.26	57.26	188
Nitrogen dioxide Annual	0.14	0.14	0.07	0.07	0.14	0.14	100
Sulfur dioxide 1-Hour	1.31	1.31	0.66	0.66	1.27	1.27	196
Sulfur dioxide 3-Hour	0.72	0.72	0.36	0.36	0.7	0.7	1,300
Carbon monoxide 8- Hour	178.87	178.87	89.44	89.44	173.12	173.12	10,000
Carbon monoxide 1- Hour	540.68	540.68	270.34	270.34	523.30	523.30	40,000

Source: Strohm 2018c

Text that is **bold** and marked with a double asterisk \*\* indicates concentrations above NAAQS

\*Explicit modeled impacts were calculated for Alternative A (Proposed Action) and Alternatives B and D. Although fugitive dust may increase along Gate Road, emissions for Alternative C would be consistent with Alternative A (Proposed Action), as the activity rates would be maintained, and the setback to the Closure Area would be consistent. The assessment of dispersion for Alternative E (No Permit/Event) could not be assessed, as the potential ad-hoc gathering location and activity rates cannot be explicitly identified. The impacts associated with Alternative D would represent a likely worst-case first year of Alternative E (No Permit/Event). For more information, see the AERMOD Modeling Report to Assess Ambient Air Quality Impacts, found on the BLM ePlanning website at <https://go.usa.gov/xnBTu>.

Given the dispersed nature of past, present, and reasonably foreseeable future actions in the Assessment Area; air quality conditions that are in attainment of national ambient air quality standards; and the temporary nature of the Event, past, present, and reasonably foreseeable future projects would not have a long-term cumulative impact on air quality.

### D.5.2 Noise

The cumulative impacts analysis Assessment Area for noise encompasses areas that have a direct line of sight within 0.5 miles of the Closure Area and traffic routes CR 34, and SR 445, 446, and 447 (see **Appendix A** and **Table C-13** in **Appendix C**). **Table D-1** lists the past, present, and reasonably foreseeable future actions and the area associated with the actions. Noise at the Event site would be influenced by activities on BLM-administered land, because the BLM administers the NCA where the Event would occur. Noise beyond the Event site would be influenced by activities on mostly private, state, county, and other lands.

Past, present, and reasonably foreseeable future actions that have affected or can affect noise in the cumulative impacts analysis Assessment Area involve recreation; communications, energy, and minerals projects; transportation; land management plans; and land transfers and designations. These actions involve opportunities for the generation of sounds. Depending on the location and scale of the actions, the sounds can create a permanent increase in ambient sound levels, or a temporary or periodic increase in ambient sound levels. Some of these actions involve high-intensity sounds from energy, minerals, and transportation projects. Others involve temporary or less noticeable sounds from certain recreation activities and resource conservation. It is likely that only a few of the actions would promote minimizing the generation of sounds.

Under all alternatives, all BLM-administered lands would continue to be managed in a manner that would minimize the generation of sound. When combined with past, present, and reasonably foreseeable future actions, the Event alternatives could contribute to cumulative impacts on a temporary or periodic increase in ambient sound levels from traffic. The cumulative impacts would increase as the Event participant numbers increase. Alternative E would have similar cumulative impacts, but to a lesser extent because there would eventually be no Event. The cumulative impacts, however, are highly influenced by sound levels associated with past, present, and reasonably foreseeable future actions, which are unknown.

### D.5.3 Soils (Playa Sediments)

The Assessment Area for cumulative effects is the same as the Assessment Area for direct and indirect effects (see **Appendix A** and **Table C-14** in **Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, soils and playa sediments in the Assessment Area. They include recreation in the NCA (e.g., motor vehicle tours, OHV races, and other motorized and nonmotorized recreation), transportation and communication rights-of-way, geothermal and minerals development, wildlife habitat improvement projects, wildfire suppression and fuels reduction treatments, livestock grazing, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-I**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

An annual Event would result in a contribution to continuing wind erosion of disturbed and loosened sediment on the surface of the playa at the Event's location. This would be added to the estimated 18,000 acres already believed to be disturbed on an annual basis and would increase the total area of disturbed and loosened surface sediments that are likely to contribute to erosion, dune formation, and dust storms on the playa from all human uses (BLM 2006). This would lead to an increased potential for erosion and dust storms associated with the Event. The actual amount of wind erosion in these areas would vary based on climate, but the increase in soil eroded would be expected to be proportionate to the increase in area disturbed. This increased potential would be short term, as rains that generally occur in September or October would promote the formation of a surface crust on the playa, which would decrease the ability of winds to move dust.

The types of impacts on playa sediments from past, present, and reasonably foreseeable future actions are wide-ranging. Recreation in the NCA, both motorized and nonmotorized, has affected playa materials by breaking the surface crust and creating wind erosion and subsequent dune formation. Previous observations and studies indicate that within the Black Rock City area, winds are removing between 5 millimeters to less than 1 centimeter (0.2 inches to less than 0.4 inches) of surface material

from the site during the Event (BLM 2006; Adams and Sada 2010). This number would potentially increase with an increased population and size.

It is unknown to what extent, if any, the surface sediments are replaced over time by wind-driven sediment from other areas of the playa or by waterborne sediments carried by runoff into the site from other parts of the playa and nearby hills and terraces. The continuing annual use of the Black Rock Desert and playa area by varied recreational and other activities, including participants at permitted events, would lead to increased surface disturbance of the playa over time. This would also increase the potential for wind erosion, playa deformation, and additional formation of intermittent dunes. The degree to which dune formation would occur is unknown.

Continued and future geothermal development on and adjacent to the playa would be expected to disturb soils. Disturbance to soils adjacent to the playa would be expected to occur from continued and expanded mining activities in the hills and mountains adjacent to the playa. These activities would loosen soils in these areas, potentially contributing to sediment deposition on the playa from runoff and wind. These permitted projects would also be expected to have environmental mitigation measures in place to prevent or reduce erosion at and adjacent to the mines.

All alternatives analyzed in this document have the potential to contribute to cumulative impacts on playa sediments in the Assessment Area, but at varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D). However, all Event alternatives could incorporate the same mitigation and monitoring measures to reduce impacts on the playa, as described in **Appendix E**. Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 participant Event.

Under Alternative E, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Burning Man Event. The types of cumulative impacts on soils described under Alternative A (Proposed Action) would likely still occur, but the cumulative impact would likely decrease compared with other alternatives because of BLM management strategies and protection measures that would be applied. Over the long term, the cumulative impact would decrease as word of the Event closure spreads, and cumulative impacts would be more like those that occur during non-Event time periods.

#### **D.5.4 Visual Resources (Including Night Skies)**

The cumulative impacts analysis Assessment Area for visual resources, including night skies, encompasses the viewshed and key observation points (see **Appendix A** and **Table C-15** in **Appendix C**). **Table D-I** lists the past, present, and reasonably foreseeable future actions and the area associated with the actions. Visual resources at the Event site would be influenced by activities on BLM-administered land, because the BLM administers the NCA where the Event would occur. Visual resources beyond the Event site would be influenced by activities on mostly private, state, county, and other lands.

Past, present, and reasonably foreseeable future actions that have affected or can affect visual resources in the cumulative impacts analysis Assessment Area involve recreation; communications, energy, and minerals projects; transportation; land management plans; land transfers and designations; wildfire; and water management. These actions alter the characteristic landscape by changing vegetation and landforms and introducing artificial elements into the natural landscape. Depending on the location and scale of the actions, the characteristic landscape of an area can be degraded. Some of these involve highly noticeable changes to the characteristic landscape from energy, minerals, and transportation projects. Others involve temporary or less noticeable changes to the characteristic environment from certain recreation activities and resource conservation.

Under all alternatives, all BLM-administered lands would continue to be managed in a manner that would maintain the characteristic landscape. When combined with past, present, and reasonably foreseeable future actions, the Event alternatives could contribute to cumulative impacts on visual resources from the release of solid waste in the form of litter. The cumulative impacts would increase as the Event participant numbers increase. Alternative E would have similar cumulative impacts, but to a lesser extent because there would eventually be no Event. The cumulative impacts, however, are highly influenced by the likelihood of litter associated with past, present, and reasonably foreseeable future actions, which is unknown.

#### **D.5.5 Water Resources**

The Assessment Area for cumulative effects is the same as the Assessment Area for direct and indirect effects (see **Appendix A** and **Table C-16 in Appendix C**). Past, present, and reasonably foreseeable future actions have affected, and will continue to affect, water quality in the Assessment Area. They include recreation in the NCA (e.g., camping and recreational spring use), geothermal development, livestock grazing and wild horse and burro management, transportation rights-of-way and other development, wildlife habitat improvement projects, land use planning, and the effects of climate change. Reasonably foreseeable future actions are summarized in **Table D-1**, as well as in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012).

Past, present, and reasonably foreseeable future impacts on water quality have occurred from recreation in the NCA and from impacts from surrounding BLM-administered lands. There are developed and informal campsites at several area hot springs. Informal spring modifications include small-scale impoundments to create soaking “tubs,” wooden benches and “docks” extending into soaking pools, and informal pathways along pools and spring brooks. These activities have affected water quality at these locations. Though the intensity of these impacts is generally low, such impacts are widespread and affect many hot springs in the Assessment Area.

Hydrological modifications, including surface water diversions, channel modifications, and dams or impoundments (e.g., Mud Meadows Reservoir in Soldier Meadows), have affected water resources in the Assessment Area. These features have been installed for a variety of reasons, including to supply agricultural water and to support livestock grazing operations. These modifications have created functional changes at springs by decreasing or diverting water.

Geothermal developments have, in cases, reduced groundwater availability. This has occurred at the Jersey Valley Geothermal Plant in Pershing County. Other types of development, including for



transportation rights-of-ways and mineral extraction, have also affected water quality from construction activities that result in erosion or groundwater contamination.

Domestic livestock and wild horses and burros tend to congregate in riparian areas for water and succulent vegetation. Spring use by these animals has been linked to sediment loads in spring systems (Sada et al. 2001; Abele 2011). As a result, where these animals are not excluded from these systems, the quantity and quality of water resources has been reduced.

Impacts on water quality have occurred and will occur from restoration activities and resource planning. For example, the Water Sources and Riparian Enhancement projects in the BLM Twin Peaks livestock grazing allotment will conduct restoration at riparian areas degraded by historic livestock grazing. The Winnemucca District RMP and Vegetation Management Plan, as well as the PLPT Pyramid Lake Wetland Program, Nonpoint Source Management Plan, and Water Quality Control Plan, have formalized resource protection measures and guided restoration projects that protect and enhance water quality.

Climate change may affect water resources in the Assessment Area, though impacts from climate change are not known with certainty. Spring systems in Nevada are supplied mainly through aquifers, which are fed by snowmelt and precipitation in the mountains (Abele 2011). Groundwater recharge is spatially and temporally variable and can be affected by air temperature and precipitation, among other factors (Flint et al. 2004). Climate change is expected to alter temperature and precipitation (IPCC 2018). This may affect groundwater recharge or discharge and thus alter water quantity in springs habitat.

All alternatives analyzed have the potential to contribute to cumulative impacts on water quality in the Assessment Area, but they would do so to varying degrees. Alternatives incorporating an increase in the Event size (Alternative A and Alternative C) would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size (Alternative B), and to a lesser extent, keep the Event at its current size (Alternative D). However, all Event alternatives would incorporate the same monitoring measures, as described in **Appendix E**, to quantify impacts on water quality and potentially create future actions to reduce those impacts. Further, incrementally increasing the Event size (i.e., from 80,000 to 100,000 bodies on the playa) would likely result in some additional impacts, compared with maintaining the Event size limit at 80,000 bodies on the playa; however, the relative contribution from the extra 20,000 bodies on the playa would likely be minor compared with the level of impacts from the 80,000 participant Event.

Cumulative impacts under Alternative E would be as identified under Soils.

## **D.6 SOCIAL VALUES AND ECONOMICS**

### **D.6.1 Economics**

Past, present, and reasonably foreseeable future actions in the Assessment Area (see **Appendix A** and **Table C-17** in **Appendix C**) that affect similar sectors of the economy as Alternative A (Proposed Action) include recreation in the NCA; communication, mineral, and energy development projects; and roadway infrastructure projects, which are listed in **Table D-1**. They also include regional tourism events, such as Hot August Nights in Reno and Rib Fest. These activities have direct impacts on local economies and have indirect impacts on the sustainability of economic activity in the region so that other activities continue to function and be served.

Under all Event alternatives, the Event would continue to contribute to local economic contributions, supporting related industries. Depending on the timing of the proposed construction and development activities in relation to the Event, there is the potential for additional strains on community services, including but not limited to traffic control and law enforcement, and emergency medical response. Due to the short-term nature of the Event, strains on services would be temporary and short term if they occurred. The potential for a strain on services would be greatest under Alternative A (Proposed Action) due to the highest level of services demanded under this alternative. The Event occurs at a time frame when other tourist activities are occurring in the area, including Rib Fest and Hot August Nights. While the tourist infrastructure supports the current Event size, increased demand under Alternative A (Proposed Action) and Alternative C may result in an increased potential for hotels in the area to be booked to capacity and an increase in room rates. Under other alternatives, impacts would be similar (Alternative D) or reduced (Alternative B).

Under the no permit/action alternative (Alternative E), if an unpermitted event occurred, it would contribute some of the same economic contributions as Alternative A (Proposed Action) to the cumulative impact Assessment Area. Because the event would be expected to have fewer participants than Alternative A (Proposed Action) in the long term, the incremental contribution would be reduced compared with Alternative A (Proposed Action).

#### **D.6.2 Environmental Justice**

Past and present actions in the Assessment Area (see **Appendix A** and **Table C-18** in **Appendix C**) that have affected identified low-income and minority populations include past Events and other recreation in the NCA. It is unlikely that dispersed recreation would result in effects that would disproportionately affect these populations. Reasonably foreseeable future actions that could affect identified low-income and minority populations include communication, energy, and minerals projects as defined in **Table D-I**. Depending on the timing of construction and development of projects, there is the potential for impacts on traffic in these communities. Similarly, transportation projects from **Table D-I** could contribute to traffic congestion in area roadways and may further affect area traffic. In the long term, projects could reduce congestion in certain areas once they are completed.

The Events would contribute to cumulative effects on identified minority and low-income populations primarily due to an increase in waste and traffic. It is anticipated that proposed development activities would include mitigation to ensure that the effects of these actions would be minimized. It is unlikely that these actions would combine with the Events to result in disproportionate cumulative effects on minority populations and cause environmental justice impacts.

If a large, informal gathering occurred at the playa in the absence of a formal SRP under Alternative E (No Permit/Event Alternative), then contributions to cumulative environmental justice effects would need to be offset by BLM management and enforcement.

#### **D.6.3 Social Values**

Past and present actions in the Assessment Area (see **Appendix A** and **Table C-19** in **Appendix C**) that have affected local communities, the attendee social setting, and nonmarket values include past Events and other recreation in the NCA. Reasonably foreseeable future actions that could affect the social setting and nonmarket values include communication, energy, minerals, and transportation projects, as defined in **Table D-I**.

The Events would contribute to cumulative effects due to a potential for increased traffic, noise, and waste resulting in short-term disruptions to the community setting. Depending on the timing of construction and development of projects, there is potential for Burning Man-related impacts on traffic and construction activities to result in greater impacts on the local social setting. In addition, development projects have the potential to result in additive impacts on the natural setting on the playa, resulting in a decreased value of nonmarket services provided. Mitigation measures and best management practices employed in projects would support decreased levels of impacts. Impacts under all Event alternatives would be limited to the Closure Order period, with the peak contribution to cumulative impacts in the weeks surrounding the Event. The potential for contributions to cumulative impacts would be greatest under Alternative A (Proposed Action), due to the increased level of impacts from increased bodies on the playa under this alternative.

If a large, informal gathering occurred at the playa in the absence of a formal SRP under Alternative E, then contributions to cumulative effects would need to be offset by BLM management and enforcement.

## **D.7 SPECIAL DESIGNATIONS**

### **D.7.1 National Conservation Areas**

The Black Rock Desert-High Rock Canyon Emigrant Trails NCA was established to conserve, protect, and enhance the historic, cultural, paleontological, scenic, scientific, biological, educational, wildlife, riparian, wilderness, endangered species, and recreational values and resources associated with the Applegate-Lassen and Nobles Trails corridors. For an analysis of cumulative impacts from the Event on these values, refer to the other resources described under sections **D.2.3**, Threatened and Endangered Species; **D.2.5**, Wetlands and Riparian Areas; **D.2.6**, Wildlife; **D.3.1**, Cultural (Including National Historic Trails); **D.3.3**, Paleontology; **D.5.4**, Visual Resources (Including Night Skies); **D.6**, Social Values and Economics; and **D.7.2**, Wilderness.

### **D.7.2 Wilderness**

Overall, wilderness in the Assessment Area (see **Appendix A** and **Table C-21** in **Appendix C**) has maintained a high degree of naturalness since their designation in the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000. There have been no large-scale or incompatible land uses with long-lasting or irreversible impacts on naturalness in the wilderness areas. Past and present actions that could affect wilderness areas include dispersed recreation in the NCA, the BLM's Winnemucca District Vegetation Management Plan, and the BLM's Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan.

As the population of cities and communities near the Event grows, the demand for recreation-related opportunities will also grow. Foreseeable future actions include more people seeking recreational activities, which will affect the ability for visitors to find solitude throughout the wilderness areas. Motorized and mechanized transport is prohibited in all wilderness areas, but the risk of unauthorized use will continue to rise with more people visiting the vicinity to attend the Event.

Alternative A (Proposed Action) would contribute to cumulative effects on wilderness areas related to increased numbers of visitors outside of the Event who are introduced to the area by the Event. The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Vegetation management activities would serve to improve ecosystem composition, structure, and diversity, which would improve the overall apparent naturalness of the area. In the short

term, however, apparent naturalness could be affected due to an increase in human presence applying any treatments. BLM's Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan emphasizes the need to maintain and enhance wilderness qualities in the areas.

The cumulative effects of the 50,000-person maximum population and the 80,000-person maximum population alternatives would be similar to Alternative A (Proposed Action). The incremental contribution of a smaller event to cumulative effects would be reduced compared with Alternative A (Proposed Action).

BLM regulations would remain in effect even if the event were not officially permitted and stipulated as in Alternative E. If a substitute event occurred on lands not managed by the BLM, impacts on wilderness would depend on the proximity of any wilderness areas to a substitute event.

### **D.7.3 Wilderness Study Areas**

In addition to Alternative A (Proposed Action), other past and present actions in the Assessment Area (see **Appendix A** and **Table C-22** in **Appendix C**) that could affect WSAs include dispersed recreation in the NCA and the BLM's Winnemucca District Vegetation Management Plan.

As the population of cities and communities near the Event grows, the demand for recreation-related opportunities will also grow. Foreseeable future actions include more people seeking recreational activities, which will affect the ability for visitors to find solitude throughout the WSAs.

Alternative A (Proposed Action) would contribute to cumulative effects on WSAs related to increased numbers of visitors outside of the Event who are introduced to the area by the Event. The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Vegetation management activities would serve to improve ecosystem composition, structure, and diversity, which would improve the overall apparent naturalness of the area. In the short term, however, apparent naturalness could be affected due to an increase in human presence applying any treatments.

The cumulative effects of the 50,000-person maximum and the 80,000-person maximum alternatives would be similar to Alternative A (Proposed Action). The incremental contribution of a smaller event to cumulative effects would be reduced compared with Alternative A (Proposed Action). This incremental contribution would be minimal and would not combine with dispersed recreation to create cumulative impacts.

Cumulative impacts under Alternative E are the same as discussed under Wilderness.

## **D.8 VISITOR USES**

### **D.8.1 Recreation**

Cumulative impacts on recreation opportunities for Event and non-Event visitors would be from actions and circumstances within and outside the BLM's ability to manage. These impacts would enhance or diminish the quality of the recreational setting or experience, change the type or accessibility of recreation, or cause physical displacement of visitors. Past, present, and reasonably foreseeable future actions listed in **Table D-I** with the potential to cumulatively affect recreation in the Assessment Area

(see **Appendix A** and **Table C-23** in **Appendix C**) are past Events, previous wilderness designations, previous and proposed transportation infrastructure improvements, climate change, and wildfire.

Past Events would cumulatively affect recreation by establishing an expectation among Event and non-Event visitors that there would be a Burning Man Event. This expectation likely deters some non-Event visitors from visiting the playa during the Event. Alternative A (Proposed Action) and Alternatives C and D could maintain and increase the desire among non-Event visitors to avoid the Assessment Area during the Closure Order period. A smaller Event under Alternative B may result in slightly more non-Event visitors recreating in the Assessment Area during the Event. For Event attendees, Alternative A (Proposed Action) and Alternatives C and D would align with existing expectations, although a larger Event under Alternatives A and C may be less desirable for some previous Event attendees. Alternatives B and E would be inconsistent with Event participant expectations.

The wilderness management plan for the Black Rock Desert has designated ten wilderness areas associated with the Black Rock Desert-High Rock Canyon Emigrant Trails NCA. These areas support nonmotorized dispersed forms of recreation in a remote setting. Activity, dust, and lights from the Event alternatives, particularly Alternative A (Proposed Action) and Alternative C, would cumulatively affect recreation opportunities in wilderness areas by conflicting with visitors' expectations and opportunities for solitude.

Proposed transportation improvements would maintain or increase visitor access to the Assessment Area. Highway maintenance projects support the free flow of traffic to and from the Event; however, combined with increasing traffic along Interstate 80 associated with the Tahoe-Reno Industrial Center, congestion may lead to decreased access, especially with larger Event populations under Alternative A (Proposed Action) and Alternative C. Over time, roadway surface deterioration on CR 34 from Event and non-Event traffic may outpace Washoe County's ability to adequately maintain the roadway surface. Deteriorated surface conditions could produce unsafe travel conditions for some vehicles, resulting in an overall decrease in the level of access in the Assessment Area. Additional funding from BRC to Washoe County for maintaining CR 34 would reduce the potential for cumulative impacts on recreation access from roadway deterioration. Under Alternatives B and E, there would be less traffic and less potential for cumulative effects on roadways and access.

Increasing temperatures and extreme weather events associated with climate change (IPCC 2018) would cumulatively affect the quality of Event- and non-Event-related recreation in the Assessment Area. Hotter temperatures could eliminate the viability of some activities during the summer months. Extreme precipitation events would inundate the playa and temporarily displace recreation activities, including the Burning Man Event.

The increasing threat of larger, more intense wildfires would cumulatively affect the quality of recreation because of reduced air quality from smoke. Fires could also temporarily or permanently displace non-Event visitors from portions of the Assessment Area. Wildfire could prevent Event visitors from entering or leaving the Event. Wildfire smoke would contribute to poor air quality for Event visitors. Combined with high levels of airborne playa materials, particularly under Alternative A (Proposed Action) and Alternatives C and D, wildfire smoke would cumulatively decrease the quality of the Event experience. Smoke combined with dust would preclude recreation opportunities for Event and non-Event visitors with respiratory issues, including children and the elderly.

### D.8.2 Transportation and Traffic

Cumulative impacts on traffic and transportation would be the result of past, present, and reasonably foreseeable future actions, such as increasing residential and commercial development with associated new or existing roadway infrastructure, and the increasing popularity of the NCA for recreation. The potential for wildfire and other environmental factors during the Closure Order period could also cumulatively change the level of traffic in the Assessment Area (see **Appendix A** and **Table C-24** in **Appendix C**).

The playa at Black Rock Desert is a popular location for dispersed recreation in Nevada, including hunting, camping, off-road and off-highway vehicle usage, rocketeering, and other outdoor activities. Gerlach serves as the main point of entry to the playa, and SR 447 serves as the main connector to the region's population centers. As the populations of Reno and Fernley grow, in part because of employment demand at the Tahoe-Reno Industrial Center, traffic volume on SR 447 and connected roadways, such as Interstate 80, is likely to increase.

All alternatives are likely to result in increased traffic conditions in urban centers. During the peak arrival and departure periods for the Event, Reno, Fernley, and other urban centers near the Event are likely to have higher traffic volumes and longer commute times for urban dwellers. Higher traffic densities can increase the potential for vehicle collisions and moving violations. Increased usage of SR 447 and its connected roadways is likely to result in accelerated degradation over time.

Environmental factors could also affect the transportation conditions surrounding the alternatives. In the summer of 2017, the Tohakum 2 wildfire burned 94,221 acres, and the Twin Buttes fire burned 562 acres. Both wildfires affected traffic for Event attendees. Higher temperatures and drier conditions increase the potential for wildfires in the region, with associated impacts on transportation.

The timing and management of infrastructure expansion and development could affect transportation conditions during the Event period. SR 445 at Pyramid Highway is undergoing improvements to widen and expand its roadways. Highway/US 395 Connector – Package I is a proposed development in 2018 to widen Pyramid Highway from four lanes to six lanes. Construction during the closure period could result in increased congestion for Event participants, non-Event populations, and urban commuters in the Reno area. Upon completion, these improvements would improve roadway capacity and reduce the potential for congestion associated with the Event.

Cumulative impacts would be greatest under Alternative A (Proposed Action) and Alternative C because of the proposed Event population of 100,000 and associated traffic volumes from Event participants, vendors, staff, and volunteers. In comparison to those alternatives, impacts would be less under Alternatives B and D. Cumulative impacts under Alternative E would occur in the short term but would be expected to diminish over time.



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# Appendix E

## Mitigation and Monitoring

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# Appendix E. Mitigation and Monitoring

## E.1 MITIGATION MEASURES

All federal actions undertaken as a result of Alternatives A–D are subject to approval by the BLM prior to implementation. Mitigation measures attached to the approved SRP would ensure the protection of environmental resources and public health and safety. Implementation of recommended mitigation measures would ensure the prevention of unnecessary and undue degradation of public lands. As discussed in **Chapters 2 and 3** and outlined in **Appendix B**, SRP stipulations are applied to the SRP each year and would be applied as appropriate for each ensuing SRP. Mitigation measures that the BLM adopts would be implemented as stipulations in the SRP.

In addition, specific mitigation measures have been developed for this EIS based on public comments and the BLM's internal review of the Proposed Action and alternatives analysis. **Table E-1** lists proposed mitigation measures by resource area for the Burning Man SRP EIS. Implementation of the proposed mitigation measures would be at the discretion of the BLM Authorized Officer and may not apply to all Event alternatives. The BLM audit team would be present during the Event to ensure all applicable SRP stipulations are being implemented. Also, see **Chapter 3**, which further analyzes proposed mitigation measures relative to the potential impacts of the proposed alternatives for each resource and use.

**Table E-1**  
**Proposed Mitigation Measures**

Resource Area	Mitigation Measure Number	Mitigation Measure
Migratory Birds, Wildlife, Special Status Species, and Threatened and Endangered Species	SPEC-1	See Air Quality, below, for proposed particulate matter reduction measures.
	SPEC-2	Require BRC to reduce the amount of light pollution by banning the use of high-energy lasers and search lights being pointed straight up, and requiring shields on sources of light at night where feasible.
	SPEC-3	BRC must educate and discourage participants from disturbing, harassing, feeding, or watering wildlife.
	SPEC-4	BRC must educate and encourage participants to report wildlife if found at the Event.
	SPEC-5	BRC will notify the BLM Authorized Officer and nearest USFWS Law Enforcement office (916-414-6660) within 24 hours, if the operator discovers a dead or injured raptor species in the Closure Area. If BRC is unable to contact the USFWS Law Enforcement office, BRC must contact the nearest USFWS Ecological Services office (775-861-6300) and/or NDOW office (775-688-1506 Reno Office or 775-623-6565 Winnemucca Office). A copy of the notification must be sent to the BLM.
	SPEC-6	Review and ensure conformance with the required design features listed in the Nevada and Northeastern California Greater Sage-Grouse Approved RMP Amendment (September 2015 or latest amendment).
Vegetation	VEG-1	BRC will provide noxious weed and fire education safety information to participants.

Resource Area	Mitigation Measure Number	Mitigation Measure
Wetlands and Riparian Areas	WET-1	BRC must ascertain with the ACOE if a Clean Water Act Section 404, Nationwide Permit 33, and/or Nationwide Permit 18 is needed. If so, the proponent must obtain those permits and provide copies to the BLM 30 calendar days before the start of the Closure Order.
Cultural Resources (Including NHTs)	CULT-1	BRC must educate participants of the Nobles Trail through production and dissemination of pamphlets, showing trail maps on the front and trail facts on the reverse to be distributed at the Event.
	CULT-2	BRC will coordinate with the BLM to ensure that the staging area is at least 200 feet from the playa edge buffer zone. This must be done 30 days before the Closure Order goes into effect. This is intended to protect potential undiscovered cultural and paleontological resources that may be found in this area.
	CULT-3	Through the website, social media, and other means approved by the BLM, BRC will inform staff volunteers, vendors and contractors, and Event participants that collection, excavation, or vandalism of historical/archeological artifacts or sites is illegal.
	CULT-4	Should BRC discover an archeological resource, it must stop all activities in the discovery vicinity, notify the BLM Authorized Officer, and protect the site until Event completion or until notified otherwise by the BLM Authorized Officer.
Native American Religious Concerns	NAT-1	Through consultation with the PLPT, BRC will educate participants via its website, social media, and other means approved by the BLM, on issues of concern to the PLPT.
	NAT-2	To reduce litter and trash in the PLPT Reservation and along SR 447, the proponent must place a sufficient number of dumpsters in the city and along Gate Road before its intersection with Highway 34. This is intended to reduce adverse impacts on the PLPT Reservation and SR 447. These dumpsters must be placed by 12:01 a.m. on the Friday before Labor Day and must be kept in place until Exodus is completed. To prevent overflow, BRC will be required to maintain the dumpsters during the time they are in place.
Paleontology	PAL-1	See Cultural Resources, above.
Public Health and Safety	PHS-1	At all portals of entry into the Event, beginning 14 days before Labor Day, BRC will be required to contract a BLM-approved, independent, third-party, private security to screen vehicles and participants, vendors and contractors, and staff and volunteers entering the Event. Third-party, private security will report Closure Order violations, to include weapons and illegal drugs, directly to law enforcement as violations are observed so that law enforcement can respond. Third-party, private security will provide an Event summary report to the BLM within 30 days of the end of the Event.
	PHS-2	The BLM will contract a sexual assault response team beginning 7 days prior to Labor Day through the Tuesday following Labor Day to better facilitate investigations and prosecutions of sexual assaults on public lands. BRC will compensate the government for this expense through cost recovery.
	PHS-3	BRC will be required to implement physical perimeter barriers (e.g., Jersey barriers and K-rail fence) to reduce the risk of unauthorized entry to the Event. This will be done concurrent with city and perimeter fence construction.
	PHS-4	BRC will facilitate all structures over 10 feet to be inspected by qualified and Nevada-certified building inspectors prior to occupancy.

Resource Area	Mitigation Measure Number	Mitigation Measure
Public Health and Safety <i>(continued)</i>	PHS-5	During the Closure Order, BRC will minimize disruptions of services to the PLPT and local communities for art installation arrivals and departures.
	PHS-6	During pre- and post-Event time frames within the Closure Order, BRC will contract an ambulance service for emergency services.
Waste, Hazardous or Solid	WHS-1	See dumpster requirement under Native American Religious Concerns.
	WHS-2	BRC will be required to continue its public outreach efforts involving leaking vehicles via its website and other means approved by the BLM.
	WHS-3	BRC will encourage vehicle operators to inspect and repair their vehicles before arriving at the Event.
	WHS-4	BRC will require all participants and staff on the playa to clean up and dispose of all fluids and materials by the appropriate means. The BLM will monitor disposals.
	WHS-5	BRC will educate participants on safe hauling methods, such as how to properly tie down materials and safe trailer hauling.
	WHS-6	The proponent will educate participants, vendors and contractors, and staff and volunteers on all wastewater (e.g., grey and black) management from motor homes, campers, and service trucks.
	WHS-7	BRC will increase its environmental compliance teams commensurate with the population size; teams will begin operating during build week and continue through Exodus.
	WHS-8	To prevent unnecessary and undue degradation, for BRC's fuel storage facilities, BRC will create a spill prevention control and containment plan in accordance with 40 CFR 112, or if determined impracticable, a written plan in accordance with 40 CFR 109 that includes a written commitment of manpower, and equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful or considered as a hazardous waste.
Air Quality	AQ-1	BRC must develop solutions to reduce dust events that are twice the NAAQS for PM <sub>2.5</sub> and PM <sub>10</sub> .
	AQ-2	BRC, through the Black Rock Rangers or other appropriate group, must maintain speed limits on all motorized vehicles inside the city, except for law enforcement and emergency vehicles.
	AQ-3	BRC should consider rerouting Gate Road to an area north of Black Rock City. Given general wind directions, this has the potential to reduce the amount of PM <sub>2.5</sub> and PM <sub>10</sub> reaching the city.
	AQ-4	BRC must provide written notice to participants, staff and volunteers, and vendors and contractors of air quality health risks prior to the Event and upon arrival.
	AQ-5	The BLM will provide employees and contractors N95 respirators or other equipment to protect against air quality health risks; costs will be recouped through costs recovery.
Noise	NOISE-1	No recommended mitigation measures
Soils	SOIL-1	BRC must clean the playa such that all post-Event inspection points have less than 1 square foot per acre of debris/litter.
	SOIL-2	BRC must require burn barrels for camp fires, which would be elevated at least 10 inches to prevent burn scarring.
	SOIL-3	BRC will restore the playa contours by the end of the Closure Order.

Resource Area	Mitigation Measure Number	Mitigation Measure
Visual Resources	VIS-1	See dumpster requirement under Native American Religious Concerns, above.
	VIS-2	See lighting mitigations under Wildlife, above.
	VIS-3	BRC and the BLM must implement shielding interventions on mast-mounted work lights.
Water Resources	WTR-1	No recommended mitigation measures
Economics	ECON-1	BRC will negotiate with Washoe County to provide cost recovery for maintenance of CR 34 associated with Event traffic.
	ECON-2	Refer to mitigation measures reported in other resource and resource use sections.
Environmental Justice	EJ-1	Refer to mitigation measures reported in other resource and resource use sections.
Social Values	SV-1	Refer to mitigation measures reported in other resource and resource use sections.
National Conservation Areas	NCA-1	BRC must post a reclamation bond sufficient to remove large art installations and theme camps left behind after Exodus. This bond is intended to remove the risk of unnecessary or undue degradation to the NCA and defray the costs to taxpayers.
	NCA-2	The BLM will provide permittees with car passes for easy transit across the playa.
Wilderness	WILD-1	BRC will inform all pilots of flight restrictions associated with wilderness areas.
Wilderness Study Areas	WSA-1	See Wilderness requirements, above.
Recreation	REC-1	Vendor and film permit applications associated with the Event must be submitted 194 calendar days before Labor Day. The costs of BLM employee labor will be recouped via cost recovery from BRC.
	REC-2	The proponent will submit to the BLM and Pershing County its Final Operating Plan for each year's Event at least 45 calendar days before the first Closure Order begins for that year's Event.
Transportation and Traffic	TRAN-1	BRC will issue no more than 35,000 vehicle passes. This number includes all participants, BRC staff and volunteers, and BRC contractors. The intent of this measure is to minimize traffic impacts on the surrounding roads and communities.
	TRAN-2	BRC will contract with a third-party ticketing agency to report directly to the BLM the number of vehicles entering the Closure Area under a vehicle pass.

## E.2 RECOMMENDED MONITORING

In conjunction with any approved SRP, BRC and the BLM, as applicable, would commit to the recommended monitoring in **Table E-2**. The purpose of monitoring would be to identify and prevent impacts from the Burning Man Event SRP. The BLM audit team would report on the effectiveness of BRC's operating plan and SRP stipulations and suggest changes as needed. If BRC monitoring requirements are not met, increased BLM staffing would be required, and the costs of BLM employee labor would be recouped via cost recovery from the proponent.

**Table E-2**  
**Recommended Monitoring**

<b>Resource Area</b>	<b>Mitigation Measure Number</b>	<b>Recommended Monitoring</b>
Migratory Birds, Wildlife, Special Status Species, and Threatened and Endangered Species	SPEC-1	BRC will monitor trash fence effectiveness during the Closure Order.
	SPEC-2	BRC will monitor the Closure Area for loose debris during the Closure Order.
	SPEC-3	The BLM or BLM-approved contractor will monitor dust aerosols during the Closure Order. The costs of BLM employee and contractor labor will be recouped via cost recovery from the proponent.
	SPEC-4	See Wetlands and Riparian Areas for recommended hot springs monitoring.
Wetlands and Riparian Areas	WET-1	The BLM will monitor participant use of hot springs during the Closure Order.
Cultural (Including NHTs)	CULT-1	See Wetlands and Riparian Areas for recommended hot springs monitoring.
	CULT-2	If a prehistoric cultural resource is discovered within the Closure Area, the BLM will notify the PLPT Tribal Historic Preservation Officer and comply with The Native American Graves Protection and Repatriation Act as applicable.
Native American Religious Concerns	NAT-1	See Waste, Hazardous or Solid for recommended solid waste monitoring.
	NAT-2	The BLM will consult with the Pyramid Lake Paiute Tribe on litter and road damage within the reservation associated with the Event.
	NAT-3	See Wetlands and Riparian Areas for recommended hot springs monitoring.
Paleontology	PAL-1	See Wetlands and Riparian Areas for recommended hot springs monitoring.
Public Health and Safety	PHS-1	The BLM will monitor illegal substance activity for the full duration of the Closure Order using contracted resources if necessary. The costs of BLM employee and contracted labor will be recouped via cost recovery from the proponent.
	PHS-2	The BLM will monitor the effectiveness of perimeter barriers (e.g., Jersey Barriers or K-rail fencing) from the time of installation until removed.
	PHS-3	The BLM will monitor the effectiveness of building inspections by documenting incidents of structure collapse or other structure-related incidents resulting in injury.
	PHS-4	The BLM will monitor disruption of services in Gerlach via public complaints, Washoe County government personnel, federal government personnel, and other feedback.
	PHS-5	The BLM will monitor effectiveness of BRC's and the BLM's environmental and vending compliance programs.
	PHS-6	The BLM will monitor, through Pershing County reporting, crimes against people and missing juveniles at the Event site during the Closure Order.



<b>Resource Area</b>	<b>Mitigation Measure Number</b>	<b>Recommended Monitoring</b>
Waste, Hazardous or Solid	WHS-1	The BLM will review the effectiveness of the required dumpsters in reducing litter in and around the Event site, including SR 447, during the Closure Order for 7 days after Labor Day.
	WHS-2	In order to quantify and assess how much oil is deposited on the playa during the Event, the proponent must fund a third party to conduct an oil drip survey during the first year of the permit and midway through the permit. The sampling will be completed during the playa restoration period following the Event, and the results of the survey will be submitted by January 1 of the following year. The oil drip survey will include a scientifically valid methodology for sampling collection, verifiable results, discussion regarding the results, as well as actions to reduce the amount of hydrocarbon waste (i.e., oil) if it is shown to be increasing at the playa. The study design (methodology) will be coordinated with the BLM Hazardous Materials Specialist and approved by the BLM Authorized Officer prior to implementation. The BLM Authorized Officer will approve personnel conducting the study prior to study implementation. The proponent will be responsible for the costs associated with the monitoring program and any potential operational changes that may be necessary (as determined by the BLM) as indicated by the research results.
	WHS-3	BRC will monitor solid waste disposal. The BLM will audit the effectiveness, as necessary.
	WHS-4	The BLM will audit the effectiveness of roadside cleanup by BRC along SRs 445, 446, and 447 and CR 34 post-Event.
Air Quality	AQ-1	BLM law enforcement and BRC will monitor speed limits within the Closure Area during the Closure Order.
	AQ-2	The BLM or BLM-approved contractor will monitor dust aerosols during the Closure Order. The costs of BLM employee and contractor labor will be recouped via cost recovery from the proponent.
Noise	NOISE-1	There is no recommended monitoring for noise at this time.
Soils	SOIL-1	BRC will monitor fire pits in the Closure Area during the Closure Order.
	SOIL-2	The BLM will continue to monitor erosion of the playa.
Visual Resources	VIS-1	The BLM will implement monitoring measures of the Burning Man Event Night Skies Study (Craine and Craine 2017). The costs of BLM employee and contractor labor will be recouped via cost recovery from the proponent.
	VIS-2	See Air Quality for recommended dust monitoring.
	VIS-3	BRC will monitor mast-mounted lights in the Closure Area during the Closure Order.
	VIS-4	The BLM will monitor to ensure high-energy lasers and large lights (e.g., spotlights) are not used during the Event.
Water Resources	WTR-1	The BLM and BRC will monitor all wastewater spills in the Closure Area during the Closure Order.
	WTR-2	See Wastes, Hazardous or Solid for recommended oil drip monitoring.
	WTR-3	See Wetlands and Riparian Areas for recommended hot springs monitoring.
Economics	ECON-1	Refer to monitoring measures identified in other resource and resource use sections.
Environmental Justice	EJ-1	Refer to monitoring measures identified in other resource and resource use sections.

<b>Resource Area</b>	<b>Mitigation Measure Number</b>	<b>Recommended Monitoring</b>
Social Values	SV-1	Refer to monitoring measures identified in other resource and resource use sections.
National Conservation Areas	NCA-1	The BLM will monitor and assess recreation use studies every 5 years within the National Conservation Area.
	NCA-2	No additional monitoring is recommended outside of the monitoring identified in SRP stipulations.
Wilderness	WILD-1	No monitoring is recommended at this time.
Wilderness Study Areas	WSA-1	No monitoring is recommended at this time.
Recreation	REC-1	The BLM will work with BRC to develop an independent third-party population monitoring system for the Event. The purpose would be to ensure that the total number of attendees visiting the playa during the Closure Order is equal to or less than the maximum permitted population.
	REC-2	See Soils for recommended erosion monitoring.
	REC-3	The BLM will monitor and assess visitor use numbers, patterns, and activities, and determine if desired experiences are being achieved.
	REC-4	Through post-Event inspections, the BLM will assess the magnitude, distribution, and subsequent impacts of all debris generated by the Event.
	REC-5	See Visual Resources recommended mitigation for light at night.
	REC-6	The BLM will monitor vendor SRPs associated with the Event for the processing time and authorization schedule.
	REC-7	The BLM will monitor and assess recreation use studies every 5 years within the National Conservation Area.
Transportation and Traffic	TRAN-1	The BLM will install traffic counters at 12-Mile and Gate Road 14 days before Labor Day, and they will remain in operation until 7 days after Labor Day. The costs of the equipment and BLM employee labor will be recouped via cost recovery from the proponent.

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# Appendix F

## Visual Assessment of Historic Properties Forms

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# **Appendix F. Visual Assessment of Historic Properties Forms**

This Appendix compiles visual assessment forms that analyze impacts on the integrity of setting, feeling, and association of National Historic Trail segments from the Burning Man Event.

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# VISUAL ASSESSMENT OF HISTORIC PROPERTIES FORM

## Burning Man EIS

Resource Name and #: California Trail – Applegate-Lassen Route 26Pe3158 (CrNV-22-0822)  
Resource Eligibility (NRHP Criteria): Significant (D) Period(s) of Significance: ca. 1846-1868  
Date of Form: 9/24/2018 Recorder: Far Western Anthropological Research Group, Inc.

### TYPES OF EFFECT

View of Project? ☐ Yes ☒ No No Historic Properties Affected

### **Disturbance Type:**

☐ Materials Pit ☐ Access Road ☐ Veg. Clearing ☐ Fence  
☒ Other: Special Event and Temporary Closure

### VIEWSHED & LANDSCAPE CONTEXT (see attached map)

Breadth of Viewshed from Historic Property Affected: ☒ 90° ☐ 180° ☐ 270° ☐ 360°

Is resource part of larger cultural landscape? ☒ Yes ☐ No

The landscape is part of the resource's overall setting. This trail section is part of an extensive, linear cultural resource with other segments beyond the current project area.

### EXISTING INTEGRITY OF HISTORIC PROPERTY/ TRAIL

#### **Aspect of Historic Integrity**

*Setting – physical environment of a historic property*

#### **Existing Retention or Loss of Integrity**

This route traverses the northern edge of the Black Rock Desert, having separated from the primary California Trail near Rabbithole Spring to the east, and extending west towards Soldier Meadows and High Rock Canyon. This segment crosses the desert playa and was part of the southern route into Oregon opened by the Applegate brothers in 1846.

*Feeling – a property's expression of the aesthetic or historic sense of a particular period of time*

Although route morphology has been impacted by the natural environment, the segment's integrity of feeling remains intact as modern development and recreational activities have not altered the route's trajectory or original construction.

*Association – the direct link between an important historic event or person and a historic property*

The Applegate-Lassen Trail remains a major transportation route and holds historic importance related to transportation and migration. It served as an established route for immigrant travel west to California and Oregon during the 1800s. This remote section of the route in the Black Rock Desert lacks developed features and sees little recreational activity, thus retaining integrity of setting and association.

### INDIRECT EFFECT CRITERIA: DISTANCE, CONTRAST, OBSTRUCTION, AND FRAGMENTATION

Distance to Project: ☐ Foreground (< 2 mi.) ☐ Middleground (2-5 mi.) ☒ Background (> 5 mi.)

Expected Degree of Project Contrast: ☒ None ☐ Weak ☐ Moderate ☐ Strong

Describe Project features and how they will contrast with landscape (line, form, color, texture, scale, or space):

The project event's Public Closure Area is approximately 11.4 miles southwest of the Applegate-Lassen Trail. From the key observation point (KOP) along the trail there is no project contrast. Similarly, there would be no project contrast from the proposed project alternatives.

Level of Obstruction: (Obstruction of views of important landscape components):

☒ None ☐ Partial ☐ Full

Describe Project features and how they obstruct landscape components that contribute to the property's integrity/significance:

At this distance, the project event and proposed alternatives do not obstruct landscape components of the Applegate-Lassen Trail.

Level of Fragmentation (Open Space): ☒ Little or None ☐ Moderate ☐ Full Fragmentation

Describe how open space is/is not fragmented by Project elements:

The project event and proposed alternatives do not fragment open space from the Applegate-Lassen Trail.

### Photograph

Direction of view: Southwest

Date of photo: 8/31/2017

Description: View from the Applegate-Lassen Trail KOP facing toward the event. A faint layer of dust is visible on the horizon, a common occurrence on the playa.



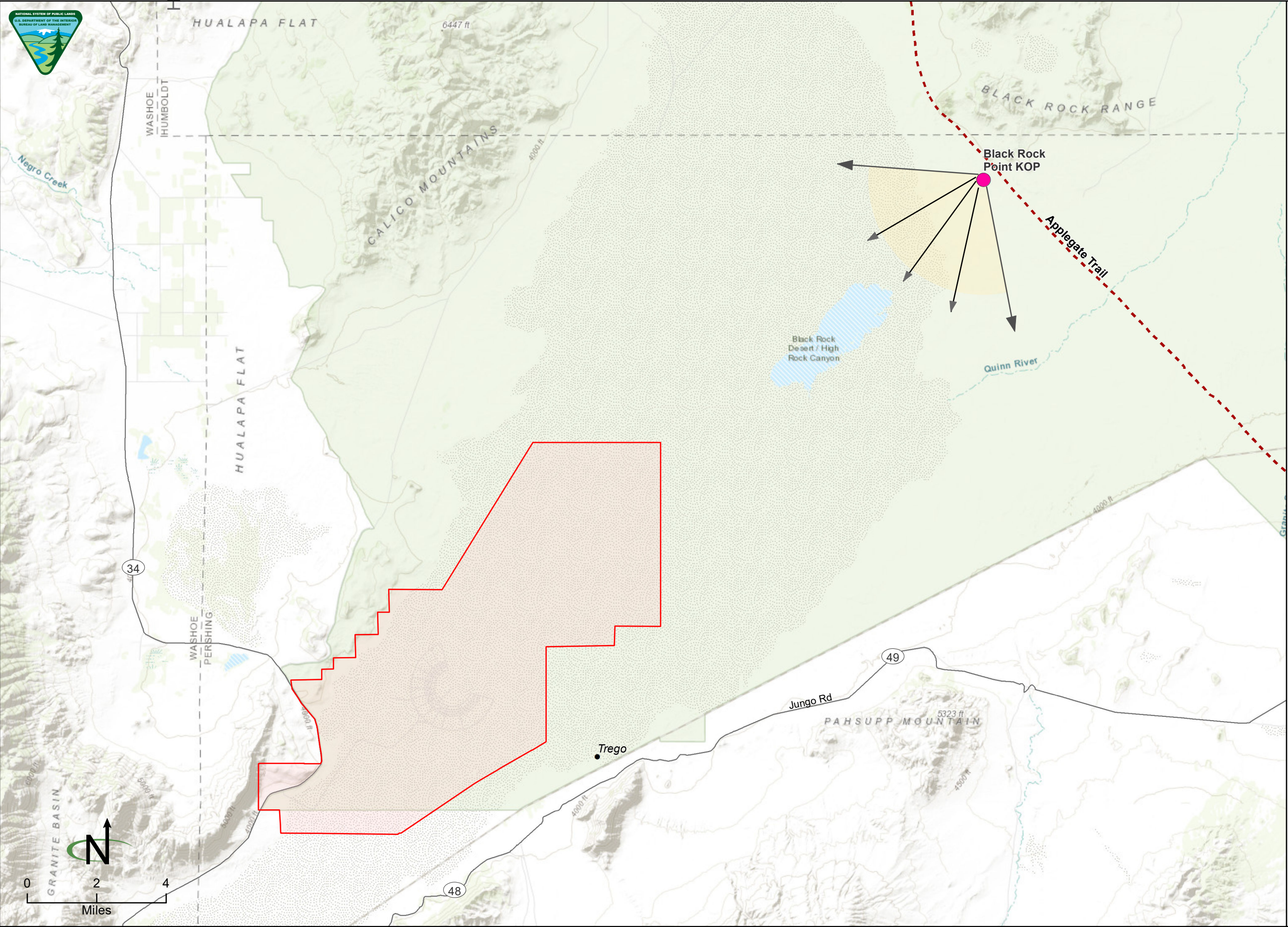
### LEVEL OF EFFECT

Effect Recommendation	Y/N
Adverse Effect 36 CFR 800.5(d)(2)	N
No Adverse Effect 36 CFR 800.5(b)	Y



**Adverse Effect:** An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

**No Adverse Effect:** The undertaking's effects do not meet the criteria of adverse effect (as found in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed so that adverse effects are avoided.





**Applegate-Lassen**

-  Alternatives analysis area
-  Key observation point (KOP)

Source: BLM GIS 2017  
November 2018  
Bureau of Land Management  
Humboldt River Field Office, NV  
No warranty is made by the BLM  
as to the accuracy, reliability, or  
completeness of these data for  
individual use or aggregate use  
with other data.





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# VISUAL ASSESSMENT OF HISTORIC PROPERTIES FORM

## Burning Man EIS

Resource Name and #: California Trail – Noble's Cutoff Route from Black Rock Springs to Granite Creek  
26Pe2301 (CrNV-02-4665)

Resource Eligibility (NRHP Criteria): Significant (A) Period(s) of Significance: ca. 1851-1868

Date of Form: 9/24/2018 Recorder: Far Western Anthropological Research Group, Inc.

### **TYPES OF EFFECT**

View of Project? ☒ Yes ☐ No Yes, the project has an adverse effect on the setting of the trail for the duration of the event.

### **Disturbance Type:**

☐ Materials Pit ☐ Access Road ☐ Veg. Clearing ☐ Fence  
☒ Other: Special Event and Temporary Closure

### **VIEWSHED & LANDSCAPE CONTEXT (see attached map)**

Breadth of Viewshed from Historic Property Affected: ☐ 90° ☐ 180° ☐ 270° ☒ 360°

Is resource part of larger cultural landscape? ☒ Yes ☐ No

The landscape is part of the resource's overall setting. This trail section is part of an extensive, linear cultural resource with other segments beyond the current project area.

### **EXISTING INTEGRITY OF HISTORIC PROPERTY/ TRAIL**

#### **Aspect of Historic Integrity**

*Setting – physical environment of a historic property*

#### **Existing Retention or Loss of Integrity**

This route of the Nobles Trail extends from its junction with the Applegate-Lassen Trail, near Black Rock Springs, to the southwest crossing the playa. The trail bisects the event footprint northeast-southwest before turning west towards Granite Creek, south of County Road 34. Portions of trail are visible on the playa surface but have mostly been destroyed by the volatile wetland environment and recreational activity.

*Feeling – a property's expression of the aesthetic or historic sense of a particular period of time*

Integrity of feeling for this route is diminished due to modern disturbances from recreational use. Although temporary, several annual events, including one large-scale event with over 50,000 people, are executed at this location.

*Association – the direct link between an important historic event or person and a historic property*

Heavy use of the playa has degraded the integrity of setting at this portion of the route. Lasting impacts from modern land use also weaken the association between historic-era emigrant travel and this segment of the Noble's Trail. However, the route retains historic importance related to transportation and migration, as it was an established transportation route for immigrants traveling west to California and Oregon during the 1800s.

### **INDIRECT EFFECT CRITERIA: DISTANCE, CONTRAST, OBSTRUCTION, AND FRAGMENTATION**

Distance to Project: ☒ Foreground (< 2 mi.) ☒ Middleground (2-5 mi.) ☐ Background (> 5 mi.)

Expected Degree of Project Contrast: ☐ None ☐ Weak ☐ Moderate ☒ Strong

Describe Project features and how they will contrast with landscape (line, form, color, texture, scale, or space):

The Black Rock to Granite Creek route of Noble's Trail passes through the center of the project event's footprint in the Public Closure Area. Key observation points (KOPs) along the Black Rock to Granite Creek route rests in the northwestern portion of the event area. Event activity directly affects the trail at this location, and almost completely obscures the surrounding view. Although temporary, the event features entirely interrupt the natural landscape and setting at this location.

The degree of visual contrast would diminish considerably under the proposed project alternative moving the event further north.

Level of Obstruction: (Obstruction of views of important landscape components):

☐ None ☐ Partial ☒ Full

Describe Project features and how they obstruct landscape components that contribute to the property's integrity/significance:

This trail at this location typically offers an unobstructed view of an empty playa with distant views of landscape features in the background. During the project event, this entire KOP is surrounded by temporary camps, staging areas, vehicles, and ancillary event activity. This obstruction creates an adverse effect to visual landscape components temporarily affecting all aspects of historic integrity.

The degree of obstruction would diminish considerably under the proposed project alternative moving the event further north.

Level of Fragmentation (Open Space): ☐ Little or None ☒ Moderate ☐ Full Fragmentation

Describe how open space is/is not fragmented by Project elements:

For the duration of the project event, the landscape pattern is completely altered resulting in fragmentation of open space. However, the temporary nature of the project event does not cause a permanent adverse effect.

This pattern of fragmentation is consistent throughout the proposed project alternatives.

### Photograph

Direction of view: West

Date of photo: 8/25/2018

Description: View from Photo Point 2 along the Black Rock to Granite Creek route in the west-central portion of the event footprint (detail of event up close).



### **LEVEL OF EFFECT**

<b>Effect Recommendation</b>	<b>Y/N</b>
Adverse Effect 36 CFR 800.5(d)(2)	Y
No Adverse Effect 36 CFR 800.5(b)	N

**Adverse Effect:** An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

**No Adverse Effect:** The undertaking's effects do not meet the criteria of adverse effect (as found in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed so that adverse effects are avoided.

### **ADDENDA PHOTOGRAPHS**

Direction of view: East

Date of photo: 8/25/2018

Description: View from Photo Point 1 along the Black Rock to Granite Creek route at the western portion of the event footprint. Event features visible on the playa in the background (demonstrating localized extent of the event).



Direction of view: West

Date of photo: 8/25/2018

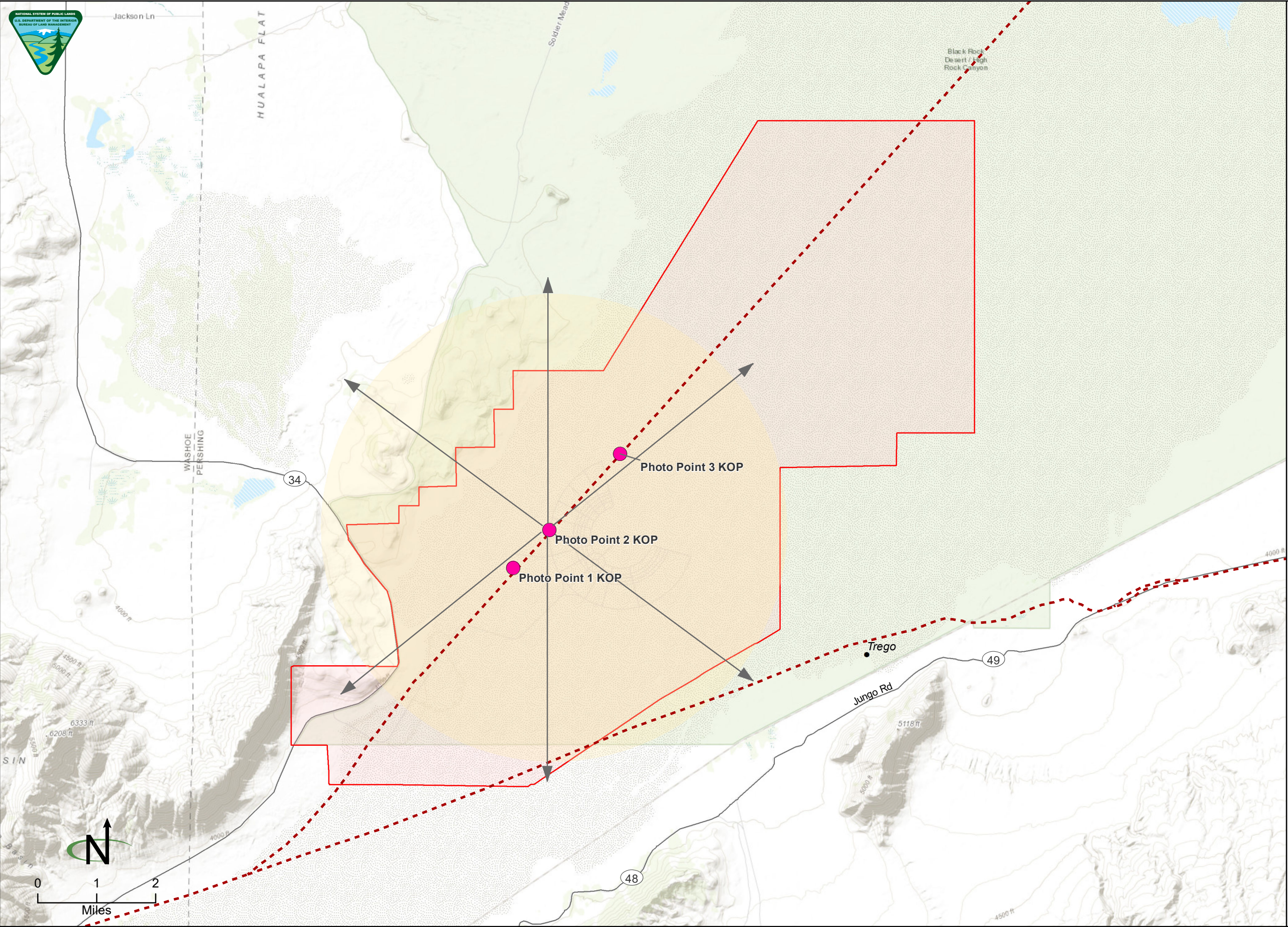
Description: View from Photo Point 3 along the Black Rock to Granite Creek route at the northern portion of the event footprint (demonstrating localized extent of the event).





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**Nobles - Black Rock to Granite Creek Route**

- Alternatives analysis area
- Key observation point (KOP)

Source: BLM GIS 2017  
November 2018  
Bureau of Land Management  
Humboldt River Field Office, NV  
No warranty is made by the BLM  
as to the accuracy, reliability, or  
completeness of these data for  
individual use or aggregate use  
with other data.





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# VISUAL ASSESSMENT OF HISTORIC PROPERTIES FORM

## Burning Man EIS

Resource Name and #: California Trail – Noble's Cutoff Route from Rabbithole Springs to Granite Creek  
26Pe2301 (CrNV-02-4665)

Resource Eligibility (NRHP Criteria): Significant (A) Period(s) of Significance: ca. 1856-1868

Date of Form: 9/24/2018 Recorder: Far Western Anthropological Research Group, Inc.

### **TYPES OF EFFECT**

View of Project? ☒ Yes ☐ No Yes, the project has an adverse effect on the setting of the trail for the duration of the event.

### **Disturbance Type:**

☐ Materials Pit ☐ Access Road ☐ Veg. Clearing ☐ Fence  
☒ Other: Special Event and Temporary Closure

### **VIEWSHED & LANDSCAPE CONTEXT (see attached map)**

Breadth of Viewshed from Historic Property Affected: ☐ 90° ☒ 180° ☐ 270° ☐ 360°

Is resource part of larger cultural landscape? ☒ Yes ☐ No

The landscape is part of the resource's overall setting. This trail section is part of an extensive, linear cultural resource with other segments beyond the current project area.

### **EXISTING INTEGRITY OF HISTORIC PROPERTY/ TRAIL**

#### **Aspect of Historic Integrity**

*Setting – physical environment of a historic property*

#### **Existing Retention or Loss of Integrity**

This route of Nobles Trail traverses the eastern edge of the Black Rock Desert from its junction with the Applegate-Lassen Trail, near Rabbithole Springs, to the southwest past Trego Hot Springs. South of Trego, the trail turns west and crosses the playa south of the event footprint before turning northwest towards Granite Creek south of County Road 34.

*Feeling – a property's expression of the aesthetic or historic sense of a particular period of time*

Where extant, the route is clearly visible on the ground and retains good integrity and morphology. However, integrity of feeling for portions of this trail segment have been diminished by modern recreation and road construction around Trego Hot Springs. Recreational activity near Trego occurs year-round, seeing both local and non-local traffic. Road construction overlying portions of the trail has obscured the route and diminishes historic appearance. Though not within the event footprint, ancillary road-networks surrounding the event bring heavy amounts of pedestrian and vehicle traffic.

*Association – the direct link between an important historic event or person and a historic property*

Modern maintained roads and a radio tower near Trego Hot Springs are the only permanent developments surrounding this trail segment. However, impacts from modern land use and recreation create lasting impacts to the surrounding environment. As such, this segment's integrity of association is variable across the landscape, but ultimately retains historic importance related to transportation and migration, as it was an established transportation route for immigrants traveling west to California and Oregon during the 1800s. Use of the route by ranchers and off-road vehicles does not impact the integrity of material and workmanship.

## **INDIRECT EFFECT CRITERIA: DISTANCE, CONTRAST, OBSTRUCTION, AND FRAGMENTATION**

Distance to Project:    ☒ Foreground (< 2 mi.)    ☐ Middleground (2-5 mi.)    ☐ Background (> 5 mi.)

Expected Degree of Project Contrast:    ☐ None    ☐ Weak    ☒ Moderate    ☐ Strong

Describe Project features and how they will contrast with landscape (line, form, color, texture, scale, or space):

The Rabbit-hole Springs to Granite Creek route of Noble's Trail passes through the vicinity of Coyote Dunes inside the southern boundary of the project event's Public Closure Area. From the Coyote Dunes key observation point (KOP), event activity is visible below the horizon in a linear position along the playa floor. Although temporary, the event features interrupt the natural landscape and setting at this distance.

The degree of visual contrast would diminish under the proposed project alternative moving the event further north.

Level of Obstruction: (Obstruction of views of important landscape components):

☐ None    ☒ Partial    ☐ Full

Describe Project features and how they obstruct landscape components that contribute to the property's integrity/significance:

The resource from this KOP typically offers an unobstructed view of an empty playa with the Granite Range in the background. During the project event, temporary camps and playa activity create an adverse effect to visual landscape components by obscuring the interface of the playa and landforms in the distant background.

The degree of obstruction would diminish under the proposed project alternative moving the event further north.

Level of Fragmentation (Open Space):    ☐ Little or None    ☒ Moderate    ☐ Full Fragmentation

Describe how open space is/is not fragmented by Project elements:

For the duration of the project event, the landscape pattern is altered resulting in fragmentation of open space. However, the temporary nature of the project event does not cause a permanent adverse effect.

This pattern of fragmentation is consistent throughout the proposed project alternatives.

### **Photograph**

Direction of view:    North

Date of photo:    8/27/2018

Description: View from Coyote Dunes at the south edge of the Public Closure Area. In this image, the event is clearly visible at a low profile below the horizon.



### **LEVEL OF EFFECT**

<b>Effect Recommendation</b>	<b>Y/N</b>	
Adverse Effect 36 CFR 800.5(d)(2)	Y	<b>Adverse Effect:</b> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.
No Adverse Effect 36 CFR 800.5(b)	N	<b>No Adverse Effect:</b> The undertaking's effects do not meet the criteria of adverse effect (as found in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed so that adverse effects are avoided.

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HUALAPA FLAT

Black Rock Desert / High Rock Canyon

### Nobles - Rabbithole to Granite Creek Route

- Alternatives analysis area
- Key observation point (KOP)

WASHOE  
PERSHING

34

PAHSUPP M

Nobles Trail

Trego

Jungo Rd

49

48



0 1.5 3  
Miles

Source: BLM GIS 2017  
November 2018  
Bureau of Land Management  
Humboldt River Field Office, NV  
No warranty is made by the BLM  
as to the accuracy, reliability, or  
completeness of these data for  
individual use or aggregate use  
with other data.





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# Appendix G

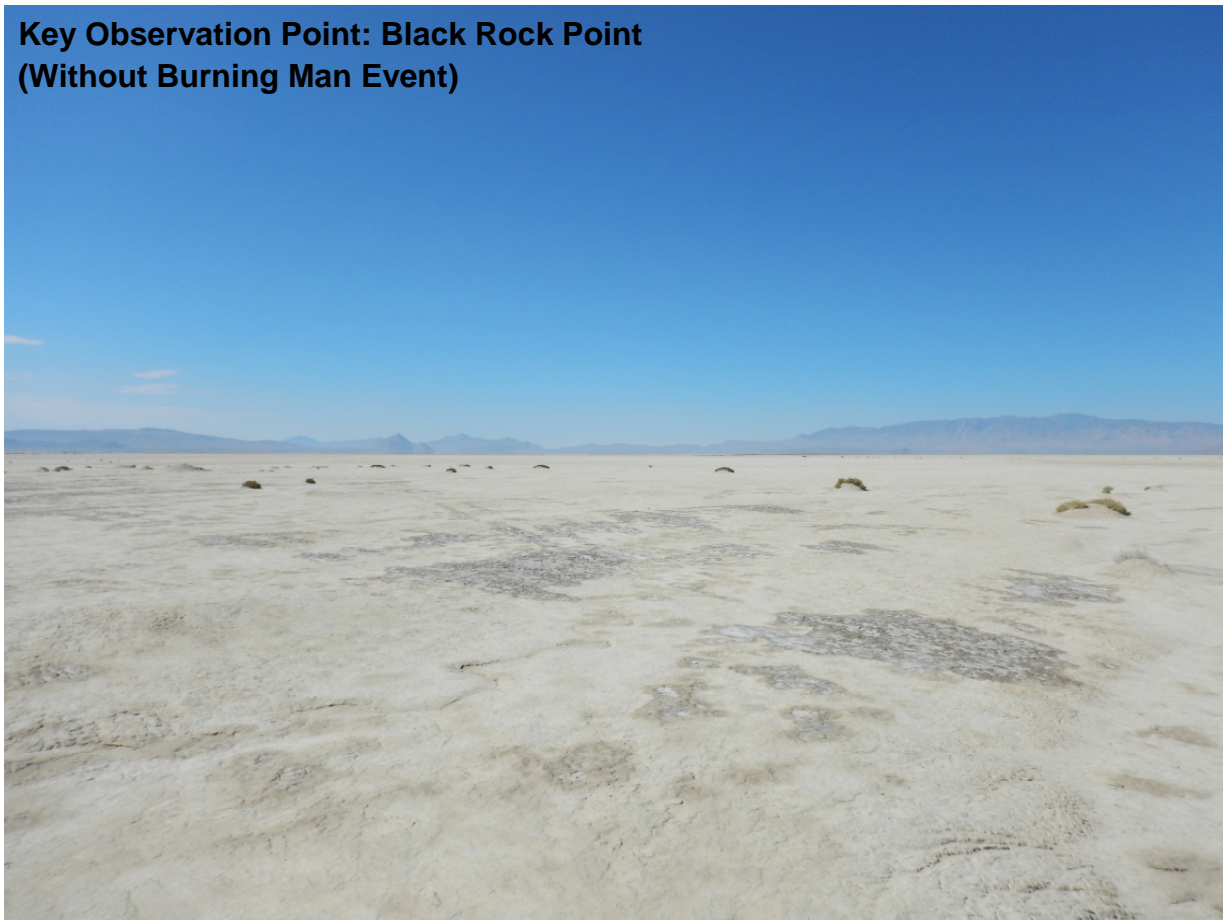
Key Observation Point Photos for Visual Resources  
and Cultural Resources

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**Key Observation Point: Black Rock Point  
(During Burning Man Event)**

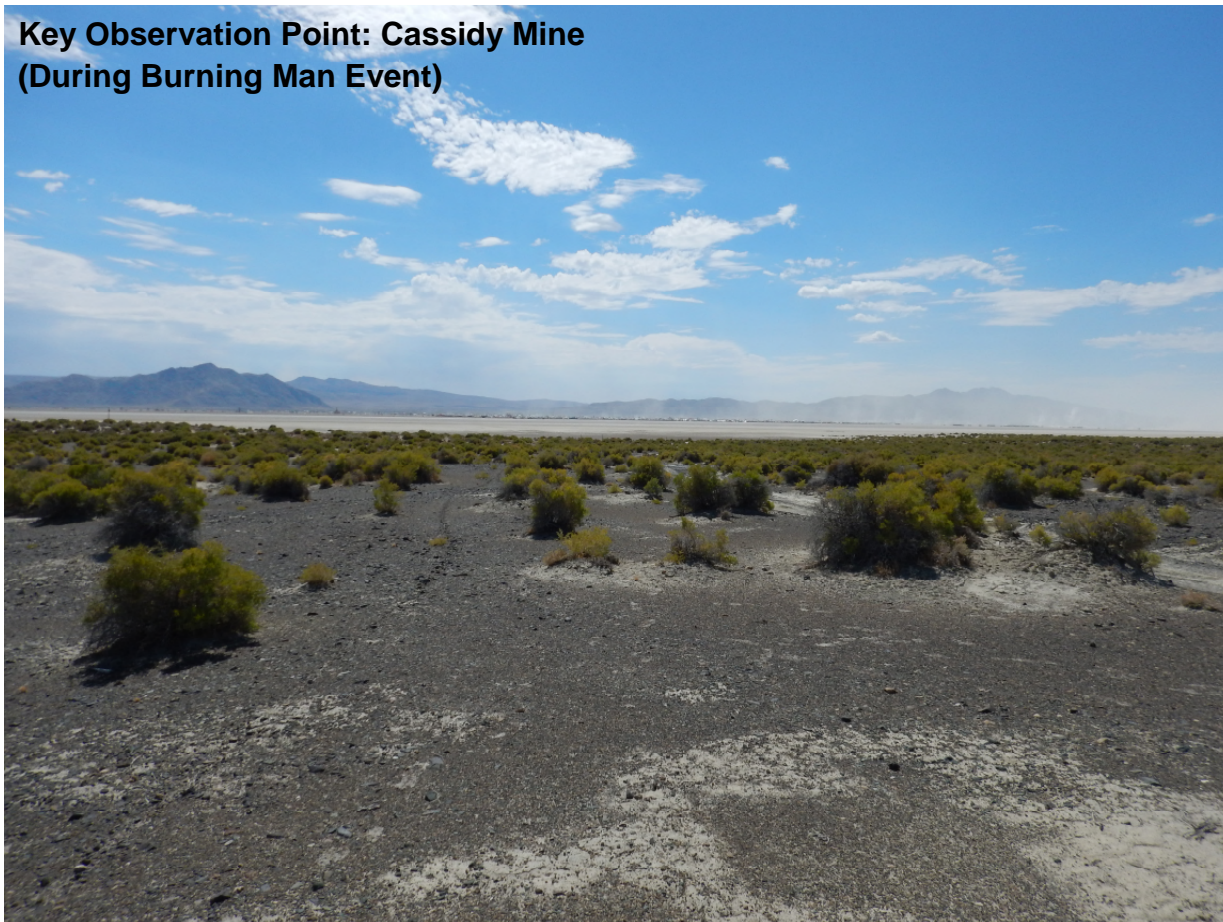


**Key Observation Point: Black Rock Point  
(Without Burning Man Event)**

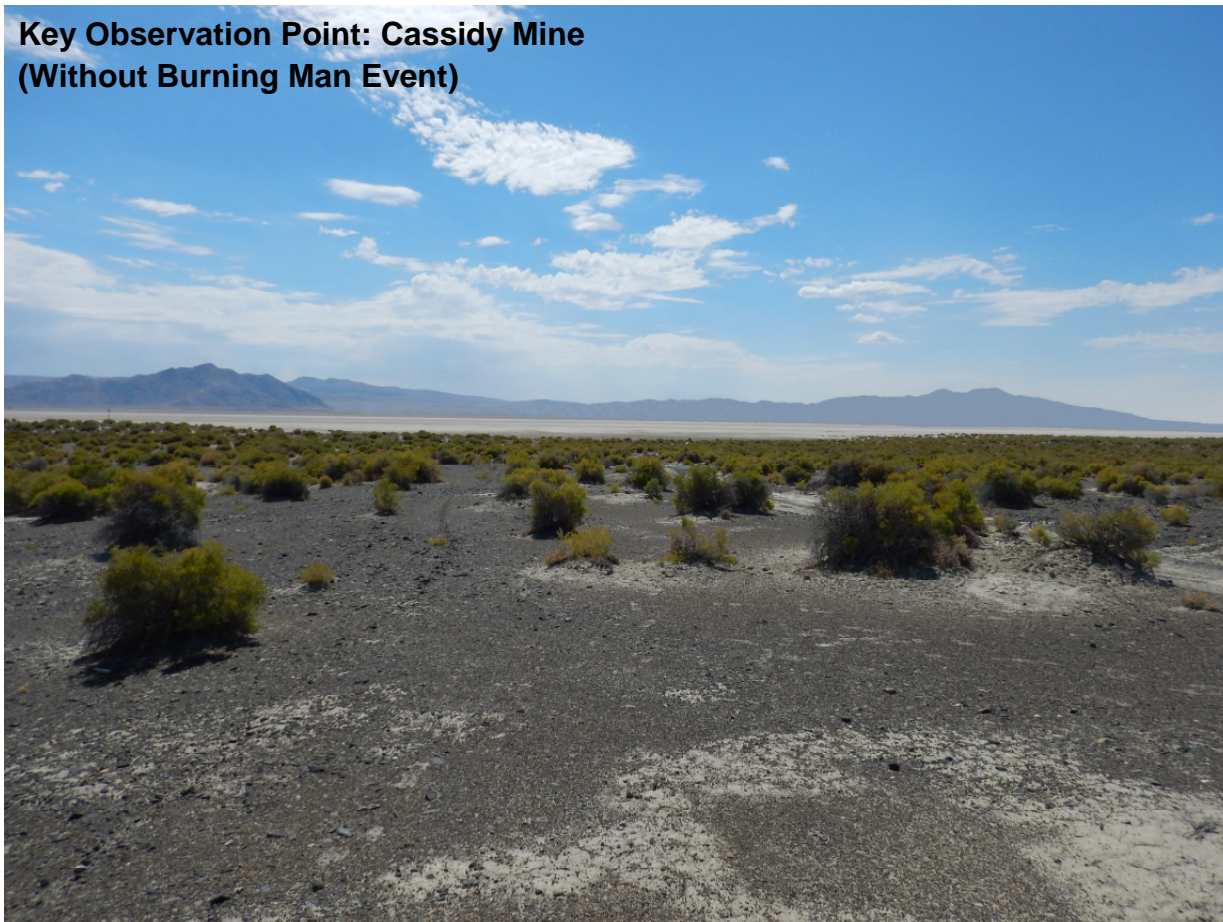




**Key Observation Point: Cassidy Mine  
(During Burning Man Event)**



**Key Observation Point: Cassidy Mine  
(Without Burning Man Event)**





**Key Observation Point: Gerlach  
(During Burning Man Event)**



**Key Observation Point: Gerlach  
(Without Burning Man Event)**





**Key Observation Point: Trego Hot Springs  
(During Burning Man Event)**



**Key Observation Point: Trego Hot Springs  
(Without Burning Man Event)**

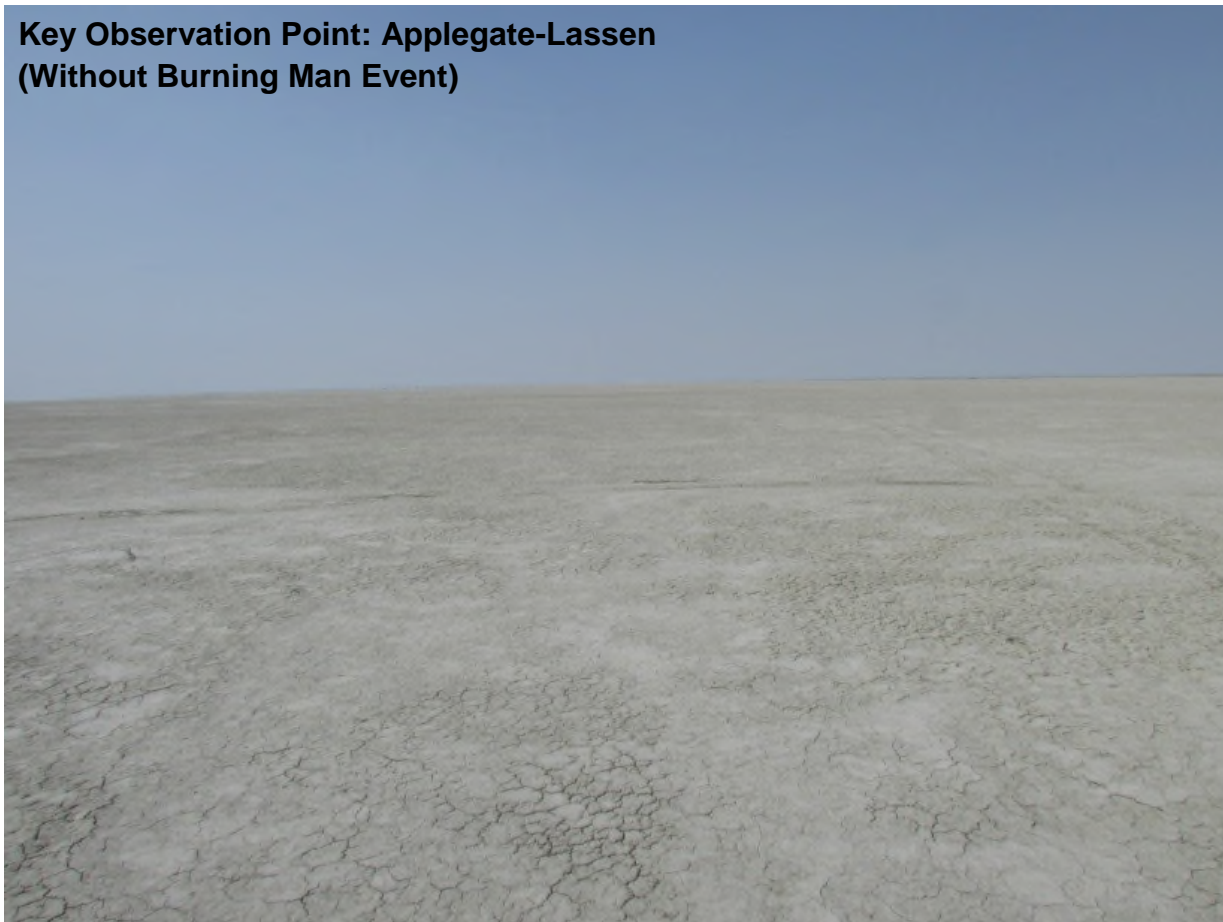




**Key Observation Point: Applegate-Lassen  
(During Burning Man Event)**



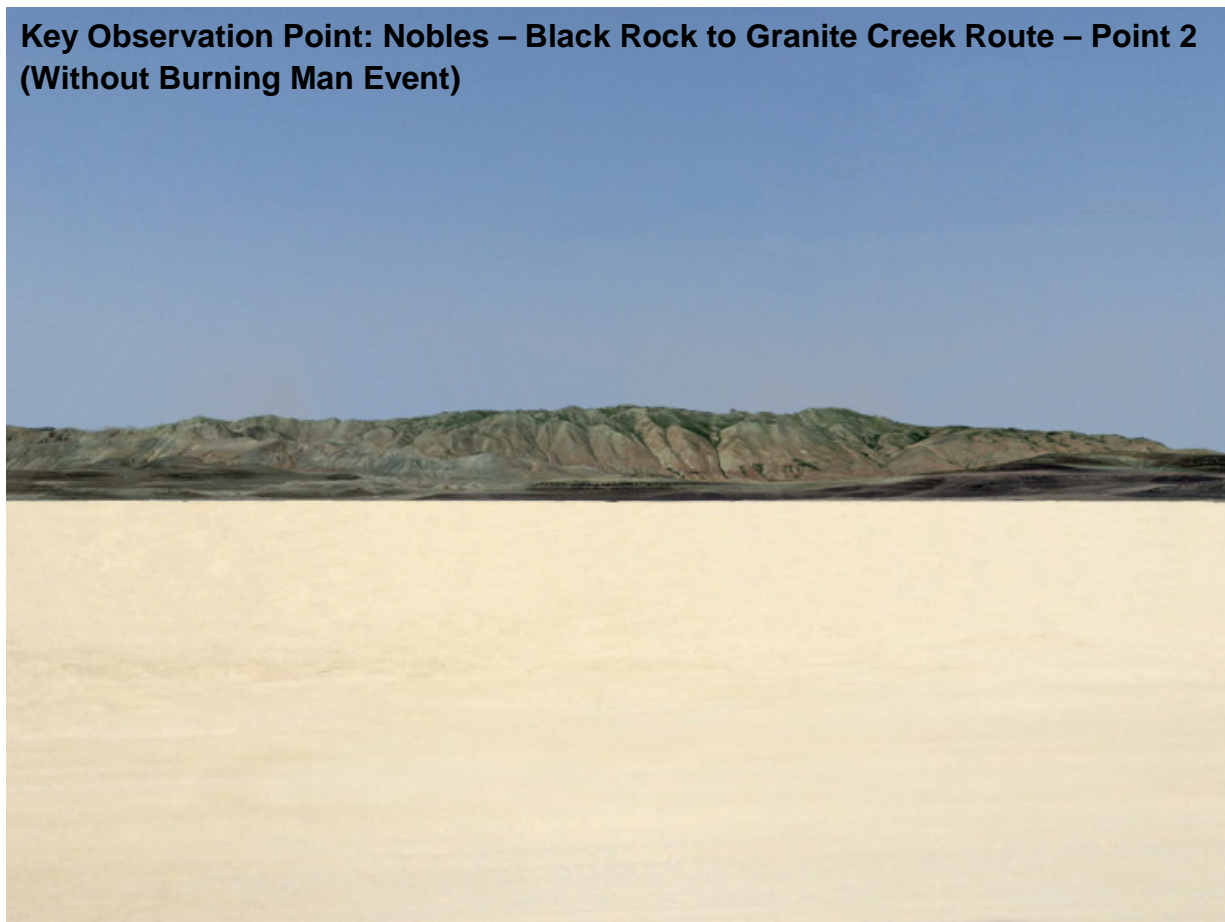
**Key Observation Point: Applegate-Lassen  
(Without Burning Man Event)**



**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 2  
(During Burning Man Event)**



**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 2  
(Without Burning Man Event)**





**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 1  
(During Burning Man Event)**



**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 1  
(Without Burning Man Event)**



**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 3  
(During Burning Man Event)**

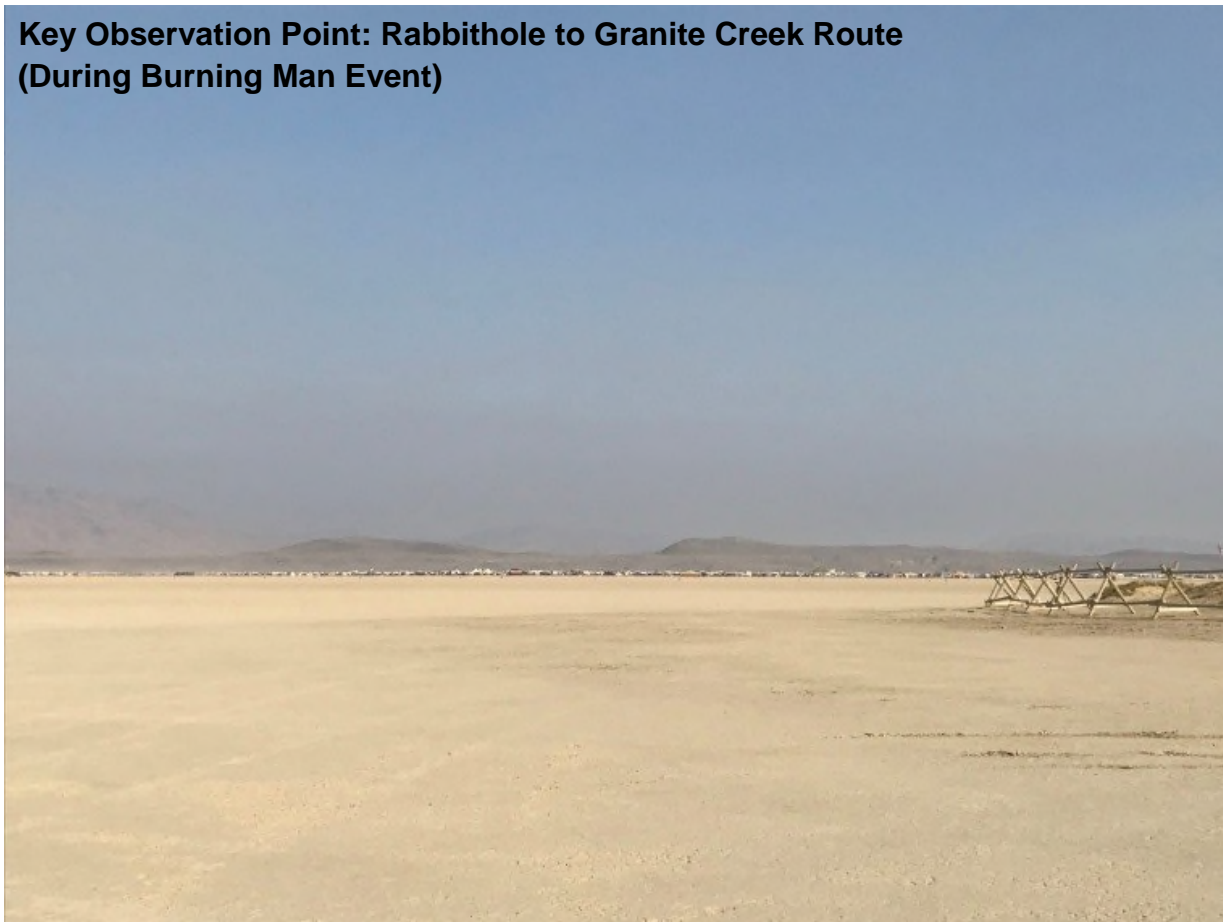


**Key Observation Point: Nobles – Black Rock to Granite Creek Route – Point 3  
(Without Burning Man Event)**





**Key Observation Point: Rabbithole to Granite Creek Route  
(During Burning Man Event)**



**Key Observation Point: Rabbithole to Granite Creek Route  
(Without Burning Man Event)**



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# Appendix H

## Glossary and Index

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# Appendix H. Glossary and Index

## H.I GLOSSARY

**Active sand dune.** Those dune lands whose physical landscape and ecological character results from continuously moving wind-blown sand. They are geomorphically unstable, mobile (Johnson & Rogers 2003), and bare to sparsely vegetated (Hilton et al. 2000). Active dunes include all open sand dunes, active hummocks, and active foredunes.

**Administrative Areas.** Areas used for administrative use.

**Administrative purposes.** Administrative use functions involving regular maintenance or operation of facilities or programs.

**Administrative use.** Official use related to management and resources of public lands by federal, state, or local governments or non-official use sanctioned by an appropriate authorization instrument, such as rights-of-way (ROWs), permit, lease, or maintenance agreement.

**Air quality.** The quality of the atmosphere as determined by the concentration of air pollutants, visibility, odors, sound, and other energy forms (such as solar radiation) transmitted through the atmosphere.

**Anthropogenic.** Caused or produced by humans.

**Areas of critical environmental concern (ACECs).** Areas within public lands in which special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes or to protect life and safety from natural hazards.

**Assessment.** The act of evaluating and interpreting data and information for a defined purpose.

**Assessment Area.** Assessment Areas represent the locations where direct, indirect, or cumulative impacts could occur under the alternatives. Assessment areas vary by resource/ resource use.

**Authorized officer.** A federal employee who has the delegated authority to make a specific decision.

**Avian.** Of, relating to, or derived from birds.

**Backcountry.** A recreation setting classification characterized by a naturally appearing landscape with human modifications not readily noticeable, small areas with limited evidence of surface or vegetation disturbances, and little or no evidence of primitive roads or motorized use. Small, isolated structures may be present. Contains some primitive trails made of native materials (e.g., log bridges and carved wooden signs).

**Backcountry byways.** A component of the national scenic byway system that focuses primarily on corridors along backcountry roads that have high scenic, historic, archeological, or other public interest values. The road may vary from a single-track bike trail to a low-speed, paved road that traverses backcountry areas.

**Big game.** Large wildlife species that are hunted (e.g., moose, elk, deer, bison, bighorn sheep, and pronghorn).

**Biological assessment (BA).** The document prepared by or under the direction of the BLM concerning listed and proposed species and designated and proposed critical habitats that may be present in the action area. The document contains the BLM's determination of potential effects of the action on such species and habitats. Biological assessments are required for formal consultations and conferences on "major construction projects." They are recommended for all formal consultations and formal conferences and many informal consultations in which a written evaluation of the effects of an action on listed or proposed species and on designated or proposed critical habitat is needed.

**Biological diversity (biodiversity).** The full range of variability within and among living organisms and the ecological complexes in which they occur. Biological diversity encompasses ecosystem or community diversity, species diversity, and genetic diversity.

**Biological opinion (BO).** The document that includes (1) the US Fish and Wildlife Service's and/or National Marine Fisheries Service's opinion as to whether or not a federal action is likely to jeopardize the continued existence of a listed species or to result in the destruction or adverse modification of designated critical habitat; (2) a summary of information on which the opinion is based; and (3) a detailed discussion of the effects of the action on a listed species or designated critical habitat. Depending on the determination of jeopardy or non-jeopardy, the biological opinion may contain reasonable and prudent alternatives, a statement of anticipated take of listed animals, and conservation recommendations for listed plants.

**Biological soil crust.** Biological soil crusts are formed by living organisms and their byproducts, creating a crust of soil particles bound together by organic materials. These biological communities consist of cyanobacteria (blue-green bacteria), micro fungi, mosses, lichens, and green algae and perform many important functions, including fixing nitrogen and carbon, maintaining soil surface stability, and preventing erosion. These biological crusts also influence the nutrient levels of soils and the status and germination of plants in the desert. These crusts are slow to recover after severe disturbance and are different from chemical and physical crusts, which are inorganic features such as a salt crust or platy surface crust.

**Black Rock City.** The annual, temporary city created by the community of Burning Man participants.

**Bodies on playa.** The total number of Burning Man Event participants and volunteers. Bodies on playa does not include government personnel or private vendors (see also event population).

**Burner.** A person who pursues a way of life based on the values reflected in the ten Principles of Burning Man.

**Candidate species.** Taxa for which the US Fish and Wildlife Service has sufficient information on their status and threats to support proposing the species for listing as endangered or threatened under the Endangered Species Act but for which issuance of a proposed rule is currently precluded by higher priority listing actions. Separate lists for plants, vertebrate animals, and invertebrate animals are published periodically in the *Federal Register*.

**Casual use.** Any short-term, noncommercial activity ordinarily resulting in no or negligible disturbance of public lands, resources, or improvements. Casual use generally includes surveying, marking routes, and data collection. It also includes collecting of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, and nonmotorized sluicing. It also generally includes use of metal detectors, gold spears, and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated dry-washers. Casual use excludes the use of mechanized earthmoving equipment, truck-mounted drilling equipment, suction dredges, and motorized vehicles in areas designated as closed to off-highway vehicles, chemicals, or explosives. It also excludes occupancy or operations in which the cumulative effects of the activities result in more than negligible disturbance.

**Climate.** The description of the long-term pattern of weather in a particular area. Climate is the aggregate of weather in a particular area.

**Climate change.** A change in the statistical properties of the climate system when measured over long periods of time, regardless of the cause. Fluctuations over short periods of time, shorter than a few decades, such as El Niño, do not represent climate change.

**Closed.** Generally denotes that an area is unavailable for a particular use or uses; refers to specific definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “closed” as it relates to OHV use, and 43 CFR 8364 defines “closed” as it relates to closure and restriction orders.

**Closure Area.** The area of public lands temporarily closed and restricted to the public under the Closure Order.

**Closure Order.** A temporary closure and restriction of a defined area on public lands to protect public safety and resources.

**Code of Federal Regulations (CFR).** The official codification of federal regulations established under the Federal Register Act.

**Commercial purpose or activity.** The circumstance where a holder attempts to produce a profit by allowing the use of its facilities by an additional party.

**Commercial filming.** The film, electronic, magnetic, digital, or other recording of a moving image by a person, business, or other entity for a market audience with the intent of generating income. Examples include, but are not limited to, feature film, videography, television broadcasts, or documentary, or other similar projects. Commercial filming activities may include advertisement of a product or service, or the use of actors, models, sets, or props.

**Commercial use.** Recreation use of public lands and related waters for business or financial gain. When any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services as compensation from participants in recreation activities occurring on public lands or related waters, the use is considered commercial. An activity, service, or use is commercial if anyone collects a fee or receives other compensation that is not strictly a sharing of, or is in excess of, actual expenses incurred for the purposes of the activity, service, or use. Commercial use is also characterized by situations when a duty of care or expectation of safety is owed participants as a result of compensation. It may also be characterized by paid public advertising for participants.

**Compliance.** Compliance with the National Environmental Policy Act to promote the enhancement of the environment.

**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.

**Conservation agreement.** A formal written document agreed to by the BLM and another federal agency, state agency, local government, tribes, or the private sector to achieve the conservation of candidate species or other special status species through voluntary cooperation. It documents the specific actions and responsibilities for which each party agrees to be accountable. The objective of a conservation agreement is to reduce threats to a special status species or its habitat. An effective conservation agreement may lower species' listing priority or eliminate the need for listing.

**Contamination.** A general term for any undesirable substance not normally present in the environment. Examples include, but are not limited to, Comprehensive Environmental Response, Compensation and Liability Act, hazardous substances, and/or petroleum products.

**Cooperating agency.** Assists the lead federal agency in developing an environmental assessment or environmental impact statement. The Council on Environmental Quality regulations implementing the National Environmental Policy Act of 1969 (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, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

**Council on Environmental Quality (CEQ).** An advisory council to the president of the United States established by the National Environmental Policy Act of 1969. It reviews federal programs to analyze and interpret environmental trends and information.

**Critical habitat.** (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accordance with the Endangered Species Act, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon determination by the US Fish and Wildlife Service and/or National Marine Fisheries Service that such areas are essential for the conservation of the species. Critical habitats are designated in 50 CFR 17 and 226. The constituent elements of critical habitat are

those physical and biological features of designated or proposed critical habitat essential to the conservation of the species.

**Cultural resource or cultural property.** 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. It may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and using for public benefit described in this manual series.

**Cumulative impact.** The impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

**Degradation.** The act or process of degrading.

**Designated roads and trails.** Specific roads and trails identified by the BLM (or other agencies) where some type of motorized vehicle use is appropriate and allowed either seasonally or yearlong.

**Developed recreation site.** A discrete place containing a concentration of facilities and services used to provide recreation opportunities to the public and evidencing a significant investment in facilities and management under the direction of an administrative unit in the National System of Public Lands.

**Dispersed or extensive recreation.** Recreation activities of an unstructured type that are not confined to specific locations or dependent on recreation sites. Examples of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing.

**Disruptive activities.** Activities that preclude basic life functions for a species. These activities could result in individuals leaving a currently used area; increased stress on the individual; and/or not breeding, young abandonment, or aberrant behavior.

**Disturbed areas.** Any action created through mechanized or mechanical means that would cause soil mixing or result in the alteration or removal of soil or vegetation, exposing the mineral soil to erosive processes. Used in the literal context of actual, physical disturbance and movement or removal of the land surface and vegetation. Examples include construction of roads and trails, well pads, pits, reservoirs, pipelines, and facilities. Emergency activities, rangeland monitoring, routine maintenance associated with an approved authorization, dispersed recreation (e.g., hunting and hiking), and livestock grazing are not considered surface disturbance.

**Emergency rehabilitation.** See Rehabilitation.

**Emergency stabilization.** Planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life or property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of the land or resources.

**Endangered species.** Any animal or plant species in danger of extinction throughout all or a significant portion of its range as designated by the US Fish and Wildlife Service under the Endangered Species Act. Also see Threatened Species.

**Endangered Species Act (ESA).** The US Endangered Species Act is federal legislation that aims to conserve the ecosystems upon which endangered and threatened species depend. The act was signed into law in December 1973. The ESA protects plant and animal species and is jointly administered by the US Fish and Wildlife Service and National Marine Fisheries Service. Its aim is twofold: to provide protection for species that are in danger of extinction and to conserve the habitats on which those species depend.

**Environmental impact statement (EIS).** A formal public document required by the federal government under the National Environmental Policy Act (NEPA) for certain federal actions that documents the information required to evaluate the environmental impact of a project. It informs decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the environment. This is the highest level of environmental analysis and documentation in the NEPA process.

**Environmental justice (Executive Order 12898).** The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences of industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Executive Order 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations—directs federal agencies to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

**Erosion.** To diminish, destroy, or wear away by the action of water, wind, or glacial ice.

**Erosion factor.** An index that identifies the susceptibility of soil to sheet and rill erosion by water. The higher the erosion factor, the more susceptible the soil is.

**Event (Special Recreation Permit event).** A single, structured, organized, consolidated, or scheduled meeting or occurrence for recreational use of public lands and water resources; it may be composed of several related activities.

**Event population.** The total number of Burning Man Event participants and volunteers. Event population does not include government personnel or private vendors (see also Bodies on playa).

**Executive order (EO).** An Executive order is a presidential directive with the force of law. It does not need congressional approval. The Supreme Court has upheld executive orders as valid either under the general constitutional grant of executive powers to the president or if authority for it was expressly granted to the president by Congress. Congress can repeal or modify an executive order by passing a new law; however, it must be signed by the president or overridden by his veto.



**Exodus.** The mass departure of Burning Man Event participants at the end of the event on Labor Day.

**Federal Land Policy and Management Act of 1976 (FLPMA).** Public Law 94-579, October 21, 1976, often referred to as the BLM's "Organic Act." The act that (1) set out, for the Bureau of Land Management, standards for managing public lands including land-use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land-use planning and management; (3) established criteria for reviewing proposed wilderness areas; and (4) provided guidelines for other aspects of public land management, such as grazing.

**Federal lands.** As used in this document, lands owned by the United States, without reference to how the lands were acquired or what federal agency administers the lands. The term includes mineral estates or coal estates underlying private surface, but excludes lands held by the United States in trust for Indians, Aleuts, or Eskimos (see also Public Land).

**Federal Register.** A daily publication that reports presidential and federal agency documents.

**Federal reserved water rights.** Where Congress, or the Executive Branch, has withdrawn lands from the public domain for a specific federal purpose, such reservation may create a federal reserved water right to unappropriated water in the amount necessary to fulfill the primary purpose of the reservation (US v. New Mexico). The US Supreme Court established federal reserved water rights in the 1908 case of *Winters v. United States*, 207 U.S. 568.

**Fiscal year.** The federal government's annual accounting period that begins on October 1 and ends on September 30 of the following calendar year.

**Fragile soils.** Soils with intrinsic properties and in areas that make them especially susceptible to erosion. These properties include high salt concentrations, very fine textures, shallow depths, and steep slopes (more than 30 percent).

**Geographic information system (GIS).** 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.

**Greenhouse gas (GHG).** A greenhouse gas, sometimes abbreviated as GHG, is a gas in an atmosphere that absorbs and emits radiation in the thermal infrared range. GHGs in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

**Groundwater.** Water located beneath the earth's surface in soil pore spaces and in the fractures of rock formations. Groundwater supplies wells, streams, springs, seeps, and other bodies of water. Its use is regulated by the Nevada Department of Conservation & Natural Resources, Nevada Division of Water Resources. Nevada Revised Statutes Chapters 533 and 534 address the use of the groundwater in Nevada.

**Habitat.** The place where an organism (plant or animal) lives. There are four major divisions of habitat, namely, terrestrial, freshwater, estuarine, and marine.

**Habitat fragmentation.** The process by which habitats are increasingly subdivided into smaller units, resulting in their increased insularity and losses of total habitat area.

**High-value habitat.** Any particular habitat that sustains a community, population, or subpopulation. It includes intensive use areas that because of relative wide distribution do not constitute crucial values but are highly important to high-interest wildlife. It may also include moderately sensitive habitats of high-interest species that have low reclamation potential, including Class 3 streams, lakes, ponds, or reservoirs. Reconstruction or enhancement of these areas may be possible, but should be avoided if not possible. Examples include less crucial (critical) but more widely distributed summer and/or winter ranges, important feeding areas, areas of high wildlife diversity and/or density of high-interest species, natural wetlands, and all other riparian areas.

**Hydrology.** The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

**Impacts (or effects).** Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects may be either direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative.

**Impoundment.** A body of water confined by a dam, dike, floodgate, or other artificial barrier.

**Indicators.** Components of a system whose characteristics (presence or absence, quantity, and distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure (BLM 2005).

**Interdisciplinary team (IDT).** Staff specialists representing identified skill and knowledge needs working together to resolve issues and provide recommendations to an Authorized Officer.

**Intermittent or seasonal stream.** A stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas. Generally, intermittent streams flow continuously for periods of at least 30 days and usually have visible vegetation or physical characteristics reflective of permanent water influences, such as the presence of cottonwoods.

**Invasive plants.** Plants that are not part of (if exotic), or are a minor component of (if native), the original plant community or communities that have the potential to become a dominant or co-dominant species on the site if their future establishment and growth is not actively controlled by management interventions, or are classified as exotic or noxious plants under state or federal law. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants (USDI, BLM, 2007b).

**Land use authorization.** The issuance of leases and permits to authorize certain kinds of development, uses, or occupancy of public lands. Leases and permits are issued for activities such as temporary or permanent commercial facilities (except on mining claims), harvesting native or introduced species, residential occupancy, recreation (e.g., camping and ski resorts), agriculture (crops and apiaries),

construction equipment storage, livestock holding or feeding areas not related to a grazing permit, water pipelines and well pumps (for irrigation or other purposes), and advertising displays.

**Land use plan (LUP).** A set of decisions that establish management direction for lands within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act, and an assimilation of LUP-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes resource management plans and management framework plans.

**Leq.** The equivalent steady-state A-weighted sound level, in a stated period of time that would contain the same acoustic energy as the time-varying sound level during the same period.

**Limited use.** An area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories: numbers of vehicles, types of vehicles, time or season of vehicle use, permitted use only, use on existing roads and trails, use on designated routes, and other restrictions.

**Man, the.** Term used for the Burning Man statue.

**Management decision.** A decision made by the BLM to manage public lands. Management decisions include land-use plan decisions and implementation decisions.

**Minimize impacts.** To reduce the adverse impact of an activity to the lowest practical level. This can be done by either not approving an activity or through measures such as stipulations, restrictions, BMPs, and SOPs identified during the NEPA process.

**Mitigation.** A method or process by which impacts from actions may be made less injurious to the environment through appropriate protective measures. Mitigation is further defined under 40 CFR 1508.20 as (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing an impact by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance; and (5) compensating for the impact by replacing or providing substitute resources or environments.

**Monitoring.** The process of tracking the implementation of land-use plan decisions and collecting and assessing data/information necessary to evaluate the effectiveness of land-use planning decisions.

**Morphology.** A branch of biology that deals with the form of living organisms and with relationships between their structures.

**Motor vehicle.** Any means of transportation over land, snow, or ice that is powered by a motor, engine, or other non-living power source.

**Multiple use.** The management of public lands and their various resource values so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions;

the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including but not limited to recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

**Mutant vehicle.** A unique, motorized creation that shows no resemblance to its original form or to any street vehicle.

**National Environmental Policy Act (NEPA).** The federal law that established a national policy for the environment and requires federal agencies (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed federal actions and provide a mechanism for public input to federal decision-making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

**National Historic Preservation Act (NHPA).** A federal statute that established a federal program to further the efforts of private agencies and individuals in preserving the nation's historic and cultural foundations. The NHPA (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require federal agencies to consider the effects of federally assisted activities on properties included on or eligible for the National Register of Historic Places. Also see National Register of Historic Places.

**National Register of Historic Places.** The National Register of Historic Places is expanded and maintained by the Secretary of the Interior, as authorized by Section 2(b) of the Historic Sites Act and Section 101(a)(1)(A) of the National Historic Preservation Act. The national register lists cultural properties found to qualify for inclusion because of their local, state, or national significance. Eligibility criteria and nomination procedures are found in 36 CFR 60. The secretary's administrative responsibility for the national register is delegated to the National Park Service.

**Native American tribe.** Any American Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the *Federal Register*).

**Natural hydrologic function.** The natural hydrologic process of the dynamic equilibrium between the movement of water and the movement of sediment absent of human modifications.

**Naturalness.** Lands and resources exhibit a high degree of naturalness when affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable. The BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences, and other improvements; the nature and extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats.

**Nonattainment area.** An area in which the level of a criteria air pollutant is higher than the level allowed by the federal standards. A single area may have acceptable levels of one criteria air pollutant

but unacceptable levels of one or more other criteria air pollutants; therefore, an area can be both attainment and nonattainment at the same time.

**Noxious weeds.** A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the United States.

**Permit.** A short-term, revocable authorization to use public lands for specific purposes. The Federal Land Policy Management Act Section 302 provides the BLM with authority to issue permits for the use, occupancy, and development of the public lands. Permits are issued for purposes such as commercial or noncommercial filming, advertising displays, commercial or noncommercial croplands, apiaries, harvesting of native or introduced species, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related to irrigation and non-irrigation facilities. The regulations establishing procedures for the processing of these permits are found in 43 CFR 2920.

**Playa.** Also known as a dry lake. A basin or depression formerly holding a body of water lost through evaporation exceeding surface recharge.

**Plug-in-play camp.** See “Turnkey camp.”

**Primitive.** A recreation setting classification characterized by a setting that is essentially an unmodified natural environment with extremely rare evidence of surface or vegetation disturbances. Trails may be present and suited for wilderness use. Structures are small and extremely rare. Enforcement presence is very rare.

**Primitive recreation.** Activities that provide dispersed, undeveloped recreation and do not require facilities or motorized equipment.

**Public land.** 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 the Outer Continental Shelf and land held for the benefit of Native Americans, Aleuts, and Eskimos.

**Public purpose.** The purpose of providing facilities or services for the benefit of the public in connection with, but not limited to, public health, safety, or welfare. Use of lands or facilities for habitation, cultivation, trade, or manufacturing is permissible only when necessary for and integral to (i.e., an essential part of) the public purpose.

**Record of Decision (ROD).** A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement.

**Recreation opportunities.** The combination of recreation activities, settings, and experiences provided by a specific geographic area.

**Recreation setting characteristics (RSC).** Recreation setting characteristics are derived from the recreation opportunity spectrum. The RSCs are characterized as physical, social, and operational components and are further subdivided into specific characteristics (attributes). These characteristics are categorized across a spectrum of classes that describe a range of qualities and conditions of a recreation setting, for example primitive to urban.

**Recreation settings.** The collective distinguishing attributes of a landscape. Recreation settings determine the production of recreation opportunities.

**Remoteness.** See solitude.

**Resource management plan (RMP).** A BLM planning document, prepared in accordance with Federal Land Policy and Management Act Section 202, that presents systematic guidelines for making resource management decisions.

**Restoration.** Implementation of a set of actions that promotes plant community diversity and structure, and allows plant communities to be more resilient to disturbance and invasive species over the long term.

**Rights-of-Way (ROWs).** A land-use authorization/grant for the use of public lands for specified purposes, for the construction, operation, maintenance, and termination of a project, such as pipelines, roads, telephone lines, electric lines, and reservoirs.

**Riparian.** Pertaining to or situated on or along the bank of streams, lakes, springs, and reservoirs.

**Riparian area.** A form of wetland transition between permanently saturated wetlands and upland areas. A riparian area is defined as an area of land directly influenced by permanent (surface or subsurface) water. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, hanging gardens, and areas surrounding seeps and springs. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

**Road.** A transportation facility used primarily by vehicles having four or more wheels, documented as such by the owner, and maintained for regular and continuous use.

**Rural.** A recreation setting classification characterized by a substantially modified natural setting with culturally modified landscapes constantly in view. The setting may include pastoral, agricultural landscapes. Surface and vegetation modifications are typical, and constructed roads and highways are present. Structures are readily apparent and may include small, dominant clusters, including campgrounds, group shelters, boat launches, and exhibits.

**Scenic quality.** The relative worth of a landscape from a visual perception point of view.

**Scoping.** An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This involves the participation of affected



federal, state, and local agencies and any affected Native American tribe, proponent of the action, and other interested persons unless there is a limited exception under 40 CFR 1507.31.

**Secondary containment.** (a) (1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and (2) capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(b) To meet the requirements of paragraph (a) of this section, secondary containment systems must be, at a minimum:

- (1) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic)
- (2) Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift
- (3) Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours
- (4) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or as promptly as possible, to prevent harm to human health and the environment

**Secretary.** The Secretary of the Interior when used in connection with public lands administered by him through the Bureau of Land Management.

**Section 106 compliance.** The requirement of National Historic Preservation Act Section 106 that any project funded, licensed, permitted, or assisted by the federal government must be reviewed for impacts on significant historic properties and that the state historic preservation officer and the Advisory Council on Historic Preservation be allowed to comment on a project.

**Section 7 consultation.** The requirement of Section 7 of the Endangered Species Act that all federal agencies consult with the US Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

**Sensitive soils.** Soils that have a high wind or water erosion hazard, are difficult to reclaim or restore due to physical and chemical properties (e.g., high salt or gypsum concentrations, high rock content, or low available water), or that are more susceptible to impacts and damage due to high water tables (hydric or wetland/riparian soils) or very fine surface textures. Information used to identify sensitive soils includes soils surveys, ecological site descriptions, local monitoring records, and research studies.

**Sensitive species.** Those species designated by a state director, usually in cooperation with the state agency responsible for managing the species and state natural heritage programs, as sensitive. They are those species that (1) could become endangered in or extirpated from a state or within a significant portion of its distribution; (2) are under status review by the US Fish and Wildlife Service and/or the National Marine Fisheries Service; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce the existing distribution of the species; (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, or candidate or state listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are state listed but may be better conserved through application of BLM sensitive species status.

**Significant.** An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, whether beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

**Solitude (remoteness).** The state of being alone or remote from habitations or the sights and sounds of other people; the experience of a lonely, unfrequented, or secluded place.

**Solitude and primitive/unconfined recreation.** Visitors may have outstanding opportunities for solitude, or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent; where visitors can be isolated, alone, or secluded from others; where the use of the area is through nonmotorized, nonmechanical means; and where no or minimal developed recreation facilities are encountered.

**Special Recreation Permit (SRP).** An authorization that allows for specific, nonexclusive permitted recreational uses of public lands and related waters. SRPs are issued to control visitor use, protect recreational and natural resources, provide for the health and safety of visitors, and accommodate commercial recreational uses.

**Special status species.** Plant or animal species listed as threatened, endangered, candidate, or sensitive by the federal government or state governments.

**Spring.** A discrete natural flow of groundwater that naturally emerges from the earth at a reasonably distinct location, whether or not such flow constitutes a source of water or is tributary to a watercourse, pond, or other body of water.

**Spur.** A route that exists for a specific purpose, such as access to a specific use or feature. Uses can be recreational or commercial. Features include campsites, mines, or range developments. A spur route is connected to another road or route type.

**Staging area.** An area where participants in an activity gather and make final preparations for the activity.

**Standard.** A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (e.g., land health standards). To be expressed as a desired outcome (goal).

**State Historic Preservation Officer (SHPO).** The official within and authorized by each state at the request of the Secretary of the Interior to act as the liaison for the National Historic Preservation Act.

**State Implementation Plan (SIP).** A strategic document, prepared by a state (or other authorized air quality regulatory agency) and approved by the EPA, that thoroughly describes how requirements of the Clean Air Act will be implemented (including standards to be achieved, control measures to be applied, and enforcement actions in case of violation).

**Still photography.** The use of photographic equipment to capture still images on film, digital format, and other similar technologies on public lands that:

- a) Takes place at a location where members of the public are generally not allowed or where additional administrative costs are likely; or
- b) Uses models, sets, or props that are not part of the site's natural or cultural resources or administrative facilities.

Examples of still photography could include calendars, advertisements, books, catalogs, and product placement advertising. As noted, paid public advertising qualifies a use as commercial. Paid public advertising includes, for example, newspaper ads, Internet banners, and radio and television air time (43 CFR 2932.5[1][iii]).

**Stipulation.** A condition specified as a part of a permit, lease, or right-of-way.

**Surface disturbance.** Greater than casual use actions created through mechanized or mechanical means that would cause soil mixing and result in alteration or removal of soil and vegetation, exposing the mineral soil to erosive processes to the extent that reclamation may be required.

**Theme camp.** An interactive camp curated by groups of Burning Man participants who come together to provide a service, entertainment, art, or other creative experience.

**Threatened species.** Any plant or animal species likely to become endangered within the foreseeable future throughout all or a part of its range and designated by the US Fish and Wildlife Service under the Endangered Species Act. Also see Endangered Species.

**Turnkey camp.** A camp that is set up and operated by third-party vendors on behalf of its fly-in or drive-in participants.

**Unconfined recreation.** Activities that are enjoyed without unnecessary management restriction.

**Visual resource inventory.** The visual resource inventory process provides BLM managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes.

**Visual resource management (VRM).** The inventory and planning actions taken to identify visual values and establish objectives for managing those values, and the management actions taken to achieve the visual management objectives.

**Visual resource management classes.** Classes with specific objectives for maintaining or enhancing scenic quality, including the kinds of landscape modifications that are acceptable to meet the objectives. Class I (preservation) provides for natural, ecological changes only. This class includes wilderness areas, some natural areas, some wild and scenic rivers, and other similar sites where landscape modification should be restricted. Class II (retention of the landscape character) includes areas where changes in any of the basic elements (form, line, color, or texture) caused by management activities should not be evident in the characteristic landscape. Class III (partial retention of the landscape character) includes areas where changes in the basic elements caused by management activities may be evident in the characteristic landscape, but the changes should remain subordinate to the existing landscape character. Class IV (modification of the landscape character) includes areas where changes may subordinate the original composition and character, but the changes should reflect what could be a natural occurrence in the characteristic landscape.

**Visual resources.** The visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

**Wastewater.** Water in the form of gray water (wastewater without fecal matter or urine) and black water (wastewater with fecal matter and urine) deposited deliberately or as a result of drips, leaks, and spills.

**Water quality.** The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

**Watershed.** The fifth level of the hydrologic unit delineation system. A watershed is coded with 10 numerical digits, and watersheds range in size from 40,000 to 250,000 acres (Subcommittee on Spatial Water Data 2000).

**Wilderness.** BLM lands that have been designated by Congress as part of the National Wilderness Preservation System.

**Wilderness characteristics.** Features of the land associated with the concept of wilderness that may be considered in land-use planning when the BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, and importance) and need (trend and risk), and are practical to manage. See Naturalness, Solitude, and Primitive/Unconfined Recreation.

**Wildfire.** An unplanned ignition caused by lightning, volcanoes, unauthorized and accidental human-caused fires, and escaped prescribed fires.

**Wildlife.** A broad term that includes birds, reptiles, amphibians, and non-domesticated mammals.

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# Appendix J

## List of Preparers

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# Appendix J. List of Preparers

This EIS was prepared by an interdisciplinary team of staff from the BLM and Environmental Management and Planning Solutions, Inc. (EMPSi), with their supporting subcontractors. The following is a list of people that prepared or contributed to the development of the EIS.

## BUREAU OF LAND MANAGEMENT

Team	Name	Role/Responsibility	Education
Management	Mark Hall	Field Office Manager, Native American Religious Concerns	PhD Anthropology MSE Mining and Metallurgy BSE Mining and Metallurgy MA Anthropology
	Chelsea McKinney	Acting Project Manager, visual resources, recreation	MS Recreation and Tourism Management BS Parks and Recreation Management
	Lynn Ricci	Planning and Environmental Coordinator	BS Biology
Interdisciplinary	Becky Andres	Law enforcement, public health and safety, including writing these sections of the EIS	MBA Concentration in Emergency Management BS Physical Anthropology
	Kathryn Ataman	Cultural resources, paleontological resources, National Conservation Area, National Historic Trails	PhD Prehistory MA Anthropology MA Near Eastern Archaeology BA Indiv. Conc. in Archaeology
	Logan Briscoe	Law enforcement, public health and safety	BS Biology BA Sociology/Criminal Justice
	Kathleen Cadigan	Wildlife habitat, threatened and endangered species (plant and animal), special status species (plant and animal), migratory birds	BS Wildlife Ecology & Conservation and Biology (double major)
	Monica Castro	Waste, hazardous or solid	BS Geology MS Geology
	Kyle Hendrix	Public Affairs Specialist	BA Communications
	Andrew Laca	Soils	BS Agricultural Education AA Agriculture
	Michael McCampbell	Invasive, nonnative species (plants and animals)	MS Applied Ecology & Conservation Biology BA Biology
	Derek Messmer	Fire management	BS Natural and Environmental Resource Science – Forestry and Range Management
	Craig Nicholls	Air quality	MS Atmospheric Science BS Atmospheric Science
	Mark Pirtle	Law enforcement, public health and safety	BS Resource Management/Forestry
	Fernando Pitones	Public Outreach Specialist	BA Business Management (estimated completion December 2019)
	Zwaantije Rorex	GIS	BA Geography

**BUREAU OF LAND MANAGEMENT (continued)**

Team	Name	Role/Responsibility	Education
<b>Interdisciplinary (continued)</b>	Kenneth Shedden	Wilderness and wilderness study area, lands with wilderness characteristics	MS Environmental Management BS Applied Science
	Josh Sidon	Social values, environmental justice, economics	PhD Economics MA Economics BSE Civil and Environmental Engineering
	Tanner Whetstone	Native American Religious Concerns	BA Anthropology

**CONSULTANTS:****ENVIRONMENTAL MANAGEMENT AND PLANNING SOLUTIONS, INC.**

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Team	Name	Role/Responsibility	Education
<b>Core</b>	Holly Prohaska	Project Manager	MS Environmental Management BA Marine Science/Biology
	Peter Gower	Assistant Project Manager	MS Land Use Planning BS Geography BA Political Science
	Jennifer Thies	QA/QC Specialist, socioeconomics	MS Resource Management BS Conservation and Resource Studies
	Zoe Ghali	Socioeconomics lead	MS Environmental Physiology Interdisciplinary Masters Certificate, Environmental Policy BS Biology
<b>ID Team and Support Staff</b>	Amy Cordle	Air quality	BS Civil Engineering
	Sean Cottle	Special designations (including NCA, WSA, and Wilderness), decision file coordinator, ePlanning and comment analysis	BS Ecohydrology
	Mattea Curtis	Recreation, document support	BS Environmental Management and Protection
	Annie Daly	Air quality	BA Environmental Studies
	Kevin Doyle	Cultural resources, Native American Concerns, and paleontology	BA Sociology
	Derek Holmgren	Visual resources and wastes, hazardous or solid	MS Environmental Science MPA Environmental Policy and Natural Resources Management BA Environmental Science
	Kate Krebs	Special designations (including NCAs, WSA, and Wilderness), visual resources	BA Environmental Studies and Spanish
	Laura Patten	Water resources, soil (playa) resources	MA Environmental Law and Policy BA Economics
	Kevin Rice	Wildlife/special status species	BS Environmental Science
	Marcia Rickey	GIS and data	MS Biology, Conservation Biology Sequence BS Biology

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Team	Name	Role/Responsibility	Education
<b>ID Team and Support Staff (continued)</b>	Chad Ricklefs	Recreation	MURP Environmental Planning BA Political Science and Environmental Conservation
	Cindy Schad	Word Processing/508 Compliance	BFA Creative Writing
	Andy Spellmeyer	Wildlife/Special Status Species	MS Biology BS Biology
	Angelo Sisante	Traffic and transportation, document support	MS Resource Economics BS Economics
	Morgan Trieger	Special status species, vegetation, weeds, migratory birds, fish, and wildlife	BS Conservation and Resource Studies
	Randolph Varney	Technical Editor	MFA Writing BA Technical and Professional Writing
	Tom Whitehead	Water resources, soils, geology, and paleontology	MS Hydrology BS Geology BA Anthropology

**TRINITY CONSULTANTS**

Name	Role/Responsibility	Education
David Strohm	Air Quality	BS Meteorology

**COMMUNITY PASTS**

Name	Role/Responsibility	Education
Terri McBride	Cultural resources, Native American Concerns, paleontology	MA Anthropology BA Art

**WESTERN RESEARCH COMPANY INC.**

Name	Role/Responsibility	Education
Eric Crane PhD	Night Skies	PhD Astrophysics BS Physics, Mathematics, Astronomy

**CHARLES M. SALTER ASSOCIATES**

Name	Role/Responsibility	Education
Alexander Salter	Noise	BS Engineering Mechanics

**ECONORTHWEST**

Name	Role/Responsibility	Education
Joel Ainsworth	Socioeconomics and Environmental Justice	MS Applied Economics BA Economics
Sarah Reich	Socioeconomics and Environmental Justice	MA Urban and Environmental Policy and Planning BS Environmental Economics, Policy, and Management

**SOLAEGUI ENGINEERS LTD.**

<b>Name</b>	<b>Role/Responsibility</b>	<b>Education</b>
Paul Solaegui, PE, PTOE	Traffic and Transportation	BS Civil Engineering

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**FAR WESTERN ANTHROPOLOGICAL RESEARCH GROUP, INC.**

<b>Name</b>	<b>Role/Responsibility</b>	<b>Education</b>
D. Craig Young, PhD	Cultural Resources and National Historic Trails	PhD Anthropology MA Anthropology

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