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

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Burning Man Event Special Recreation Permit

Draft Environmental Impact Statement: Volume 1

Costs

BLM: $280,000

Proponent: $922,468

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.

DRAFT
ENVIRONMENTAL IMPACT STATEMENT
BURNING MAN EVENT SPECIAL RECREATION PERMIT

LEAD AGENCY:	**US Department of the Interior,** **Bureau of Land Management,** **Winnemucca District Office,** **Black Rock Field Office**
COOPERATING AGENCIES:	**US Department of Homeland Security** **US Environmental Protection Agency** **US Federal Bureau of Investigation** **Pyramid Lake Paiute Tribe** **Nevada Department of Transportation** **Humboldt County** **Pershing County** **Pershing County Sheriff's Office** **Washoe County**
PROJECT LOCATION:	**Pershing County, Nevada**
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ABSTRACT

This Draft Environmental Impact Statement analyzes the potential impacts associated with a proposed multi-year Special Recreation Permit for Black Rock City, LLC to produce the Burning Man Event annually from 2019 to 2028. The Burning Man Event is an annual gathering in the Black Rock Desert of northwest Nevada. The Event takes place on Black Rock Desert Playa 8.5 miles northeast of Gerlach, Nevada, and approximately 100 miles northeast of Reno, Nevada. The primary component of the Proposed Action includes an incremental population increase of 5,000 per year, starting at 85,000 bodies on playa (including participants and BRC staff and volunteers, and excluding government personnel and vendors) in 2019, reaching a maximum population of 100,000 in 2022. The Main Event would occur for 9.5 days, ending at 6:00 pm on Labor Day. Site preparations for the event would take place up to 35 days in advance, and site cleanup would be conducted up to 35 days post-event. Event activities include technological displays, interactive events, social interactions, small- and large-scale art installations, and small and large burn events. In this Draft Environmental Impact Statement, the BLM analyzed the Proposed Action and four alternatives, including a No Event Alternative.

Responsible Official for EIS:	Mark Hall Black Rock Field Office Manager

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
ACEC	areas of critical environmental concern
ACHP	Advisory council on historical preservation
ACOE	Army Corps of Engineers
ADA	Americans with Disabilities Act
ADT	Average daily traffic
ALAN	Artificial light at night
AO	Authorized officer
ARPA	Archaeological Resources Protection Act of 1979
ATV	All terrain vehicle
BLM	Bureau of Land Management
BO	Biological opinion
BRC	Black Rock City, LLC
BRCMA	Black Rock City Municipal Airport
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CISEH	Center for invasive species and ecosystem health
CR	County Road
dBA	A-weighted decibels
DEIS	Draft environmental impact statement
DNA	Determination of NEPA Adequacy
DNL	Day-Night average sound level
DRI	Desert Research Institute
EA	Environmental assessment
EIS	Environmental Impact Statement
EMPSi	Environmental Management and Planning Solutions Incorporated
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FBRHR	Friends of Black Rock High Rock
FE	Federally listed endangered
FEIS	Final environmental impact statement
FLPMA	Federal Land Policy and Management Act
FT	Federally listed threatened
GAP	Gap analysis program
GIS	Geographic Information System
GPS	Global positioning system
HAPs	Hazardous air pollutants
HMM	Hazardous material management
ICS	incident command system
IDT	Interdisciplinary team
IM	Instruction Memorandum

ACRONYMS AND ABBREVIATIONS *(continued)*

	Full Phrase
IPCC	Intergovernmental Panel on Climate Change
JOC	Joint Operations Center
KOP	key observation point
LCT	Lahontan cutthroat trout
LUA	Land-use authorization
LOS	Level of Service
LUP	Land-use plan
MBTA	Migratory Bird Treaty Act
MCLs	Maximum contaminant levels
MOU	Memorandum of understanding
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NASA	National Air and Space Administration
NCA	National Conservation Area
ND	No critical habitat designated
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NLCS	National Landscape Conservation System
NNHP	Nevada Natural Heritage Program
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPBH	Nevada Division of Public and Behavioral Health
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NTS	National Trail System
NVCRIS	Nevada Cultural Resource Information System
NWI	National Wetlands Inventory
NWP	Section 404 Clean Water Act Nationwide Permit
OHV	off-highway vehicle
PCE	Primary constituent elements
PFC	proper functioning condition

ACRONYMS AND ABBREVIATIONS *(continued)*

	Full Phrase
PFYC	Potential fossil yield classification
PLPT	Pyramid Lake Paiute Tribe
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or less
PSD	prevention of significant deterioration
PT	Proposed threatened
PTOE	Professional Traffic Operations Engineer
QA/QC	Quality Assurance/Quality Control
RDF	required design feature
REA	Recreation Enhancement Act
R&I	Relevance and importance
R&PP	Recreation and Public Purpose
RFFA	Reasonably Foreseeable Future
RMA	Recreation management area
RMIS	Recreation Management Information System
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
RV	Recreational vehicle
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office
SR	State Route
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SSS	Special status species
SWReGAP	Southwest Regional Gap Analysis Project
TCP	traditional cultural property
TDS	Total dissolved solids
T&E	Threatened and endangered
TMDL	Total maximum daily load
TRIC	Tahoe-Reno Industrial Center
UC	unified command
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USDOT	United States Department of Transportation
US EPA	US Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management
WFRHBA	Wild Free-Roaming Horses and Burros Act of 1971 (as amended)

ACRONYMS AND ABBREVIATIONS *(continued)*

	Full Phrase
WO	BLM Washington Office
WOUS	Waters of the United States
WSA	Wilderness Study Area

Executive Summary

ES.1 Introduction

Black Rock City, LLC (BRC) is applying for a special recreation permit (SRP) to produce the Burning Man Event (Event) on public lands administered by the Winnemucca District of the United States Bureau of Land Management (BLM). The request is for a 10-year permit (2019–2028) with a maximum Event population of 100,000 people. The population, also called bodies on the playa, is all Burning Man Event attendees, including participants and BRC staff and volunteers. The population does not include government personnel or vendors.

The Burning Man Event is a 9.5-day annual social gathering in the Black Rock Desert Playa (Black Rock Playa) of northwestern Nevada. The BLM has issued an SRP for the annual Burning Man Event on BLM-administered lands since 1991 (with a partial SRP for the Man and artwork on BLM-administered land in 1997). The BLM has completed seven different environmental assessments to analyze the potential impacts associated with the issuance of the SRPs, the most recent of which the BLM completed in 2012, which covered the 2012 through 2016 Events. For the 2017 and 2018 Events, the BLM prepared a determination of National Environmental Policy Act adequacy and issued two 1-year extensions to the 2012–2016 SRP.

ES.2 Purpose of and Need for Federal Action

The purpose of this environmental impact statement (EIS) is to analyze the potential impacts associated with a proposed multiyear SRP for BRC to conduct the Burning Man Event from 2019–2028 on public lands administered by the BLM Winnemucca District on the Black Rock Playa.

The need for action is established by the BLM's responsibility under the Federal Land Policy and Management Act of 1976, 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. In addition, the need for action is established by the Federal Lands Recreation Enhancement Act, which authorizes the BLM to issue SRPs for group activities and recreation events.

ES.3 Scoping, Consultation, and Coordination

The BLM held three public outreach meetings and two public scoping meetings to solicit public input on the proposed SRP and to identify potential issues for the EIS. The 45-day formal scoping period for the EIS began with publication of the notice of intent on June 20, 2018. Issues identified during the initial public outreach period and the public scoping period are included in **Chapter 1** and in the project scoping summary report (BLM 2018a).

In accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (2000), the BLM sent letters requesting consultation on Alternative A (Proposed Action) to the following tribes: Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, and Summit Lake Paiute Tribe. The BLM held consultation and informational meetings to discuss Alternative A (Proposed Action) with the Pyramid Lake Paiute Tribe in January 2017 and January and August of 2018. The BLM will continue government-to-government consultation with the Pyramid Lake Paiute Tribe throughout the EIS.

ES.4 Management Alternatives

This EIS carries forward five alternatives. The alternatives represent a reasonable range of management options identified in accordance with the National Environmental Policy Act, other applicable laws, and public, government, and tribal participation. **Chapter 2** describes the five alternatives in more detail.

ES.4.1 Alternative A (Proposed Action)

Under Alternative A (Proposed Action), the BLM Authorized Officer would approve a 10-year SRP for the Burning Man Event that would allow for an incremental population increase of 5,000 per year, starting at 85,000 bodies on the playa (including participants and BRC staff and volunteers, and excluding government personnel and vendors) in 2019, reaching a maximum population of 100,000 in 2022 through 2028.

The Event site would be a 3,900-acre pentagon surrounded by a perimeter fence. The perimeter fence would enhance site security, define the Event site, and prevent windblown trash from leaving the site. Before each Event, BRC would consult with the BLM to determine the exact location of the Event site and Closure Order area (Closure Area) boundary.

The Event site would be within a two-phased Closure Area. Closure Order Phase 1 would occur approximately 43 days before Labor Day, lasting 29 days, and again 6 days after Labor Day for a total of 57 days. It would encompass 9,570 acres. Closure Order Phase 2 would occur 14 days before Labor Day, would last for 21 days, and would encompass an additional 5,250 acres, for a total size of 14,820 acres (see **Figures 2-1** and **2-2**; **Appendix A** for Event site and Closure Area locations). In total, the Closure Order would last 78 days.

Site preparations would begin up to 35 days before the beginning of the Event, including preliminary surveying of the perimeter fence, the Man, Gate Road, BRC airport, and the streets, and construction of large camps. During the week before the Event, commonly referred to as build week, most materials would arrive for the construction of private theme camps and art installations. The population during build week could reach 30,000.

At the maximum population of 100,000, BRC would issue 34,000 vehicle passes; however, once within the Event site perimeter, participants would not be allowed to drive within the Closure Area other than directly from the Main Gate to their camping area or directly from their camping area to the Main Gate. BRC would also pursue the use of alternate transportation by approximately 15,000 to 24,000 people, the majority of which would use the Burner Express Bus and Express Air. Event participants within the Event site would travel primarily by foot and bicycle, but also by BRC-licensed mutant vehicles. The Event would include up to 1,000 mutant vehicles (art cars), which are to be licensed for day and night driving with a speed restriction of 5 miles per hour. During Event end (Exodus), there would be a metered traffic release of 1,000 cars per hour to reduce vehicle volume along County Road (CR) 34 and State Route (SR) 447.

Each year, the Event would start at 12:01 a.m. on Sunday the weekend before Labor Day and last until 6:00 p.m. on Labor Day. Major activities during the Event would include the burning of the Man, a 40- to 100-foot-tall wooden effigy at the center of Black Rock City, on Saturday night before Labor Day and the burning of the Temple on Sunday night before Labor Day. The Event would include up to 400 registered art installations and 2,000 interactive theme camps.

Within 5 days of the Event's end, all participants and most staff would vacate the site. Within 21 days of the Event's end, BRC staff and volunteers would remove all structures, large equipment, and the perimeter fence. All cleanup work would be completed within 35 days of the Event's end.

ES.4.2 Alternative B (Reduced Population Alternative)

Under Alternative B, the BLM would cap the maximum population of the Event at 50,000. The Closure Order period would be 15 days prior to the Event, 9.5 days for the Event, and 19 days after the Event ends. Vehicle passes would be capped at 17,000, and there would be no more than 500 mutant vehicles and 1,000 theme camps allowed. The Event site area would be 3,410 acres within a 14,150-acre, single-phase Closure Area boundary.

ES.4.3 Alternative C (Alternate Site Alternative)

Alternative C would be similar to Alternative A (Proposed Action), except the larger 18,940-acre Closure Area boundary and 3,900-acre Event perimeter would shift to the north, and there would be no phased Closure Area. Primary access to the playa would remain at Eight Mile Road; the distance from CR 34 to the Event site would be 8 miles. The maximum Event population would be 100,000.

ES.4.4 Alternative D (No Population Change/Action Alternative)

Under this alternative, the BLM would issue an SRP for the Burning Man Event with the same population cap (80,000), durations, and conditions as the 2018 Event. There would be a phased Closure Area, which would include a 9,570-acre Closure Area footprint up to build week and after the Event. During build week and the Event, the Closure Area footprint would be 14,330 acres.

ES.4.5 Alternative E (No Permit/Event Alternative)

Under this alternative, the BLM would not issue a Burning Man Event SRP. Due to the historic nature of the Event and the commitment from Event participants, it is assumed for analysis that a no Event alternative would likely result in an unauthorized gathering of thousands of people. The BLM would apply subsequent management strategies and protection measures to address issues related to large informal gatherings comprised of an unknown number of participants that may occur on the playa without infrastructure or mitigation measures. A closure order for the Event site in the affected environment may be necessary to prevent unauthorized group use of the Black Rock Playa. This alternative would still require a BLM agency presence to ensure the activities absent the Event in the time frame under Alternative A (Proposed Action) do not threaten natural and cultural resources and public health and safety on BLM-administered lands.

ES.5 Environmental Consequences

The purpose of the environmental consequences analysis in this EIS is to determine the potential for significant impacts of the federal action on the human and natural environment. **Chapter 3** objectively evaluates the likely direct, indirect, and cumulative impacts on the human and natural environment in terms of environmental, social, and economic consequences that are projected to occur from implementing the alternatives. **Appendix D** also provides a more detailed cumulative impacts analysis for each of the resources and resource uses in Chapter 3. **Appendix E** identifies recommended mitigation that would reduce impacts from the alternatives and monitoring measures that could inform future actions to further limit impacts.

ES.6 Comparison of Environmental Consequences of the Alternatives

Table ES-1 presents a comparison summary of impacts for the five alternatives. **Chapter 3** provides the detailed impact analysis.

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Table ES-1
Summary of Environmental Consequences

Biological Resources	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Migratory Birds	• Noise, artificial nighttime lighting, and decreased air quality could displace birds or alter foraging or movement. Birds could be injured or killed by Event participant vehicles or aircraft or from striking temporary structures. Birds could use trash in nest building, and trash could attract predators. Surface disturbance could affect invertebrate food sources. • Implementing Mitigation Measures[1] SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, and VIS-3 would reduce impacts. • Implementing Mitigation Measure SPEC-5 and Monitoring Measures SPEC-1 through SPEC-4 would inform the BLM and the United States Fish & Wildlife Service (USFWS) of impacts on migratory birds and ensure compliance with the Migratory Bird Treaty Act (MBTA) under this alternative.	• Impacts from collisions, air quality, noise, artificial nighttime lighting, and surface disturbance (food sources) could be slightly reduced because there would be fewer Event participants. • Implementing Mitigation Measures SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, and VIS-3 would reduce impacts further. • Implementing Mitigation Measure SPEC-5 and Monitoring Measures SPEC-1 through SPEC-4 would inform the BLM and USFWS of impacts on migratory birds and ensure compliance with the MBTA under this alternative.	• Impacts from surface disturbance (food sources) could be increased because the longer Event entrance road would result in more surface disturbance. • Implementing Mitigation Measures SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, and VIS-3 would reduce impacts. • Implementing Mitigation Measure SPEC-5 and Monitoring Measures SPEC-1 through SPEC-4 would inform the BLM and USFWS of impacts on migratory birds and ensure compliance with the MBTA under this alternative.	• Impacts would be similar to those under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, and VIS-3 would reduce impacts. • Implementing Mitigation Measure SPEC-5 and Monitoring Measures SPEC-1 through SPEC-4 would inform the BLM and USFWS of impacts on migratory birds and ensure compliance with the MBTA under this alternative.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. In the long term, the impact intensity would likely be reduced as word of the Event closure would spread.
Special Status Species	• Anthropogenic light, noise, structures, and human presence could alter bat and avian foraging or movement. • Participant vehicles could disturb or injure bighorn sheep from collision and reduce habitat quality by spreading weeds. • Impacts on Greater Sage-Grouse would not be expected at the Event site. Impacts would be most likely along travel routes, where they occur in high-quality habitat. • Implementing Mitigation Measures AQ-1, SPEC-2, SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, VEG-1, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• Impacts from anthropogenic light, noise, structures, human presence, and vehicles could be slightly reduced because there would be fewer Event participants. • Implementing Mitigation Measures AQ-1, SPEC-2, SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, VEG-1, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts further.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures AQ-1, SPEC-2, SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, VEG-1, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• Impacts would be similar to those under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures AQ-1, SPEC-2, SPEC-6, NAT-2, WHS-1 through WHS-8, SOIL-1, VEG-1, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. In the long term, the impact intensity would likely be reduced as word of the Event closure would spread.
Threatened and Endangered Species	• Potential effects from increased traffic levels and subsequent aquatic habitat pollution would be minimal. Alternative A (Proposed Action) may affect, but is unlikely to adversely affect, Lahontan cutthroat trout (LCT) and cui-ui.	• Impacts would be similar to those described under Alternative A (Proposed Action) but could be slightly reduced because there would be fewer Event participants. This alternative may affect, but is unlikely to adversely affect, LCT and cui-ui.	• Shifting the Event location to the north would not change the magnitude or type of impacts. This alternative may affect, but is unlikely to affect, LCT and cui-ui.	• Impacts would be similar to those under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. This alternative may affect, but is unlikely to affect, LCT and cui-ui.	• The impact intensity would likely be lower because there would be fewer participants at such a gathering. Impacts would likely be reduced further, as word of the Event closure would spread. This alternative would have no effect on LCT and cui-ui.
Vegetation (Including Invasive, Nonnative Species)	• Event participant vehicles could spread weeds along roads, and unauthorized off-road use could damage vegetation and increase weed establishment. • Implementing Mitigation Measures WHS-3, WHS-5, and VEG-1 would reduce impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), but they could be slightly reduced because there would be fewer Event participants. • Implementing Mitigation Measures WHS-3, WHS-5, and VEG-1 would reduce impacts further.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures WHS-3, WHS-5, and VEG-1 would reduce impacts.	• Impacts would be similar to those under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures WHS-3, WHS-5, and VEG-1 would reduce impacts.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. In the long term, the impact intensity would likely be reduced as word of the Event closure would spread.

Biological Resources	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Wetlands and Riparian Areas	• Recreational use at area hot springs would be discouraged, and participant use monitored (Monitoring Measure WET-1) during the Closure Order. As a result, there would not be effects on wetlands and riparian areas at these locations from recreational use. • Determining the need for a Clean Water Act Section 404 Nationwide Permit, and if necessary, complying with measures stipulated therein, would minimize or avoid impacts on jurisdictional areas (see Mitigation Measure WET-1).	• Impacts would be the same as those described under Alternative A (Proposed Action).	• Shifting the Event location to the north would not change the magnitude or type of impacts. Impacts would be the same as those under Alternative A (Proposed Action).	• Impacts would be the same as those described under Alternative A (Proposed Action). • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. In the long term, the impact intensity would likely be reduced as word of the Event closure would spread. • The relative difficulty of traveling from the playa to surrounding springs would be reduced, because recreationists could simply drive from a gathering on the playa to the surrounding springs.
Wildlife	• Anthropogenic factors like automobile and aircraft traffic, noise, human presence, artificial light, temporary structures, pollution and trash, fugitive dust, and surface disturbance could displace wildlife, result in injury or mortality, and degrade habitat. • Implementing Mitigation Measures AQ-1 through AQ-3, SPEC-2, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), but impacts from traffic collisions, air quality, and surface disturbance could be slightly reduced because there would be fewer Event participants. Impacts from noise and light would be as described under Alternative A (Proposed Action). • Implementing Mitigation Measures AQ-1 through AQ-3, SPEC-2, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts further.	• The longer Event entrance road would result in more surface disturbance and associated impacts on invertebrates. • Implementing Mitigation Measures AQ-1 through AQ-3, SPEC-2, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• Impacts would be similar to those under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures AQ-1 through AQ-3, SPEC-2, and VIS-3, and Monitoring Measures SPEC-1 through SPEC-4 would reduce impacts.	• The impact intensity would likely decrease compared with other alternatives and be more similar to impacts during non-Event time periods. Impacts would likely be reduced further, as word of the Event closure would spread.

Cultural Resources	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Cultural (Including National Historic Trails [NHTs])	• The Event could increase the potential for disturbance to historic properties, undiscovered cultural resources, or physical remnants of NHTs. • The Event could temporarily affect access to, and the historic setting and feeling of, NHTs. • The Event would allow for the city footprint to move from year to year. This would result in the disturbance footprint, including trenching and burning, occurring in different areas each year. • Implementing Mitigation Measures CULT-1 through CULT-4, and Monitoring Measure CULT-2 would reduce impacts.	• The potential for disturbance to historic properties, undiscovered cultural resources, or physical remnants of NHTs under Alternative B is similar, but to a lesser extent, to the potential under Alternative A (Proposed Action). • Alternative B could temporarily affect access to, and the historic setting and feeling of, NHTs similar to Alternative A (Proposed Action), but to a lesser extent. • A reduced population under this alternative would allow for a smaller city footprint that could move a greater distance from year to year. This would result in the disturbance footprint, including trenching and burning, occurring in different areas each year. • Implementing Mitigation Measures CULT-1 through CULT-4, and Monitoring Measure CULT-2 would reduce impacts further.	• Additional cultural resource identification efforts would be needed to determine the presence and the potential for impacts on historic properties and the need for avoidance or mitigation. • Implementing Mitigation Measures CULT-1 through CULT-4, and Monitoring Measure CULT-2 would reduce impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. Impacts would be similar to those described under Alternative A (Proposed Action), but to a lesser extent. • Implementing Mitigation Measures CULT-1 through CULT-4, and Monitoring Measure CULT-2 would reduce impacts.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. The BLM would apply management strategies and protection measures to address issues related to large, informal gatherings and to ensure that cultural resources are protected. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.
Native American Religious Concerns	• The Event could result in increased visitation, unauthorized artifact collection, vandalism, damage from vehicle use on the playa and reservation roads, litter, incompatible activities, and loss of access to traditional-use areas or culturally important locations. • Increased recreational use of hot springs could impede the Native American setting. • Implementing Mitigation Measures NAT-1 and NAT-2, and Monitoring Measures CULT-2, NAT-2, WHS-1, WHS-2, and WHS-3 would reduce impacts.	• Impacts may be reduced because there would be fewer Event participants. • Implementing Mitigation Measures NAT-1 and NAT-2, and Monitoring Measures CULT-2, NAT-2, WHS-1, WHS-2, and WHS-3 would reduce impacts further.	• Additional consultation with tribes would be needed to determine any concerns with the new site. • Implementing Mitigation Measures NAT-1 and NAT-2, and Monitoring Measures CULT-2, NAT-2, WHS-1, WHS-2, and WHS-3 would reduce impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures NAT-1 and NAT-2, and Monitoring Measures CULT-2, NAT-2, WHS-1, WHS-2, and WHS-3 would reduce potential impacts.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. The BLM would apply management strategies and protection measures to address issues related to large, informal gatherings and to ensure that Native American religious concerns are protected. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.
Paleontology	• Paleontological resource damage, unauthorized collection, or loss could occur at springs, Potential Fossil Yield Classification (PFYC) Class 3 areas, playa margins, and off-site fossil locations. • No impacts would occur on the playa due to a very low paleontological potential. • Implementing Mitigation Measures CULT-2 through CULT-4 would reduce impacts.	• Impacts could be reduced because there would be fewer Event participants. • Implementing Mitigation Measures CULT-2 through CULT-4 would reduce impacts further.	• Additional paleontological consideration would be needed to determine any concerns with the new site. • Implementing Mitigation Measures CULT-2 through CULT-4 would reduce impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures CULT-2 through CULT-4 would reduce impacts.	• The impact intensity would likely decrease compared with other alternatives and would be more like impacts during non-Event time periods. The BLM would apply management strategies and protection measures to address issues related to large, informal gatherings and to ensure that paleontological resources are protected. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

Health and Safety	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Public Health and Safety (Including Law Enforcement)	• The Event could strain local community and partner agency resources, which could prevent meeting other agency priorities, public safety operations, and public interests. • The Event traffic could disrupt emergency and wildfire response or suppression, and slow evacuation times. • Concern could increase for public health and safety factors as the Event population increases. • Implementing Mitigation Measures PHS-1 through PHS-6 would reduce impacts. • Implementing Monitoring Measures PHS-1 through PHS-6 could inform future actions to limit impacts on public health and safety.	• The impact intensity could be reduced because there would be fewer Event participants. • Implementing Mitigation Measures PHS-1 through PHS-6 would further reduce impacts. • Implementing Monitoring Measures PHS-1 through PHS-6 could inform future actions to further limit impacts on public health and safety.	• The alternate site would substantially increase concerns related to civil disobedience, emergency response, law enforcement, and evacuation due to the more remote location and associated emergency response challenges. • Implementing Mitigation Measures PHS-1 through PHS-6 would reduce impacts. • Implementing Monitoring Measures PHS-1 through PHS-6 could inform future actions to limit impacts on public health and safety.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures PHS-1 through PHS-6 would reduce impacts. • Implementing Monitoring Measures PHS-1 through PHS-6 could inform future actions to limit impacts on public health and safety.	• If unauthorized gatherings occurred, a law enforcement presence would be required to ensure natural and cultural resource protection and to maintain public health and safety on BLM-administered lands. • The potential for civil unrest could increase as participants could protest the decision. • Concern would remain for public health and safety factors. • In the long term, the impact intensity would likely be reduced as word of the Event closure would spread.
Wastes, Hazardous or Solid	• Solid waste would be generated and dispersed into the Assessment Area. Oil drips or leaks and gray water or black water would be deposited on the playa, and hazardous materials would be released into the environment. • Implementing Mitigation Measures WHS-1 through WHS-8 would reduce impacts. • Implementing Monitoring Measures WHS-1 through WHS-4 could inform future actions to limit impacts within the Closure Area and surrounding roadways.	• The release of solid waste, vehicle oil, wastewater, and hazardous materials may be reduced because there would be fewer Event participants. • Implementing Mitigation Measures WHS-1 through WHS-8 would further reduce impacts. • Implementing Monitoring Measures WHS-1 through WHS-4 could inform future actions to further limit impacts within the Closure area and surrounding roadways.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures WHS-1 through WHS-8 would reduce impacts. • Implementing Monitoring Measures WHS-1 through WHS-4 could inform future actions to limit impacts within the Closure Area and surrounding roadways.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures WHS-1 through WHS-8 would reduce impacts. • Implementing Monitoring Measures WHS-1 through WHS-4 could inform future actions to limit impacts within the Closure area and surrounding roadways.	• As word of the Event termination would spread, fewer participants would be expected to arrive in subsequent years. Impacts from solid waste, hydrocarbon waste, wastewater, and hazardous waste would be expected to reduce over time.

Physical Resources	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Air (Including Quantitative Analysis)	• Criteria pollutants, greenhouse gases, and particulate emissions would be released by vehicles used to travel to the Event site, and by mutant and service vehicles, generators, and burning art installations on the playa. Foot, bicycle, and vehicle traffic during the Event would also create air quality impacts by increasing particulate matter concentrations. • Implementing Mitigation Measures AQ-1 through AQ-5 would reduce impacts. • Implementing Monitoring Measures AQ-1 and AQ-2 could inform future actions to limit air quality impacts.	• Impacts on air quality caused by foot traffic, travel to the Event, and vehicle use during the Event would be less under this alternative due to fewer Event participants. • Implementing Mitigation Measures AQ-1 through AQ-5 would further reduce impacts. • Implementing Monitoring Measures AQ-1 and AQ-2 could inform future actions to further limit air quality impacts.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures AQ-1 through AQ-5 would reduce impacts. • Implementing Monitoring Measures AQ-1 and AQ-2 could inform future actions to limit air quality impacts.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures AQ-1 through AQ-5 would reduce impacts. • Implementing Monitoring Measures AQ-1 and AQ-2 could inform future actions to limit air quality impacts.	• Canceling the Event under Alternative E would have less air impacts than other alternatives, and any impacts from an unpermitted event would decrease over time as word of the Event closure would spread.
Noise	• Temporary sound increases over ambient levels would occur from vehicles, large gatherings of participants, theme camps, and mutant vehicles. Permanent sound increases would not occur.	• Less sound would be generated under this alternative, because there would be fewer vehicles, participants, theme camps, and mutant vehicles.	• The change in Event location would change the locations where sounds from participants, theme camps, and mutant vehicles are generated, so sound levels at monitoring stations would also change.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • Sound levels would not increase between 2019 and 2028 because the number of Event participants would not increase.	• Because BRC would not assist in managing any activities on the playa, the potential would exist for noise impacts, but impacts would be expected to be less than under other alternatives because of BLM management strategies and protection measures that would be applied. Over time, impacts would be reduced as word of the Event closure would spread.
Soils (Playa Sediments)	• Surface disturbance would increase the potential for wind erosion, playa deformation, and mound formation. • Implementing Mitigation Measures SOIL-1 through SOIL-3 would reduce impacts and restore playa contours. • Implementing Monitoring Measures SOIL-1 and SOIL-2 could inform future actions to limit impacts on playa sediments.	• The reduction in Event participants would lead to lower-intensity impacts for wind erosion, playa deformation, and mound formation. • Implementing Mitigation Measures SOIL-1 through SOIL-3 would further reduce impacts and restore playa contours. • Implementing Monitoring Measures SOIL-1 and SOIL-2 could inform future actions to further limit impacts on playa sediments.	• The change in Event location could lead to higher-intensity impacts from playa deformation at the new site, because previous surface disturbance from the Event has not occurred at this location. • Implementing Mitigation Measures SOIL-1 through SOIL-3 would reduce impacts and restore playa contours. • Implementing Monitoring Measures SOIL-1 and SOIL-2 could inform future actions to limit impacts on playa sediments.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures SOIL-1 through SOIL-3 would reduce impacts and restore playa contours. • Implementing Monitoring Measures SOIL-1 and SOIL-2 could inform future actions to limit impacts on playa sediments.	• Unpermitted events would likely have individually smaller areas of playa crust disturbance, but the total area or duration of disturbance could be greater if there are more, larger, or longer-lasting events. Impacts from an unauthorized event or events would not be confined to an enclosed area; however, because of BLM management strategies and protection measures that would be applied, impacts would be less than those under Alternative A and would dissipate over time as word of the Event closure would spread.

Physical Resources	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Visual Resources (Including Night Skies)	• Visual resource management (VRM) class objectives would be met at three key observation points (KOPs). VRM class objectives would not be met at one KOP; this would only occur during the Event. The most notable change to the landscape from the closest KOP would be dust at the Event site. Dust presence would vary throughout the day and is influenced by the playa condition, Event activity level, wind, and dust-abatement measures. • Artificial light at night levels during the Event are in stark contrast to baseline levels, but they are comparable with other population centers. • Implementing Mitigation Measures SPEC-2 and VIS-3 would reduce impacts. • Implementing Monitoring Measures VIS-1 through VIS-4 could inform future actions to limit impacts on visual resources, including night skies.	• VRM class objectives would be met at all KOPs. Fewer Event participants would potentially generate less dust, litter, and artificial light, resulting in fewer opportunities for affecting visual resources and night skies. • Implementing Mitigation Measures SPEC-2 and VIS-3 would further reduce impacts. • Implementing Monitoring Measures VIS-1 through VIS-4 could inform future actions to further limit impacts on visual resources, including night skies.	• VRM class objectives would be met at all KOPs. The change in Event location would shift the location of the source of visual and night skies impacts but would not change the magnitude or type of impacts. • Implementing Mitigation Measures SPEC-2 and VIS-3 would reduce impacts. • Implementing Monitoring Measures VIS-1 through VIS-4 could inform future actions to limit impacts on visual resources, including night skies.	• VRM class objectives would be met at all KOPs. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures SPEC-2 and VIS-3 would reduce impacts. • Implementing Monitoring Measures VIS-1 through VIS-4 could inform future actions to limit impacts on visual resources, including night skies.	• VRM class objectives would be met at all KOPs. Because BRC would not assist in managing any activities on the playa, the potential exists for visual resource impacts, but because of BLM management strategies and protection measures that would be applied, impacts would be less than under other alternatives. Impacts would be expected to dissipate over time as word of the Event closure would spread.
Water Resources	• Application of dust suppression water could affect surface water or groundwater quality depending on the quantity of water applied. • Surface water and/or groundwater quality could be degraded if hazardous materials, such as oil or wastewater, leak onto or are discharged onto the playa. Monitoring oil drips and wastewater spills would allow the BLM and BRC to quantify these spills. • Groundwater pumping would not occur, so no administered groundwater basins would be affected. • Recreational hot spring use could cause water quality impacts at these locations, but monitoring participant use of hot springs during the Closure Order period would allow the BLM to monitor changes in water quality. • Implementing Mitigation Measures WHS-4 through WHS-6 would reduce impacts on groundwater quality from human waste. • Implementing Monitoring Measures WET-1, WTR-1, and WHS-2 could inform future actions to limit impacts on water quality within the Closure Area and the adjacent springs.	• The impact intensity on surface water and groundwater quality may be reduced because there would be fewer Event participants. • Implementing Mitigation Measures WHS-4 through WHS-6 would further reduce impacts on groundwater quality from human waste. • Implementing Monitoring Measures WET-1, WTR-1, and WHS-2 could inform future actions to limit impacts on water quality within the Closure Area and the adjacent springs.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures WHS-4 through WHS-6 would reduce impacts on groundwater quality from human waste. • Implementing Monitoring Measures WET-1, WTR-1, and WHS-2 could inform future actions to limit impacts on water quality within the Closure Area and the adjacent springs.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures WHS-4 through WHS-6 would reduce impacts on groundwater quality from human waste. • Implementing Monitoring Measures WET-1, WTR-1, and WHS-2 could inform future actions to limit impacts on water quality within the Closure Area and the adjacent springs.	• Alternative E would have less water resource impacts than under other alternatives, and any impacts from an unpermitted event would decrease over time as word of the Event closure would spread. • If a substitute event occurred off of BLM-administered lands, impacts on water quality would depend on the location of the substitute event, the size of the substitute event, and other factors, such as the proximity of hot springs and other surface water and groundwater basins within that area.

Social Values and Economics	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Economics	• Total direct annual spending related to the Event associated with BRC nonlabor operational expenditures and participants spending is estimated at $166 million at the peak Event size and maximum spending levels. Total economic output in Nevada is estimated at over $78 million per year. Almost $68 million of this would occur in the primary Assessment Area. • In SRP years 1 through 4, when the population could increase by 5 percent each year, spending and the economic contribution would increase commensurately until it reaches the year 5 amounts described above. • The level of services required for law enforcement and management would also be increased with the Event size. Public health and safety indicators, to include BLM citations, reported sexual assaults, and arrests made by Pershing County Sheriff's Office, can be expected to proportionately increase with the population size. The level to which the increase in revenue with the increased Event size would offset increased demand and costs of services is uncertain and would likely vary by service and agency. • In total, an estimated $4,619,000 per year in state and local taxes would be collected from Event participants spending under Alternative A (Proposed Action). • Funding for agencies and tribal governments would be affected from staffing and support for the Event. • Implementing Mitigation Measure ECON-1 would reduce impacts.	• Total direct spending associated with BRC nonlabor operational expenditures and participants spending is estimated to decrease to approximately $80 million per year. Total economic contributions would decrease to a total economic output in Nevada of $40 million per year. Almost $35 million of this would occur in the primary Assessment Area. • With the reduced Event size, the potential for strains on resources and budgets would be reduced, as the demand and costs for all services would decrease in accordance with the population decrease; however, a decreased attendance would decrease contributions to tax revenue. • Total state and local tax revenue collected from Event participants spending is estimated at $2,309,500 per year. • Implementing Mitigation Measure ECON-1 would further reduce impacts.	• Total direct annual spending is estimated to be the same as that under Alternative A. • Due to the more remote location of the alternate Event location, there is the potential that the cost and time required to provide services could increase under this alternative. • Implementing Mitigation Measure ECON-1 would reduce impacts.	• Total direct spending associated with BRC nonlabor operational expenditures and participants spending is estimated at $132.6 million per year. Economic contributions from spending in Nevada are estimated at $63 million per year. Almost $55 million of this would occur in the primary Assessment Area. • Under Alternative D, no increase in the population size or related increases in the cost and demand for services would occur above current conditions, decreasing the potential for strains on services and budgets. • With the Event population remaining at current population levels, total tax revenue is estimated at $3,695,200 per year. • Implementing Mitigation Measure ECON-1 would reduce impacts.	• Economic contributions from participants traveling to and from a large informal Event in the absence of an SRP would still occur, although the specific amount cannot be determined. Because no BRC spending would occur to organize and hold the Event, no contributions would occur from this spending. In the long term, economic contributions would decrease as the Event size would decrease. • In the absence of a formal SRP permit and an Event run by BRC, it is likely that BLM staff, as well as local law enforcement and state highway patrol, would remain necessary to manage informal event crowds and traffic. As a result, demand for services and costs would increase. In the long term, impacts would most likely be reduced as word of the Event closure would spread, and the Event size would decrease.

Social Values and Economics	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Environmental Justice	• Impacts on social values and economics have the potential to result in disproportionate adverse impacts on low-income and minority populations in Gerlach and the Pyramid Lake Paiute Tribe due to the proximity of the Event to these populations. The inclusion of mitigation measures and communication with communities regarding Event issues would minimize the level of impacts. Short-term impacts may remain at locally significant levels for traffic (based on an unacceptable level of service for some area roads at peak use), as discussed in **Section 3.9.2**, Transportation and Traffic. • Implementing Mitigation Measures NAT-2, PHS-6, and TRANS-1 would reduce environmental justice impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to reduce environmental justice impacts from Event-related traffic and transportation.	• With the reduction in the Event size, identified concerns for environmental justice communities (low-income and minority populations in Gerlach and the Pyramid Lake Paiute Tribe) would likewise decrease in intensity, assuming implementation of measures to minimize impacts. • Implementing Mitigation Measures NAT-2, PHS-6, and TRANS-1 would further reduce environmental justice impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to reduce environmental justice impacts from Event-related traffic and transportation.	• Impacts on environmental justice communities (low-income and minority populations in Gerlach and the Pyramid Lake Paiute Tribe) would remain similar to those described under Alternative A (Proposed Action). • Implementing Mitigation Measures NAT-2, PHS-6, and TRANS-1 would reduce environmental justice impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to reduce environmental justice impacts from Event-related traffic and transportation.	• Potential impacts on identified environmental justice communities (low-income and minority populations in Gerlach and the Pyramid Lake Paiute Tribe) would remain similar to current conditions. • Implementing Mitigation Measures NAT-2, PHS-6, and TRANS-1 would reduce environmental justice impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to reduce environmental justice impacts from Event-related traffic and transportation.	• In the absence of an organized event structure, some issues in identified environmental justice communities (low-income and minority populations in Gerlach and the Pyramid Lake Paiute Tribe) could be increased. For example, with a lack of limits on vehicles accessing the playa or organized traffic management, local traffic impacts could be elevated in certain areas. The potential for sustained participation in an unauthorized event would likely dissipate over time; therefore, related impacts would likewise decrease over time.
Social Values	• Event activities have the potential to affect community values and the social setting. These impacts are short term and include, but are not limited to, increased traffic, trash, and other waste along roadsides, and increased airborne particulates from playa dust. Impacts would be highest for communities closest to the Event, such as Gerlach. • Additional impacts could occur where community members feel a disconnect between Event actions and community values. • Positive contributions to local communities from BRC would continue or increase. • Impacts on local populations could be reduced by measures included in Alternative A (Proposed Action) or as mitigation measures. • The Event could continue to affect other recreationalists. • With the increased Event size, there could be an increased potential for changes to the values and setting of the Event for Event participants. • A phased Event population increase under Alternative A (Proposed Action) could result in elevated impacts on nonmarket values supported by the playa. • Implementing Mitigation Measure PHS-6 would reduce social value impacts on the Pyramid Lake Paiute Tribe (PLPT) and local communities.	• Under Alternative B, reducing the Event population size to 50,000 would reduce the intensity of impacts compared with Alternative A (Proposed Action). • Implementing Mitigation Measure PHS-6 would further reduce social value impacts on the PLPT and local communities.	• Moving the Event to an alternate site on the playa would not likely further affect the community or participant social setting; Gerlach would remain the closest town to the Event, and travel routes would remain similar to those under Alternative A. • Implementing Mitigation Measure PHS-6 would reduce social value impacts on the PLPT and local communities.	• Due to the lack of a phased population increase, impacts would be reduced compared with current conditions. • Implementing Mitigation Measure PHS-6 would reduce social value impacts on the PLPT and local communities.	• In the absence of an organized event structure, some identified social issues associated with the Event could occur. For example, the potential impacts of trash and traffic concerns, as well as concerns about illegal substance abuse and law enforcement issues, could occur in the absence of a controlled event; however, because of BLM management strategies and protection measures that would be applied, impacts would be less than under other alternatives. The potential for sustained participation in an unauthorized event would likely dissipate over time; therefore, related impacts would likewise decrease over time.

Special Designations *s*	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
National Conservation Areas (NCAs)	• The Event could affect NCA values by increasing visitation rates outside of the Event period. An estimated 12,800 to 16,000 additional visitors to the NCA would occur outside of the Closure Order period. • Implementing Mitigation Measures NCA-1 and NCA-2 would reduce impacts. • Implementing Monitoring Measure NCA-1 could inform future actions to limit impacts on the NCA.	• The impact intensity on NCA values could be reduced because there would be fewer Event participants. An estimated 8,000 visitors would return to the NCA outside of the Closure Order period. • Implementing Mitigation Measures NCA-1 and NCA-2 would further reduce impacts. • Implementing Monitoring Measure NCA-1 could inform future actions to limit impacts on the NCA.	• Shifting the Event location to the north would not change the magnitude or type of impacts. • Implementing Mitigation Measures NCA-1 and NCA-2 would reduce impacts. • Implementing Monitoring Measure NCA-1 could inform future actions to limit impacts on the NCA.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. An estimated 12,800 visitors would return to the NCA outside of the Closure Order period. • Implementing Mitigation Measures NCA-1 and NCA-2 would reduce impacts. • Implementing Monitoring Measure NCA-1 could inform future actions to limit impacts on the NCA.	• If an unpermitted event occurred, it could cause impacts on visitation in the NCA, but to a lesser degree than current conditions due to fewer people on the playa. If a substitute event occurred on lands not administered by the BLM, impacts on the NCA would depend on where within the NCA a substitute event would occur.
Wilderness	• Increased visitation, noise, and night sky impacts from Event activities could affect wilderness visitors' ability to enjoy predominantly natural, solitary, and quiet recreation in nearby wilderness areas. • Public access to nearby wilderness areas would be retained; however, Event-related traffic could inconvenience wilderness visitors. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• The impact intensity on wilderness areas could be reduced because there would be fewer Event participants. • Implementing Mitigation Measure WILD-1 could further reduce impacts from air traffic associated with the Event.	• The impact intensity in the Calico Mountains and Black Rock Desert Wilderness Areas would be increased because the Event would be closer to these areas, thereby introducing new visitors to the area. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• If an unpermitted event occurred, it could cause impacts on wilderness areas, but to a lesser degree than current conditions due to fewer people on the playa. If a substitute event occurred on lands not administered by the BLM, impacts would depend on the proximity of wilderness areas to where a substitute event would occur.
Wilderness Study Areas (WSAs)	• Increased visitation, noise, and night sky impacts from Event activities could affect WSA visitors' ability to enjoy predominantly natural, solitary, and quiet recreation in nearby WSAs, including the Selenite Mountains, Poodle Mountain, and Fox Range WSAs. • Public access to nearby WSAs would be retained; however, Event-related traffic could inconvenience WSA visitors. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• The impact intensity on WSAs could be reduced because there would be fewer Event participants. • Implementing Mitigation Measure WILD-1 could further reduce impacts from air traffic associated with the Event.	• The impact intensity in the Selenite Mountains, Poodle Mountain, and Fox Range WSAs would be decreased because the Event would be further from these areas. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • The impact intensity would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measure WILD-1 could reduce impacts from air traffic associated with the Event.	• If an unpermitted event occurred, it could cause impacts on WSAs, but to a lesser degree than current conditions due to fewer people on the playa. If a substitute event occurred on lands not administered by the BLM, impacts would depend on the proximity of WSAs to where a substitute event would occur.

Visitor Uses	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Recreation	• Unhealthy air quality and potential respiratory health issues could limit the extent, location, and type of recreation of both Event participants and other recreationists. Dust abatement and limits on vehicle permits would lessen impacts. • Event structures, vehicles, dust, and artificial light at night (ALAN) would diminish the recreation setting for some users. • Micro-debris accumulation and playa deformation would alter the physical setting, diminishing the sense of naturalness and remoteness and the viability of certain recreational activities. Required playa restoration would lessen the potential for impacts. • The phased Closure Area would directly restrict non-Event visitors' ability to recreate on the playa during the peak visitation season. • A larger Event population could be undesirable for some Event participants. • During the Closure Order, ALAN resulting from the pre-Event activities would restrict the ability of recreationists to fully observe the Perseid meteor shower, both from on the playa and nearby sites. • Implementing Mitigation Measures AQ-1 through AQ-5, CULT-1, NAT-2, NCA-1, PHS-1 through 6, SOIL-1 through 3, SPEC-2, TRAN-1, VIS-3, and WHS-4 through WHS-8 would reduce impacts. • Implementing Monitoring Measures AQ-1, AQ-2, NCA-1, REC-1, REC-3, REC-4, REC-6, REC-7, SOIL-1, SOIL-2, TRAN-1, VIS-1, VIS-3, and VIS-4 could inform future actions to limit impacts on recreation from the Event.	• Impacts on the recreation setting and experience for non-Event visitors would generally be less than under Alternative A (Proposed Action) and occur in a smaller area. • The non-phased Closure Area would be smaller, but it would preclude non-Event access, displacing or precluding some non-Event activities. • Restricting the Event population to 50,000 would displace visitors who would have otherwise attended the Event. • During the Closure Order, ALAN resulting from the pre-Event activities would restrict the ability of recreationists to fully observe the Perseid meteor shower, but to a lesser degree than under Alternative A (Proposed Action). • Implementing Mitigation Measures AQ-1 through AQ-5, CULT-1, NAT-2, NCA-1, PHS-1 through PHS-6, SOIL-1 through SOIL-3, SPEC-2, VIS-3, and WHS-4 through WHS-8 would further reduce impacts. • Implementing Monitoring Measures AQ-1, AQ-2, NCA-1, REC-1, REC-3, REC-4, REC-6, REC-7, SOIL-1, SOIL-2, TRAN-1, VIS-1, VIS-3, and VIS-4 could inform future actions to further limit impacts on recreation from the Event.	• Impacts on the recreation setting and experience would be increased on non-Event users in the Calico Mountains Wilderness and Selenite Mountains WSA because the Event would be nearer these areas. • The non-phased Closure Area would displace or preclude non-Event access similar to the Phase 2 Closure Area under Alternative A (Proposed Action); however, the duration of impacts would be longer compared with the Phase 2 Closure Area under Alternative A. • The Closure Area boundary would conflict with the historically preferred location for amateur rocket launching and could reduce or eliminate the viability of that activity. • A larger Event population could be undesirable for some Event participants. • During the Closure Order, ALAN resulting from the pre-Event activities would restrict the ability of recreationists to fully observe the Perseid meteor shower, both from on the playa and nearby sites. • Implementing Mitigation Measures AQ-1 through AQ-5, CULT-1, NAT-2, NCA-1, PHS-1 through PHS-6, SOIL-1 through SOIL-3, SPEC-2, TRAN-1, VIS-3, and WHS-4 through WHS-8 would reduce impacts. • Implementing Monitoring Measures AQ-1, AQ-2, NCA-1, REC-1, REC-3, REC-4, REC-6, REC-7, SOIL-1, SOIL-2, TRAN-1, VIS-1, VIS-3, and VIS-4 could inform future actions to limit impacts on recreation from the Event.	• Impacts would be similar to those described under Alternative A (Proposed Action), however to a lesser degree. • Not increasing the Event population between 2019 and 2028 would decrease impacts on recreationists outside of the Event, but it would increase impacts on those who want to attend the Event and would be unable to participate. • Implementing Mitigation Measures AQ-1 through AQ-5, CULT-1, NAT-2, NCA-1, PHS-1 through PHS-6, SOIL-1 through SOIL-3, SPEC-2, TRAN-1, VIS-3, and WHS-4 through WHS-8 would reduce impacts. • Implementing Monitoring Measures AQ-1, AQ-2, NCA-1, REC-1, REC-3, REC-4, REC-6, REC-7, SOIL-1, SOIL-2, TRAN-1, VIS-1, VIS-3, and VIS-4 could inform future actions to limit impacts on recreation from the Event.	• Without stipulations provided in an SRP, no responsible party to manage the Event, and no Closure Area, there would be the potential for unsafe recreational conditions with potentially higher-intensity impacts on the recreation setting and user experiences than any other alternative. • There would be a greater potential for indirect effects on the recreation setting following unpermitted events. • In the long term, impacts would most likely be reduced as word of the Event closure would spread, and the Event size would decrease.

Visitor Uses	Alternative A (Proposed Action)	Alternative B (Reduced Population Alternative)	Alternative C (Alternate Site Alternative)	Alternative D (No Population Change/Action Alternative)	Alternative E (No Permit/Event Alternative)
Transportation and Traffic	• The average daily traffic volume on roadways used by Event participants would increase from baseline (2017) levels. Traffic volume would increase the most (24 percent) along SR 447. Most segments of the SR 447 roadway would continue to operate at an acceptable level of service conditions; however, SR 447 north of SR 446 in Nixon, Nevada, would fall to the level of service E conditions. Vehicle pass limits (Mitigation Measure TRAN-1) and the metered release during Exodus would reduce the potential for congestion. • Implementing Mitigation Measure TRAN-2 could also reduce impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to limit impacts on traffic and transportation from the Event.	• Fewer Event participants would lessen the average daily traffic volume on roadways used by Event participants compared with baseline levels. All roadway segments would continue to operate at an acceptable level of service conditions. • Implementing Mitigation Measure TRAN-2 could further reduce impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to further limit impacts on traffic and transportation from the Event.	• Impacts on the average daily traffic volume and level of service conditions on roadways used by Event participants would be nearly the same as under Alternative A (Proposed Action). Localized traffic impacts on CR 34 could be higher. • Implementing Mitigation Measures TRAN-1 and TRAN-2 could reduce impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to limit impacts on traffic and transportation from the Event.	• Impacts on the average daily traffic volume and level of service conditions on roadways used by Event participants would be the same as observed during the 2017 Event. Impacts on the traffic volume and level of service conditions would not increase between 2019 and 2028 because the number of Event participants would not increase. • Implementing Mitigation Measures TRAN-1 and TRAN-2 would reduce impacts. • Implementing Monitoring Measure TRAN-1 would inform future actions to limit impacts on traffic and transportation from the Event.	• There would not be traffic control along SR 447 or CR 34. Visitors would be able to access the playa through the 3-Mile, 8-Mile, and 12-Mile access roads. Travel to an unpermitted event could prove more difficult for drivers without traffic control. Without a metered release from an unpermitted event, the potential for a reduced level of service conditions along SR 447 would increase. Visitors could have extra routes available to exit the playa, but there would likely be increased congestion along the CR 34 and SR 447 intersection. These impacts would be greatest in the near term and would diminish over time.

[1] See Appendix E for a full list of Recommended Mitigation and Monitoring Measures.

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Chapter 1. Introduction

1.1 Event History

In 1992, Black Rock City, LLC (BRC) applied for the first multiyear special recreation permit (SRP) from the United States (US) Department of the Interior, Bureau of Land Management (BLM) to conduct the Burning Man Event (Event) in the Black Rock Desert Playa (Black Rock Playa) in Pershing County, Nevada (see **Figure 1-1**; **Appendix A**). The BLM has issued an SRP for the annual Burning Man Event on BLM-administered lands since 1991 (with a partial SRP for the Man and artwork on BLM-administered land in 1997). BRC has applied for an SRP from the BLM to hold the Event each year on BLM-administered lands on the Black Rock Playa to date. During that time, the BLM has completed seven different environmental assessments (EAs) to analyze the potential impacts associated with the issuance of the SRPs and the Event's steadily increasing size and potential issues associated with that growth. The BLM completed the most recent EA in 2012 and covered the 2012 through 2016 Events. For the 2017 and 2018 Events, the BLM prepared a determination of National Environmental Policy Act (NEPA) adequacy (DNA) and issued two 1-year extensions to the 2012–2016 SRP.

Since 2012, BRC has met post-event inspections and reporting requirements. BRC was found noncompliant for a population overage in 2013 and for a population overage, fuel storage, Tier 1 notification, and airport notification in 2018; BRC has appealed two of these noncompliances.

1.2 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 Office (**Figure 1-1**; **Appendix A**).

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.

1.3 Decision to be Made

The BLM Authorized Officer (AO) will select one or a combination of alternative components outlined in **Chapter 2**, Alternatives, for implementation. For any alternative resulting in the issuance of an SRP, the BLM AO would select from existing and recommended stipulations for inclusion in the SRP on a yearly basis. Stipulations may be edited, added, or removed as Event and environmental conditions require. Should the selected alternative not result in the issuance of an SRP, the BLM AO would evaluate the need for BLM action to protect resources and public health and safety.

1.4 Issues Identified during Scoping

Based on key issues identified by the public, tribal governments, cooperating agencies, and BLM staff, the BLM determines the scope and the significant issues to be analyzed in depth (40 CFR 1501.7(a)(2)) in an environmental impact statement (EIS). The project scoping summary report (BLM 2018a) summarizes the public scoping process and identifies the issues and concerns brought forward during the public outreach period and the official scoping process. The BLM conducted internal scoping and solicited input from tribal governments and cooperating agencies at the beginning of the EIS process. **Chapter 4,** Consultation and Coordination, lists consultation efforts and the cooperating agency process.

The public scoping process for this EIS began with publication of the notice of intent (NOI) to prepare this EIS in the *Federal Register* on June 20, 2018. The NOI invited public participation and scoping comments during a 45-day scoping period ending on August 4, 2018.

Issue statements were developed to highlight the key issues identified during scoping. The BLM used the issue statements, planning criteria, and other information collected during early project planning and scoping to help formulate a reasonable range of alternatives for the Burning Man Event SRP and EIS. The major issue topics identified during public and internal scoping include the following:

1.4.1 Biological Resources

What are the impacts on wildlife and their habitats (aquatic and terrestrial) from invasive species, traffic, and air, light, noise, and waste (hazardous and solid) pollution, and how will they be mitigated? What are the impacts from the Event on vegetation, wetlands, and riparian areas, and how will they be mitigated?

1.4.2 Cultural Resources

What are the impacts on significant cultural and paleontological resources, including National Historic Trails (NHTs), and can they be mitigated? What are the impacts on Native Americans from spiritual, cultural, and social values and economics?

1.4.3 Health and Safety

Can the BLM provide the support and resources needed to administer the SRP, while providing for public health and safety and preventing unnecessary and undue degradation to BLM-administered lands?

1.4.4 Physical Resources

How does the Burning Man Event affect air, soil, and water resources? Can mitigations be developed to prevent unnecessary and undue degradation?

1.4.5 Social Values and Economics

What are the regional economic contributions and effects on community services and federal, state, and local budgets? How do the public and participants view the Event? Are there any disproportionate impacts from the Burning Man Event on environmental justice and other populations?

1.4.6 Special Designations

How does the Burning Man Event affect the values of the Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area (NCA), wilderness areas, and wilderness study areas?

1.4.7 Visitor Uses

How does the Burning Man Event affect access and transportation, SRPs, and other users and their experiences within the Assessment Area?

1.5 SUMMARY OF PERMITS FOR THE ACTION

The BLM issues an SRP per 43 CFR 2930. An SRP can be issued for a maximum of 10 years. The BLM determines the appropriate term on a case-by-case basis. In addition to the BLM's SRP, **Table 1-1** lists other federal, state, and local permits and authorizations required for the proposed Burning Man Event.

Table 1-1
Required Federal, State, and Local Permits

Agency	Permit Required
Federal Aviation Administration	Private-use airport permit for Black Rock City Airport
Federal Communication Commission	Radio System permit
Nevada Division of Environmental Protection Bureau of Water Pollution Control	Discharges to surface and groundwater: • Stormwater Industrial general permit • De minimis Discharge general permit • Pesticide general permit • Drainage Well general permit • Temporary permit for discharges to groundwaters of the State • Working in Waters permit • Wastewater Discharge permits • Underground Injection Control permits • Onsite Sewage Disposal System permits • Holding Tank permits • 401 Water Quality Certification
Nevada Division of Environmental Protection Bureau of Air Pollution Control	Air permits
Nevada State Health Department	Temporary Food Establishment permit
Nevada Department of Transportation	Encroachment permit (to clear and flag roads and for trash removal) Temporary airport runway permit
Pershing County	Fireworks Display permit
US Army Corps of Engineers	Clean Water Act Section 404 Permit, Nationwide Permits (NWP) 18 and 33
Local Governments	Local permits

Source: BRC 2018a, BLM 2018c, NDEP 2018

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Chapter 2. Alternatives

2.1 Introduction

This chapter describes alternatives proposed by the applicant and the BLM based on the issues identified during scoping. The alternatives represent a reasonable range of management options identified in accordance with NEPA, other applicable laws, and public, government, and tribal participation.

2.2 Alternative A: Proposed Action

2.2.1 Introduction to Alternative A (Proposed Action)

BRC is applying for a 10-year SRP under 43 CFR 2930 to produce the Burning Man Event on public lands administered by the BLM Winnemucca District. The Event would include a 9.5-day Main Event during a 78-day government-administered Closure Order period held annually from 2019 to 2028. Refer to **Section 2.2.2**, BRC Alternative A (Proposed Action) Components, Event Production, for more information on the closure. Under Alternative A, the Event would have a maximum population of 100,000. From the current Event size of 80,000, the population could increase in increments of 5,000 each year starting with the 2019 Event, reaching 100,000 in 2022. **Section 2.2.2** describes Alternative A (Proposed Action), which is derived from BRC's proposal (available on the BLM ePlanning website, https://go.usa.gov/xnBTu).

2.2.2 BRC Alternative A (Proposed Action) Components

Population Definition and Reporting

Under Alternative A, the BLM AO would approve the maximum authorized population, or cap, for each year of the 10-year permit based on annual SRP requests submitted by BRC. The population, also called bodies on the playa, is all Event attendees, including participants and BRC staff and volunteers. The population does not include government personnel or BLM-permitted vendors. BRC would keep the maximum Event population from exceeding the cap and would report daily numbers to the BLM. BRC would count each person as they enter the Event through designated points of entry.

Event Production

BRC would produce the Event on the Black Rock Playa. The boundary of the Event site would be within a 3,900-acre pentagon (see **Figures 2-1**, **2-2**, and **2-3**; **Appendix A**). The perimeter fence would have side lengths up to 11,033 feet; the Event site would have a total circumference of 10.4 miles. Residential portions of the Event site/Black Rock City (city) would be a maximum of 1,250 acres.

The BLM would initiate a Closure Order associated with the SRP that identifies the Closure Area and time frame for the SRP. The Event site would be within the Closure Area, the physical space that would be temporarily closed during the Event. The Closure Order would last 78 days. There would be two phases of the Closure Order. Closure Order Phase 1 would occur approximately 43 days before Labor Day and would encompass 9,570 acres lasting 29 days. Closure Order Phase 2 would occur 14 days before Labor Day, would last for 21 days, and would encompass an additional 5,250 acres, for a total size of 14,820 acres (see **Figures 2-1** and **2-2**; **Appendix A** for Event site and Closure Area locations). The Closure Order would shrink back to the Phase 1 size 6 days after Labor Day for approximately 28 additional days.

The Phase 1 and Phase 2 Closure Area boundaries (see **Figures 2-1** and **2-2**; **Appendix A**) would encompass the following (see **Figure 2-3**, **Appendix A**):

- Event site/city, including a 50-foot buffer from the edge of the perimeter fence
- 350-foot-wide Gate Road and a 25-foot buffer on each side of the road

- Gate headquarters, buildings and structures, ticket scanning lanes, and temporary staging areas (such as blue pit), parking lots, and holding areas
- Joint Operations Center (JOC) and Point 1 entrance lanes on the 12-Mile access road from County Road (CR) 34
- Airport buildings and structures, towers, aircraft runways, and aircraft parking areas
- Centercamp
- The Man
- The Temple

Before each Event, BRC would consult with the BLM to determine the exact location of the Event site and Closure Area boundary. In general, the Event would be approximately 8.5 miles northeast of the town of Gerlach, Nevada. The permit period would potentially extend from the last week of July through the second week of October.

Site preparations would begin up to 35 days before the beginning of the Event. It would include preliminary surveying of the perimeter fence, the Man, Gate Road, BRC airport, and the streets, as well as constructing large camps. BRC volunteers and staff would also stage equipment, building materials, and infrastructure within a 60- by 300-foot staging area adjacent to CR 34 and 12-Mile access.

Along the Event site/city boundaries, BRC would install perimeter fencing within the Closure Area 28 days before the Event start. The perimeter fence is intended to define the Event site, enhance security, and minimize windblown trash from leaving the Event site. After completing the perimeter fence, BRC staff and volunteers would establish residence on-site and begin installing structures, portable toilets, street signs, the main gate (Gate) entrance into the city, the main entry road, and other infrastructure.

Approximately 21 days before the Event start, artists would arrive to begin construction of the larger art pieces. During this time, the population would remain under 5,000.

The week before the Event starts is commonly referred to as build week. This is when most materials would arrive for the construction of private theme camps (large areas of the Event site that contain multiple camp sites based on a common theme). During build week, BRC would also license art cars/ mutant vehicles, continue building Event infrastructure, and test equipment. Burner Express Bus and Burner Express Air would begin operations. For an Event with a total population of 100,000, the population during build week could reach up to 30,000.

Each year, the Event would start at 12:01 a.m. on Sunday the weekend before Labor Day and end at 6:00 p.m. on Labor Day. The peak population typically occurs on Thursday and Friday before Labor Day. Major activities during the Event include burning the Man, a 40- to 100-foot-tall wooden effigy at the center of Black Rock City, on Saturday night before Labor Day and burning the Temple on Sunday night before Labor Day. Exodus, the last day of the Event, is on Labor Day.

Within 5 days of the Event's end, all participants and most staff would vacate the site. Within 21 days of the Event's end, BRC staff and volunteers would remove all structures, large equipment, and the perimeter fence. All cleanup work would be completed within 35 days of the Event's end.

Traffic Management and Access

Before each Event, BRC would submit a traffic plan to the BLM. The plan would include the following strategies:

1. BRC would work year-round with the Nevada Department of Transportation (NDOT), Nevada Highway Patrol, Washoe County Sheriff's Office, Pershing County Sheriff's Office, and Pyramid

Lake Paiute Tribe (PLPT) to ensure appropriate planning, monitoring, and traffic safety in local communities and along the roads leading into and out of the Event.

2. State-licensed flaggers would be used along State Route (SR) 447 and CR 34, as needed, to help ensure traffic flows through nearby communities during peak travel times before and after the Event.
3. BRC would manage and maintain a vehicle pass program to create limits on the number of vehicles entering the Event.
4. BRC staff and volunteers would manage traffic ingress and egress from CR 34, scan tickets and vehicle passes, search vehicles for stowaways and prohibited items, and protect the perimeter of the Event.
5. BRC would manage a traffic operations center, which would be the headquarters for BRC. BRC would work with agency personnel to communicate messages to participants about traffic conditions entering and exiting the Event. These messages would be communicated via social media and all Event radio outlets.
6. During Exodus, BRC would employ a metered release protocol, which would ensure that no more than 1,000 vehicles per hour exit onto CR 34 from Gate Road.
7. BRC would manage the Burner Express Bus and Burner Express Air programs to provide alternatives to personal vehicles. It would also promote carpooling. BRC would encourage the use of these alternative transportation modes by reserving tickets for Burner Express passengers.
8. BRC would charge a reentry fee to discourage participants from leaving and returning during the Event.
9. To optimize traffic patterns, BRC would work with the BLM to adjust opening and closing times of the Gate up to 24 hours before the Event starts and up to 24 hours after the Event ends.
10. BRC would manage the number of theme camps, mutant vehicles, staff, and artists arriving during build week.
11. BRC would communicate the need for safe travel, including promoting the traffic operations center, advising participants year-round and in real time on traffic trends and best practices, and promoting BRC's RideShare carpool program.

Once in the Event, Event participants would not be allowed to drive their vehicles other than directly to their camps on arrival and to the exit on departure. Participants would camp in neighborhoods delineated by the city streets, and would either walk, use bicycles, or operate an art car/mutant vehicle for transportation. Motorized transportation in the Event perimeter would be restricted to BLM staff, law enforcement, BRC staff, vendors, mutant vehicles, vehicles for disabled persons, and satellite shuttles.

BRC would continue to use the 3-Mile entrance for emergencies and the occasional BRC infrastructure vehicle. BRC would continue to use the 12-Mile access for BRC, vendor, and agency access to Point 1 of the Event site/city/pentagon.

Vehicle Passes

BRC would require vehicle passes and would issue a maximum of 33,000 vehicle passes for a population size of 80,000 to 89,999. This would increase to a maximum of 34,000 vehicle passes for a population of 90,000 to 100,000. For reference, there were 32,150 vehicle passes issued for the 2017 Event.

Mutant Vehicles and Driving Rules

With a total population of 100,000, BRC would license up to 1,000 mutant vehicles and up to 500 vehicles strictly regulated for disabled persons. BRC would preapprove mutant vehicles, also known as art cars, before arrival. Mutant vehicles on-site would be inspected and permitted. The speed limit within the Event perimeter would be 5 miles per hour.

Event Site and Camping

Activities associated with the Event include technological displays, interactive events, social interactions, large- and small-scale art installations, small fire pit burns, and large burn events. BRC and its vendors build the Man, the Man base, and camp infrastructure, including street signs, community services, medical services, and coffee- and ice-vending venues, but Event participants bring, make, and install everything else.

Art

At a maximum population of 100,000, approximately 300 to 400 registered art pieces would be placed and installed. BRC would review and revise project plans to help ensure build design and installation safety. BRC safety teams would continuously inspect the artwork before and during the Event.

Theme Camps

With a peak population of 100,000, Black Rock City would have up to 2,000 interactive theme camps. Theme camps would be required to be visually stimulating, interactive, and neighborly, and have a previous record of following Leave No Trace® principles and BRC safety protocols. BRC would manage theme camp applications.

Dust Abatement

Private vendors hired by BRC would provide dust abatement along designated routes and streets within the Event site, as warranted by weather and playa surface conditions. Water would be transported via water tanker trucks from Fly Ranch, a private property owned by BRC. Dust-abatement trucks would operate from the day the perimeter fence is established through site cleanup, as needed. For reference, the 2017 Event utilized 14 water tanker trucks transporting approximately 16.5 million gallons of water to the Event site for dust abatement.

Sanitation

Private vendors hired by BRC would provide portable toilets and hand-sanitizing stations throughout the Event site. The portable toilets would be in banks along city streets, near the Man, along Gate Road, and at specific sites where crowds are likely to gather. BRC would continue to manage all aspects of sanitation before, during, and after the Event. For reference, there were approximately 1,700 toilets at the 2017 Event. Auxiliary toilets would be stored in case of a weather emergency. BRC would advise participants through multiple communication channels that BLM regulations prohibit the dumping of wastewater (gray water or black water) on public lands.

Fire

BRC would advise participants regarding procedures and safety guidelines for open fires, which would only be permitted on raised burn platforms or in barrels raised above the playa surface. No fires would be allowed directly on the playa surface. BRC would manage permitted burns.

BRC would actively educate participants in the construction and supervision of burn barrels in order to protect the playa surface and to create safe campfire containment. Additionally, BRC would maintain a supply of approximately 12 large burn platforms, usually made from heavy metal.

Organizers of each art burn and BRC would be responsible for implementing procedures for the complete cleanup of each burn site. This would include using decomposed granite, a raised platform, or other means to protect the playa surface; removing ash and unburned material such as nails, screws, glass, and any decomposed granite; and grading and raking the surface to eliminate scarring.

Cultural Resources

BRC would inform all participants and staff that collection, excavation, or vandalism of historical and archaeological artifacts or sites is illegal. BRC would notify the BLM immediately upon any discovery of archaeological artifacts (objects more than 50 years old) or human remains.

Hot Springs Protection

Use of the hot springs is not allowed as part of the Burning Man Event SRP. BRC would work with the BLM and law enforcement to monitor area hot springs on BLM-administered lands and discourage participants from using them. BRC would educate participants about the potential for environmental damage caused by excessive use.

Event Cleanup

Being a Leave No Trace® event, there would be no trash cans or trash collection in Black Rock City. Participants and BRC would be responsible for picking up and disposing of trash from the Event.

After the Event, BRC's playa restoration crew would clean the area within the perimeter fence. Site cleanup would begin on the Wednesday after Labor Day and would continue for up to 33 days after the Event. Structure disassembly and general on-site garbage removal would begin approximately 4 days after Labor Day and would be completed within 21 days. Approximately 20 days after the Event's end, the remaining structures and large equipment would be removed, and the perimeter fence deconstructed.

During the remaining period of the Closure Order, after the perimeter fence has been removed, BRC would remove debris in the Closure Area and dispose of it in an approved landfill or recycling facility. Burn marks from fires would be shoveled, raked, and dragged to remove all debris and break up any hardened surface associated with baking of the playa surface.

All playa restoration work would be completed within 30 days after the end of the Event. BRC would conduct additional playa restoration in the fall and, weather permitting, return to the Event site in the spring as needed to remove any remaining items that might have resurfaced after winter precipitation events. The BLM would conduct a site inspection in October and, if deemed necessary, a follow-up inspection in the spring. The exact timing of the inspections would depend on playa and weather conditions.

Offsite Cleanup

Offsite cleanup would include litter and debris pickup along roads and highways surrounding the Event site. Litter and debris collected by BRC's highway restoration crew would be disposed of at approved sites and facilities in accordance with all applicable laws and regulations.

BRC would include a minimum of three roadside crews to intermittently patrol portions of SRs 445, 446, and 447 and CR 34 after the Event and collect all roadside trash. If necessary, other road shoulders and sites would be cleaned. Off-site cleanup would begin after all of the Event attendees depart Black Rock City (Exodus) and would continue for approximately 14 days, or longer as needed. Weather, traffic, and other safety concerns permitting, BRC would schedule this cleanup effort to begin on Wednesday after Labor Day.

Security and Public Safety

Security

BRC would manage security functions, including perimeter security and gate operations and traffic enforcement, at the Event. Black Rock Rangers, a division of BRC, would facilitate public safety and serve as Black Rock City's first point of contact for participants. Rangers would patrol primarily on foot and bikes 24 hours a day. Specially trained Rangers would be staffed at a minimum of one Ranger on-site for

every 200 participants. They would provide perimeter and safety support for art burns, traffic safety enforcement, peer counseling services, conflict mediation and resolution assistance, and support for government personnel, as required. BRC would manage all aspects of Black Rock City's Gate and perimeter operations and Exodus.

Law Enforcement

The BLM and the Pershing County Sheriff's Office would provide law enforcement on-site. The Washoe County Sheriff's Office, PLPT Police, and Nevada Highway Patrol (NHP) would provide law enforcement in each agency's respective areas of jurisdiction.

BRC would meet with BLM law enforcement and the Pershing County Sheriff's Office year-round to plan operations and infrastructure. BRC would also meet with BLM law enforcement and the Pershing County Sheriff's Office daily during and immediately after the Event to evaluate on-site operations.

Unified Command and Emergency Procedures

BRC would work with the BLM and other stakeholder agencies to plan and provide coordinated response at the Event through an incident command system (ICS) tailored for the unique aspects of the Event. BRC, the BLM, and other agencies would cooperate in the development of a unified command (UC) structure, including designation of Tier 1 leadership positions, for the management of available safety, security, and infrastructure resources in the event of an emergency incident.

Leadership would meet as needed during the Event, as well as during the immediate pre- and post-operating period, to review and evaluate conditions and situations at and affecting the Event, including attendance figures, weather, medical and law enforcement trends, and relevant operations. They would be notified and activated in the event of an emergency threshold event. All UC on-site operations would be managed from a single command post at the JOC, unless it is deemed more appropriate by the Tier 1 leadership to have an incident-specific UC location.

BRC would meet with Event cooperators to plan, prepare, and debrief each year. Event cooperators would include the BLM and those agencies with federal, state, or county jurisdiction, such as the Federal Aviation Administration, Pershing County, Washoe County, PLPT, and the State of Nevada. BRC would facilitate tabletop exercises with UC and other Event cooperators as needed each year to practice emergency response.

Emergency Communications

A central communication system, including two-way radios, would have separate communication channels for various functions, including security, compliance, public safety and health, and other specific operations. The UC planning team would establish protocols for communication on-site that would include face-to-face meetings, radios, dispatch protocols, and other means, as appropriate. The BLM and BRC would operate independent communications systems, and the two systems would operate 24 hours per day to provide security, emergency response, and public safety with a collocated dispatch center to ensure coordinated emergency response.

Illegal Substance Policy

BRC has an illegal substance policy that would be communicated to all participants and staff. Terms on the back of the Event ticket state that the ticketholder agrees to read and abide by all rules in the Burning Man Survival Guide, including prohibitions on the use and possession of illegal drugs, and to follow all applicable federal, state, and local laws. In addition to these terms, BRC would educate participants and staff about federal, state, and local laws concerning the sale and use of illegal substances.

Medical

BRC would manage and provide on-site basic and advanced life support, which would be available to all participants, staff, and official personnel. BRC's life-support services would comply with all applicable federal, state, and local requirements. Medical services would be provided and managed by BRC's Emergency Services Department, which would be involved in year-round planning with stakeholder agencies and UC. BRC's Emergency Services Department would maintain a clear management structure and chain of command and would use official vehicles to patrol the Event site and respond to medical assistance calls.

Fire Response

Beginning approximately 5 days before the Event start and ending approximately 4 days after the Event end, BRC would provide fire suppression with appropriate equipment and professionally qualified staff on a 24-hour basis to respond to vehicles, structures, and camps within the Event perimeter. BRC would combine organizational resources with specific contracted resources operating under the ICS for all fire, hazardous material, and rescue operations within Black Rock City.

BRC would utilize incident action plans to assign appropriate resources to planned fire events, including stand-by for pyrotechnic loading under the guidance of BRC's licensed pyrotechnic operator, and through the complete firing and collapse of intentionally burned structures. Trained firefighters with personal protection equipment would provide immediate intervention in the hazard zone between the crowd perimeter and the collapse zone during live fire performance exhibitions, including hazard mitigation and extrication to medical control for any persons harmed or injured during such exhibitions under the command team assigned.

A minimum of 66,000 gallons of available fire suppression water would be available for emergency fire response with the capacity to fill and support a water shuttle operation. During the Event, there would be fire engines and water tenders to match the estimated fire flows needed for occupancies and the structure size within the Event perimeter per the National Fire Administration.

Hazardous Materials

BRC would manage hazardous materials response. BRC's hazardous materials team consists of certified hazardous materials firefighters specializing in the prevention and mitigation of incidents involving hazardous materials, toxic substance releases, and high-angle rescue incidents. The team vehicle would be equipped with chemical response equipment, including a decontamination shower, stabilization equipment, extrication equipment (e.g., saws and hydraulics), rigging and harnesses for a high-angle rescue, power generator, lighting, and equipment to detect flammable and toxic materials.

BRC would discourage the burning of objects or structures that contain plastics, synthetics, or materials that release toxic fumes. BRC would also include information about the hazards of airborne embers, glue, and laminates.

BRC would encourage and enforce appropriate fuel storage and safety.

Food and Drink Service and Potable Water Hauling

BRC would comply with all State of Nevada requirements for food and beverage service and potable water hauling. Management practices would adapt as needed for changing conditions and requirements. Any person who is hauling, delivering, vending, providing, or selling potable water to any individual or organized camp other than their own private or individual camp must be permitted by either the Nevada Division of Public and Behavioral Health (NPBH) or the Nevada Division of Environmental Protection (NDEP).

Compliance Programs

BRC would manage environmental and vending compliance programs at the Event. It would monitor the Event site during the operational period, educate participants, help bring violators into compliance, and escalate severe problems to the BLM.

Leave No Trace® Principles

In 2014, BRC and the BLM launched the Burning Man Leave No Trace® program to monitor and support environmental protection efforts on-site and to educate participants on Leave No Trace® best practices. BRC would coordinate and collaborate with the BLM year-round and during the Event to enforce this principle.

To enforce the Leave No Trace® principle, BRC would have a minimum of three teams working on-site during build week. Starting on Monday of the Event, BRC would have eight to ten teams patrolling Black Rock City in specific quadrants, as well as three roving teams.

After the Event, three teams would monitor the Event site until Wednesday after Labor Day, when the playa restoration team would lead environmental protection and waste removal. The BLM and BRC would review and revise the full environmental compliance protocol annually.

Public Communications

BRC would communicate with participants during and outside of the Event. Major topic areas pre-event would include surviving and thriving in a harsh desert environment, practicing environmental stewardship, arranging safe arrival and departure, ensuring public health and safety, and providing education on Event culture. During the Event, communication via Burning Man Radio and Twitter would include updates regarding playa resources, Gate wait times, public health and safety announcements, weather updates, and general announcements.

The Burning Man website (http://www.burningman.org) would be the primary source of year-round information about the Event. The Jack Rabbit Speaks email newsletter would be used to provide updates on Event issues and preparation, best practices, safety, and volunteer opportunities. BRC would consult as needed with the BLM and other agencies and would publish Jack Rabbit Speaks issues with content dedicated to traffic, health and safety, law enforcement, sanitation and waste disposal, environmental protection, and other relevant issues in the months leading up to the Event. BRC would use social media to reach mass audiences and community forums and email lists to share information with participants, volunteers, and other specific audiences, including artists, theme camp organizers, mutant vehicle builders, and regional coordinators.

2.2.3 Additional Components of Alternative A (Proposed Action) Identified by the BLM

On-Playa Population

The BLM's monitoring of the on-playa population during the Event indicates that BRC oversells the Event. Under Alternative A (Proposed Action), there would be no more than the permitted population of total attendees (including Event participants, staff, and volunteers) allowed on the playa from the start of the Closure Order to the end of the Closure Order. If maximum population is reached and attendees depart the Event, additional attendees would not be allowed to replace those attendees.

Stipulations

Stipulations would be attached to the SRP, which would be determined through this analysis and based on the mitigation measures identified in this EIS **(Appendix E).** The 2018 SRP stipulations are included in **Appendix B**, Special Recreation Permit and Stipulation Information. The stipulations from the 2018 Event are assumed to serve as environmental protection measures for the purpose of analysis. Further measures may be implemented on a yearly basis, if determined to be necessary, and would be developed based on

the analysis and recommended to the BLM AO. Adaptive management principles could result in new or modified stipulations.

Electrical Distribution

As part of Event operations, BRC places electrical wire underground throughout the Event site to supply power to BRC operating areas (e.g., center camp) and theme camps. This wire is placed by digging an approximate 6- to 8-inch trench in the playa to hold the wiring. The wiring is buried and then dug up and removed after the Event.

Lighting

There would be an array of stationary and mobile light sources associated with theme camps, mutant vehicles, and vendor, staff, and government personnel vehicles. Vehicles entering and exiting the Event via Gate Road would also create light. The Temple, Man, and larger art pieces would be illuminated. The highest density of light would be from street lighting and individual camps in the residential areas. Mobile light sources, such as mutant vehicles and illuminated bicycles, would contribute to light in the residential area, especially along the Esplanade (inner circle street of the city). Dispersed light from these mobile sources would occur throughout the Event area. Lasers used in art pieces or in theme camps may also be used. The JOC would be illuminated using temporary flood lights, which would contribute to artificial light levels at the southwest edge of the Event perimeter.

Noise

The major noise sources during the Event are the theme camps and the mutant vehicles that produce dance club-like levels of noise, particularly in the lower frequencies. While theme camps create stationary noise, noise emanating from mutant vehicles creates a constant noise source throughout the Event site (mostly from music).

Black Rock Ranger Training and Other Security Measures

Black Rock Rangers are participants who volunteer a portion of their time at the Event in service of the safety and well-being of the Event community. All Rangers go through a required annual training session in order to volunteer as Rangers each year. Trainings are offered outside of the Event in California, Nevada, Oregon, and Washington starting 3 months prior to the Event. Some of this training occurs on the playa, including during Fourth of Juplaya (an informal gathering of recreationists to the Black Rock Playa over the Fourth of July holiday weekend).

The BLM is aware that BRC is pursuing options for retaining private security at the Event. The scope of services that BRC is soliciting is unclear, so the BLM cannot analyze potential impacts at this time.

Golden Spike Ceremony

The Golden Spike Ceremony marks the beginning of the Event. Anywhere from 200 to 400 people arrive on the playa for the ceremony. A minimal number of campers on the playa is observed for the ceremony itself. The Golden Spike is the center point from which the city is laid out by the survey team and represents the exact center of the city (and ultimately the Man). Historically, the Golden Spike Ceremony has occurred the Thursday prior to the start of the SRP Closure Order.

Vehicle Passes

The maximum number of vehicle passes issued per year would include those for BRC staff, volunteers, and contractor vehicles.

Burner Express Bus and Air Operations

With a peak population of 100,000, BRC would pursue 15 to 24 percent of the population, or 15,000 to 24,000 people, to arrive and depart through alternative transportation. Burner Express Bus would carry

the majority of the passengers. Burner Express Air would access the Event at the Federal Aviation Administration (FAA)-regulated Black Rock City Municipal Airport (BRCMA). There would be two passenger airport runways and one medical evacuation runway that are each approximately 6,000 feet long by 50 feet wide. Two helipads capable of loading six helicopters would accompany the airport. The airport maintains association aviation and motor vehicle fuel storage.

Closure Order Access Passes

The BLM may provide access as necessary to other users (such as rocketeers [groups of recreationists that hold high-powered rocketry launches on Black Rock Playa] and livestock permittees) or specify that these other users are partaking in BLM-permitted activities.

Fuel Storage

BRC operates seven fuel depots at the airport, JOC, Department of Public Works Fuel Depot, Point 1, Golf Cart Service Yard, Heavy Machinery Yard, and Hell Station with tanks ranging from 1,500 to 12,000 gallons. The BLM estimates that there are 27,000 gallons of petrochemicals on the playa at any given time during the Event.

Vending Compliance

The BLM would manage the vending program under all actions and coordinate with BRC for overlaps in their Outside Service Program. In 2018, there were 66 BLM-authorized vendors; in 2017, there were 82 BLM-authorized vendors for the Event for the participant cap of 70,000. These vendors are present because of the Event and are not covered under BRC's SRP.

Vending is typically associated with a permitted event and may be managed under the event's SRP if the event controls the services. Since BRC does not control the vending at the Event or provide insurance for vendors, each vendor must apply and receive an individual SRP from the BLM.

Under Alternative A (Proposed Action), the BLM would authorize vending permits and cap them at no more than 100 vendors at the maximum population of 100,000 bodies on the playa.

Additional BLM Compliance Elements

- Although no more than 500 Americans with Disabilities Act (ADA) vehicle passes were proposed in **Section 2.2.2**, BRC Alternative A (Proposed Action) Components, and analyzed in this EIS, the BLM cannot place restrictions on ADA compliance.
- The BLM recommendation of a minimum height of 10 inches above the playa must be implemented for all burn barrels on the playa.
- After the Event, BRC's playa restoration crew would clean the area within the entire Closure Area.
- Drip pans are expected to be removed from the playa by participants and disposed of according to state and federal law.
- In accordance with the National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), and Native American Graves Protection and Repatriation Act (NAGPRA), human remains, associated funerary objects, unassociated funerary objects, sacred objects, and/or objects of cultural patrimony discovered during the Event would be protected from disturbance, and the BLM AO would be notified immediately.
- Any staging areas for the Event would be at least 200 feet from the edge of the playa.

2.2.4 BLM Identification of a Preferred Alternative

The BLM has not identified a preferred alternative for this Draft EIS, which is permissible per 40 CFR 1502.14(e). Following the public comment period on the Draft EIS, the BLM will evaluate potential alternatives that could be the preferred alternative identified in the Final EIS.

2.3 ALTERNATIVE B (REDUCED POPULATION ALTERNATIVE)

Under this alternative, the BLM would issue an SRP for the Event; however, the BLM would cap the maximum population at 50,000. Stipulations would be attached to the SRP, which would be determined through this analysis and based on the mitigation measures identified in **Appendix E**. The Event perimeter (3,410 acres), Closure Area boundary (14,150 acres), and single-phase Closure Order period (15 days prior to the Event, an 8-day Event, and 19 days after the Event end) would be the same as Alternative 2 in the 2012 Burning Man EA (BLM 2012; see **Figures 2-1** and **2-2**; **Appendix A**). No more than 17,000 vehicle passes, 500 mutant vehicles, and 1,000 theme camps would be allowed. BRC's Event production, traffic management, infrastructure planning, and public health and safety protocols would be as described in Alternative A (Proposed Action) (**Section 2.2.2**, BRC Alternative A [Proposed Action Components]).

Primary access to the playa would remain at 8-Mile Playa Access, which becomes Gate Road during the Event. There would be no more than one operational runway and one emergency runway at BRC Airport. The assumption for analysis is that approximately 1,100 people would arrive by Burner Express Air, and 4,150 people would arrive by Burner Express Bus.

2.4 ALTERNATIVE C (ALTERNATE SITE ALTERNATIVE)

Alternative C would be similar to Alternative A (Proposed Action), except the Closure Area boundary would be increased to 18,940 acres, the 3,900-acre Event perimeter would shift to the north, and there would be no phased Closure Area. Primary access to the playa would remain at 8-Mile Playa Access; the distance from CR 34 to the Event site would be 8 miles (see **Figures 2-1** and **2-2**; **Appendix A**). The maximum Event population (bodies on playa) would be 100,000. There would be no more than 100,000 total attendees (including Event participants, staff, and volunteers) allowed on the playa from the start of the Closure Order to the end of the Closure Order.

2.5 ALTERNATIVE D (NO POPULATION CHANGE/ACTION ALTERNATIVE)

Under this alternative, the BLM would issue an SRP for the Event with the same durations as the 2018 Event. There would be no more than 80,000 total attendees (including Event participants, staff, and volunteers) allowed on the playa from the start of the Closure Order to the end of the Closure Order. There would be a phased Closure Area, which would include a 9,570-acre Closure Area footprint during build week and after the Event. During the Event, the Closure Area footprint would be 14,330 acres (see **Figures 2-1, 2-2,** and **2-3**; **Appendix A**). The 2018 permit stipulations included in **Appendix B** and applicable mitigation measures, as determined by the BLM AO, in **Appendix E** would apply. Stipulations may be amended, as determined by the BLM.

2.6 ALTERNATIVE E (NO PERMIT/EVENT ALTERNATIVE)

Under this alternative, the BLM would not issue a Burning Man Event SRP. Due to the historic nature of the Event and the commitment from Event participants, it is assumed for analysis that a no event alternative would likely result in an unauthorized gathering of thousands of people. This assumption is based on observed gatherings on the playa outside the Event, such as Fourth of Juplaya, that appear to be related to the Event. It could also result in requests for multiple SRPs to hold similar events.

The BLM may apply subsequent management strategies and protection measures to address issues related to large, informal gatherings comprised of an unknown number of participants that may occur on the playa without infrastructure or mitigation measures. A Closure Area for the event site in the affected

environment may be necessary to prevent unauthorized group use of the Black Rock Playa. This alternative would still require a BLM presence to ensure the activities absent the Event in the time frame under Alternative A do not threaten natural and cultural resources and public health and safety on BLM-administered lands. The potential for sustained participation in an unauthorized event would likely dissipate over time.

2.7 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

This section briefly describes alternatives considered but eliminated from further analysis in this EIS. The alternatives considered were recommended by BLM resource specialists or by the public during scoping and alternatives development workshops. The management alternatives considered are described below, along with the rationale for excluding them from further consideration.

2.7.1 Hold the Event on Another Playa or Other Location outside the Black Rock Desert

Before the 2017 Event, BRC and the BLM conducted a thorough evaluation of other potential Event locations on BLM-administered lands in Nevada. BRC also considered other potential Event locations on private lands. None of the potential sites considered were viable due to accessibility, surface water conditions and other environmental considerations, production logistics, and compatibility with the Event's culture. The BLM is analyzing an alternate Event location on the Black Rock Playa (Alternative C) but is not analyzing an alternative with the Event on another playa or outside the Black Rock Desert. An Event location on another playa or other location outside the Black Rock Desert would also not meet the purpose of and need for federal action (**Chapter 1**, **Section 1.2**, Purpose of and Need for Federal Action).

2.7.2 Hold the Event during a Different Time of Year

While this alternative would be more favorable for law enforcement staffing compared with the Labor Day holiday, this alternative was considered but eliminated because holding the Event earlier in the summer would affect other recreation users. Holding the Event later in the fall would increase the potential for weather-related impacts, including playa flooding. BRC also relies heavily on volunteer staffing to operate the Event; holding the Event over the Labor Day holiday allows more volunteers to participate.

2.7.3 Analyze an SRP Length other than 10 Years

Issuing an SRP for more than 10 years is limited by SRP regulations. Issuing an SRP for less than 10 years (e.g., 5 years) would create unnecessary permitting costs and be less efficient for BLM staff. Compliance with the SRP, stipulations, and operating plans for any permit issued would determine whether the BLM would continue authorizing the SRP on an annual basis.

2.7.4 Require the Event be Age Restricted

A minimum age limit for attendance was suggested during scoping. The Burning Man Event website (http://www.burningman.com) states that "anybody under 18 years of age must be accompanied by an adult of 21 or older." Participants have chosen to be at the Event and/or have paid for a ticket. For individuals under 18, parental consent to attend the Event is required; therefore, whether a minor should attend is up to the discretion of his or her parent or legal guardian. In addition, the BLM has no authority to regulate the age of participants at an Event. The State or County would have to provide such regulation.

2.7.5 Hold the Event without Burning

Scoping comments suggested an Event without burning art. This alternative was considered, but eliminated, because it is inconsistent with the activities in Alternative A (Proposed Action). Burning of art is paramount to the Event.

2.7.6 Hold the Event at an Alternate Event Site outside the National Conservation Area Boundary

Relocating the Event southward on the playa so that it is outside the NCA boundary was considered but eliminated because it would change the configuration of the Event site, which has been developed based on years of operational field-tested efficiencies. It would also locate the Event closer to the town of Gerlach, Nevada, which could have undesirable effects on the community, including traffic and health and safety concerns. It would also potentially place the Event atop lithium brine claims (a hard rock mineral creating a conflict with 43 CFR 3809 rights and privileges). Relocating the Event perimeter would require the airport to be relocated, which would place it in an undesirable location relative to Black Rock City. Aircraft would be subject to increased dust and hazardous flying conditions.

2.7.7 Provide On-site Sanitation Services

On-site sanitation services are components of each alternative and do not represent a unique alternative. A private vendor provides 1,700 bathroom facilities that may be pumped up to 3 times per day. In addition, the vendor provides gray water and black water pumping of recreational vehicles. The vendor also collects all solid waste from BRC and government infrastructure. In addition, theme camps can rent dumpsters to be used during the Event.

2.7.8 Provide Alternative Transportation Options

Based on scoping input, the BLM considered several options intended to alleviate traffic impacts associated with the Event. The following options were considered but eliminated from detailed analysis:

1. **Assigning entrance and arrival times for the Event, with different ticket prices based on the time of arrival at the Event**
    - This was dismissed from detailed analysis because arrival times can be unpredictable, pricing differences could lead to unfairness, and management of such a mechanism would be overly difficult. Additionally, ticket pricing is outside the scope of this EIS.
2. **Special railroad trains with participant passengers stopping in Gerlach or on the Black Rock Desert**
    - The logistics of such transport, from its construction to management of its use, would not be practical for a single event, and there is inadequate demand from other users to support such an undertaking. In addition, train passengers arriving in Gerlach would still need to be transported to the playa.
3. **Use the BLM 3-Mile entrance to the playa, Jungo Road, or Smoke Creek for additional ingress/egress methods**
    - The use of these unpaved roads would be unsafe for broad usage and would further reduce air quality, in addition to increasing impacts on soil and playa resources and could increase user conflicts.

2.8 BLM LAND USE PLAN CONFORMANCE

The alternatives are in conformance with the BLM land use plan for the area. The resource management plan approved in July 2004 for the Black Rock-Desert–High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness and other Contiguous Lands in Nevada (BLM 2004a), currently guides management of the Black Rock Desert. The RMP includes an objective "to provide opportunities for a diverse range of permitted activities consistent with the NCA Act, while providing public access and solitude for other users." The NCA Proclamation states that "The Secretary [of the Interior] may continue to permit large-scale events in defined, low impact areas of the Black Rock Desert playa…."

2.9 COMPARISON OF ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Chapter 3 provides the detailed impact analysis of the proposed alternatives. A summary of impacts for the five alternatives is provided in **Table ES-1** in the Executive Summary.

Chapter 3. Affected Environment and Environmental Consequences

3.1 INTRODUCTION

This chapter describes the affected environment and environmental consequences for resources, resource uses, special designations, and social and economic considerations. Where the affected environment descriptions in the Burning Man 2012–2016 SRP EA (BLM 2012a) are still relevant, this EIS references that information. As appropriate, this chapter provides updated information relevant to the Assessment Area to clarify, expand on, or modify the affected environment described in the Burning Man 2012–2016 SRP EA (BLM 2012a). Current conditions in the Assessment Area serve as the baseline for characterizing impacts from the alternatives.

The methodology used to assess direct and indirect impacts for each resource topic area, including a description of the Assessment Area, indicators used to assess impacts, and assumptions used in the impact analysis, is included as **Appendix C**. Under all Event alternatives, stipulations outlined in **Appendix B** would be applied to the Burning Man Event SRP; therefore, effects of implementing stipulations are discussed in the analysis. **Section 3.10** of this chapter describes the cumulative impacts based on the past, present, and reasonably foreseeable future actions in the Assessment Area (see **Appendix D** for a description of cumulative impact methodology and the table of past, present, and reasonably foreseeable future actions). **Appendix E**, Mitigation and Monitoring, contains recommended mitigation measures by resource topic area.

3.2 RESOURCES

3.2.1 Supplemental Authorities

Through NEPA analysis, the BLM must consider supplemental authorities that are subject to requirements specified by statute or executive order; these are listed in **Table 3-1**. The table lists the elements and their status, as well as the rationale to determine whether an element would be affected.

Table 3-1
Supplemental Authorities

Supplemental Authorities	Not Present	Present; Not Affected	Present; Affected	Rationale
Air quality	No	No	Yes	Not applicable
Areas of Critical Environmental Concern (ACEC)	No	Yes	No	Soldier Meadows ACEC is approximately 50 miles from the Event site but is not expected to be affected; therefore, it is analyzed under the cumulative impacts section of this EIS.
Cultural resources, including National Historic Trails	No	No	Yes	Not applicable
Environmental justice	No	No	Yes	Not applicable
Farmlands (prime or unique)	Yes	No	No	By definition, no federally designated prime or unique farmlands are near the Assessment Area.
Floodplains	Yes	No	No	By definition, no federally designated floodplains are near the Assessment Area.

Supplemental Authorities	Not Present	Present; Not Affected	Present; Affected	Rationale
Invasive, Nonnative Species	No	No	Yes	This section is included in the general vegetation discussion.
Migratory birds	No	No	Yes	Not applicable
Native American religious concerns	No	No	Yes	Not applicable
Threatened and endangered species	No	No	Yes	Not applicable
Wastes, hazardous or solid	No	No	Yes	Not applicable
Water quality (surface water and groundwater)	No	No	Yes	Although water quantity is not covered by a supplemental authority, for the purposes of this analysis, it is included in the water quality section.
Wetlands/riparian zones	No	No	Yes	Not applicable
Wild and Scenic Rivers	Yes	No	No	By definition, no federally designated Wild and Scenic Rivers are near the Assessment Area.
Wilderness	No	No	Yes	Not applicable

Source: BLM 2009b
N/A = not applicable

3.2.2 Additional Affected Resources

In addition to the elements listed under supplemental authorities (**Section 3.2.1**), the BLM considers other important resources and uses on BLM-administered lands that could be affected by the alternatives. Other resources or uses of the human environment that have been considered for this EIS are listed in **Table 3-2**.

Table 3-2
Additional Affected Resources

Additional Affected Resources	Not Present	Present; Not Affected	Present; Affected	Rationale/Comments
Lands with wilderness characteristics	Yes	No	No	Not applicable
Minerals	No	Yes	No	Lithium mining claims have been staked outside the NCA boundary on the playa (in the cumulative Assessment Area); therefore, minerals are analyzed under the cumulative impacts section of the EIS.
National Conservation Area	No	No	Yes	Not applicable
Noise	No	No	Yes	Not applicable
Paleontology	No	No	Yes	Not applicable
Public health and safety (including law enforcement)	No	No	Yes	Not applicable
Recreation	No	No	Yes	Not applicable
Social values and economics	No	No	Yes	Not applicable
Soils (playa sediments)	No	No	Yes	Not applicable
Special status species	No	No	Yes	Not applicable
Transportation and traffic	No	No	Yes	Not applicable
Vegetation	No	No	Yes	Not applicable

Additional Affected Resources	Not Present	Present; Not Affected	Present; Affected	Rationale/Comments
Visual resources management (including night skies)	No	No	Yes	Not applicable
Wilderness Study Areas	No	No	Yes	Not applicable
Wild horses and burros	No	Yes	No	Indirect impacts on wild horses and burros would be negligible.
Wildlife	No	No	Yes	Not applicable

Source: BLM 2008
N/A = not applicable

3.3 BIOLOGICAL RESOURCES

3.3.1 Migratory Birds

Affected Environment

See the Burning Man Event SRP EIS Biological Resources Baseline Report[1] (EMPSi 2018a) for a detailed description of the affected environment for migratory birds.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for migratory birds is depicted on **Figure 3-1,** Biological Resources, in **Appendix A**. Migratory birds would be affected by Burning Man Event activities under all Event alternatives. The intensity of impacts would correspond to the number of Event participants. Noise, light pollution, emissions, dust, traffic, and playa soil degradation would become more intense as the number of Event participants increased. Under all alternatives, potential impacts on migratory birds include collisions with traffic from automobiles and aircraft, avoidance and disturbance from noise, attraction to or avoidance of artificial light and temporary structure construction, pollution of habitat with human waste, garbage and air emissions, disturbance to food availability within the playa soils, and harassment potential. The extent of some impacts, such as vehicle collisions and degradation of playa soils, would be limited by the size of the Closure Area, while other sources of impacts, such as emissions, cannot be spatially contained. Incorporating the 2018 SRP stipulations (**Appendix B**) and mitigation and monitoring measures (**Appendix E**) would help reduce impact intensity as described in detail below.

Alternatives Analysis—Alternative A (Proposed Action)

Migratory birds are likely to experience the greatest impacts under Alternative A (Proposed Action), due to the increased Event population and the expansion of the Closure Area on the playa.

Migratory birds may be affected by noise, as described in the Wildlife Effects Synthesis in the Biological Resources Baseline Report (EMPSi 2018a). These effects can include increased stress levels, masking predator sounds, or interfering with communication. Major noise sources during the Event include theme camps and mutant vehicles, though the primary sources of sound in the Assessment Area are high winds, passing cars, and aircraft (Salter 2018). As a result, migratory birds with habitat closest to the Burning Man Event, such as salt-desert scrub and sagebrush scrub, may experience some impacts from Event-generated noise. Migratory birds outside of the Closure Area are not expected to be substantially affected by Event-generated noise.

Shorebirds and other species that use the playa only as feeding grounds are not likely to be affected from Event noise, as the playa is generally dry well before the start of Event activities; however, these species

[1] Scientific names of species discussed in this EIS are included in the Biological Resources Baseline Report (EMPSi 2018a).

may be found congregating in nearby springs, and there could be direct and indirect impacts from noise, human presence, disturbance, trash, and habitat degradation due to recreational use of hot springs by Event participants. In 2012, when the last EA was written, the BLM considered nearby springs as being vulnerable to disturbance by over-visitation by Event participants before and after the Event. Subsequent analysis and monitoring before and after the Event suggest that few people visit the hot springs on their way to and from the Event. This is likely because BRC actively discourages visits, and daily monitoring around the time of the Event signals that the springs are being actively protected; therefore, effects on migratory birds at these hot springs are not anticipated. The potential for impacts on wetland habitat at spring locations would be as described in **Section 3.3.5**, Wetlands and Riparian Areas.

Artificial light at night (ALAN) may cause attraction and disorientation, increase collision risk, and affect physiology in avian species (EMPSi 2018a). ALAN associated with the Event occurs primarily during a 15-day period, occurring before, during, and after the Event (Craine and Craine 2018). While the average nightly radiance was relatively stable from 2012 to 2016, there was a marked increase in nightly radiance in 2017, and models predict further increases in ALAN during future Events if the total number of attendees increases. This would increase the impact magnitude compared with current conditions. Incorporating measures to reduce the amount of light pollution, such as banning high-energy lasers and upward-pointing spotlights and shielding lights as feasible (Mitigation Measures NAT-2 and VIS-3; **Appendix E**), would reduce the impact magnitude; however, it would not prevent impacts.

As described in the biological resources baseline report (EMPSI 2018a), collisions with vehicles (including aircraft) can injure birds. The potential for collisions with vehicles in the Closure Area is minimal, due to the generally low speed of vehicles, enforced speed limits, and route and travel restrictions. The potential for collisions along roads and highways in the Assessment Area is likely higher than that in the Closure Area given the higher speeds vehicles travel on these routes. The potential for collisions, including with vehicles and aircraft, would increase with an increase in Event participants because more people would use vehicles and aircraft to travel to and from the Event.

Collisions with man-made structures can injure birds (EMPSi 2018a). During the Event, many temporary structures are present in the Closure Area, including mutant vehicles, art installations (some exceeding 20 feet in height), themed campsites and the structures within them, recreational vehicles and motorhomes, and various other types of dwellings. Nocturnal migrant species would be at greatest risk for collision due to disorientation caused by ALAN. Impacts on nesting birds from structures during the Event are unlikely because the Event is held outside of most species' breeding season.

Reflected light from industrial-scale photovoltaic solar arrays could affect avian species (EMPSi 2018a). Many structures in the Closure Area may be accompanied by household-scale solar arrays, which would likely have a negligible impact due to their small size, and because most avian species would be expected to avoid the Closure Area during the Event. The reflection from photovoltaic solar panels does have the potential to affect raptors foraging in surrounding habitat, though impacts are likely to be negligible.

Reduced air quality could affect avian species (EMPSi 2018a). An air quality assessment during the 2017 Event showed that the majority of emissions generated during the Event resulted from vehicle and human traffic that liberated playa soils for wind erosion (Strohm 2018a). Particulate concentrations were extreme for both $PM_{2.5}$ and PM_{10} (at or exceeding 10 times the National Ambient Air Quality Standards [NAAQS]). The potential for impacts from Event emissions would likely increase with an increase in the Event population. Incorporating dust abatement measures, such as watering streets in the Event area, would reduce the impact magnitude, but it would not prevent impacts.

Trash in the Assessment Area could affect migratory birds through ingestion, entanglement, and increased predation from predator attraction. Avian species can also uptake and concentrate environmental

pollutants common in anthropogenic waste. Once ingested, pollutants may be dispersed via terrestrial food webs, movements, or predation (EMPSi 2018a). SRP stipulations (**Appendix B**) and mitigation measures to reduce trash and pollution (Mitigation Measures NAT-2, WHS 1-8, and SOIL-1; **Appendix E**) would be in place. Required design features for previous Events have included a trash fence, post-Event cleanup beginning after Exodus, and site inspections for trash; these measures would be implemented under Alternative A (Proposed Action). Additionally, BRC would be required to place dumpsters along the Gate Road (Mitigation Measure NAT-2; **Appendix E**) and assign road crews to intermittently patrol portions of travel routes used by Event participants and remove trash. Further, measures would be in place to minimize pollution in the Event area from sources such as oil-leaking vehicles, wastewater, fuels, and other potentially hazardous materials. Stipulations and mitigation measures would minimize the impact intensity, but they would not prevent impacts.

Some migratory shorebirds feed on branchiopod[2] eggs found in subsoil surfaces on the playa and along access roads leading into the Closure Area. Reduced egg density would mean reduced food availability for migratory birds when the playa is flooded. Impacts on branchiopod eggs are discussed in **Section 3.3.6**, Wildlife.

Alternatives Analysis—Alternative B

Under Alternative B, the impacts discussed under Alternative A (Proposed Action) would still have the potential to occur, but the maximum number of Event participants would decrease to 50,000. The general decrease in population would likely lessen the intensity of impacts from collisions, reduced air quality, and food source disturbances due to the decreased number of vehicles, airplanes, and temporary structures.

Impacts from light and noise would be similar to those described for Alternative A (Proposed Action). The effects of ALAN on migratory birds would be somewhat lessened under Alternative B, due to the reduction in the Event population.

Alternatives Analysis—Alternative C

Under Alternative C, the potential for impacts on migratory birds would remain comparable to Alternative A (Proposed Action), albeit in a modified Event location and with a larger Closure Area on the playa.

Alternatives Analysis—Alternative D

Under Alternative D, there is potential for impacts on migratory birds, but because the population (80,000) would remain at 2018 levels for the entirety of the 10-year SRP, as opposed to a phased increase under Alternative A (Proposed Action), the rising potential for impacts from an incremental Event population increase through 2022 would not occur under Alternative D.

Alternatives Analysis—Alternative E

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

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

[2] A small aquatic crustacean of the class Branchiopoda, such as a water flea or fairy shrimp

3.3.2 Special Status Species

See the Burning Man Event SRP EIS Biological Resources Baseline Report (EMPSi 2018a) for a detailed description of the affected environment for special status species.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for special status species is depicted on **Figure 3-1** in **Appendix A**. Special status species could be affected by one or more of several anthropogenic factors associated with the Event, including traffic, noise, light, trash, air quality, and human presence. Incorporating stipulations (**Appendix B**) and mitigation and monitoring measures (**Appendix E**) would minimize or avoid some impacts, as described in detail below. These impacts are described under the alternative analyses below, as they relate to specific special status species that have been observed in or near the Closure Area or have the potential to occur there.

Alternatives Analysis—Alternative A (Proposed Action)

In general, the nature and type of impacts on special status wildlife species would be similar to those discussed in **Section 3.3.1**, Migratory Birds, and **Section 3.3.6**, Wildlife (EMPSi 2018a).

Several bat species observed in or near the Assessment Area (NDOW 2017a) could be affected by anthropogenic light sources and dust and vehicle emissions during the Event (EMPSi 2018a). Measures would be incorporated to reduce the amount of light pollution, such as banning high-energy lasers and upward-pointing spotlights and shielding lights as feasible (Mitigation Measures SPEC-2 and VIS-3; **Appendix E**). Alternative A (Proposed Action) also incorporates dust abatement measures. These measures would reduce the impact magnitude, but they would not prevent impacts.

Bat species may also use temporary Event structures or art installations for day roosting. Bats that roost in such structures would be at increased risk of direct impacts from disturbance, entrapment, or unintentional injury due to structure work or burning.

There are 70 acres of bighorn sheep habitat in the southwest portion of the Closure Area, immediately west of CR 34 (NDOW 2017b). Event traffic on CR 34 could increase the potential for bighorn sheep injury from vehicle collision (EMPSi 2018a). The potential for this impact would be highest where 2-lane, high-speed roads (Oxley et al. 1974) are in or near occupied habitat, as in the case of CR 34 north of Gerlach. CR 34, a 2-lane arterial (55 miles per hour speed limit) has approximately 440 daily vehicles outside of the Event. Daily traffic volume increased to 14,730 trips during the 2017 Event and is expected to increase to 18,430 at full Event capacity in 2023 (Solaegui Engineers 2018).

Bighorn sheep would also likely avoid using suitable habitat near the Closure Area during the Event, given increased anthropogenic activity in the area. Results of noise monitoring at the 2017 Event (Salter 2018) indicate that ambient noise levels outside of the Closure Area are not significantly different from ambient levels, so Event-generated noise is generally not expected to affect bighorn sheep using this habitat. Additionally, vehicle- and road-borne air pollution can pose serious physiological risks to mammalian species (EMPSi 2018a).

Alternative A (Proposed Action) would be unlikely to affect Greater Sage-Grouse at the Event location. The 280-acre portion of General Habitat[3] (USGS GIS 2016) in the Closure Area likely provides little habitat value to the species and, as a result, individuals are unlikely to be present in this area. Priority

[3] See the Biological Resources Baseline Report (EMPSi 2018a) for more information on Greater Sage-Grouse habitat, including figures contrasting habitat in the Assessment Area as mapped by the BLM (2015c) and Coates et al. (2016).

Habitat mapped in the Granite Range is approximately 1 mile from the Closure Area, indicating that impacts on this habitat or individuals using it are also unlikely. There are no leks within 4 miles of the Closure Area (NDOW 2017a), and, therefore, there would be no impacts on Greater Sage-Grouse leks due to the Event. Further, the proponent would review and ensure conformance with Greater Sage-Grouse required design features (RDFs; BLM 2015c) where necessary as determined by the BLM (Mitigation Measure SPEC-6; **Appendix E**). Applicable RDFs would require measures to minimize weed spread, trash, and pollution, which would help maintain habitat quality.

As shown on **Figure 3-13** in **Appendix A**, travel routes in the wider Assessment Area traverse Greater Sage-Grouse Core, Priority, and General Habitat. In particular, State Route (SR) 447 between Gerlach and Cedarville traverses a relatively large amount of Core Habitat. There are 6 known active and inactive leks within 4 miles of travel routes (EMPSi 2018a). This indicates that the potential for road-related direct and indirect impacts on Greater Sage-Grouse would be relatively high. The potential for impacts would be greatest on SR 447 between Gerlach and Cedarville, which travels through the highest-quality habitat.

On October 4, 2018, the BLM coordinated with the Nevada Department of Wildlife (NDOW) on Greater Sage-Grouse seasonal habitat mapping per BLM Instruction Memorandum IM-NV-2016-038. Lekking, nesting, summer, and winter habitats were identified along the Assessment Area travel routes. No lekking, nesting, summer, or winter habitat was identified in the Closure Area or Event access road. The BLM recommended, and the NDOW agreed, that applying Greater Sage-Grouse timing restrictions along travel routes was not necessary because the Event takes place outside of the lekking and nesting seasons. Also, timing restrictions would be unenforceable along Interstate 80 and SR 447 because these roads are open and used year-round. The BLM recommended, and the NDOW agreed, that RDFs would be applied within habitat areas as necessary.

Western snowy plovers may forage or breed on the playa when it contains water and at surrounding springs. Because the known breeding season ends in early July (Wildlife Action Plan Team 2012), there would be no anticipated impacts on breeding plovers from the Event. Further, foraging plovers are unlikely to be present in the Closure Area during the Event when the playa is dry, meaning there would be no anticipated impacts on this species at this location. This species may congregate at surrounding springs when the playa is dry, increasing the potential for direct and indirect impacts in these areas (EMPSi 2018a); however, effects are not anticipated to occur, as described in **Section 3.3.1**, Migratory Birds.

Because nesting habitat for most special status raptor species documented near the Closure Area (NDOW 2017a) is not present, and because the Event is held outside of most species' breeding seasons, impacts on nesting golden eagles, northern goshawks, peregrine falcons, Swainson's hawks, burrowing owls, and short-eared owls are not expected. Foraging individuals near the Closure Area could be affected, as described in **Section 3.3.1**, Migratory Birds. The potential for these impacts would be lowered, but not completely avoided, by implementing dust abatement in the Event area, as well as stipulations (**Appendix B**) and mitigation measures (**Appendix E**) to minimize trash (Mitigation Measures NAT-2, WHS-4, WHS-5, and SOIL-1), pollution (Mitigation Measures NAT-2, WHS 1-8, and AQ-1), and ALAN (Mitigation Measures SPEC-2 and VIS-3) as described above. Impacts from increased recreational use on individuals foraging near hot springs are not anticipated to occur, as described above.

Impacts on other avian special status species, including loggerhead shrike and Brewer's sparrow, would be as described in **Section 3.3.1**, Migratory Birds.

Recreational hot spring use by Event participants could affect special status species that use these areas due to trampling, human presence, habitat modification, water quality degradation, and trash or other anthropogenic waste (EMPSi 2018a); however, as described in **Section 3.3.1**, Migratory Birds, impacts from recreational hot spring use are not anticipated to occur. This is because BRC actively discourages

recreational hot spring use by Event participants, and monitoring has shown that springs are being actively protected.

An increased population under Alternative A (Proposed Action) would increase the potential for direct and indirect impacts on special status plant species, including being crushed, uprooted, or damaged by vehicles driving off designated routes. This activity would not occur in the Closure Area due to route and traffic restrictions but could occur along travel routes in the wider Assessment Area. Even if cross-country vehicle use does not directly damage plants, this activity would degrade suitable habitat by compacting soils, increasing the potential for erosion and wildfire potential, and introducing weed seeds into habitat. Similarly, vehicles using designated routes would facilitate weed spread along routes, which has the potential to indirectly degrade special status plant habitat. Educating participants about noxious weed spread (Mitigation Measure VEG-1; **Appendix E**) would reduce the intensity of this impact, but it would not prevent it.

Alternatives Analysis—Alternative B

Under Alternative B, impacts on special status species as described for Alternative A (Proposed Action) would still have the potential to occur. Considering the Event population would be reduced to 50,000, the impact intensities could be reduced. This would be especially true for impacts from Event-related traffic.

While Event traffic volume on CR 34 for a population of 50,000 was not modeled, the difference in traffic volume between a 70,000-participant Event (population of 80,000) and a population of 100,000 in 2023 is approximately 3,700 daily trips. Extrapolating downward to a population of 50,000, there would be roughly 2,466 fewer daily trips compared with the 2017 Event, or about 12,264 daily trips on CR 34.

As noted in Alternative A (Proposed Action) discussion, most Event-generated noise levels outside of the Closure Area were not significantly higher than ambient levels. With a population of 50,000, Event-generated noise levels would be similar to, or less than, those for a population of 80,000. As a result, anthropogenic noise is not expected to have more than a minor impact on special status species that could be present near the Closure Area. Any effects would be temporary and would likely result in area avoidance during the Event.

Impacts on special status species would be similar to those described for Alternative A (Proposed Action). The intensity of the impacts could be slightly lower given the lower population.

Alternatives Analysis—Alternative C

Under Alternative C, the potential for impacts on special status species would be similar to those described under Alternative A (Proposed Action). This is because primary access to the playa would remain at Eight Mile Road, so Event traffic would traverse the same amount of bighorn sheep habitat on CR 34 (NDOW 2017b). Because Event participant levels would be the same as Alternative A (Proposed Action), traffic volume on CR 34, and associated risk of collision with bighorn sheep, would be as described for Alternative A (Proposed Action).

Under Alternative C, there is no Greater Sage-Grouse General Habitat in the Closure Area (BLM GIS 2017, USGS GIS 2016). Priority Habitat in the Granite Range would be approximately 1 mile from the Closure Area, as described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

Under Alternative D, the potential for impacts on special status species would be less than Alternative A (Proposed Action). Because the population would remain at 2017 levels under Alternative D, as opposed to a phased increase under Alternative A (Proposed Action), increased potential for impacts from a rising Event population through 2023 would not occur under Alternative D.

During the Event, daily traffic volume on CR 34 in bighorn sheep habitat would be at the same levels observed during the 2017 Event (14,730 trips). Therefore, the potential for impacts from collision are not expected to increase from the 2017 Event.

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. The types of impacts on special status species as discussed under Alternative A (Proposed Action) would still have the potential to occur. Impact intensity would likely be elevated in the short term depending on the type of impact and decreased over the long term as fewer people gathered. For example, impacts from traffic would likely be more intense initially because traffic controls (i.e., phased traffic release) would not be implemented. Because there would be no perimeter fence erected nor formal trash cleanup during and post-Event, additional trash would likely make its way into the environment compared with the Event alternatives, potentially affecting special status species to a greater degree. Further, there would be no measures in place to dissuade Event participants from using area hot springs; therefore, impacts from recreational hot spring use may increase. In the long term, impacts would likely be reduced as word of the Event closure spreads.

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.3.3 Threatened and Endangered Species

Affected Environment

See the Burning Man Event SRP EIS Biological Resources Baseline Report (EMPSi 2018a) for a detailed description of the affected environment for threatened and endangered species.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for threatened and endangered species is depicted on **Figure 3-1** in **Appendix A**. As described in the Biological Resources Baseline Report (EMPSi 2018a), vehicle traffic and roadway presence can degrade nearby aquatic habitat. Degradation may result if runoff transports pollutants deposited on roadways by vehicles, into aquatic habitat. The amount of pollutants deposited on roadways is generally commensurate with traffic volume (Van Hassel et al. 1980; Callender and Rice 2000).

In the Assessment Area, SR 447 crosses the Truckee River in Nixon, and in places between Wadsworth and Nixon, open water is less than 300 feet from the roadway. SR 427 crosses the Truckee River in Wadsworth, and Interstate 80 runs near the Truckee River for approximately 25 miles between Reno and Wadsworth. This habitat is occupied year-round by Lahontan cutthroat trout (LCT), and most of this habitat (i.e., the lower Truckee River) is occupied seasonally by cui-ui during spawning[4] (USFWS 1992, 1995; EMPSi 2018a).

Because LCT and cui-ui habitat is present near travel routes, impacts from vehicle pollutant runoff are possible under all Event alternatives. Because the potential for impacts would be generally commensurate with traffic volume, alternatives with more Event participants would have a greater potential for impacts. However, as described under the alternatives analysis below, the potential for Event-related pollution impacts would be relatively minor compared with the potential for such impacts outside of the Event period.

[4] SR 447 is also within approximately 150 feet of the Pyramid Lake Fishway at Marble Bluff just north of Nixon, which may be occupied by both species when in operation, which is generally outside of the Event period.

Alternatives Analysis—Alternative A (Proposed Action)

Observed and anticipated traffic volumes on these roadways under Alternative A (Proposed Action) are summarized in **Table 3-3**.

Table 3-3
Traffic Volume Near the Lower Truckee River

Route Segment	Non-Event Volume	2017 Event Volume	Alternative A Volume	Change from Non-Event Volume to Alternative A Volume
SR 447, Wadsworth	840	10,850	13,430	16-fold increase
SR 447, Nixon	1,400	14,340	17,690	13-fold increase
SR 427, Wadsworth (east of SR 447)	2,300	3,730	4,100	78 percent increase
Interstate 80, Reno to Wadsworth	26,000	34,580	36,800	42 percent increase

Source: Adapted from Solaegui Engineers (2018)

Pollutants can also be deposited on roadways from vehicle crashes (EMPSi 2018a). During the Burning Man Event periods in 2014, 2015, and 2016, vehicle crashes on SR 447 increased by approximately 58 percent; crashes were widely dispersed along the corridor and were mostly due to driver error (Solaegui Engineers 2018).

The above analysis indicates that LCT may be directly and indirectly affected by pollutant increases in aquatic habitat. Direct impacts are possible because this species is present in aquatic habitat near travel routes during the Event period. Indirect effects are possible due to the potential for aquatic habitat degradation, including pollutant accumulation in soils and invertebrate food sources.

The potential for Event-related pollution impacts would be relatively minor compared with the potential for such impacts outside of the Event period. Anticipated Event-related traffic increases on SRs 447 and 427 under Alternative A (Proposed Action), while increased, would still be lower than non-Event levels on Interstate 80 (**Table 3-3**), which runs near the Truckee River for approximately 25 miles between Reno and Wadsworth. Traffic is also anticipated to increase along Interstate 80 during the Event but given the high volume of daily trips on this route outside of the Event period, the incremental effects of additional trips would be minimal compared with the non-Event period.

Direct impacts on cui-ui are less likely to occur, because this species would generally be absent from the lower Truckee River during the Event period. This is because the Event period is outside of this species' spawning season. Indirect impacts on this species, as described for LCT, are still possible but are similarly expected to be minor. Overall, Alternative A (Proposed Action) may affect, but would be unlikely to adversely affect, LCT and cui-ui.

Alternatives Analysis—Alternative B

Impacts on LCT and cui-ui as described for Alternative A (Proposed Action) would still have the potential to occur. Considering the Event population would be reduced to 50,000, the impact intensities would be reduced because there would be less Event-related vehicle traffic and crashes on travel routes near the lower Truckee River.

Alternatives Analysis—Alternative C

The potential for impacts on LCT and cui-ui would be the same as those described under Alternative A (Proposed Action). This is because the population would be the same so Event-related vehicle traffic and crashes on travel routes near the lower Truckee River would be as described for Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

The potential for impacts on LCT and cui-ui would be similar to Alternative A (Proposed Action). Because the population would remain at 2017 levels under Alternative D, an increased potential for impacts from a rising Event population through 2023 would not occur under Alternative D.

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. Impacts on LCT and cui-ui as described for Alternative A (Proposed Action) would still have the potential to occur in the short term. The impact intensity would likely be lower, because there would be fewer participants at such a gathering. Impacts would likely be reduced further, as word of the Event closure is passed.

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded. Under this scenario, there would be no effect on LCT or cui-ui.

3.3.4 Vegetation (Including Invasive, Nonnative Species)

Affected Environment

See the Burning Man Event SRP EIS Biological Resources Baseline Report (EMPSi 2018a) for a detailed description of the affected environment for vegetation, including invasive, nonnative species. Vegetation types in the Assessment Area according to The Southwest Regional Gap Analysis Project (SWReGAP) 2017 are depicted on **Figure 3-2,** Vegetation Types in **Appendix A.**

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for vegetation is depicted on **Figure 3-2** in **Appendix A**. Vegetation could be affected by increased potential for weed establishment and spread along travel routes in the Assessment Area. Unauthorized off-road vehicle use would increase the potential for this impact. If Event participant vehicles left designated routes, they could crush, uproot, or damage vegetation. In the Closure Area, vehicles would be limited to the Event entrance road and the Event area, so the potential for this impact would be limited to these areas. Further, because the Event area and most of the Event entrance road are devoid of vegetation, this impact would only have the potential to occur on the Event entrance road while it traverses the vegetated terraces before entering the playa itself.

Under each Event alternative, the Event entrance road would traverse approximately 10 acres of Inter-Mountains Greasewood Flat and 2 acres of Inter-Mountain Basins Mixed Salt Desert Scrub (SWReGAP GIS 2005) before entering the unvegetated playa. This indicates that these communities could be affected. Because the road itself is not vegetated, impacts would be limited to vegetation along the road margins. This impact could also occur along travel routes elsewhere in the Assessment Area as participants travel to or from the Event. This activity would degrade vegetation communities along travel routes by compacting soils, increasing erosion potential, and introducing weed seeds.

The Event could draw higher numbers of vehicles in poor or unmaintained condition, increasing the number of vehicles that break down or need to pull over to the road shoulder compared with baseline traffic. This would increase the chance of fire starts along travel routes. Encouraging vehicle operators to inspect and repair vehicles before arriving at the Event (Mitigation Measure WHS-3; **Appendix E**) and educating participants about fire safety (BRC 2018l) would reduce the intensity of this impact; however, it would not prevent it.

Noxious Weed Risk Assessment. The following noxious weeds have been documented in or near the Closure Area: Russian knapweed, perennial pepperweed, musk thistle, and saltcedar/tamarisk (EMPSi 2018a). Additional noxious weeds and nonnative, invasive species that are common on BLM-administered lands administered by the Winnemucca District Office are hoary cress, Scotch thistle, and cheatgrass. These species are all common along roadways. Russian olive (*Elaeagnus angustifolia*) and purple loosestrife (*Lythrum salicaria*) are present in riparian situations along travel routes in the Assessment Area.

The noxious weed assessment risk rating is obtained by multiplying Factor 1, which assesses the likelihood of weeds spreading into the Assessment Area, by Factor 2, which assesses the consequences of weed establishment in the Assessment Area. Factors and risk rating are summarized in **Table 3-4**.

Table 3-4
Weed Risk Assessment Factors

Factors	Risk	Assessment
Factor 1	None (0)	Weed species are not located within the Assessment Area. Project activity is not likely to result in weed establishment in the Assessment Area.
	Low (1-3)	Weed species are present in the areas adjacent to but not within the Assessment Area. Project activities can be implemented and prevent weed spread into the Assessment Area.
	Moderate (4-7)	Weed species located immediately adjacent to or within the Assessment Area. Project activities are likely to result in some areas becoming infested even when preventative management actions are followed. Control measures are essential to prevent weed spread within the Assessment Area.
	High (8-10)	Heavy weed infestations are located within or immediately adjacent to the Assessment Area. Project activities, even with preventative management actions, are likely to result in weed establishment and spread on disturbed sites throughout much of the Assessment Area.
Factor 2	Low to Nonexistent (1-3)	None; no cumulative effects expected.
	Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the Assessment Area. Cumulative effects on native plant communities are likely but limited.
	High (8-10)	Obvious adverse effects within the Assessment Area and probable weed infestation expansion to areas outside the Assessment Area. Adverse cumulative effects on native plant communities are probable.
Risk Rating	None (0)	Proceed as planned.
	Low (1-10)	Proceed as planned. Initiate weed control treatments on populations that establish in the area.
	Moderate (11-49)	Develop preventative management measures to reduce risk of weed establishment and spread. Preventative management measures should include seeding disturbed areas and at least 3 years of monitoring and treating new infestations.
	High (50-100)	Project must be modified to reduce risk level with preventative measures as above. Provide 5 years of monitoring and treating infestations.

Source: adapted from BLM Manual 9015, Integrated Weed Management

Alternatives Analysis—Alternative A (Proposed Action)

Event traffic could indirectly increase the potential for weed establishment and spread, particularly along Event access routes. Roads facilitate weed establishment and spread by providing favorable habitats for weed establishment and growth, such as periodically disturbed road edges with increased light and moisture levels (Parendes and Jones 2000; Trombulak and Frissell 2000). Roads also provide numerous mechanisms to physically move weed seeds or other reproductive parts. Seeds can be transported on

vehicle tires or undercarriages or on the footwear or clothing of vehicle passengers (Lonsdale and Lane 1994; Greenberg et al. 1997). Routes may also concentrate water flows (i.e., in roadside ditches) or wind patterns, which can facilitate weed seed transport (Gelbard and Belnap 2003). Because the Event draws participants from a wide geographic area, the potential for numerous weed species to be introduced into the Assessment Area is high.

Roads can facilitate weed spread into nearby, undisturbed habitats (Parendes and Jones 2000; Gelbard and Belnap 2003). Depending on the aggressiveness of the weed and its ability to compete with native vegetation, this could indirectly result in changes to native vegetation composition, decreasing the quantity or quality of native vegetation.

The potential for weed introductions from Event participant vehicles is high. During the 2017 Event, daily traffic volume on CR 34 between Gerlach and the Event experienced a 30-fold increase, from 440 daily trips before the Event to 14,730 daily trips (Solaegui Engineers 2018). Volume is expected to increase to 18,430 daily trips at full Event capacity in 2023 (Solaegui Engineers 2018).

If Event participant vehicles left designated routes, they could crush, uproot, or damage vegetation. The intensity of this impact could increase with additional vehicles using access routes as the Event population increases to 100,000 between 2019 and 2023. Educating participants about noxious weed spread (Mitigation Measure VEG-1; **Appendix E**) would reduce the intensity of this impact, but it would not prevent it.

Event participant vehicles have started wildfires in the past near the Event. Sparks generated by dragging tow hitch chains or vehicle undercarriage parts, and by driving on wheel rims exposed by a tire blowout, can start wildfires. When vehicles pull over to the roadside over dry vegetation, hot exhaust pipes and mufflers can also start fires (CWCG 2018). Wildfires would alter vegetation community characteristics and increase the prevalence of invasive annual weed species (Chambers et al. 2007). The potential for this impact would increase as the Event population increases between 2019 and 2023. Educating participants about safe hauling methods (Mitigation Measure WHS-5; **Appendix E**) would reduce the intensity of this impact, but it would not prevent it.

Noxious Weed Risk Assessment. The Noxious Weed Risk Assessment rating for Factor 1 for Alternative A (Proposed Action) is high (9). There are several noxious weed infestations along access routes near the Closure Area and many more along routes throughout the Assessment Area. Given the number of vehicles that would enter the Closure Area, and the wide geographic locations the vehicles would be coming from, weed seed transport into the Closure Area would be high. There are few or no feasible measures to prevent weed transport.

The Noxious Weed Risk Assessment rating for Factor 2 is high (8). Most of the vehicles would introduce weed seeds not only in the Closure Area, but also on roads throughout the Assessment Area. As a result, it is highly likely that weeds would become established along routes in other portions of the Assessment Area.

The resulting Noxious Weed Risk Assessment rating for Alternative A (Proposed Action) is high (72). It is highly likely that Event participant vehicles would spread weeds along Assessment Area routes and highly likely that new infestations would establish in these areas. Due to the volume of traffic that is expected, preventing weed spread is not feasible. Educating participants about noxious weed spread (**Appendix E**) would lower, but not prevent, new weed infestations as a result of Alternative A (Proposed Action).

Alternatives Analysis—Alternative B

Under Alternative B, the impacts on vegetation described above under Alternative A (Proposed Action) would still have the potential to occur. The potential for wildfire starts and weed introductions from Event participant vehicles would still be relatively high, even given the decrease in Event participants. As

discussed in **Section 3.3.2**, Special Status Species, there would still be approximately 12,264 daily trips on CR 34 for a population of 50,000.

Similarly, the impacts from off-road vehicle use would still have the potential to occur. While the potential for this impact may be somewhat reduced, it is still relatively likely to occur given the likelihood that up to 17,000 vehicle passes may be issued for an Event population of 50,000.

Noxious Weed Risk Assessment. Anticipated vehicle traffic under Alternative B is reduced compared with Alternative A (Proposed Action), at 17,000 vehicle passes. As a result, the numerical rating for Factor 1 would be slightly reduced to moderate (7). Although the amount of noxious weed infestations in the Closure Area and Assessment Area would be the same, since fewer vehicles would enter the Closure Area, weed seed transport to the Closure Area would likely be reduced. The numerical rating for Factor 2 would be the same as it is for Alternative A (8), since vehicles would still have the potential to introduce weed seeds on roads throughout the Assessment Area. The numerical resulting risk rating would be 56, which is less than under Alternative A (Proposed Action); however, this is still considered a high-risk rating, as shown in **Table 3-4**.

Alternatives Analysis—Alternative C

Under Alternative C, the potential for impacts on vegetation would be the same as under Alternative A (Proposed Action). Even though the Closure Area would be in a different location, vehicle access would still be via the same locations, Eight Mile Road and CR 34. Vehicles would traverse the extra distance to the Closure Area entrance gate on the playa. As discussed above, because the playa does not support vegetation, including weeds, the extra distance vehicles would travel would not increase the potential for weed establishment and spread.

Noxious Weed Risk Assessment. Numerical ratings for Factor 1, Factor 2, and the resulting risk rating would be the same as under Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

Under Alternative D, the potential for impacts on vegetation would be similar to those described above under Alternative A (Proposed Action). Because the number of Event participants would remain at 2017 levels under Alternative D, the increased potential for impacts from a rising Event population through 2023 would not occur under Alternative D.

During the Event, daily traffic volume on CR 34 would increase to the same levels observed during the 2017 Event (14,730 trips; Solaegui Engineers 2018), indicating that the potential for wildfire starts and weed introduction from vehicles would be the same as the 2017 Event.

Noxious Weed Risk Assessment. Numerical ratings for Factor 1, Factor 2, and the resulting risk rating would be the same as under Alternative A (Proposed Action).

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. The types of impacts on vegetation, as discussed under Alternative A (Proposed Action), would still have the potential to occur. Impact intensity would likely be decreased for most types of impacts because there would be fewer gathering participants. For example, the potential for wildfire starts and weed establishment and spread would be reduced from Alternative A (Proposed Action) because there would be fewer vehicles traveling on roads in the Assessment Area. Impact intensity could be increased for some types of impacts. The potential for impacts from unauthorized off-road vehicle use in the short term would likely be higher, particularly in the vegetated playa terraces that generally support Inter-Mountains Greasewood Flat and Inter-Mountain Basins Mixed Salt Desert Scrub vegetation communities. This is because designated access points would not be established, and there

would be no traffic enforcement or control. The BLM, however, may implement management strategies to reduce these impacts. Over the long term as participation declined, impacts would decrease.

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

Noxious Weed Risk Assessment. Compared with Alternative A (Proposed Action), there would likely be fewer participants in an informal gathering. As a result of fewer vehicles traveling to the playa, the rating for Factor 1 may be slightly lower, but it would still be high (8) in the short term. Because this alternative would lack the traffic control and enforcement levels of the Event alternatives, the potential for off-road vehicle use would be slightly increased, as discussed above. As a result, the rating for Factor 2 would be increased to high (9) in the short term. The resulting risk rating would be high (72). These ratings would decrease as participation in a gathering also decreases.

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.3.5 Wetlands and Riparian Areas

Affected Environment

See the Burning Man Event SRP EIS Biological Resources Baseline Report (EMPSi 2018a) for a detailed description of the affected environment for wetlands and riparian areas.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for wetlands and riparian areas is depicted on **Figure 3-1** in **Appendix A**. Participants would be discouraged from using area hot springs during the Event. Measures would include charging a reentry fee at the Event site, regularly patrolling area hot springs, and educating visitors encountered on the impacts of excessive hot spring use. These would minimize the potential for riparian vegetation loss at area hot springs, as well as changes in the hydrological conditions that support riparian vegetation in these areas.

Most of the Closure Area is on the Black Rock Playa, which is classified as a lake under the National Wetlands Inventory (EMPSi 2018a; USFWS GIS 2017). Under each Event alternative, the entire Event area and most of the Event entrance roads are on this feature. This feature may be considered Other Waters of the US by the US Army Corps of Engineers (ACOE), potentially placing it under ACOE jurisdiction under Section 404 of the Clean Water Act. The ACOE regulates discharge or fill into Other Waters of the US, including temporary fill. Placement of art installations and decomposed granite to protect the playa surface and fencing and other temporary Event infrastructure may be considered fill and be subject to regulatory approval.

The BLM communicated with the ACOE and NDEP to determine any necessary regulatory approval for the Event, as discussed in **Section 1.5**, Summary of Permits for the Action. The proponent would ascertain with the ACOE if a Section 404 Clean Water Act Nationwide Permit (NWP) is needed, and if so, the proponent would obtain the NWP(s) (Mitigation Measure WET-1; **Appendix E**). Complying with measures stipulated in the NWP(s) would ensure the Event does not result in loss or degradation of Other Waters of the US.

Alternatives Analysis—Alternative A (Proposed Action)

Abele (2011) identifies incompatible recreation uses as one of nine stressors for Nevada's springs. Recreational uses, such as bathing and camping, are not considered imminent threats to the springs, but these activities can result in soil compaction, vegetation removal, and increased erosion around the spring system (Abele 2011). Bathers create soaking "tubs" by diverting or impounding spring flows, which can alter the hydrological conditions necessary to support riparian vegetation. Further, soaps and other chemicals introduced by bathers can alter water quality (Sada et al. 2001). Recreational use does not alter water quantity from the spring source.

In 2012, when the last EA was written, the BLM considered nearby springs as being vulnerable to disturbance by over-visitation by Event participants before and after the Event. Subsequent analysis and monitoring before and after the Event suggest that few people actually visit the hot springs on their way to and from the Event. This is likely because BRC actively discourages visits, and daily monitoring around the time of the Event signals that the springs are being actively protected. Effects on wetlands and riparian areas at these hot springs are, therefore, not anticipated.

Alternatives Analysis—Alternative B

Impacts on riparian areas and wetlands under Alternative B would be similar to those described under Alternative A (Proposed Action), but the potential for impacts on riparian vegetation at area hot springs would be somewhat decreased due to fewer Event participants. The same measures to discourage recreational hot spring use during the Event as described in Alternative A (Proposed Action) would be in place under Alternative B.

Alternatives Analysis—Alternative C

Impacts on riparian areas and wetlands under Alternative C would be the same as those described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

Impacts on riparian areas and wetlands under Alternative D would be the same as those described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. The types of impacts on wetlands and riparian areas, as discussed under Alternative A (Proposed Action), could still occur. The impact intensity could be increased in the short term. The relative difficulty of traveling from the playa to surrounding springs would be reduced, because recreationists could simply drive from a gathering on the playa straight across the playa to the surrounding springs. For example, exiting the Event via the access road, driving through Gerlach, and paying an Event reentry fee would not be necessary to visit Trego Springs. As a result, impacts from recreational hot spring use could increase, increasing the potential for riparian vegetation loss and hydrological modifications at area springs. The BLM, however, may implement management strategies to reduce these impacts.

In the long term, the impact intensity would most likely be reduced as word of the Event closure would spread and fewer recreationists would gather. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.3.6 Wildlife

Affected Environment

See the Burning Man Event SRP EIS Biological Resources Baseline Report (EMPSi 2018a) for a detailed description of the affected environment for wildlife.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for wildlife is depicted on **Figure 3-1** in **Appendix A**. Under all alternatives, wildlife could be affected by one or several different types of anthropogenic[5] factors, including automobile and aircraft traffic, noise, artificial light, temporary structure construction, human waste and garbage pollution, particulate and other emissions, playa disturbance, and harassment potential. Impacts that correspond with the number of Event participants, such as playa soil degradation, noise, light pollution, emissions and dust, and wildlife collisions with structures, cars, and aircraft, would become more intense as the number of Event participants increased. Implementing 2018 SRP stipulations (**Appendix B**) as required design features and mitigation and monitoring measures (**Appendix E**) would help reduce the impact intensity on wildlife species, as discussed in the alternative analyses below.

Alternatives Analysis—Alternative A (Proposed Action)

Human presence can disturb wildlife, causing habitat avoidance of or displacement from suitable habitat, and increasing perceived risk (EMPSi 2018a). Because human presence would be concentrated in the Closure Area, wildlife likely to be most affected are those with habitat in or near the Closure Area.

As described in the biological resources baseline report (EMPSI 2018a), traffic increases the potential for wildlife collisions with vehicles, which can injure wildlife. As discussed in **Section 3.3.2**, Special Status Species, the marked increase in daily vehicle trips on CR 34 (Solaegui Engineers 2018) would increase the potential for wildlife impacts. Within the playa, traffic is unlikely to have substantial effects on most wildlife, due to the slow speeds at which cars travel, route and travel restrictions, and the general rarity at which most species are found within the playa during dry periods.

Wildlife may respond to noise by avoiding it, leaving noisy areas, or otherwise altering behavior (EMPSi 2018a). Event-generated noise could affect wildlife in the Event vicinity. Results of noise monitoring at the 2017 Event (Salter 2018) indicate that ambient noise levels outside of the Closure Area are not significantly different[6] from ambient levels[7] and that the primary sources of noise are not directly related to Event activities, but rather are attributable to high winds, passing cars, and aircraft (Salter 2018). As a result, wildlife with habitat closest to the Burning Man Event, such as those that occur in salt-desert scrub and sagebrush scrub, may experience some impacts from Event-generated noise. Wildlife outside of the Closure Area are not expected to be substantially affected by Event-generated noise.

Impacts from traffic and noise on mule deer within the 390 acres of limited-use mule deer habitat in the southwestern portion of the Closure Area are assumed to be the same as those discussed for bighorn sheep in **Section 3.3.2**, Special Status Species.

Wildlife could be affected by ALAN (EMPSi 2018a). As discussed in **Section 3.3.1**, Migratory Birds, Event-related ALAN is expected to increase during future Events if the total number of attendees increases

[5] originating in human activity

[6] Greater than 10 dBA over ambient noise levels

[7] The only monitoring station where significantly higher noise was observed was at LT-1 (Transfer Station Road) in Gerlach. Noise levels at the transfer station were largely attributed to cars passing by and government personnel activity at the transfer station, not activity from the Burning Man Event (e.g., music and voices; Salter 2018).

(Craine and Craine 2018). This would increase the impact magnitude from current conditions. Incorporating measures to reduce ALAN, such as banning high-energy lasers and upward-pointing spotlights and shielding lights as feasible (Mitigation Measures SPEC-2 and VIS-3; **Appendix E**), would reduce the impact magnitude; however, they would not prevent impacts.

Reduced air quality can affect wildlife species (EMPSi 2018a). As discussed in **Section 3.3.1**, Migratory Birds, the majority of emissions generated during the Event resulted from vehicle and human traffic that liberated playa soils for wind erosion, and particulate concentrations were extreme for both $PM_{2.5}$ and PM_{10} (at or exceeding 10 times the NAAQS; Strohm 2018a). Moreover, there could be indirect impacts through dust's physical effect on plants and habitat used by wildlife in the Assessment Area, as discussed in **Section 3.3.1**, Migratory Birds. Incorporating air mitigation measures (Mitigation Measures AQ-1 through AQ-3; **Appendix E**), such as watering streets in the Event area, would reduce the impact magnitude, but they would not prevent impacts. The potential for impacts from Event emissions would likely increase with increased Event participants.

Vehicle traffic on the Black Rock Playa could reduce fairy shrimp egg density (EMPSi 2018a). Shallow trenching, burying, and subsequent excavation of electrical cables used to distribute electricity during the Event, as well as digging holes for structure foundations, could have similar impacts. General soil disturbance, dumping of gray/black water, and vehicle oil or fuel drip on the playa surface would likely have some residual impacts on branchiopod egg abundance following the Event. The potential for impacts would likely increase with increased Event participants. Measures would be in place to minimize pollution in the Event area from sources such as oil-leaking vehicles, wastewater, fuels, and other potentially hazardous materials. These would minimize the impact intensity, but they would not prevent impacts.

Trash generated by the Event could affect wildlife species through ingestion, entanglement, and increased predation (EMPSi 2018a). Similarly, avian species can uptake and concentrate environmental pollutants common in anthropogenic waste. Once ingested, pollutants may be dispersed via terrestrial food webs, movements, or predation (EMPSi 2018a). Measures would be implemented to minimize impacts, including installing perimeter fence to capture wind-blown garbage, post-Event cleanup, site inspections, and using road crews to intermittently patrol portions of travel routes utilized by Event participants.

Alternatives Analysis—Alternative B

Under Alternative B, the impacts discussed under Alternative A (Proposed Action) would still have the potential to occur. This population decrease would likely lessen the intensity of impacts on wildlife from vehicle collisions, air quality reductions, and impacts on branchiopod eggs.

Impacts from light and noise would be similar to those described under Alternative A (Proposed Action). Event-generated noise is unlikely to substantially affect wildlife because it would not likely increase over ambient levels. Any direct or indirect impacts from Event-generated noise would be at night, temporary, and short term. The effects of ALAN on wildlife would be somewhat lessened, compared with Alternative A (Proposed Action), due to fewer Event participants.

Alternatives Analysis—Alternative C

Under Alternative C, potential wildlife impacts would be the similar to those described under Alternative A (Proposed Action). Traffic, light, and noise and their associated impacts are likely to remain comparable because the population would remain the same. Primary access to the playa would remain at Eight Mile Road, and the distance to the Event site across the playa would be 8 miles. Because the Event entrance road would be longer than that in Alternative A (Proposed Action), additional impacts on branchiopod eggs from vehicle-related surface disturbance could occur.

Alternatives Analysis—Alternative D

Under Alternative D, impacts on wildlife would be the same as those described under Alternative A (Proposed Action), but the impact intensity would not increase between 2019 and 2023.

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an unpermitted, informal gathering would still occur on the playa due to the historic nature of the Event. The types of impacts on wildlife, as discussed under Alternative A (Proposed Action), could still occur, but the impact intensity would likely decrease compared with other alternatives and be more similar to impacts during non-Event time periods. The BLM may apply management strategies and measures to protect resources and reduce impacts. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.4 CULTURAL RESOURCES

3.4.1 Cultural (Including National Historic Trails)

Affected Environment

This section is a description of the types of cultural resources known or expected to be present in the Assessment Areas. Methods used to identify the presence of cultural resources vary among resource types and the scale of an action or undertaking. Identifying archaeological resources, for example, typically requires a systematic pedestrian survey. Identifying historic-age structures transportation or water systems would more appropriately start with archival research, followed by fieldwork to document the condition of any extant features. Likewise, the historic emigrant trail routes have been defined through archival maps and records supplemented with remote sensing and pedestrian surveys. Identification of traditional cultural properties (TCPs) and/or sacred sites requires ethnographic/ethnohistoric research and consultation with Native American tribes and other potentially affected or affiliated groups.

Assessment Areas for cultural resources were defined by the BLM and are described in **Appendix C** and mapped as **Figure 3-3,** Cultural, Paleontological, and Native American Religious Concerns in **Appendix A**. The Closure Area and primary access roads would be the direct impact area for Event activities. A Class III pedestrian inventory of the direct impact area was not performed. A pedestrian survey of the playa is unlikely to produce indications of prehistoric or historic activity because of depositional and erosional processes that have deposited and eroded sediments through water and wind actions. Previous projects have surveyed areas of playa margins, which were often a focus of prehistoric activity, and around hot springs where both historic and prehistoric activity was common. Only two sites, the Nobles Trail (CrNV-22-4665/26PE2301), considered to be an NHT as part of the larger California Trail, and a small unevaluated lithic scatter (CrNV-02-1009/PE651) are found within the Closure Area. The lithic scatter is on the western boundary line of the Closure Area in the dunes around the edge of the playa. Due to its location, the prehistoric site is unlikely to be affected by any activities or actions associated with the Event.

The indirect impact area would be an area bounded by the edge of the playa on the east and west, and by the Closure Area on the south. The boundary to the north would extend farther away from the Closure Area to encompass Black Rock Hot Springs. The extent of the indirect impact area for cultural resources is based primarily on the viewshed from which significant changes to the landscape due to the presence of the Event can be seen. Potential impacts in the indirect impact area could be visual, audible, or atmospheric, or could involve access restriction.

There are two routes of the Nobles Trail that are in or near the Closure Area. One route passes through the Closure Area, and the other skirts it but falls within the indirect impacts area. The earlier route from Black Rock Point to Granite Creek was used primarily between 1852 and 1856. After that time, a new route deviated from the Applegate Trail at Rabbithole and went to Granite Creek by way of Trego Hot

Springs and Coyote Dunes. Based on evidence from maps, diaries, and other documents, the Black Rock Point to Granite Creek segment of the Nobles Route (CrNV-02-4665) likely passed through the Closure Area. A visual assessment for locations on the Applegate and Nobles Routes—using photos from the 2017 and 2018 Event closure periods—is provided in **Appendix F**.

One major driving force behind the designation of the Black Rock Desert–High Rock Canyon Emigrant Trails NCA was the protection of the viewshed of the Applegate-Lassen Trail, one of largest intact emigrant trails remaining in the US. Several other historic-era trail routes cross the Black Rock Desert. John C. Frémont's 1843–1844 exploration party passed through the Black Rock Desert traveling south along the Black Rock Range to Great Boiling Springs near present-day Gerlach. Another major emigration route, the Nobles Trail, also crossed the playa. The Applegate-Lassen Route is listed on the National Register of Historic Places (NRHP [#78001722]), segments of the Nobles Route have been determined eligible, and Frémont's route has not been specifically identified or evaluated.

Several other sites eligible for the National Register under Criteria a, b, or c, where setting, feeling, and association are related to their eligibility or which are unevaluated for those criteria, are located on the eastern edge of the indirect effects area. Prehistoric sites eligible under Criterion d are not described here because they are almost always significant for their information value, which is not affected by visual, audible, or atmospheric impact. The historic sites include the Western Pacific Railroad (now the Union Pacific) (CrNV-22-6736/PE3157), two sites associated with the railroad, the abandoned siding at Trego (CrNV-21-3652), a telephone line (CrNV-22-7745), the unevaluated historic component of the Trego site (CrNV-22-2194/PE118) that may be related to mining, and the site of the Barbara Worth film set (CrNV-22-7571), which is unevaluated.

The railroad and the telephone line, which are approximately 2 miles from Black Rock City, run roughly parallel to the eastern edge of the Closure Area for approximately 1 mile. The Trego siding is located at a similar distance from the Event. The historic component of the Trego site is located approximately 2 miles from the Closure Area and 3 miles from Black Rock City. At these distances, based on previous observations, the dust from the Event and vehicle activity is visible, but the structures at the Event are not. These sites are rarely subject to tourist or traveler visitation and while access might be discouraged by the Reno to Gerlach traffic during the Event, the areas are still open during the Event.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

Under all Event alternatives, there is some potential for cultural resources impacts resulting from closures, Event site preparation, vendor activities, human presence and use, noise, traffic, vehicle use, post-Event Exodus and cleanup, and off-site access and use. As described in Table C-7 in **Appendix C** types of effects could include ground or setting disturbance on historic properties and NHTs from Event-related infrastructure, activities, and large number of Event participant presence. Impact potential and intensity resulting from the Event or unsanctioned activities would vary by alternative and primarily be based on Event population and Event activities footprint, site preparation, and access. Because of the potential for prehistoric archaeological sites along the playa margin, a 200-foot buffer is included in all alternatives, excluding the Event staging area near the 12-Mile entrance and other activities. Exclusion would reduce the potential for surface disturbance impacts in sensitive areas.

The Closure Area would be the direct impact area for Event activities because nearly all ground-disturbing activities associated with the Event are confined to this area. There is potential for direct impacts on the Nobles Trail, but the project is unlikely to directly affect other historic properties or NHTs. Cultural resources that are eligible for listing on the NRHP or are unevaluated would be avoided. If an eligible or unevaluated site is identified during the SRP period, it would be protected from disturbance. Although NHTs are present, no physical evidence or historic trail artifacts or traces have been exposed. As the

Event occurs year after year, there are ongoing and repeated surface disturbances to the routes of the Nobles Trail. There is potential that artifacts along the trail are being damaged or moved during this process. Physical disturbance of trail and trail artifacts are difficult to identify, but the potential for impacts increases each year of the Event, regardless of Event population.

BRC would provide general information to participants and support staff regarding prohibitions on collecting, vandalizing, and excavating historical and archaeological artifacts. In addition, if there are any unanticipated discoveries of cultural artifacts or sites, BRC is required to report the find to the BLM, stop work around any unanticipated discoveries, and maintain confidentiality of site locations. General information on resource protection would be disseminated without compromising resource confidentiality. Requiring BRC to educate participants of the Nobles Trail through production and dissemination of pamphlets (Mitigation Measure CULT-1; **Appendix E**) would minimize potential impacts on trail resources.

Incorporating proposed mitigation measures and required SRP stipulations would reduce the potential for direct impacts on cultural resources from ground disturbance, artifact collection, vehicle use damage, and inadvertent damage. These include ensuring that the staging area is at least 200 feet from the playa edge buffer zone (Mitigation Measure CULT-2); requiring BRC to inform staff volunteers, vendors and contractors, and Event participants that collection, excavation, or vandalism of historical/archeological artifacts or sites is illegal (Mitigation Measure CULT-3); and stipulating that should BRC discover an archeological resource, it must stop all activities in the discovery vicinity, notify the BLM AO, and protect the site until Event completion or until notified otherwise by the BLM AO (Mitigation Measure CULT-4; see **Appendices B and E**).

NHT segments (Applegate-Lassen and Nobles) and the Fremont Exploration Route are in the Event's vicinity. Protection of the Applegate-Lassen Route's viewshed was one of the purposes of the Black Rock Desert–High Rock Canyon NCA's creation. As outlined in **Appendix F**, the visual assessment of impacts on the Applegate-Lassen Route resulted in a determination of "no historic properties affected" for all alternatives. The visual assessment of impacts on the Black Rock Point to Granite Creek segment of the Nobles Route resulted in a determination of an adverse effect. The visual assessment of impacts on the Rabbithole to Granite Creek segment of the Nobles Route resulted in a determination of an adverse effect for all action alternatives.

Although it is approximately 15 miles from the Event, the BLM conducted a visual assessment for the Applegate Trail (CrNV-02-822/PE3158) using a photo taken during the 2017 Event from the point closest to Black Rock City. The visual assessment revealed only a faint dust cloud near the Event. Dust clouds are common year-round on the playa, so the visual impact would not be confined to the Event. The trail is too far away from the Event to be affected by noise; therefore, the BLM anticipates there would be no adverse effect on the Applegate Trail from Alternative A (Proposed Action) or any of the action alternatives.

Impacts from restricted access and the integrity of setting, feeling, and association of NHTs would occur from the Closure Order and Event-associated activities, noise, lights, traffic, crowded conditions, and displacement. These effects would be temporary during the annual SRP period, and the integrity of setting, feeling, and association of other segments of the trails removed from the direct and indirect impact areas would be unchanged, although they may experience additional use.

Potential impacts in the indirect impacts area could be visual or could involve restricted access. The boundaries on the east and north of the indirect impacts area also encompass two hot springs that in 2012, when the last EA was written, the BLM considered as being vulnerable to disturbance by over-visitation by Event participants before and after the Event. There are prehistoric sites surrounding the hot springs and historic trails that are too far from the Event to be subject to visual impacts, but which could

potentially be affected by increased visitation, unauthorized collection, and vehicle traffic. Subsequent analysis and monitoring before and after the Event suggest that few people actually visit the hot springs on their way to and from the Event. This is likely because BRC actively discourages visits, and daily monitoring around the time of the Event signals that the springs and sites around them are being actively protected. Therefore, indirect effects on the sites around these hot springs are not anticipated.

Under all Event alternatives, the BLM would continue consulting with the Nevada State Historic Preservation Officer (SHPO) and the National Park Service on the nature of impacts on cultural resources affected by the Event alternatives.

Alternatives Analysis—Alternative A (Proposed Action)

The types of potential Alternative A (Proposed Action) impacts are as described in Table C-7 in **Appendix C** and would be similar to those described under Impacts Common to All Event Alternatives. Incremental population increases would be associated with larger footprints of surface disturbance and more intensive use. The Event would allow for the city footprint to move from year to year. This would result in the disturbance footprint, including trenching and burning, occurring in different areas each year. Within the direct impact area, there are no recorded historic properties other than the two cutoff routes of the Nobles Trail. If historic properties, undiscovered cultural resources, or physical remnants of the trails are disturbed, there could be impacts on cultural resources. Known cultural resources would be avoided, and an appropriate level of cultural resource identification effort would be conducted for changes or increases in the Closure Area, Event access, or other disturbance areas.

No physical evidence or historic trail artifacts or traces have been exposed to date. There is the potential for direct ground-disturbance impacts on the Nobles Trail, but they may not be recognizable, when and if they occur. The Event SRP stipulations would include educational information on protecting cultural resources and action requirements in the case of inadvertent discoveries.

The incremental population increase and associated closures, Event activities, and Event-associated lights, traffic, crowded conditions, and displacement would temporarily adversely affect access to, and the historic setting and feeling of, the two routes of the Nobles Trail. These effects would likely increase with a larger Event but would be temporary during the annual Event. The setting and feeling of other trail segments would be unchanged, although they could experience additional use through displacement. Phased closures would reduce the impacts from the loss of access to the NHTs, compared with Alternative D, the No Population Change Alternative. An increased population may also be associated with increased visitation and potential impacts on spring locations and other off-site cultural resources and Native American cultural use locations.

Alternatives Analysis—Alternative B

The potential for impacts from ground disturbance, historic setting changes, access limitations, and cultural resources and Native American cultural uses disturbance would be similar to those for Alternative A (Proposed Action) but would generally be reduced and less intense. There could be new ground disturbance associated with site preparation, a change in Event locations, access route footprints, and utilities. A reduced population under this alternative would allow for a smaller city footprint that could move a greater distance from year to year. This would result in the disturbance footprint, including trenching and burning, occurring in different areas each year. The historic setting, feeling, and association of the two cutoff routes of the Nobles Trail would be adversely affected temporarily on an annual basis, and access would be restricted for approximately 42 days each year.

Alternatives Analysis—Alternative C

Alternative C would be the same as Alternative A (Proposed Action) but would change the Event location further north and would not phase the Closure Order. The potential for impacts would be the same as

those described for Alternative A (Proposed Action); however, as the Closure Order is not phased, access to the Nobles Trail would be restricted for a longer period.

Alternatives Analysis—Alternative D

Potential impacts would be similar to those described under Impacts Common to All Event Alternatives and Alternative A (Proposed Action), but under Alternative D, the potential for impacts from ground disturbance, alterations to historic setting, and disturbance of spring sites and other off-site cultural resources would not increase over time, and the phased Closure would be in effect.

Alternatives Analysis—Alternative E

If the BLM does not issue a Burning Man Event SRP, a no permit/Event alternative would likely result in an unauthorized gathering of people. The types of potential impacts would be similar to those described under Impacts Common to All Event Alternatives. In this case, the potential for inadvertent cultural resource impacts could occur from the lack of stipulations, avoidance areas, and monitoring and policing of sensitive resources, such as the hot springs. Access would not be formally restricted, although traffic and activities on the playa would be greater than usual for non-permitted Event periods. In the longer term, the overall disturbance footprint and effects on setting would likely be reduced without the Event. The BLM also may apply subsequent management strategies, protection measures, or closures to address issues related to large informal gatherings and to ensure that cultural resources are protected. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.4.2 Native American Religious Concerns

Affected Environment

Native American interests in the Assessment Area include a wide range of overlapping economic, social, traditional, and religious practices and uses. The BLM has the responsibility to consult with tribes to consider the conditions necessary to satisfy any economic or resource access concerns and to continue traditional uses in interest areas. Currently, tribal members may be using BLM-administered lands for subsistence, religious, and cultural purposes. Native American tribes with potential interest in the Assessment Area include, but are not limited to, the Paiute and Shoshone Tribe, PLPT, Reno-Sparks Indian Colony, and Summit Lake Paiute Tribe.

The BLM sent letters requesting consultation on Alternative A (Proposed Action) to the PLPT, Reno-Sparks Indian Colony, and Summit Lake Paiute Tribe on November 27, 2017. Consultation and an informational meeting to discuss Alternative A (Proposed Action) were held with the PLPT on January 24, 2018. The PLPT emphasized that their concerns extend beyond the PLPT's Reservation and include aboriginal territory encompassed by the affected environment. In keeping with the concept of living in harmony and connection with the natural environment, landscapes, resources, and geographic locations like the Black Rock Playa and hot springs are important features to traditional religious practitioners. PLPT elders and traditional cultural practitioners perform ceremonies before and after the Event in order to bless and protect the Black Rock Desert Playa; however, they continue to view the land as being "spiritually polluted" as a result of the Event. Tribal and cultural committee members expressed concerns regarding litter, trespass, and unauthorized artifact collection, especially along the travel routes.

Concerns were also raised about the influx of drug activity through the Pyramid Lake Paiute Tribe Reservation and the subsequent impact on tribal communities. They also expressed concerns regarding increased visitation and impacts on springs and other culturally important sites surrounding the Black Rock Playa. They requested additional surveys to identify those potentially important sites. BLM monitoring during previous Events demonstrates that there is minimal traffic and visitation in these areas during the Closure Order. Based on these observations, the BLM has determined that additional surveys are not needed at these areas.

The geographic extent for analysis of Native American Religious Concerns is the same as described for Cultural Resources, as shown on **Figure 3-3** in **Appendix A**.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

No specific sacred sites have been identified within the direct impact Assessment Area. The Black Rock Playa and other landscape features have broadly defined spiritual and cultural importance to traditional religious practitioners. Cultural sites and traditional use areas are known to be associated with springs, sites on the playa margins, and reservation lands in the indirect impact Assessment Area. Under all alternatives, there would be tribal concerns and potential impacts from unauthorized artifact collection, playa and reservation road vehicle use damage, litter, incompatible activities, and access loss. There is the potential for impacts on hot springs and other cultural resources resulting from visitation, unauthorized artifact collection, vandalism, inadvertent damage, or interference with Native American cultural uses.

Access and use of the springs related to the Event would be actively discouraged, monitored, and patrolled to protect a variety of resources, cultural values, and public safety. Mitigation would require BRC, through consultation with the PLPT, to educate participants via its website, social media, and other means approved by the BLM, on issues of concern to the PLPT (Mitigation Measure NAT-1). To reduce litter and trash in the PLPT's Reservation and along SR 447, BRC would also be required to place dumpsters in the city and along Gate Road before its intersection with CR 34 (Mitigation Measure NAT-2; **Appendix E**). These measures would be attached to the SRP to reduce the potential for impacts on Native American concerns from artifact collection, damage to the playa and reservation road from vehicle use, litter, incompatible activities, vandalism, inadvertent damage, or interference with Native American cultural uses.

Alternatives Analysis—Alternative A (Proposed Action)

Potential impacts on Native American religious concerns would be similar to those described under Impacts Common to All Event Alternatives. Population increase could increase effects from Event activities, including traffic, noise, litter, road impacts, and traditional and cultural uses and practices integrity and setting. These effects would likely increase with a larger Event but would be temporary during the annual Event. Increased population could be associated with increased visitation and potential impacts on spring locations, Reservation lands, and other off-site locations of Native American interests or cultural uses. Impacts could include visitation, unauthorized artifact collection, vandalism, inadvertent ground disturbance, or Native American cultural use interference.

Alternatives Analysis—Alternative B

Potential impacts on Native American religious concerns would be similar to those described under Impacts Common to All Event Alternatives but would be reduced from current levels because the population and duration of the Event would be reduced. The potential for impacts from unauthorized artifact collection, playa and Reservation road vehicle use damage, litter, incompatible activities at hot springs, and access loss would be reduced.

Alternatives Analysis—Alternative C

The potential for impacts would be the same as those described for Alternative A (Proposed Action). Additional consultation with tribes would be needed to determine any concerns with the new site and access.

Alternatives Analysis—Alternative D

Potential impacts would be similar to those described under Impacts Common to All Event Alternatives and Alternative A (Proposed Action), but the potential for impacts would not increase over time.

Alternatives Analysis—Alternative E

If the BLM does not issue a Burning Man Event SRP, a no permit/Event alternative would likely result in an unauthorized gathering of people. The types of potential impacts would be similar to those described under Impacts Common to All Event Alternatives in the short term. In this case, the potential for inadvertent impacts, particularly on spring locations, could occur if not addressed by Event stipulations, avoidance areas, and monitoring and policing of sensitive resources. The BLM may apply subsequent management strategies, protection measures, or closures to address issues related to large informal gatherings and to ensure that resources are protected. The overall disturbance footprint and temporary effects on setting would likely be reduced. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.4.3 Paleontology

Affected Environment

The potential for paleontological resources is based on the regional geology. To assess the potential for paleontological resources, the BLM reviewed mapped localities. The Potential Fossil Yield Classification (PFYC) geographic information system (GIS [BLM GIS 2018]) was overlaid on the Black Rock Desert base map. A detailed summary of the paleontology of the Black Rock Desert is found in the 2003 Proposed resource management plan (RMP) and Final EIS for the Black Rock Desert–High Rock Canyon NCA and Associated Wilderness and other Contiguous Lands in Nevada, Volume 1, pages 3-12 and 3-13 (BLM 2004c).

The PFYC system is used to assess the relative paleontological resource sensitivity of geological units that may be affected. This five-tiered system classifies geological units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate and plant fossils and their potential to be adversely affected; a higher-class number indicates a higher potential level. Each class is defined in the RMP EIS for the Black Rock (BLM 2004c).

The PFYC classification is based on coarse mapping of formations and does not necessarily include information from ground surveys for fossil localities. It also does not consider the potential for Pleistocene era fossils (i.e., those not preserved in rock formations). It indicates potential sensitivity that should be considered in project planning, but not necessarily the presence or absence of the resource.

There has been no systematic field survey for paleontological resources in the Assessment Area. Although there have been scientifically important paleontological resources, including mammoths, found in adjacent areas, the potential for important paleontological resources in the Assessment Area is considered low. The Closure Area in the Black Rock Playa is almost entirely in a PFYC Class 1 very low potential area. Quaternary ostracods (a micro-invertebrate) occur in the relict Black Rock Playa lakebed of Lake Lahontan. Playa margins on the western edge and southeast of the Closure Area include some PFYC Class 3 Quaternary sediment and shoreline features and deposits related to pluvial Lake Lahontan. Hot spring locations include volcanic ash layers that can provide important stratigraphic and chronological markers. No paleontological resources in the NCA qualify for special designations (BLM 2003).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for paleontological resources is depicted on **Figure 3-3** in **Appendix A**. No direct impacts are anticipated in the Assessment Area. There is some potential for the presence of fossil localities or exposures on the playa margins, at old lakeshores features, and hot spring locations in adjacent indirect impact areas. Scientifically significant vertebrate fossils are not anticipated in areas that would be directly affected by Event activities. Because of the potential for the presence of fossils along the playa margin, a 200-foot buffer, excluding the Event staging area near the 12-Mile entrance and other activities, is included

in the alternatives. Exclusion would reduce the potential for surface disturbance impacts in sensitive areas. 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. Exposed fossils can be damaged incrementally by natural weathering and erosion from wind and water, and this damage can be exacerbated by concentrating human use and activity.

To protect potential undiscovered paleontological resources that may be found in this area, recommended mitigation would require BRC to coordinate with the BLM to ensure that the staging area is at least 200 feet from the playa edge buffer zone (Mitigation Measure CULT-2). Additionally, through the website, social media, and other means approved by the BLM, BRC would be required to inform staff, volunteers, vendors and contractors, and Event participants that collection, excavation, or vandalism of fossils is illegal (Mitigation Measure CULT-3). Should BRC discover a paleontological resource, it would be required to stop all activities in the discovery vicinity, notify the BLM AO, and protect the site until Event completion or until notified otherwise by the BLM AO (Mitigation Measure CULT-4; **Appendix E**). If these mitigations are incorporated, the potential for direct impacts on paleontological resources from ground disturbance, unauthorized collection, vehicle use damage, and inadvertent damage may be reduced through education and restrictions.

Alternatives Analysis—Alternative A (Proposed Action)

The types of potential impacts under Alternative A (Proposed Action) are as described in Table C-9 in **Appendix C** and would be similar to those described under Impacts Common to All Event Alternatives. Incremental population increases would be associated with larger footprints of surface disturbance and more intensive use. For any changes in the disturbance areas, the BLM would consider the potential for fossils to be present based on geologic unit and known exposures. There could be impacts if previously undiscovered locations of scientifically significant fossils are exposed or disturbed. Increased population may be associated with increased visitation and potential impacts on hot springs or other locations where fossils may be present. Event-related access to and use of springs would be actively discouraged, monitored, and patrolled to protect a variety of resources, cultural values, and public safety.

Alternatives Analysis—Alternative B

The potential for impacts associated with the Event would be similar to, Alternative A (Proposed Action). Because of the reduced population, impacts would be reduced.

Alternatives Analysis—Alternative C

The potential for impacts would be the same as those described for the Proposed Action. For any changes in the disturbance areas, the BLM would consider the potential for fossils to be present based on geologic unit and known exposures.

Alternatives Analysis—Alternative D

Potential impacts would be similar to those described under Impacts Common to All Event Alternatives and Alternative A (Proposed Action), but the potential for impacts would not increase over time.

Alternatives Analysis—Alternative E

If the BLM does not issue a Burning Man Event SRP, a no permit/Event alternative would likely result in an unauthorized gathering of people. The types of potential impacts would be similar to those described under Impacts Common to All Event Alternatives, with potential for fossils in playa margins to be damaged due to the absence of a buffer. In this case, the potential for inadvertent impacts could occur in the short term from the lack of Event stipulations, avoidance areas, and monitoring and policing of sensitive resources. Impacts would be reduced in the long term as participation declines.

In addition, the BLM may apply subsequent management strategies, protection measures, or closures to address issues related to large informal gatherings and ensure that resources are protected. Over the long term, the overall disturbance footprint would likely be reduced. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.5 HEALTH AND SAFETY

3.5.1 Public Health and Safety (Including Law Enforcement)

Affected Environment

Emergency Response

Emergency response by law enforcement agencies at the Event include responding to person-on-person crimes, such as disorderly conduct, theft, assaults, and batteries; and fire and medical emergencies, such as vehicle accidents, injuries, structural collapse, structure fires, and drug intoxication. The proponent prepares operational and contingency plans annually to address emergency response by medical, hazardous materials, and fire personnel. Investigating person-on-person crimes at the Event are the primary responsibility of Pershing County Sheriff's Office; BLM officers augment Pershing County Sheriff's Office as needed, depending on call volume and available staffing, to ensure responsiveness to participants' public health and safety. Law enforcement staffing is based on current and future Event populations and is determined by responsible agencies, based on current and future management studies incorporating proximity, capacity, and response time of emergency services, to address emergency response and public health and safety.

Respiratory Concerns

The Closure Area is on the Black Rock Playa, which contains alkaline gypsum and silica dust that becomes airborne in high concentrations with Burning Man Event activities and wind (Adams and Sada 2010). Exposure to alkaline gypsum dust with a silica component is regulated by the Occupational Safety and Health Administration as a known carcinogen[8]. Detailed air quality analyses, including threshold limits, are found in **Section 3.2.1**. Children take in more air per unit body weight than adults, resulting in greater impacts from poor air quality (CARB 2000).

Human Health Concerns

While the Burning Man Event is an at-will recreational event, medical incidents associated with the event can and have occurred. **Table 3-5** summarizes medical incidents during the Event from 2012 through 2017. The playa is a rugged, austere environment with risks from heat, dehydration, sun exposure, and chemical burns to skin from exposure to playa surface soils (BLM 2012a).

Table 3-5
Summary of Medical Incidents at Burning Man Event[1]

Incident	2012	2013	2014	2015	2016	2017
Patients	4,821	6,196	5,443	5,313	4,899	5,039
Off-site transports	29	34	22	26	31	53
Altered state, influence of drugs/alcohol	76	240	127	79	126	325
Combative patients	Not Reported	Not Reported	Not Reported	1	6	Not Reported

Source: BRC-provided statistical information
[1]BRC has not provided 2018 medical data

[8] a substance capable of causing cancer in living tissue

Traffic-related injuries occur in the Closure Area and on travel routes to the Event. In 2014, a participant was killed in an accident involving an art car.

Within the Event Closure Area, Leave No Trace® principles are communicated to participants, but unauthorized dumping has occurred, including unsanitary debris, such as trailers and trash, next to the Closure Area and along travel routes affecting surrounding communities. See **Section 3.5.2** Waste, Hazardous or Solid and **Section 3.7** Social Values and Economics sections for further discussion.

Illegal controlled substance ingestion at the Event is a human health concern, with potential impacts from the rise of the national opioid epidemic. The "gifting culture" of the Event results in participants accepting items from other participants, potentially ingesting substances unknown to them. Participants who believe they are ingesting one substance, only to find out they have ingested something completely different, could overdose. Foods, such as dried apricots and breath mints laced with illicit substances, have been located at the Event. In addition, law enforcement responds to assaultive or combative subject calls during the Event, due to illegal controlled substance abuse. This use jeopardizes the safety of the public, first responders, and BRC staff and volunteers. Law enforcement resources enforce state and federal law to combat illicit drug use at the Event. Illicit drug use can result in an urgent need to evacuate one's refuse, resulting in increases of human feces deposited on the playa and left unclaimed by participants in recent years.

Participants fall from structures and art pieces at the Event, which is a human health concern before, during, and after the Event as art is built, experienced, and dismantled.

First responder resources, including fire, emergency medical services, and law enforcement, are drawn down during the Event, as personnel from across northern Nevada support the Event. Communities across northern Nevada are left with reduced emergency services staff, particularly in Pershing County. BLM resources at the Event are brought from across the nation, leaving millions of acres of public lands without BLM law enforcement coverage during the Event. The drawdown of BLM and partnering law enforcement is exacerbated when the Event falls on Labor Day weekend, one of the nation's busiest weekends on public lands.

Limited access controls and lack of professional security resources at entrance points into the city, coupled with limited law enforcement staffing, are two critical Event vulnerabilities. BRC operates the gate and searches for stowaways at peak traffic flow areas to prevent ingress and prevent traffic backlog onto paved routes in the area. There is not enough law enforcement assigned to the Event to provide a high-visibility presence at gate operations at the three portals into the city: The Main Gate, Airport, and Point 1.

Additional baseline information on the following public health and safety topics are included in the BLM Public Health and Safety Baseline Report (BLM 2018b): evacuation protocols, explosives, fire safety, hygiene and food safety, missing juveniles, and disease.

Environmental Consequences

The assessment area for public health and safety is depicted on **Figure 3-4**, Air Quality, Climate and Public Health and Safety in **Appendix A**.

Alternatives Analysis—Alternative A

The increased number of bodies on the playa during build week necessitates more law enforcement and emergency medical services prior to, during, and following the Main Event. Mitigation Measure PHS-1 could offset government staffing limitations as described in this analysis. Impacts could increase for public health and safety factors, such as aircraft activity, disease vectors, explosives, evacuation, fire safety, hygiene and food safety, and structure collapse. Mitigation Measure PHS-6 could reduce impacts on

neighboring jurisdictions supporting emergency medical evacuations from the Event during the Closure Order period.

Event Population of 85,000 in 2019. The modest increase in 2019 would not create additional significant impacts beyond those listed in the BLM Public Health and Safety Baseline Report (BLM 2018b). Refer to **Section 3.6.1**, Air, for detailed projections of air quality impacts related to this population increase that would affect public health and safety. BLM law enforcement issued an average of 420 citations between 2013 and 2017, with a population ranging from 65,922 to 79,435. A population increase of approximately 5,000 is a 6.25 percent increase and can be expected to result in approximately 26 more citations. The median rate of reported sexual assaults per day at the Event between 2014 and 2017 ranged from 0.81 to 2.40 and is likely to increase proportionate to the Event population; approximately 23 incidents are projected in 2019. Refer to the BLM Public Health and Safety Baseline Report (BLM 2018b) for comparable environments and related statistics. This population increase would also require an increase over the baseline numbers of 75 law enforcement personnel of approximately 5 additional officers, proportionate to population growth, further reducing the BLM's national resources (BLM 2018b). Refer to **Section 3.7**, Social Values and Economics, for further discussion regarding partner agency impacts.

Event Population of 90,000 in 2020. The population increase proposed for 2020 represents a 12 percent increase in population from the baseline analysis. This increase raises potential impacts regarding all impacts identified in the BLM Public Health and Safety Baseline Report (BLM 2018b). Public health and safety indicators, including BLM citations, reported sexual assaults, and arrests, can be expected to also increase by a 12 percent margin from the existing environment. This would require an increase of a minimum 9 personnel in federal law enforcement, reducing the BLM's ability to execute other priority missions, such as border security, marijuana eradication, and patrols of heavily visited recreational areas on BLM-administered lands during Labor Day weekend, in addition to daily BLM law enforcement activities on BLM-administered lands nationwide. Additionally, this increase would negatively affect public health and safety in Pershing County due to a further drawdown on first responders available to the service the remainder of the County. Refer to **Section 3.7**, Social Values and Economics, for further discussion regarding partner agency impacts.

Event Population of 95,000 in 2021. The population increase proposed for 2020 represents an approximate 16 percent increase in population from the baseline analysis. This increase would raise concerns regarding all impacts identified in the BLM Public Health and Safety Baseline Report (BLM 2018b). Public health and safety indicators, including BLM citations, reported sexual assaults, and arrests made by Pershing County Sheriff's Office, can be expected to proportionately increase by a 15 percent margin from the existing environment (BLM 2018b). This would require an increase of a minimum 12 personnel in federal law enforcement, reducing the BLM's ability to execute other priority missions, as described above. Refer to **Section 3.7**, Social Values and Economics, for further discussion regarding partner agency impacts.

Event Population of 100,000. The population increase proposed for 2020 represents a 25 percent increase in population from the baseline analysis. This increase would increase all potential impacts identified in the BLM Public Health and Safety Baseline Report (BLM 2018b). Public health and safety indicators, including BLM citations, reported sexual assaults, and arrests made by Pershing County Sheriff's Office, can be expected to proportionately increase by a 25 percent margin from the existing environment. This increase would require an increase in law enforcement to approximately 50 percent of all BLM law enforcement nationwide at 2018 agency staffing levels, reducing the BLM's ability to execute other agency missions, as described above. This increase would require an onerous and potentially unattainable increase in BLM law enforcement while increasing public health and safety risks on BLM-administered lands outside of the Event location. Auxiliary law enforcement resources could be contracted, although jurisdictional

limitations may apply. Additionally, this increase would negatively affect public health and safety in Pershing County as a whole due to drawdown on first responders available to the remainder of the county. Refer to **Section 3.7**, Social Values and Economics, for further discussion regarding partner agency impacts.

Alternatives Analysis—Alternative B

Aircraft activity, disease vectors, explosives, evacuation, fire safety, hygiene and food safety, structure collapse, and terrorism could decrease in concern with a decreased population due to reduced exposure for each impact. Reducing the Event population would allow for mitigation success to include Mitigation Measures PHS-1 and PHS-6, based on the assumption that the SRP proponent's mitigation programs retain the level of integrity and participation historically implemented.

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

Alternatives Analysis—Alternative C

This alternative would substantially increase potential impacts related to civil disobedience, emergency response, law enforcement, and evacuation due to the more remote location and associated transportation challenges of emergency response to this location for all population considerations. The increased number of bodies on the playa during build week would necessitate more law enforcement and medical staffing prior to the Main Event. Mitigation Measure PHS-1 could offset government staffing limitations as described in this analysis. The analysis by population with the inclusion of Mitigation Measure PHS-6 would be the same as that described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

Impacts on 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 be the same as those described in the BLM Public Health and Safety Baseline Report (BLM 2018b). Mitigation Measure PHS-1, however, could offset government staffing limitations as described in the baseline report. Mitigation Measure PHS-6 could reduce impacts on neighboring jurisdictions supporting emergency medical evacuations from the Event during the Closure Order period.

Alternatives Analysis—Alternative E

Due to the historic nature of the Event and the commitment from Event participants, a no permit/Event alternative would likely result in an unorganized gathering of thousands of people. A Closure Order for entry onto the event site in the affected environment could be necessary to prevent unauthorized group use of the Black Rock Playa. This alternative would still require a law enforcement presence to ensure the activities absent the Event in the time frame under Alternative A (Proposed Action) do not threaten natural and cultural resources and negatively affect public health and safety on BLM-administered lands.

If unorganized or unauthorized gatherings at the Event site occurred, emergency response, flooding, human health impacts, respiratory impacts, unorganized aircraft activity, disease vectors, explosives, evacuation, fire safety, hygiene and food safety, structure collapse, emergency medical response, and terrorism would remain as potential impacts on public health and safety. The potential for civil unrest could increase under the no permit/Event alternative, as participants could protest the decision. The BLM would mitigate impacts through administrative adaptive management. The BLM would also expect impacts to decrease in the long term as participation declines. If the BLM applied, managed, and enforced a Closure

Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

Proposed Mitigations for All Event Alternatives

Hardened physical perimeter barriers, such as jersey barriers or K-rail fencing, would reduce the risk of vehicle entry through perimeter fencing (BLM 2018b). Contracted BLM-approved, third-party, private security at all portals of entry to screen participants, staff, and volunteers entering the Event (Mitigation Measure PHS-1; **Appendix E**) would reduce entry of firearms and other contraband into the Event (BLM 2018b). For example, events, such as the Electric Daisy Carnival, hire security personnel for entry screening to reduce subsequent impacts on law enforcement staffing the Event from banned contraband entering the Event (BLM 2018b).

A Sexual Assault Response Team contracted for placement in Gerlach, Nevada (Mitigation Measure PHS-2), would ease the burden on victims of assault and allow for a stronger support network to accompany the victim to and from the examination (BLM 2018b). This could increase successful prosecutions and provide a deterrent to elevated incidents of sexual assault. The availability of Sexual Assault Response Team exams removed from the Event yet close enough to drive a victim would save the cost of flying a victim to and from the Event in a medically equipped aircraft and increase the capacity of the air ambulance to remain on call for advanced life support functions.

Mitigation Measure PHS-5 would require BRC to minimize disruptions of services to the PLPT and local communities, reducing public health and safety impacts related to emergency services and utilities.

Inspection by Nevada-licensed building inspectors of habitable structures over 10 feet tall provides additional protection in preventing structure collapses during the Event (Mitigation Measure PHS-4; **Appendix E**). Implementation of licensed inspections reduces the threats of structure collapse to the health and safety of participants and first responders (BLM 2018b).

Proposed air quality mitigation measures identified in **Appendix E** would alleviate public health and safety concerns from elevated levels of particulate matter during the Closure Order (Mitigation Measures AQ-1 through AQ-5). Requiring BRC to recontour Gate Road (Mitigation Measure SOIL-3), maintain motor vehicle speed limits (Mitigation Measure AQ-2), and develop other solutions to reduce dust events would reduce the potential for air quality-related health impacts on participants, staff and volunteers, and vendors and contractors. By providing its employees and contractors with respirators or other equipment (Mitigation Measure AQ-5), the BLM would further minimize air quality-related health risk impacts on its employees and contractors.

3.5.2 Waste, Hazardous or Solid

Affected Environment

The Assessment Area for wastes encompasses areas within 0.5 miles of the Closure Area, including CR 34 and SR 445, 446, and 447 (see **Figure 3-5,** Wastes, Hazardous or Solid in **Appendix A**).

Mining has occurred in this region of Nevada, and such sites can contain hazardous waste. Although there are no mines in the Assessment Area, the abandoned Cassidy Mine is approximately 1.0 to 1.5 miles to the northwest.

In the Assessment Area, most of the illegally dumped material is litter that has been dropped by individuals or windblown into the area. These materials tend to be found along authorized and unauthorized transportation routes, such as those for highway vehicles and off-highway vehicles (OHVs), and in authorized and unauthorized recreation areas. It is a misdemeanor for any person to throw or deposit on any public highway within Nevada, or within 1,000 feet from the center of any public highway, any dead

animal, dirt, garbage, or rubbish (Nevada Revised Statues 202.185). Nevada law defines a misdemeanor as a crime punishable by up to 6 months or less in jail and a fine not to exceed $1,000.

In the 1940s, Black Rock Desert was used as a bombing range (Friends of Black Rock High Rock 2018). There are no known explosives in the Assessment Area, but incidents in Nevada have included lost live ordnance, crashes, dumped fuel tanks, and wayward missiles. Mining-related explosives from historical and active mining operations have been found on BLM-administered land (BLM 2013).

The NDEP, Bureau of Waste Management protects human health, public safety, and the environment from the effects of improper, inadequate, or unsound management of hazardous waste; establishes programs for regulation of the storage, generation, transportation, and treatment and disposal of hazardous waste; and ensures safe and adequate management of hazardous waste (Nevada Revised Statues 459.400).

Event SRP regulations state the discharge of any and all trash/litter (also known as matter out of place) onto the playa/ground surface is prohibited. BRC installs a temporary trash fence around the entire Event perimeter to collect solid waste from blowing beyond the Event Closure Area. All Event participants must pack out and properly dispose of all trash at an appropriate disposal facility off the playa. BRC asks all participants to pack out their own solid waste according to Leave No Trace® principles on its website (BRC 2018b) and provides guidance to participants on how to reduce their solid waste, a list of available locations for solid waste disposal and recycling, and information on the restrictions regarding solid waste disposal on its website (BRC 2018c).

BRC is responsible for all Closure Area solid waste removal and cleanup and transports any solid waste remaining at the site to an appropriate landfill. BRC establishes a cleanup crew that employs methods developed between 1998 and 2008. The cleanup crew divides the site into an extensive grid system that is patrolled at 7- to 10-foot intervals. The cleanup crew picks up any solid waste found within their grid.

The BLM's post-cleanup inspection protocol is detailed in the 2013 and 2017 Post-Event Inspection reports. Inspection was conducted at 60 random points and 5 targeted points. These points represent approximately 1.5 percent of the total area of the city. To pass the inspection, there must be an average of 1 square foot (or less) of trash per acre. For 2013 through 2017, the averages ranged from a low of 0.32 square foot/acre in 2013 to a high of 0.77 square foot/acre in 2016. More details can be found in the Post-Event Inspection reports available at https://go.usa.gov/xnBTu.

BRC is responsible for patrolling the areas of special concern for cleanup of Event-related solid waste for CR 34 from the 12-Mile entrance to SR 447; SR 447 from CR 34 to Wadsworth; CR 447 from Gerlach to the California state line; and SR 446 from Nixon to SR 445 near Sutcliffe. Also, it may include, as necessary, CR 34 north of the Event site to Jackson Lane.

BRC operates seven fuel depots at the airport: JOC, Department of Public Works Fuel Depot, Point 1, Golf Cart Service Yard, Heavy Machinery Yard, and Hell Station with tanks ranging from 1,500 to 12,000 gallons. Under previous permits, all fuel must be stored in a designated fuel storage area located at least 10 feet away from any flammable materials, including vehicles and camping trailers. All fuel containers must have secondary containment[9] that can hold 110 percent of the largest container.

Event permit regulations (see **Appendix B**) state the dumping or discharge of vehicle oil, petroleum products, or other hazardous household, commercial, or industrial refuse or waste onto the playa/ground

[9] Secondary containment: (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.

surface is prohibited. This applies to all recreational vehicles, trailers, motorhomes, port-a-potties, generators, and other camp infrastructure. The unintentional release of oil can occur. Drip pans are expected to be removed from the playa by participants and disposed of according to state and federal law.

Hydrocarbons, such as fuels or oils, can be deposited on the playa from dripping or leaking vehicles or containers. According to BLM law enforcement statistics, for the 2017 Event, four warnings and no violation notices for fuel storage were issued. Fuel was leaking from a JOC fuel tank in 2017, and contaminated playa soil was removed. For the 2018 Event, 74 warnings and 40 violation notices for fuel storage were issued. During the 2018 Event, BRC fuel tanks were found leaking, though notice was issued for other fuel storage violations. BRC was issued a violation notice for not complying with 40 CFR 112 and 40 CFR 267.195.

A 2003 Oil Drip Survey provided estimates of the total amount of oil dripped onto the playa during the 2002 Event with approximately 29,000 participants. In the survey, it was assumed there were 1.6 participants per vehicle and that 1 in 6 vehicles dripped oil; most of those vehicles were in poor condition. The survey determined that the Event resulted in the deposition of approximately 14.5 gallons of vehicle-related oil onto the playa surface (BLM 2012a).

A 2012 Oil Drip Survey found that 14 (4.4 percent) of the 319 sampled vehicles were observed to be dripping oil. The peak number of vehicles at the Event was estimated at 29,630 based upon counts of the numbers of participants per vehicle. Based upon this vehicle estimate, approximately 1,300 vehicles dripped oil during the 2012 Event. The 2012 results were consistent with a previously documented downward trend in the percentage of vehicles with oil drips. During the 2002, 2003, and 2004 Events, the percentage of sampled vehicles with oil drips was 15.7, 11.0, and 5.1 percent, respectively (Farschon 2012).

Event permit regulations (see **Appendix B**) state that the depositing of human waste (liquid and/or solid) and the discharge or dumping of wastewater (gray water and black water) on the playa/ground surface is prohibited, but they have occurred during previous Events. Grey water is defined as water that has been used for cooking, washing, dishwashing, or bathing and/or contains soap, detergent, food scraps, or food residue, regardless of whether such products are biodegradable or have been filtered or disinfected. Black water is defined as wastewater containing feces, urine, and/or flush water.

BRC actively monitors for wastewater leaks from trailers, recreational vehicles (RVs), and kitchens, and educates participants on how to prevent and remediate spills that occur. RV servicing is available at the Event for a fee. During the 2017 Event, 13 warnings and 7 citations for gray or black water were issued. During the 2018 Event, 7 warnings and 37 citations for gray or black water were issued (BLM 2018c).

Properly collected and disposed of wastewater can be more readily quantified than improper releases. In 2011, the Event with approximately 54,000 participants generated a total of 545,000 gallons of effluent, which included all gray and black water generated by infrastructure, portable toilets, commissary, showers, and café, as well as all the recreational vehicles that were serviced (BLM 2012a).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Alternatives Analysis—Alternative A (Proposed Action)

Solid Waste. Under Alternative A (Proposed Action), solid waste would be generated by participants and would be expected to be found in the Assessment Area following the Event. Based on the Burning Man Event SRP EIS Public Scoping Report (BLM 2018a), residents have expressed concern about discarded waste found on private and public land along the travel routes. It is not possible to characterize the exact quantity or composition of solid waste potentially released into the environment, because that is highly influenced by the Event population, the occurrence of unintentional or intentional releases, and participant

adherence to Leave No Trace® principles. As part of the SRP, BRC adheres to Leave No Trace® principles in the Event Closure Area.

With an Event population of 100,000, the amount of solid waste potentially released into the environment would increase compared with previous Events. This would increase the need for solid waste management, outreach, and monitoring. The quantity and composition of solid waste that is unintentionally or intentionally released by participants affects the type of hazard it can present to the public or the environment. For example, it 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.

The Event Operations Plan (BRC 2018l) contains procedures for Event clean-up and site restoration based on Leave No Trace® principles. BRC's Earth Guardians inform and encourage participants to apply the Leave No Trace® principles and to leave positive traces. Earth Guardian projects include Leave No Trace® outreach and resolution, hot spring patrols, litter removal, staffing an information desk, and support for Event and camp operations for over 1,000 volunteer-hours.

An Event population of 100,000 would likely expose the public and environment to solid waste. Despite being based on Leave No Trace® Principles, a time series analysis from 2006 through 2018 (Hall and Rorex 2018) for the City Grid indicates that there is a trend of increasing debris and litter left behind each year of the Event. For 2018, the density of debris left behind after clean-up was 1.15 square feet per acre. This is in excess of the stipulated amount allowed. Forecasting indicates that at present trends, there is a high probability that the debris left behind would be in excess of 1.3 square feet per acre in less than 5 years.

The likelihood of exposing the public and environment to solid waste would be minimized but not entirely prevented by Event SRP regulations, guidelines for Event participants, BRC's plans for managing solid waste, and stipulations outlined in **Appendix B**. It would be further minimized by requiring BRC to implement mitigation measures in **Appendix E**, such as placing dumpsters on the playa along Gate Road before its intersection with CR 34 (Mitigation Measure NAT-2) and adherence to established acceptable methods for storing, transporting, and disposing of solid waste by participants and BRC (Mitigation Measure WHS-4).

Hydrocarbon Waste. Under Alternative A (Proposed Action), hydrocarbon releases in the form of drips or leaks would occur during the Event. Hydrocarbon wastes would be deposited on the playa from dripping or leaking vehicles or containers. The released fuel or oil can contaminate soil or water thus creating hazardous conditions for the public or the environment.

Using the same assumptions described in the 2003 Oil Drip Survey (BLM 2003), it is estimated that under Alternative A (Proposed Action), approximately 100, 105, 110, 115, 120, and 125 gallons of vehicle-related oil would drip onto the playa surface based on population levels at 80,000, 84,000, 88,000, 92,000, 96,000, and 100,000, respectively. The hydrocarbons would be readily absorbed in the top layer of sediment of the playa and then volatilized, dispersed as a film in the intermittent lake surface, or photo-degraded over time by sunlight (BLM 2012a). Vehicle-related oil leaks associated with the Event would be limited to the Closure Area.

The vehicle-related oil deposition estimates are based on population growth and do not account for the implementation of management efforts to reduce oil leaks on the playa. For example, BRC would make educational materials available to participants prior to the Event that explain the need to inspect vehicles and repair or modify those with drips of oil or other fluids. BRC would actively monitor for engine oil drips from trailers, RVs, and kitchens, and educate participants on how to prevent and remediate spills that occur. BRC would also train staff involved with greeting participants to identify vehicles likely to have an

increased risk of oil or fluid drips, inspect suspect vehicles, and take appropriate actions to minimize contamination from leaking vehicles. These efforts would minimize the potential for impacts from oil leaks.

The Event Operations Plan (BRC 2018l) contains spill control procedures to contain and immediately clean up fuel or oil spills, as well as a fuel spill response plan. Participants would be advised to use materials, such as hazardous materials pads or drip pans, to minimize the release of hydrocarbons. Additionally, BRC educates participants about oil leaks on its website (BRC 2018d) and Leave No Trace® principles on its website (BRC 2018b).

Event SRP regulations, guidelines for Event participants, and BRC's plans for managing vehicle oil waste would minimize the likelihood of exposing the public and environment to vehicle oil waste. Proposed mitigation (see **Appendix E**), such as requiring all participants and staff to clean up and dispose of all fluids and materials by the appropriate means (Mitigation Measure WHS-4), would further minimize the potential for impacts. Recommended BLM monitoring of disposals (Recommended Monitoring Measure WHS-3; see **Appendix E**) could also result in future stipulations to address observed impacts.

Wastewater. For Alternative A (Proposed Action), some wastewater in the form of gray water and black water could be deposited on the playa during the Event either deliberately by participants or because of drips, leaks, and spills from recreational vehicles, portable toilets, or showers. The quantity and composition of wastewater that is unintentionally or intentionally released into the environment by participants affects the type of hazard it can present to the public or the environment. For example, it can attract insects, harm or kill wildlife, contaminate soil or water, or be a public health concern from contact.

Based on data from the 2011 Event, it is estimated that, under Alternative A (Proposed Action), approximately 808,000, 848,400, 888,800, 929,2000, 969,600, and 1,010,000 gallons of wastewater would be properly collected and disposed based on Event populations of 80,000, 84,000, 88,000, 92,000, 96,000, and 100,000, respectively. The wastewater would come from portable toilets, commissary, showers, and café, as well as all the recreational vehicles that are serviced. It is expected that some Event participants unintentionally or intentionally dispose of wastewater on the playa. This activity is prohibited by the BLM and BRC, but it still occurs. As the number of participants increases, it is assumed the amount of unintentionally or intentionally disposed of wastewater on the playa would increase. This would increase the number of portable toilets needed and the need for outreach and monitoring.

The Event Operations Plan (BRC 2018l) contains human waste management requirements, which would minimize the potential for wastewater impacts under Alternative A (Proposed Action). For example, BRC would coordinate with the Nevada Division of Public and Behavioral Health and a portable toilet vendor to provide the proper number and locations of toilets and hand sanitizers within the Closure Area and in Gerlach for the peak anticipated population, as well as adequate resources for toilet pumping and maintenance consistent with the requirements of the health department. The condition and usage of the facilities would be monitored on-site by the appropriate state or county health department, with adjustments made by BRC based on the health department's recommendations. Additionally, BRC would develop a contingency plan for placing additional toilets if the anticipated population exceeds estimates. Also, there would be a BRC staff member designated to properly dispose of human waste found on the playa (BRC 2018l).

BRC would educate participants to ensure that only appropriate biological waste is placed into the toilet facilities. This education process would continue through the year prior to the Event and would be emphasized on-site with signage and media reinforcement. Additionally, BRC would continue to educate participants about wastewater on its website (BRC 2018e) and Leave No Trace® principles on its website (BRC 2018b). This would further reduce, but not eliminate, the potential for wastewater and human waste impacts under Alternative A (Proposed Action).

The likelihood of exposing the public and environment to wastewater would be further minimized by Event SRP regulations, guidelines for Event participants, BRC's plans for managing wastewater, and mitigation in **Appendix E**, which requires adherence to established acceptable methods for storing, transporting, and disposing of wastewater by participants and BRC (Mitigation Measure WHS-6).

Hazardous Material. For Alternative A (Proposed Action), hazardous material would be used in the Assessment Area, including combustible fuel and paint. Releases of volatile materials would be rapidly dispersed from the playa through evaporation. Other materials would vary in their breakdown pathway with active cleanup potentially required. It is not possible to characterize the quantity or composition of hazardous materials potentially released into the environment, because that is highly influenced by the quantity of participants; the occurrence of unintentional or intentional releases; participant adherence to proper transportation; use, handling, storage, and disposal of hazardous materials by participants (as well as BRC requirements); and participant adherence to Leave No Trace® principles.

With an Event population of 100,000, the potential for unintentionally or intentionally released hazardous materials would require hazardous material management, outreach, and monitoring to minimize the potential for impacts. The quantity and composition of hazardous material that is unintentionally or intentionally released by participants affects the type of hazard it can present to the public or the environment. For example, it can cause a fire or explosion, harm or kill wildlife, contaminate soil or water, or be a public health concern from contact or inhalation. Also, the burning of materials, such as polyvinyl chloride, rebar, or other plastic or decorative objects used in art pieces, could release toxins and result in exposure to hazardous material.

To minimize potential impacts from hazardous material releases, BRC's Emergency Services Department would be responsible for hazardous materials. The Emergency Services Department established a hazardous materials cleanup unit in 2003 to address fuel spills and similar minor hazardous materials incidents (BLM 2012a). BRC's Department of Public Works would assist with clearing debris, hazards, and/or equipment and would assist in securing a vendor to provide large-scale cleanup if necessary. Additional hazard-specific assistance would be provided by BRC as needed.

As part of the permitting process, BRC would also strategically place structural/brush-type fire engines and staff within the Closure Area to minimize the potential for impacts from hazardous materials. All Event participants using hazardous materials, including combustible fuels, would be required to educate themselves about and comply with appropriate practices for storing and handling such materials. Participants using hazardous fuels in art installations or at theme camps would be required to provide the location of any fuel storage to BRC's Emergency Services Department to help it plan for emergencies, and a Material Safety Data Sheet for hazardous chemicals must be supplied and kept on-site. BRC would also require art installation questionnaires to include diagrams with the locations of any fuels that would be stored within camps and in relation to the art. The Emergency Services Department would use this information to plan for emergencies. Also, BRC would educate participants about fuel and hazardous material storage (BRC 2018f), pyrotechnics (BRC 2018g), and fire safety agreements involving art, theme camps, mutant vehicles, fuel and hazardous materials storage (BRC 2018h), flame effects guidelines (BRC 2018i) on its website and Leave No Trace® principles on its website (BRC 2018b). These measures would reduce the potential for impacts from hazardous materials.

The Event Operations Plan (BRC 2018l) contains plans and information to minimize hazardous material releases, such as a hazardous materials incident response plan. It also contains a fuel container brochure to inform participants about the importance of using an approved fuel container, what constitutes an approved fuel container, the volume of fuel that can be stored, the methods for storing fuel, fuel spill control and response, emergency and safety requirements, and fire safety. Additionally, the Event Operations Plan (BRC 2018l) contains fuel storage rules outlining general storage requirements; specific

liquified fuel requirements involving quantity limits, fuel container types, secondary containment, handling and transfer, spill control and response, fire suppression, and safety reminders; and specific compressed and liquefied fuel gases requirements involving quantity limits and cylinder storage and care.

Event SRP regulations, guidelines for Event participants, and BRC's plans for managing hazardous materials would reduce the likelihood of exposing the public or environment to hazardous materials. Proposed mitigation in **Appendix E**, which would require the BRC to increase the size of its environmental compliance teams commensurate with the Event population size (Mitigation Measure WHS-7), would further reduce the potential for impacts from the transportation, use, handling, storage, and disposal of hazardous materials by participants and BRC during the Event.

Alternatives Analysis—Alternative B

Solid Waste. The nature and types of impacts would be similar to those described under Alternative A (Proposed Action), but less solid waste would be potentially released because there would be a smaller Event population, resulting in fewer opportunities for creating a hazard to the public or the environment.

Hydrocarbon Waste. The nature and types of impacts would be similar to those described under Alternative A (Proposed Action), but less oil would be potentially released, because the Event population would be smaller. Using the same assumptions described in the 2003 Oil Drip Survey (BLM 2003), it is estimated that approximately 62.5 gallons of vehicle-related oil would drip onto the playa surface from 50,000 participants. This would lead to fewer opportunities for a hazard to the public or the environment.

Wastewater. The nature and types of impacts would be similar to those described under Alternative A (Proposed Action), but less wastewater would be potentially released, because there would be a smaller Event population. Based on data from the 2011 Event, it is estimated that approximately 505,000 gallons of wastewater would be properly collected and disposed from 50,000, participants. This would result in fewer opportunities for creating a hazard to the public or the environment.

Hazardous Materials. The nature and types of impacts would be similar to those described under Alternative A (Proposed Action), but less hazardous materials would be potentially released, because there would be a lower Event population, resulting in fewer opportunities for creating a hazard to the public or the environment.

Alternatives Analysis—Alternative C

The impacts on solid waste, hydrocarbon waste, wastewater, and hazardous materials would be the same as those described under Alternative A (Proposed Action), because shifting the Event location to the north would not change the impacts.

Alternatives Analysis—Alternative D

The impacts on solid waste, hydrocarbon waste, wastewater, and hazardous materials would be similar to the impacts from the Event population of 80,000 under Alternative A (Proposed Action). Yet, the impacts would not change for subsequent years, because the number of participants would not increase as it would under Alternative A (Proposed Action).

Alternatives Analysis—Alternative E

Under Alternative E, participants would likely still descend on the playa each year. During this time, impacts on solid waste, hydrocarbon waste, wastewater, and hazardous materials would be less than under the other alternatives, because there would be the fewest number of participants. Because BRC would not be assisting in managing wastes, the potential exists for unexpected releases of wastes. Impacts would decrease over the long term as word of Event closure spreads. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.6 PHYSICAL RESOURCES

3.6.1 Air

Affected Environment

Climate and Meteorology

The climate in the region is semiarid and characterized by warm, dry summers and cold winters with intermittent precipitation events. The nearest National Weather Service station that collects quality meteorological data is at the Lovelock airport approximately 50 miles southeast of the Event site. Detailed climatological data are included in Section 5.1 of the Air Resources Technical Baseline Report (Strohm 2018a).

Ambient Air Quality

The Clean Air Act requires each state to identify areas that have ambient air quality in violation of NAAQS, using the monitoring data collected through state monitoring networks. Air quality in the Assessment Area is classified as attainment/unclassified for the NAAQS. The Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness RMP states that the NCA and wilderness areas will be managed as a Prevention of Significant Deterioration (PSD) Class II area as designated by the Clean Air Act. In addition, it states that all BLM actions and use authorizations will be designed to or stipulated to protect air quality. The emissions sources associated with the Event do not fulfil the definition of major stationary sources or major source modification defined in the PSD regulations within the Clean Air Act (40 CFR 51.21(B)(l)(i)). As a result, the emissions sources associated with the Event do not consume PSD ambient concentrations, therefore, the RMP requirements are maintained, and the impacts of the Event are compared with the NAAQS for the determination of significance.

Because of the limited year-round population in the Event region, there are no NDEP air monitoring stations in the air quality Assessment Area or adjacent to the Event site. As a result, baseline air quality measurements were collected adjacent to the Event location before and during the 2017 Event to establish baseline concentrations of criteria and other pollutants in support of this EIS. The results of the particulate monitoring are detailed in **Table 3-6**, below. The monitoring directly reported atmospheric concentrations of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$).

The monitoring results showed that the PM_{10} and $PM_{2.5}$ concentrations recorded during the Event dates drastically exceeded the NAAQS (see Section 2.1 of Strohm 2018a). Although not directly disclosed by the 24-hour concentration data, on-site observations and anecdotal descriptions suggest that particulate emissions peak and subside at specific, and potentially predictable, times of the day. Concentration peaks coincide with increases in attendee activity and significantly with higher wind speeds. As a result, airborne particulate exposure can be reduced by limiting outdoor activity or using personal protective equipment during periods of high concentrations. Personnel protective equipment, including particulate filtering respirators, may not be required during certain periods, when winds are calm. At other times, concentrations may be so high as to overwhelm particulate filters, and shelter-in-place may be recommended to ensure safety (see Public Health and Safety at the Burning Man Event; BLM 2018b). It should be noted that on-playa concentrations represent the highest concentration region, as the monitoring occurred near the source of the particulate generation. Particulates in the atmosphere deposit over time. The deposition of particulates is highly variable based on meteorological conditions and the size of the atmospheric particulate. On average, particulates in the size category of PM_{10} will deposit out of the atmosphere within 30 miles of the emissions source.

Table 3-6
On-site Particulate Monitoring Data

Date Monitored	PM_{10} (Microgram/Cubic Meter) MetOne BAM-1020	$PM_{2.5}$ (Microgram/Cubic Meter) MetOne BAM-1020
8/14/2017	Missing or invalid data	Missing or invalid data
8/15/2017	72	20.0
8/16/2017	93	20.1
8/17/2017	55	13.5
8/18/2017	127	27.4
8/19/2017	***194**[1]*	***48.6**[1]*
8/20/2017	***164**[1]*	***45.5**[1]*
8/21/2017	***338**[2]*	Missing or invalid data
8/22/2017	***481**[4]*	Missing or invalid data
8/23/2017	***281**[2]*	Missing or invalid data
8/24/2017	***290**[2]*	Missing or invalid data
8/25/2017	***418**[3]*	***78.8**[2]*
8/26/2017	***499**[4]*	***192.0**[3]*
8/27/2017	***539**[4]*	***196.0**[3]*
8/28/2017	***803**[4]*	***285.6**[4]*
8/29/2017	***572**[4]*	***237.2**[3]*
8/30/2017	***653**[4]*	***276.8**[4]*
8/31/2017	***602**[4]*	***245.6**[3]*
9/1/2017	***672**[4]*	***302.8**[4]*
9/2/2017	***680**[4]*	***296.8**[4]*
9/3/2017	***762**[4]*	***367.7**[4]*
9/4/2017	***638**[4]*	***176.1**[3]*
9/5/2017	***497**[4]*	Missing or invalid data
9/6/2017	***342**[2]*	Missing or invalid data

Source: Strohm 2018a

Bold, italic text that is marked with an asterisk * indicates concentration exceeding the NAAQS numerical value: the national 24-hour standards for PM_{10} and $PM_{2.5}$ are 150 and 35 micrograms per cubic meter, respectively.

[1]Concentration considered Unhealthy for Sensitive Groups (members of sensitive groups may experience health effects. The general public is less likely to be affected) per the US EPA's Air Quality Index Calculator (US EPA 2018)

[2]Concentration considered Unhealthy (some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects) per the US EPA's Air Quality Index Calculator (US EPA 2018)

[3]Concentration considered Very Unhealthy (Health alert: The risk of health effects is increased for everyone) per the US EPA's Air Quality Index Calculator (US EPA 2018)

[4]Concentration considered Hazardous (Health warning of emergency conditions: everyone is more likely to be affected) per the US EPA's Air Quality Index Calculator (US EPA 2018)

In addition to ambient particulate concentrations, the chemical constituents of a subset of the monitor filters were analyzed that were collected on the Black Rock Playa. The metals tested included arsenic, aluminum, beryllium, cadmium, chromium, cobalt, lead, and manganese. The two primary constituents found in the sample were aluminum and manganese. Both are species that are consistent with the makeup of playa soils. The testing was below the detection limit for beryllium, cadmium, chromium, and nickel. Other than aluminum, all other metals remained less than 1 percent of the filter content by weight (see Table 2-4 in Strohm 2018a). Concurrent with wet testing, testing was completed on a separate playa filter using X-ray fluorescence to assess metal and oxide constituents. The X-ray fluorescence testing indicated that silicon, iron, calcium, potassium, and aluminum were the most common constituents. All of these constituents, except aluminum, exceeded 1 percent of the sample weight, with silicon approaching 3.25 percent of the sample weight. This finding is consistent with the material on the filter being made up primarily of native playa soils (see Table 2-5 in Strohm 2018a).

Emissions Inventory and Regional Emissions Sources

The US Environmental Protection Agency's (US EPA) National Emission Inventory database contains information about sources that emit criteria air pollutants and their precursors and hazardous air pollutants (HAPs). Annual criteria pollutant emissions reported in the 2014 National Emission Inventory for all of Pershing County for mobile sources, fuel combustion, and industrial processes combined are 1,949.69 tons per year of nitrogen oxides, 3,150.36 tons per year carbon monoxide, 885.05 tons per year PM_{10}, 189.95 tons per year $PM_{2.5}$, 45.92 tons per year sulfur dioxide, and 458.02 tons per year volatile organic compounds (US EPA 2014).

Additionally, state air quality permits for sources that reside within approximately 30 miles of the Event location were reviewed for emissions data. The region surrounding the Event location is dominated by BLM-administered land used for recreation and grazing. Limited private property with agricultural or ranching activities also exists. There are a very limited number of industrial facilities within 30 miles of the Event site. Two facilities, the Hycroft Mine and the Empire Mine, are within 25 miles of the Event site; both are considered minor sources and are expected to have minimal impact on the Event area.

Greenhouse Gases

The US EPA estimated that national greenhouse gases emissions in 2015 were 6,587 million metric tons of carbon dioxide equivalents. The NDEP estimated Nevada's statewide greenhouse gases emissions in 2013 at 44.039 million metric tons of carbon dioxide equivalents (NDEP 2016).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for the air analysis is depicted on **Figure 3-4** in **Appendix A**. The use of buses, airplanes, cars, and other vehicles to travel to the Event site would affect air quality and climate through the release of criteria air pollutants, HAPs, and greenhouse gases. The impact from vehicle tailpipe emissions that occur on the road portions within communities near the Event travel routes would result in short-term increases in emissions in those areas and would vary based on travel volume and duration. In addition to emissions released during travel to the Event site, tailpipe particulate emissions (modeled as $PM_{2.5}$) would be released by vehicle use (e.g., mutant cars and service vehicles) during the Event and may affect local communities along travel routes.

Foot and vehicle traffic during the Event would also contribute to the amount of fugitive dust in the Event site, which would create air quality impacts by increasing particulate matter concentrations. These concentrations would be greatest during periods of high winds. Poor air quality would pose health risks to Event participants, employees, vendors, and government personnel working the Event. Based on **Table 3-6**, the highest measured PM_{10} and $PM_{2.5}$ concentrations exceeded the hazardous category (unhealthy for all populations) as described by the US EPA's Air Quality Index. Individuals particularly sensitive to air pollution, including people with respiratory or heart disease, the elderly, and children, would have the greatest risk of health impacts from elevated particulate matter concentrations (US EPA 2018; see also Public Health and Safety at the Burning Man Event; BLM 2018b). The number of Event attendees would influence the magnitude of the air quality impact caused by vehicle use and foot traffic; therefore, while the type of impact would be the same under all alternatives, the magnitude of the impact would vary by alternative.

To minimize these impacts, BRC would provide dust abatement along designated routes and streets within the Event site under all alternatives. These dust-abatement measures are accounted for in the quantified emissions calculations for all alternatives. The BRC would also place limits on the population of vehicles permitted at the Event site, which could regulate the magnitude of impacts on air quality created by the Event.

Burning materials and effigies is a key part of the Event and would occur under all alternatives. Burning art installations and other items would release emissions and create impacts on air quality as well. Construction during build week before the Event begins would also affect air quality. Vehicle use, foot traffic, and construction equipment use before the Event would release emissions and increase the amount of fugitive dust at the Event site.

Quantified Ambient Emissions

For all alternatives, emissions inventories were generated for Alternative A (Proposed Action) and alternatives and included windblown dust generated from disturbed playa surface; vehicle emissions from both the tailpipe (combustion) and the turbulent mixing caused by driving on unpaved roads; and combustion emissions, including vehicles and electrical generators. **Table 3-7** through **Table 3-9** present the emission inventories for criteria pollutants, HAPs, and greenhouse gases, respectively, for each alternative.

Table 3-7
Emissions Inventory for Criteria Pollutants by Alternative

Pollutant	Alternative A– Proposed Action (Tons/Year)	Alternative B– Reduced Population (Tons/Year)	Alternative C– Alternate Location (Tons/Year)	Alternative D– No Population Change (Tons/Year)	Alternative E– No Permit/Event (Tons/Year)
Total suspended particulates	1,736.00	868.00	1,862.00	1,432.00	1,432.00
PM_{10}*	814.00	407.00	850.00	664.00	664.00
$PM_{2.5}$*	119.00	59.00	122.00	96.00	96.00
Nitrogen oxides	4.63	2.32	4.91	4.50	4.50
Sulfur dioxide	0.42	0.21	0.43	0.41	0.41
Carbon monoxide	6.47	3.23	8.34	6.28	6.28
Volatile organic compounds	2.76	1.38	2.87	2.68	2.68

Source: Strohm 2018a

Note: The emissions for Alternative E were set equal to Alternative D (No Population Change), as these would represent the maximum first year emissions with no structured Event. The impacts for Alternative B could also represent a likely impact for Alternative E, as attendees under a No Permit/Event Alternative would be attending an unsanctioned Event, and this could have a downward influence on population even during the first year. Additionally, note that PM_{10} and $PM_{2.5}$ are a subset of Total Suspended Particulate (TSP) but are not equal to TSP.

*Dust abatement is accounted for in the quantified emissions calculations for all alternatives.

As shown in **Table 3-7**, above, the emissions for atmospheric particulates are significant due to both windblown dust and vehicle traffic. These emissions quantities are consistent with on-site emissions observations and monitored atmospheric particulate concentrations. Emissions for nitrogen oxides, sulfur dioxide, carbon dioxide, and volatile organic compounds are relatively insignificant compared with other regional sources of emissions, such as typical highway vehicle traffic over an annual period.

Table 3-8
Emissions Inventory for Hazardous Air Pollutants by Alternative

Pollutant	Alternative A– Proposed Action (Tons/Year)	Alternative B– Reduced Population (Tons/Year)	Alternative C– Alternate Location (Tons/Year)	Alternative D– No Population Change (Tons/Year)	Alternative E– No Permit/Event (Tons/Year)
Total HAPs	0.21	0.10	0.21	0.20	0.20

Source: Strohm 2018a

HAPs are generated by on-site combustion, including vehicles and generators. As shown in **Table 3-8**, above, HAPs emissions are below one ton per year for all alternatives. For purposes of the Clean Air Act and stationary source permitting, emissions below 10 tons per year of a single HAP or 25 tons per year of total HAPs from a facility are considered minor or "area" sources of HAPs. Traditionally, facilities with total HAP emissions below one ton per year would not be likely to trigger additional regulatory review or analyses.

Total greenhouse gas emissions were quantified for both mobile vehicle emissions and stationary generator emissions. As shown in **Table 3-9**, below, greenhouse gas emissions track in a roughly linear manner with population and approved vehicle passes. For context in reviewing the greenhouse gas emissions from the Event, the US EPA regulates some stationary sources of greenhouse gases that they consider to be major sources of greenhouse gases (facilities that emit 25,000 metric tons per year of carbon dioxide equivalents). Compared with the emissions generated for any of the alternatives, the greenhouse gas impacts from the Event would not be near the threshold for significance. In addition, greenhouse gas emissions from each project alternative would represent less than 0.002 percent of state greenhouse gas emission levels and even less for national levels.

Table 3-9
Emissions Inventory for Greenhouse Gases by Alternative

Pollutant	Alternative A–Proposed Action (Tons/Year)	Alternative B–Reduced Population (Tons/Year)	Alternative C–Alternate Location (Tons/Year)	Alternative D–No Population Change (Tons/Year)	Alternative E–No Permit/Event (Tons/Year)
Total carbon dioxide equivalents	649.00	324.00	821.00	629.00	629.00

Source: Strohm 2018a

Atmospheric Dispersion Modeling Impacts

Dispersion modeling for this EIS was conducted using the latest version of AERMOD (US EPA 2004) to calculate the maximum modeled ambient concentration at the boundary of the Event Closure Area and accounted for Event activity rates, duration, and the Event closure time frame. The Event closure boundary was selected for the assessment of impacts because it represented the location at which the public could be exposed to the highest potential Event emissions. To evaluate the potential impacts of emissions from the Event on the public, the existing background concentration of a given pollutant was added to the modeled concentration, and the result was compared with the NAAQS. The NAAQS are allowable concentration limits applied at the Closure Area boundary. **Table 3-10** presents the maximum modeled concentration and the ambient background concentration (provided by NDEP). Modeled emissions impacts were not compared with the PSD Class I or Class II increments because the emissions sources associated with the Event do not fulfill the requirements for implementing the PSD modeling methodologies detailed at 40 CFR 52.21.

Modeled emissions impacts track in a roughly linear manner with the Event population and approved vehicle passes. The modeled impacts for each 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 dioxide, sulfur 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 Event emissions, although these impacts also rise and fall with population and vehicle passes. Maximum emissions occur along the Event Closure Area boundary; as a result, the impacts listed in the EIS represent the impacts along that boundary. Impacts fall in a roughly linear faction as one moves away from the Event Closure Area boundary.

For the atmospheric particulate emissions (PM_{10} and $PM_{2.5}$), the modeled emissions impacts at the Closure Area boundary are consistent with the magnitude of the ambient particulate monitored during the 2017 Event, which exceeded NAAQS short-term standards. This provides a level of confidence in the modeled alternative outputs when assessing and disclosing impacts.

Modeling shows that even with dust abatement measures the Event would have short-term, temporary impacts on air quality from fugitive dust during the Event but that these impacts would subside once the Event has concluded. In addition to the dust control measures currently in place, BRC would implement the mitigation measures described in **Appendix E**, including developing additional solutions to reduce short-term dust impacts (Mitigation Measures AQ-1 and AQ-2). These measures could include rerouting Gate Road to an area north of Black Rock City (Mitigation Measure AQ-3), which would reduce the amount of vehicle-generated dust being blown into the city because the prevalent wind direction would be away from the city. These measures would reduce short-term particulate matter emissions below the concentrations shown in **Table 3-10** but likely would not reduce emissions below the 24-hour $PM_{2.5}$ and PM_{10} NAAQS because a primary factor of high particulate concentrations are high winds.

To protect public health during dust events, the BRC would provide written notice to participants, staff and volunteers, and vendors and contractors of air quality health risks (Mitigation Measure AQ-4). In addition, the BLM would provide employees and contractors N95 respirators or other equipment to protect against air quality health risks (Mitigation Measure AQ-5; see **Appendix E**). The use of personnel protective equipment, including particulate-filtering respirators, during windy conditions would reduce the potential for adverse health effects. At times when concentrations may be so high as to overwhelm particulate filters, shelter-in-place recommendations would alert participants to and allow them to avoid potential health risks.

Alternatives Analysis—Alternative A (Proposed Action)

Under Alternative A, the Event population cap would increase to 100,000, and the total vehicle passes would increase to 34,000. Increased Event population would increase the number of people traveling to the Event site via car, plane, and bus. It would also increase vehicle use at the Event site and foot traffic. These increases would result in the types of impacts described above in *Impacts Common to All Event Alternatives* and in the Public Health and Safety Baseline Report (BLM 2018b). The magnitude of the impacts under Alternative A would be greater than under the other Event alternatives (except for Alternative C), because the number of attendees under Alternative A would be the greatest. The emissions associated with Alternative A are provided in **Table 3-7** through **Table 3-9**, above, for criteria, HAPs, and greenhouse gas pollutants. Additionally, the results of the dispersion modeling analysis for Alternative A are the highest impacts predicted and exceed the NAAQS for atmospheric particulates, as detailed in **Table 3-10**.

Alternatives Analysis—Alternative B

Under Alternative B, the BLM would cap the Event population at 50,000 attendees and the number of vehicle passes at 17,000. Limits on vehicle transportation to the Event site, airport usage, mutant vehicles, and attendees would result in fewer impacts on air quality caused by vehicle emissions, travel to the Event site, and foot traffic. The types of impacts would be similar to those described under Alternative A, but the magnitude of the air quality impacts would be less. The emissions associated with this alternative can be viewed in **Table 3-7** through **Table 3-9**, above, for criteria, HAPs, and greenhouse gas pollutants. The emissions are roughly 50 percent of those identified for Alternative A. Additionally, as detailed in **Table 3-10**, above, Alternative B represents the lowest ambient pollutant concentration impacts at the Closure Area boundary and maintains compliance with the NAAQS for all gaseous pollutants, while still exceeding the NAAQS for PM_{10} and $PM_{2.5}$.

Table 3-10
AERMOD Maximum Model Impacts at Event Closure Area Boundary[1]

Pollutant/Time Average	Alternative A (Proposed Action)		Alternative B (Reduced Population)		Alternative D (No Population Change)		
	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)	NAAQS (micrograms per cubic meter)
PM_{10} 24-Hour	**1,581.91***	**1,592.11***	**790.79***	**800.99***	**1,532.18***	**1,542.38***	150
$PM_{2.5}$ 24-Hour	**126.95***	**134.95***	**63.61***	**71.61***	**122.82***	**130.82***	35
$PM_{2.5}$ Annual	6.32	8.62	3.16	5.46	5.07	7.37	12
Nitrogen dioxide 1-Hour	76.27	76.27	39.22	39.22	74.22	74.22	188
Nitrogen dioxide Annual	0.13	0.13	0.07	0.07	0.13	0.13	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	540.67	540.67	270.34	270.34	523.29	523.29	40,000

Source: Strohm 2018c
Text that is **bold** and marked with an asterisk * indicates concentrations above NAAQS
[1]Explicit modeled impacts were calculated for Alternative A (Proposed Action) and Alternatives B and D. 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.

Alternatives Analysis—Alternative C

Impacts under Alternative C would be similar to those under Alternative A. Event population and number of vehicle passes would be the same, while the location of the Event would change. **Table 3-7** through **Table 3-9**, above, detail the emissions for criteria, HAPs, and greenhouse gas pollutants associated with Alternative C. As shown in these tables, this alternative would produce the highest emissions quantification for atmospheric particulate, greenhouse gases, and HAPs due to the extended length of the Event access road to accommodate shifting the site to the northeast. While shifting the location would result in a slight increase in some pollutants, it would not drastically change the magnitude or type of impacts on air quality. Explicit dispersion modeling was not completed for this alternative, but the impact associated with Alternative A represents a realistic estimate of dispersed emissions impacts under Alternative C.

Alternatives Analysis—Alternative D

Under this alternative, the size of the Event would be the same as occurred in 2018. Because Event population would be less than under Alternative A, impacts on air quality caused by foot traffic, travel to the Event, and vehicle use during the Event would be less than under Alternative A. The population under Alternative D would be greater than that under Alternatives B and E; as such, the impacts on air quality from Alternative D would be expected to be greater than under Alternatives A and E.

Alternative D would include a smaller Event footprint during build week, during the Event, and after the Event. This could reduce air quality impacts caused by fugitive dust by reducing the area that attendees could occupy. **Table 3-7** through **Table 3-9**, above, detail the emissions impacts for criteria, HAPs, and greenhouse gas pollutants associated with Alternative D. Detailed dispersion modeling, summarized in **Table 3-10**, above, shows that Alternative D would result in emissions impacts at the Closure Area boundary that are between those predicted by Alternative A and Alternative B. This alternative does not maintain compliance with the NAAQS for all pollutants.

Alternatives Analysis—Alternative E

Under this alternative, impacts would be uncertain. If the Event permit was not issued, an unauthorized gathering of thousands of people would likely still occur. This could result in impacts on air quality similar to those under Alternative D, but without the same level of vehicle regulation, dust abatement, and transportation infrastructure aimed at reducing traffic and air quality impacts. The lack of official Event organization could result in larger air quality impacts under Alternative E than under some other alternatives in the short term (also see Public Health and Safety at the Burning Man Event; BLM 2018b). Emissions impacts, detailed in **Table 3-7** through **Table 3-9**, above, set the emissions for Alternative E equal to those for Alternative D because these emissions would likely represent the worst-case first year with no structured Event.

The assessment of dispersion for Alternative E could not be directly assessed, as the location and activity rates cannot be explicitly identified. The impacts described for Alternative D would represent a first-year emissions under Alternative E, although the BLM expects impacts to decrease in the long term as participation in the gathering declines. If the BLM applied management strategies impacts would be reduced. If the BLM enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.6.2 Noise

Affected Environment

The Assessment Area for noise (Table C-13 in **Appendix C, Figure 3-6,** Noise in **Appendix A**) 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). The sound levels were measured at four locations (**Figure 3-6** in **Appendix A**) for the 2017 Event for the Noise Impact Assessment (Salter 2018). Ambient sound levels are listed in **Table 3-11**.

Table 3-11
Ambient Measured Sound Levels

Noise Monitor Location	Approximate Distance to Event Fence (miles)	Event Measured DNL[1] (dBA[2])	Event Maximum 15-minute L_{eq}[3] (dBA[2])
Transfer Station Road	11.30	66.00	87.00
South Playa	1.00	43.00	68.00
North Playa	1.35	44.00	68.00
Soldier Meadows Road	13.60	50.00	78.00

Source: Salter 2018

[1]DNL (Day-Night Average Sound Level): A descriptor for a 24-hour A-weighted average noise level. DNL accounts for the increased acoustical sensitivity of people to noise during the nighttime hours. DNL penalizes sound levels by 10 decibels during the hours from 10 PM to 7 AM. For practical purposes, the DNL and Community Noise Equivalent Level (CNEL) are usually interchangeable.

[2]A-Weighted Sound Level: The A-weighted sound pressure level, expressed in decibels. Sometimes the unit of sound level is written as dBA. A weighting is a standard weighting that accounts for the sensitivity of human hearing to the range of audible frequencies. People perceive a 10-decibel increase in sound level to be twice as loud.

[3]L_{eq}: The equivalent steady-state A-weighted sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period.

Sensitive noise receptors are individuals or groups in the Assessment Area that could be aware of or be affected by changes in ambient noise levels. For example, sensitive noise receptors in the Assessment Area include individuals partaking in outdoor recreation, such as camping, visiting cultural sites and hot springs, retracing historic trails, and stargazing, where serenity and quiet are often desired. Sensitive noise receptors in the Assessment Area include local ranches or residences along CR 34 and SR 445, 446, and 447, such as the community of Gerlach; and campsites near the Closure Area (see **Section 3.9.1**, Recreation). Additional sensitive noise receptors are found in areas just beyond the Assessment Area. This includes areas with special designations, such as NCAs, Wilderness, and Wilderness Study Areas (see **Section 3.8**, Special Designations).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Alternatives Analysis—Alternative A (Proposed Action)

Under Alternative A (Proposed Action), sound would be generated by vehicles, large gatherings of participants, and both stationary and mobile music sources. Loud sounds can be harmful when they are brief or long lasting. These sounds can damage sensitive structures in the inner ear and cause noise-induced hearing loss. Noise-induced hearing loss can be immediate, or it can take a long time to be noticeable. It can be temporary or permanent, and it can affect one ear or both ears (National Institutes of Health 2018).

The most meaningful sound sources from the project occurs from mutant vehicles and theme camps. Because the theme camps are stationary, the mutant vehicles would be the major noise impacts as they move further out toward the outer playa (Salter 2018). Sound measurements collected before and during the 2017 Event are listed in **Table 3-12**.

The lowest measured sound level in **Table 3-12** was 59 dBA, which is comparable to a normal conversation (which is 55 to 65 dBA). The highest measured sound level was 83 dBA, which is comparable to an electric can opener (which is 81 to 83 dBA) (Chepesiuk 2005). Continued exposure to noise above 85 dBA over time causes hearing loss. According to the National Institute for Occupational Safety and Health, the maximum exposure time at 85 dBA is 8 hours (Center for Hearing and Communication 2018).

Table 3-12
Pre-Event and Event Sound Levels, 2017

Monitor Location	Approximate Distance to Event Fence (miles)	Pre-Event Measured Sound Levels		Event Measured Sound Levels		Event Calculated Sound Levels
		Measured DNL (dBA)	Maximum 15-minute L_{eq} (dBA)	Measured DNL (dBA)	Maximum 15-minute L_{eq} (dBA)	Model Calculated Average Hourly L_{eq} (dBA)
Transfer Station Road	11.30	63.00	66.00	67.00	75.00	27.00
South Playa	1.00	54.00	66.00	67.00	83.00	47.00
North Playa	1.35	55.00	64.00	67.00	81.00	45.00
Soldier Meadows Road	13.60	54.00	59.00	62.00	67.00	25.00

Source: Salter 2018

The major noise sources during the Event are the various loud camps and the vehicles that produce dance club-like levels of sound, particularly in the lower frequencies. Sound levels during the Event were higher than pre-Event levels. Audio recordings show that high noise levels were caused by wind and airplane flybys, as there are no audio recordings with sound from the Event (e.g., music, mutant vehicles, or voices). The increase of noise is partially due to wind storms being more present during the Event than just before the Event. During the Event, wind speeds were up to 68 miles per hour (Salter 2018).

Using sound measurements collected during the 2017 Burning Man Event with a population of 80,000, calculations were performed to estimate sound levels at the four monitoring stations from Event populations at 85,000, 90,000, 95,000, and 100,000. Population changes and their respective outcomes would result in an overall increase of 1 dBA (average hourly L_{eq}) over the sound levels for the Event with 80,000 bodies on the playa. A 1 dBA is barely perceptible (Salter 2018).

The Noise Impact Assessment (Salter 2018) also contains information for sound associated with traffic for the monitoring station at Transfer Station Road. The calculated hourly noise levels range from 52 to 56 dBA (Salter 2018). This is comparable to an electric toothbrush (which is 50 to 60 dBA) (Center for Hearing and Communication 2018).

Using sound measurements collected during the 2017 Event with a population of 80,000, calculations were performed to estimate sound levels at the monitoring station at Transfer Station Road for Event populations of 85,000, 90,000, 95,000, and 100,000 bodies on the playa. Population changes and their respective outcomes would result in, at most, an increase of 1 dBA for peak hour L_{eq} values over the sound levels for the Event with a population at 80,000. A 1 dBA is barely perceptible (Salter 2018).

During the period in which the temporary closures and restrictions are enforced, the Closure Area would be closed to camping. Campsites EWH32 and EWH33 are the closest campsites outside of the Closure Area and would experience sound levels associated with the South Playa and North Playa monitors (also see **Section 3.9.1**, Recreation).

There would be no impact on a permanent increase in ambient sound levels in the Assessment Area above levels existing without the action, because Alternative A (Proposed Action) would occur during the closure period. There would be a temporary or periodic increase in ambient sound levels in the Assessment Area above levels existing without the action. The temporary or periodic increase would be associated with traffic at the monitoring station at Transfer Station Road. Other sources of sound, such as wind and airplane flybys, can have more notable impacts on ambient sound levels.

Alternatives Analysis—Alternative B

Alternative B, with an Event population of 50,000, would result in impacts similar to Alternative A (Proposed Action), but less sound would be generated, because there would be fewer participants, theme camps, and mutant vehicles. There would be a decrease of 1 to 2 dBA (average hourly L_{eq}) at the four monitoring stations, compared with a population of 80,000. Also, the traffic reduction would result in a 2 dBA decrease for peak hour L_{eq} sound levels compared with the Event peak population of 80,000. Therefore, there would be fewer temporary or periodic increases in ambient sound levels at the four monitoring stations (Salter 2018).

Alternatives Analysis—Alternative C

Noise impacts from shifting the Event location to the north would be similar to Alternative A (Proposed Action). Because the locations of sounds generated from participants, theme camps, and mutant vehicles would change, the sound levels at the monitoring stations would also change. The relocation of the Event would increase noise by 5 dBA (average hourly L_{eq}) at Soldier Meadows Road due to the source of the sound moving closer. An increase of 5 decibels is considered audible. Alternatively, the opposite would occur for the three other monitoring locations, due to the source of the sound moving further away. Regarding traffic sound, because the population would not change, the expected level of sound increase from traffic would not differ from Alternative A (Proposed Action) (Salter 2018).

Alternatives Analysis—Alternative D

Noise impacts would be similar to those under Alternative A (Proposed Action), but the impacts would not change for subsequent years, because the population would not increase as it would under Alternative A (Proposed Action).

Alternatives Analysis—Alternative E

Under Alternative E, participants would likely still gather on the playa each year, resulting in similar noise impacts to those described for other alternatives but to a lesser degree because Alternative E would have the fewest number of participants. As word of the Event termination is passed, fewer participants are expected to arrive in subsequent years.

The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.6.3 Soils (Playa Sediments)

Affected Environment

Section 3.19 of the Burning Man 2012–2016 SRP EA (BLM 2012a) details the composition of and region of influence for playa sediments. The playa is a remnant of the former lakebed of Pleistocene Lake Lahontan (Adams and Sada 2010). Playas occupy the flat central basins of desert plains with interior drainage, where evaporation greatly exceeds water inflow.

Generally, 70 percent of the annual precipitation in the area falls during late fall, winter, and spring. During this period the Black Rock Playa surface is normally wet and may be covered with as much as 1.6 to 3.3 feet of water (Bilbo 2008; Adams and Sada 2010). A study of Landsat imagery for 1973–2017, conducted as part of the Desert Research Institute's study of the physical processes and aquatic life of the playa, indicated that flooding and formation of a lake on the playa does not occur every year. During this 37-year period, there have been only 5 years when a lake did not form and 4 years when only a small lake (less than 0.8 square mile) was formed on the Black Rock Playa (Adams and Sada 2010; NASA 2018).

In times when the playa does not flood or form a lake for a few years, the surface of the playa can change from a hard, durable surface to a soft and loose surface that is subject to wind-driven erosion. This change

from hard crust to a soft and loose surface is speculated to be caused by repeated saturation of the playa surface by rainfall, and subsequent drying. This causes shrink and swell of expansive clay minerals that disrupts the surface; saturation of the surface by rainfall causes dissolution and recrystallization of soluble salts; or the growth of needle ice in the playa sediments causes surface disruption (Adams and Sada 2010). Tollerud and Fantle (2013) concluded that wetting-drying cycles are effective in disrupting the playa surface, thereby increasing surface roughness and sensitivity to disturbance and ablation by wind.

The BLM has estimated that during the dry summer, generally June through September, 5 percent (approximately 8,400 of 169,000 acres) of the playa is subject to surface disturbances from various activities that allow wind to easily carry the loosened surface sediment (BLM 2006). An additional 300 acres is disturbed by continued vehicle use on or next to 115 miles of playa access routes. Natural dust storms, intermittent mound formation, and erosion unrelated to human activities occur on the playa. These are likely to be more prevalent following one or more years when the playa was not inundated. This changes it to a soft and loose, fluffy surface (BLM 2006; Adams and Sada 2010). A review of the West Pershing County Soil Survey (USDA NRCS 1998) indicates that there are 11 soil associations in the Assessment Area. Most of the Closure Area is underlain by a soil unit labeled "playas;" the Natural Resources Conservation Service (NRCS) classifies this designation as a "miscellaneous area," which has little to no soil material and supports little to no vegetation. This encompasses the Event Closure Area and Event entrance road, which is approximately 12,550 acres, or 89 percent of the total area (14,810 acres; BLM GIS 2018; see soil associations in the Closure Area on **Figure 3-7**, Ecological Site Descriptions, in **Appendix A**).

The playas soil association is composed of silty clay loam and silty clay. The higher the erosion factor, the more susceptible the soil is to sheet and rill erosion by water. The erosion factor for sheet and rill erosion[10] by water associated with the playas unit is 0.37, as shown in Table 3.20-1 of the Burning Man 2012–2016 SRP EA (BLM 2012a), which represents a slight hazard. The wind erodibility group of this unit is 5 (BLM 2012a), which indicates a moderate susceptibility to wind erosion. The Event area, primarily consisting of Black Rock City, is entirely underlain by the mapped playas unit.

Playas comprise 89 percent of the Closure Area. In the remaining 11 percent of the Closure Area, there are five main soil associations and three very minor associations. These are mapped on the terraces and alluvial fans along the western edge of the playa and Closure Area. The five associations, in order of percentage occurrence in the Closure Area, are Isolde-Ragtown association (3 percent), Coldent-Isolde-Swingler association (2 percent), Theon-Grumblen-rubble land association (2 percent), Mazuma-Trocken association (1.5 percent), and Toulon-Appian-Bluewing association (1.5 percent). Three minor associations make up less than 0.25 percent of the Closure Area and are not discussed further. Select characteristics of the major soils underlying the Closure Area are summarized in **Table 3-13**.

[10] The detachment of soil particles by raindrop impact and their removal downslope. This is caused by water flowing overland as a sheet instead of in definite channels or rills. Rill erosion refers to the development of small, ephemeral, concentrated flow paths.

Table 3-13
Soil Erosion Acres in the Closure Area and Event Entrance Road

Erosion Factor for Sheet and Rill Erosion	Event Area Acres	Event Entrance Road Acres	Closure Area Acres	Total Acres
0.10	0	0	250	250
0.17	0	0	760	760
0.24	0	10	300	300
0.37	3,250	120	9,190	12,560
0.43	0	0	110	110
0.55	0	0	130	130
Total	**3,250**	**130**	**10,730**	**14,120**

Source: BLM GIS 2018

The erosion factor for sheet and rill erosion by water associated with these soil associations ranges from 0.10 to 0.55, equating to a slight to moderate hazard. The wind erodibility groups for these soil associations range from 1 to 8, which correlates to a high to low susceptibility to wind erosion.

Sediments on the playa surface erode primarily by wind transport when the sediments are dry and disturbed. In the Black Rock Canyon area, winds that most commonly move the surface materials are associated with frontal passage or thunderstorms (BLM 2006). Small ripple-like features on the playa have been commonly observed over the last 10 years and have been described as granular ripples, incidental mounds, and transient mounds. Although the presence of these mounds/ripples has been increasingly noted over the past decade, they were documented before 1970, which was before the periods of heavy human activity on the playa surface (Adams and Sada 2010).

The mound/ripple features are typically expressed as a series of irregular, semi-parallel ridges, with their long axes commonly oriented northwest-southeast, or transverse to the prevailing southwesterly winds. The mound/ripple features are primarily composed of one to several millimeter-sized angular aggregates of clay and silt, with localized features containing minor amounts of similar-sized rock granules. The mound/ripple features typically have a coherent crust that has resulted from wetting of the sediments. These ripple/mound features are formed when sediments, loosened either by human disturbance or natural causes as described above, are moved across the surface of the playa by winds and accumulate on the leeward side of roughened surfaces and low features. The ripple/mounds are temporary features, generally less than a foot in height. The actions of wind and water over one or several winters lead to the removal of the mounds (BLM 2006; Adams and Sada 2010).

At both the 2006 and 2007 Burning Man Events, abundant evidence of wind erosion was present in the form of crushed playa sediment, fresh granular ripples, and wind-transported sediment accumulating along various parts of the perimeter fence (Adams and Sada 2010). Some of the sediment that accumulated in 2007 along the perimeter fence came from dust storms with saltating[11] particles that approached the area from the southwest on August 30 and 31, 2007. The sediment source was upwind of the Closure Area.

Mound features were noted along the temporary perimeter fencing after the 2007 Burning Man Event. During that Event, intense dust storms occurred at the end of August and likely helped form the approximately 18-inch-high, 100-yard-long sand mounds that formed along the perimeter (Levy 2008). After the 2007 perimeter fence was removed, cleanup crews dragged and bladed the sand piles; the presence of these mounds was still evident in a 2007 Burning Man monitoring inspection that the BLM

[11] A form of sediment transport in which particles are moved forward in a series of leaps or bounces.

conducted in June 2008. In its 2008 Burning Man Stipulation Monitoring Report, the BLM notes that the 2007 mounds were still clearly visible and crossed through the 2008 Event area.

No quantitative data have been collected regarding the number or location of mounds that have formed in the Black Rock Playa. A review of US Geological Survey (USGS) aerial images of the playa for 1999 through 2011 in late October/early November of 2012 revealed scarring, and sporadic disturbance of the playa surface is visible after the Event. A review of National Air and Space Administration (NASA) satellite imagery of the playa showed playa disturbance after the Event, as well as vegetative mound formation and playa deformation from the Event and other recreational activities and natural disturbances (NASA 2018).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

Under all Event alternatives, soils and playa sediments could be affected by increased potential for playa deformation and subsequent mound formation. Impacts could occur from surface-disturbance activities before the Event, during the Event, and during post-Event activities and subsequent cleanup. The intensity of the impacts would vary between Event alternatives. This is because impact intensity would generally be commensurate with the population. Under all Event alternatives, stipulations would be applied. Stipulations would help reduce or avoid Event -related impacts on soils and playa sediments. One 2018 SRP stipulation includes limiting Closure Area ingress and egress to designated locations (**Appendix B**).

The amount of wind erosion and subsequent intermittent mound deposition associated with the playa varies depending upon surface moisture and the amount of strong winds that occur during 3 to 4 months each year (the dry periods) when the entire playa is usually subject to wind erosion. The Burning Man Event would occur during this period when the playa is most likely to be subject to wind erosion. The amount of time the playa area disturbed by the Event would be subject to increased potential for wind erosion would be from initial set-up of the Event to the advent of the fall rains that would stabilize the playa surface. A greater amount of annual inundation could potentially mitigate playa deformation and subsequent mound encroachment (NASA 2018). The BLM would continue to monitor erosion of the playa (**Appendix E**), which could result in future actions to mitigate impacts that cause erosion.

While some loosened sediments may be blown great distances within the Black Rock Desert (primarily by large wind events), playa sediments eroded and moved by the wind are generally deposited back on the playa surface or on adjacent uplands as either sheets of loose sediment or as mound features, which are also considered vegetative mounds (NASA 2018). These windblown loosened sediments would be subject to transport by rain/water back to the low-lying playa surface during the wet season when the playa is considered an intermittent waterbody. In addition, the presence of roughened surfaces, low features, and obstructions that occur and are present during the Burning Man Event leads to the formation of intermittent small mound features. In previous years, intermittent mounds have been noted along the perimeter fence after the Event, which was confirmed in 2018 (NASA 2018). Synthetic Aperture Radar data visualizes and confirms surface deformation resulting from Burning Man, other recreational activities, and natural processes, such as dust storms, flooding, and precipitation (NASA 2018). The potential for mound formation during the Burning Man Event would depend partly on the number of strong wind events or the amount and duration of continuous winds.

BRC currently uses approximately 4 inches of decomposed granite under its authorized art burns to prevent burning and scarring of the playa surface. While use of decomposed granite prevents burning of the playa surface, remnant decomposed granite oxidizing to an orange coloration at burn sites could occur. Orange marks, from remnant oxidized decomposed granite, has the potential to create orange discoloration on the playa surface at BRC's "authorized burn" sites. Some burn scarring could result from unauthorized burns on the playa surface. Burn scars affect playa sediments through discoloration of the playa, intermittent mound formation, and potential scarring of the playa surface that can persist for

multiple years (BRC 2018i). Requiring that burn barrels for camp fires be 10 inches off of the playa surface would reduce burn scarring of the playa (**Appendix E**).

Debris and litter left behind by participants and vendors cover the playa surface and can be carried by wind to locations off-site. Requiring the BRC to clean the playa such that all post-Event inspection points have less than 1 square foot per acre of debris or litter (**Appendix E**) would reduce surface impacts on the playa at the Event site and on the playa outside of the Event boundaries.

Approximately 4 miles of trench (approximately 4 inches deep and 6 wide) was dug for the 2018 Burning Man Event [12], which is anticipated to continue under Alternative A (Proposed Action) and Event alternatives in order to support Burning Man Event operations. Impacts from trenches on the playa include playa erosion and deformation, uneven playa surface/bumps, and subsequent intermittent mound formation. This impact may be lessened through remediation by replacing the playa sediment, dampening the playa sediment, and raking to ensure that the playa surface is level during post-Event cleanup. In addition to trenching, holes in the playa for art installation and camps impact playa sediments similar to trenching. Holes less than 6 inches wide and 2 feet deep are permitted on the playa, and participants utilize materials such as rebar for tent stakes on the playa (BRC 2018j).

Alternatives Analysis—Alternative A (Proposed Action)

The Closure Area is primarily underlain by mapped Playa sediments. This represents 4 percent of the 353,100 acres of adjacent, contiguous playa area under the Phase 2 closure. Playa sediments are classified by the NRCS as having moderate potential for wind and sheet and rill erosion. Potential soil-disturbing activities during the Event would occur primarily within this unit, with the majority of impacts concentrated in the Event area and Event entrance road, or on 4,140 acres. Loosened playa sediments would be subject to erosion and movement during Phases 1 and 2 of Event activities as the crustal playa material is broken.

Under Alternative A (Proposed Action), on-playa anthropogenic activities such as vehicular and motorized traffic and heavy machinery use, impact playa materials through surface disturbance and subsequent wind erosion. The mass of crustal playa material on the recovered monitoring filters in the Revised Baseline Technical Report–Air Resources (Strohm 2018a) suggested that the main contributor to playa concentrations were on-playa anthropogenic activities. The majority of emissions generation resulted from vehicular and human traffic on the playa, which liberated material for wind erosion and led to playa deformation and subsequent mound formation. The two primary constituents found in the air samples were aluminum and manganese, which are consistent with the makeup of playa soils and demonstrates playa deformation from Event activities (Strohm 2018a). Under Alternative A (Proposed Action), water tanker trucks would be used to spray the playa and lessen the displacement of playa material.

Event traffic, including traffic and heavy equipment use pre- and post-Event, would increase the potential for playa deformation and mound formation, particularly along Event access routes and art installation areas. Roads are periodically disturbed which can disperse playa sediments when the surface is disturbed (Gelbard and Belnap 2003). Impacts related to ground disturbance, such as erosion, would occur in the Closure Area, including the entrance road. The Burning Man Event would increase the amount of sediment available for movement by wind during mid-August through September on 3,900 acres in the Event perimeter and on 9,570 acres total, including the Event area, entrance road, and Closure Area during Phase 1. During Phase 2, an additional 5,240 acres would be available, which could result in additional playa deformation during the Event. Most of the increased area of disturbed and loosened sediment would be generated within the residential portion of Black Rock City, where there is motorized, nonmotorized, and

[12] Correspondence between Mark Hall (BLM) and EMPSi, August 30, 2018.

other anthropogenic uses such as foot traffic. The intensity and volume of use would disturb and loosen sediments, where the surface crust is disturbed, due to walking, biking, art cars traveling between art pieces, and other movement of the participants inside the Closure Area fence. As population and area of closure increases, the percentage of crust broken would also increase, as indicated in the Revised Baseline Technical Report–Air Resources (Strohm 2018a).

The anticipated increased Event population under Alternative A (Proposed Action) could lead to either an increase in the size of the residential section or increased density of the City grid within the residential section, as well as an increase in the number of participants moving around with the Closure Area compared with the 2018 Event. This would lead to an increase in the amount of playa surface disturbance and deformation within the residential area and, to a lesser degree, the open playa area within the Closure Area as Event population increases. Impacts from vendors would be reduced because no more than 100 vendors at the maximum population of 100,000 would be allowed on the playa. In addition, implementing proposed mitigation in **Appendix E** to restore playa contours by the end of the Closure Order would reduce playa surface disturbance and deformation impacts.

Observations following the 2002 Burning Man Event of coins left on the playa surface within Black Rock City indicated wind erosion of up to 0.20 inch during that Event, which had a population of approximately 30,000. Assuming there is a linear relationship between population and erosion, and absent additional variables, utilizing the same methodology from 2002, there could be wind erosion resulting in playa deformation of up to approximately 0.66 inch under Alternative A (Proposed Action). The potential for the greatest impacts would be in areas of highest activity, such as Gate Road and in the Event perimeter. Global positioning system (GPS) surveys conducted on roadways within Black Rock City before and after the 2006 Event indicated that there was no measurable change in elevation of the roads due to erosion (within the survey accuracy of 0.4 inch) (Adams and Sada 2010). NASA images indicated that playa deformation occurred from the Burning Man Event, other recreational activities, and natural events, which contributed to playa deformation and subsequent mound/vegetative mound formation (NASA 2018). Continuation of the Burning Man Event would contribute to the irreversible and irretrievable commitment of the playa resource.

Impacts related to burning and mitigation that would prevent scarring on the playa are mentioned in *Impacts Common to All Alternatives*. BRC would also monitor fire pits in the Closure Area during the Closure Order (Recommended Monitoring Measure SOIL-1; see **Appendix E**), which could result in future mitigation measures or permit stipulations for avoiding playa scarring.

Under Alternative A (Proposed Action), the increase in population would lead to an increase in the number of holes, which could lead to subsequent erosion, even when carefully back filled, leaving a visible mark on the playa surface and leading to subsequent playa deformation and mound formation. Impacts from hole digging may be reduced by refilling the hole with playa sediments (participants are encouraged to bag playa sediments) and carefully tamping the soil back into place while dampening the soil. Requiring the BRC to restore the playa contours (Mitigation Measure SOIL-3; see **Appendix E**) would also reduce the potential for impacts on playa materials.

Alternatives Analysis—Alternative B

Under Alternative B, impacts on playa sediments, as described for Alternative A (Proposed Action), would still occur but to a lesser extent based on the decreased Event population. Disturbance of the playa surface from Event activities, including vehicle and heavy equipment use and art burns, and the subsequent wind driven erosion and dispersal of the playa sediments, could result in the formation of intermittent mounds and mound features along the perimeter fences and along and behind other structures. The potential for playa deformation from Event participant vehicles would still be relatively high, even given the decrease in Event participants. There would still be approximately 12,264 daily trips on CR 34 (Solaegui Engineers

2018) based on a population of 50,000 and art installations and other Event activities that could burn, scar, or loosen playa sediments would continue. As under Alternative A (Proposed Action), anticipated impacts related to disturbance and discoloration of the playa surface and increased erosion would be reduced by implementation of recommended mitigation. Impacts on playa sediments from hole digging at participant sites would be less than Alternative A (Proposed Action) because the number of camps on the playa would be reduced.

Alternatives Analysis—Alternative C

Impacts on playa sediments would be similar to those described under Alternative A (Proposed Action). An alternate site on the playa could lead to high-intensity playa deformation for the 2019 Event where surface disturbance has not previously occurred during the Burning Man Event. The 2018 location may have loosened playa sediments from the 2018 Event, which would be combined with impacts from the alternate site location. It is anticipated that an alternate location would have the same impacts as Alternative A (Proposed Action) for future Events, as the 2018 Event site would likely retain playa surface crust after annual inundation with less disturbance from Event activities. Impacts on playa sediments from a new trench location and hole digging would also lead to high-intensity impacts, as described above. If the alternate site is moved back to the original site, there would be the potential for high-intensity impacts on playa sediments, as described above.

Alternatives Analysis—Alternative D

Under Alternative D, the potential for impacts on playa sediments would be similar to those described under Alternative A (Proposed Action). Because the number of Event participants would remain at 2017 levels under Alternative D, as opposed to a phased increase under Alternative A (Proposed Action), increased potential for impacts from a rising Event population through 2023 would not occur under Alternative D. During the Event, daily traffic volume on CR 34 would increase to the same levels observed during the 2017 Event (14,730 trips; Solaegui Engineers 2018), indicating that the potential for surface disturbance from vehicles would be the same as the 2017 Event. Impacts on playa sediments from hole digging at participant sites would be less than Alternative A (Proposed Action) because the number of camps on the playa would be reduced.

Alternatives Analysis—Alternative E

If an SRP is not issued by the BLM for the Event, it is likely that individuals would still gather for an informal event. These events would likely have individually smaller areas of playa crust disturbance, but the total area or duration of disturbance could be greater if there are more, larger, or longer-lasting events. An unauthorized event or events would not necessarily follow the guidelines stipulated in the Operating Plan, and impacts would not be confined to an enclosed area. The BLM may apply management strategies and measures to protect resources. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded. The BLM expects that such a gathering would decline in participation in the long term, and impacts would decrease.

3.6.4 Visual Resources (Including Night Skies)

Affected Environment

Visual resources are the visible physical features on a landscape, such as land, water, vegetation, animals, and structures (BLM 1984). The Assessment Area for visual resources, including night skies, encompasses areas within 5 miles of the viewshed for the Closure Area and traffic routes: CR 34 and SR 445, 446, and 447. This corresponds with the BLM visual resource management (VRM) system's foreground-middle ground distance zone (BLM 1986a). It is one of three distance zones used by the visual resource inventory process. It is the area that can be seen for a distance of 3 to 5 miles. The outer boundary of this distance

zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape.

The Assessment Area contains areas with the following VRM class objectives:

- VRM Class I–The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- VRM Class II–The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- VRM Class III–The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- VRM Class IV–The objective of this class is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. While these management activities may dominate the view and be the major focus of viewer attention, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The Assessment Area is in the BLM Winnemucca District, which is in the northern Basin and Range physiographic province. Basin and Range landscapes in northern Nevada are characterized by elongated, generally north-south trending mountain ranges separated by broad open basins. This type of landscape allows for long viewing distances. The dominant natural features in the Assessment Area are steep rugged mountains, volcanic highlands and table lands, expansive valleys, mound fields, hot and cold springs, streams, and associated floodplains and marshes. Human-made features are the emigrant trails, ranches, fences, irrigated and cultivated fields, Interstate 80, other main and secondary roads, OHV trails, railroads, power lines, utility corridors, large open-pit mines, gravel pits, communication towers and repeaters, satellite dishes, and radio towers. Additionally, there are local towns and communities.

Visual intactness of the Assessment Area is very high. This is described in Burning Man 2012–2016 SRP EA (BLM 2012a).

As reflected in the VRM class ratings for the NCA wilderness, mountain ranges, and vast long-distance views across the Black Rock Playa. Viewer sensitivity is also considered to be high. High-sensitivity viewpoints are the Applegate-Lassen Emigrant Trail, a major pioneer wagon route and a national historic trail; the nearby Nobles Trail; and other nationally designated or eligible historic sites (BLM 2012a). sensitivity viewpoints are the Applegate-Lassen Emigrant Trail, a major pioneer wagon route and a national historic trail; the nearby Nobles Trail; and other nationally designated or eligible historic sites (BLM 2012a).

Visual resources objectives in the Record of Decision and RMP for Black Rock Desert–High Rock Canyon Emigrant Trails NCA and Associated Wilderness and other Contiguous Lands in Nevada are to provide a primitive and natural visual setting for visitors and to protect the visual integrity of the emigrant trail corridor (BLM 2004c).

The Black Rock Playa is notable for its exceptionally pristine, unpolluted night skies. Sources of light are described in Burning Man 2012–2016 SRP EA (BLM 2012a).

An ALAN assessment was prepared for the 2017 Event (Craine and Craine 2018). The output of ALAN by a community is a dynamic property that varies by night and by time of year. Most of the year, there is essentially no ALAN in the Black Rock Playa.

Sensitive visual receptors are individuals or groups in the Assessment Area that could be aware of or affected by changes in views of the landscape. For example, sensitive visual receptors in the Assessment Area include individuals partaking in outdoor recreation, such as camping, visiting cultural sites and hot springs, retracing historic trails, and stargazing, where the character of the landscape is important. Sensitive visual receptors in the Assessment Area include the local ranches or residences along CR 34, and SR 445, 446, and 447, such as the community of Gerlach; and campsites near the Closure Area (see **Section 3.9.1**, Recreation). Additional sensitive visual receptors are found in areas just beyond the Assessment Area. This includes areas with special designations (see **Section 3.8**, Special Designations).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

An ALAN assessment (Craine and Craine 2018) was prepared for the 2017 Event. Although the ALAN levels associated with the Event are in stark contrast to the natural levels present for most of the year, the ALAN levels are reasonable compared with other population centers in Nevada. The Event lasted for approximately 9.5 days. The ALAN at the site was measurably increased for approximately 28 days before and 7 days after the Event. Quantitative measurements of ALAN produced in association with the Event confirmed that significant levels are limited to a short period of approximately 42 days. Approximately 79.5 percent of that light is limited to an approximately 15-day period. ALAN pollution levels may be affected to a great extent by increased use of nonshielded lights and misdirected light sources. The dust layer boundary above the Event site has a profound effect on the perceived brightness of the Event lighting (Craine and Craine 2018).

The average nightly radiance has been remarkably stable over the recent past from 2012 to 2016, despite a steady increase in the Event average nightly population. This pattern was noticeably changed in 2017 with a significant increase in average nightly radiance. In addition, the radiance per person increased in 2017. These increases are consistent with modeling and would predict further increases in ALAN in future Event years (Craine and Craine 2018).

The brightening of the Burning Man Event suggests some fundamental change in the Event production, which may be important to identify. This could be the result of increasing availability of power sources at the Event (e.g., the number of reported generators and increased use of solar power have been reported). Alternatively, there may be a change in the type of lighting employed (e.g., an increase in nonshielded sources associated with Event activities and safety measures) or increased use of alternative Event-specific lighting (e.g., search lights) (Craine and Craine 2018).

The model is based on a small number of years and could represent a step-up to a new level, or it could be a transient elevation that will return to prior levels in the future. The resolution of this question will require future measurements to determine if the 2017 results are transient or if they represent a new or evolving trend in ALAN levels (Craine and Craine 2018).

Direct and Indirect Impacts from Alternatives

Alternatives Analysis—Alternative A (Proposed Action)

Under Alternative A (Proposed Action), actions and activities would be visible from the four key observation points (KOPs) that were used to assess conformance with VRM class objectives using BLM

Form 8400-4, Visual Contrast Rating Worksheet, according to BLM Handbook H-8431-1, Visual Resource Contrast Rating (BLM 1986b). The contrast rating was conducted from the most critical viewpoints. This is usually along commonly traveled routes or at other likely observation points. The four KOPs in **Figure 3-8**, Visual Resources (in **Appendix A**), were near Black Rock Point, near Cassidy Mine, in Gerlach, and near Trego Hot Springs. The closest KOP to the Event is near Cassidy Mine, approximately 1.4 miles north of Black Rock City. Photos taken of the Event from the KOPs are in **Appendix G**.

From the Cassidy Mine KOP, there is no change to the form or line of the characteristic landscape from the Event, and there would be a negligible change to the texture of the characteristic landscape from the Event. Changes in color to the characteristic landscape from the Event involve the addition of Event facilities, art installations, and participant camps on the playa. At this distance, it is only possible to differentiate between light and dark colors and identify pinpoints of shiny surfaces. The most noticeable change to the characteristic landscape at the Event site is the dust generated by Event staff vehicles, BLM and other Event support vehicles, and Event participant vehicles and bicycles. The primary locations of dust generation are the Event entrance road, roads within Black Rock City, and travel routes around the perimeter of the trash fence. The presence of dust would vary throughout the day and is influenced by the condition of the playa at the beginning of the Event, the amount of activity occurring in Black Rock City, the wind strength, and dust-abatement measures (described in **Section 2.1.7**, Dust Abatement). The presence of dust is expected to increase as the number of individuals, vehicles, and bicycles increases. Given these impacts and the temporary nature of the Event, the Event site would meet VRM Class objectives from the Cassidy Mine KOP. These short-term impacts on visual resource would be less for the three other KOPs because they are further away, thereby meeting VRM Class II objectives from those KOPs as well.

The Gerlach KOP is the only KOP from which VRM Class I land would be visible. VRM Class I land is immediately south of the Closure Area. Also, Alternative A (Proposed Action) is the only alternative with Event activities (approximately 1 mile of the Event entrance road) on VRM Class I land. The most noticeable change to the characteristic landscape at the Event site is the dust that is generated by Event staff vehicles, BLM and other Event support vehicles, and Event participant vehicles and bicycles, as described above. Dust generated during the Event would attract attention. Therefore, the Event would not be consistent with the VRM Class I objective. This would only occur during the Event. BRC would provide water trucks as necessary for dust suppression.

Although traffic routes (CR 34 and SR 445, 446, and 447) were not analyzed using KOPs, they would still experience impacts on visual resources in the Assessment Area. Solid waste, described in **Section 3.5.2**, Waste, Hazardous or Solid, is intentionally and unintentionally released along roads and in towns, and vehicles are abandoned. This is a blight on the landscape and degrades the overall appearance of visual resources. The impacts on visual resources would be short or long term, depending on the duration the litter or abandoned vehicles persist on the landscape.

A future change to the Event would be an increase in the total population of people involved. Because the amount of ALAN is correlated with the total Event population, an increase in population would be expected to have an impact on the amount of ALAN produced at the site. Based upon the trend observed from 2012 to 2017 and the within-year effect of population on levels of ALAN, an increase of the Black Rock City total population to 90,000 would be expected to have a relatively small impact on ALAN levels. The increase to 90,000 people (an increase of approximately 28.6 percent from 2017 levels) would be anticipated to increase the average nightly radiance by approximately 0.03 to 9.6 percent. These levels would still leave Black Rock City as one of the most light efficient communities in Nevada. The increase to 100,000 people (an increase of approximately 42.9 percent from 2017 levels) would be anticipated to increase the average nightly radiance by approximately 0.05 to 14 percent (Craine and Craine 2018).

If the 2017 measurements foreshadow a new trend in ALAN levels, an increase in ALAN, even in the absence of an increased population, would be expected. Increasing the population would exacerbate this trend, and it would be expected that the Black Rock City ranking among Nevada communities would begin to deteriorate (Craine and Craine 2018). The impacts on dark skies would be temporary, lasting approximately 6 weeks.

The impacts on visual resources would be minimized by Event SRP regulations, guidelines for Event participants, BRC's plans for managing elements that affect visuals resources (such as litter), and stipulations outlined in **Appendix B**. Proposed mitigation (see **Appendix E**), such as requiring shielding on sources of lights at night, including mast-mounted work lights, and banning the use of high-energy lasers and search lights pointed straight up, would further reduce the potential for night skies impacts from ALAN (see Mitigation Measures SPEC-2 and VIS-3 in **Appendix E**).

Alternatives Analysis—Alternative B

Impacts on visual resources would be similar to those described under Alternative A (Proposed Action). The exceptions would be that less dust, litter, and artificial light would be potentially generated, because there would be a lower Event population. The amount of artificial light would depend on a variety of factors, such as the type of lights used, shielding, and power sources, as described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative C

Impacts on visual resources would be the same as Alternative A (Proposed Action), because shifting the Event location to the north would not change the impacts.

Alternatives Analysis—Alternative D

Impacts on visual resources would be similar to the impacts from the Event population of 80,000 under Alternative A (Proposed Action). The exception would be that the impacts would not change for subsequent years because the number of participants would not increase as it would under Alternative A (Proposed Action).

Alternatives Analysis—Alternative E

Under Alternative E, participants would likely still gather on the playa each year. The BLM would need to fence and/or patrol the area. As word of the Event not being permitted is spread, fewer participants are expected to arrive in subsequent years. Impacts on visual resources would be less than the Event alternatives, because it would have fewest number of participants. Because BRC would not assist in managing the activities, the potential exists for visual resource impacts. The BLM would need to implement management strategies to reduce impacts. In addition, if the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded. Impacts would dissipate over time as news of the event closure spreads.

3.6.5 Water Resources

Affected Environment

The Event's identified water source is surface water from Fly Ranch in Hualapai Valley, approximately 8 to 10 miles west-northwest of the Event site. This is a thermal, continually flowing artesian source; water is taken from a reservoir downgradient of the actual surface expression. The Fly Ranch water source has been used in previous years, in accordance with water transfer certificates issued by the state water authority to BRC. Such certificates allow for this water to be used on the Event site. BRC uses up to 16.5 million gallons of water during the Event.

The climate of the Black Rock Playa is an important factor in the hydrologic cycle and is therefore used in characterizing the environmental setting relevant to water supply and water quality.

Surface Water

The proposed Event is in the Black Rock Desert Hydrographic Basin/Subarea (Area #28) of the Black Rock Desert Hydrographic Region of Nevada (Region #2) (BLM 2006). This region covers 8,632 square miles, including parts of Washoe, Humboldt, and Pershing Counties, and 17 hydrographic subareas (NDWR 2011). The Black Rock Desert Hydrographic Basin is 2,179 square miles. The closest cities and towns are Jungo, Gerlach, Nixon, and Summit Lake. Additional surface water discussion is included in the Burning Man 2012–2016 SRP EA, Section 3.11.1 (BLM 2012a).

The Burning Man Event is held in late August and early September, when the playa surface is typically dry. Since Burning Man moved to the Black Rock Playa in 1990, no year has been too wet from prior moisture to prevent the Event (this does not include precipitation during the Event). In the past, water reached the Burning Man site as late as July (see Public Health and Safety at the Burning Man Event; BLM 2018b). The playa has been classified as a discharging playa, due to the relatively shallow water table (BLM 2006; see *Groundwater*, below).

Maximum water depth estimated from satellite imagery between 1973 and 2008 was approximately 3.3 feet. This equaled a maximum surface area of approximately 115.8 square miles, with a volume of approximately 12,160.7 acre-feet. Depths of 1.6 feet occurred 15 times between 1972 and 2008. Depths approximating 3.3 feet occurred three times during this period. The playa does not flood, and lakes do not grow every year; however, there have only been 5 years between 1973 and 2008 when a lake has not formed on the playa (Adams and Sada 2010).

Fly Ranch Water Source

Water quality has been tested at the Fly Ranch source; results are presented in Section 3.11.1 of the Burning Man 2012–2016 SRP EA (BLM 2012a). The Safe Drinking Water Act (SDWA), implemented by the US EPA, defines public water systems and sets drinking water monitoring requirements and standards (maximum containment levels [MCLs]) for constituents that are known to cause health problems (NDEP 2011b). in 1978, the State of Nevada was granted authority to enforce the SDWA in the state (NDEP 2011b). The Fly Ranch water source is not a public water system and would not provide drinking water for the Event, so it would not be subject to SDWA standards as water from Fly Ranch would be used exclusively for dust abatement.

The water quality results presented in in Section 3.11.1 of the Burning Man 2012–2016 SRP EA (BLM 2012a). indicate that the Fly Ranch water source tested above the US EPA-designated primary MCLs for drinking water in concentrations of coliform, *E. Coli*, fluoride, and arsenic. The US EPA also designates secondary MCLs, which are unenforceable guidelines regulating contaminants that may cause cosmetic impacts, such as skin or tooth discoloration, or aesthetic impacts, such as taste, odor, or color, in drinking water (US EPA 2011). Fly Ranch water source tested above the US EPA-designated secondary MCLs for drinking water in concentrations of chloride and total dissolved solids.

Springs

Coyote Dunes spring mound formed around a seep that is approximately 3 miles from the Closure Area Burning Man Event (BLM 2006). Since 2007, community organizations and the BLM have been working on the Coyote Springs Restoration Project, which has included the following (Friends of Black Rock/High Rock [FBRHR] 2009): 2009):

- Removing vehicle tracks from the dune and the most obvious approaches from the playa
- Replacing eroded dune material

- Transplanting indigenous vegetation to facilitate the retention of windblown native seeds
- Removing litter and other debris
- Constructing sections of rustic-looking buck and pole fence around much of the dune
- Installing signs to indicate that the area is closed to vehicle traffic

Camping is not allowed at this location.

There are no springs, seeps, wells, streams, or permanent lakes in or next to the Closure Area Event site. site.

As described in the Burning Man 2012–2016 SRP EA (BLM 2012a), the USGS has tested water quality at several springs and wells throughout the Black Rock Desert and found high concentrations of evaporate minerals, leading to generally poor surface water quality. Springs are of suitable quality to allow human bathing, once water temperature permits, and to allow specific biologic communities to persist (BLM 2006).

Wastewater

There are no wastewater disposal systems on the Event site or in the Closure Area vicinity.

Groundwater

Groundwater in the Closure Area, at most, 5 to 10 feet below the surface. As mentioned above, the playa has been classified as a discharging playa, a result of the relatively shallow water table. Through evaporation and capillary forces, groundwater is discharged into the atmosphere, resulting in a vertical hydraulic gradient.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for the water resources is depicted on **Figure 3-9,** Water Resources, in **Appendix A**. Under all Event alternatives, water quality could be affected by hot spring use and surface and groundwater contamination from Event activities, although water contamination was not an issue in the past. Impacts could occur from hazardous material spills, hot spring use, and application of water for dust mitigation before, during, and after the Event. Impact intensity would vary between Event alternatives. This is because impact intensity would generally be commensurate with the population and likely increase as population increases. Under all Event alternatives, stipulations would be applied to the Event SRP. Stipulations would help reduce or avoid Event -related impacts on water quality such as implementing and monitoring all environmental protection measures (**Appendix B**).

Under all Event alternatives, participants would be discouraged from using area hot springs during the Event. Measures would discourage use, such as charging a reentry fee at the Event site, regularly patrolling area hot springs, and educating visitors encountered on the impacts of excessive hot spring use. These would minimize the potential for water quality degradation at area hot springs.

Alternatives Analysis—Alternative A (Proposed Action)

Surface Water. Most of the Closure Area is on the Black Rock Playa, which is classified as a lake under the National Wetlands Inventory (USFWS GIS 2017). Impacts on water resources would be the same as those described under **Section 3.3.5**, Wetlands and Riparian Areas.

Surface flow in the Assessment Area is intermittent, and during high precipitation years, the playa is partially covered with standing water, typically from March into June. The Event would be held in late August and early September when the playa surface is typically dry. BRC would provide water trucks, as necessary, for dust suppression from Fly Ranch, as warranted by weather and the condition of the playa surface. During the Event, 14 water trucks would operate from Fly Ranch, with a total capacity of

approximately 16.5 million gallons per Event. For the current Event population, approximately 16.5 million gallons of water is used during the Event per year, with an additional 66,000 gallons of water available for fire suppression. Under Alternative A (Proposed Action), with a population ranging from 80,000 to 100,000, dust-abatement operations would scale as needed to accommodate additional city streets, as would the amount of water obtained from Fly Ranch for dust and fire suppression. The Burning Man Operating Plan (BRC 2018l) states that except for those roads authorized in advance by the BLM, dust palliatives shall not be used to control fugitive dust, and water without additives would be used for fugitive dust control within Black Rock City. If application of dust palliatives is deemed necessary, magnesium chloride dust palliative may be used only on roads approved in advance by the BLM.

The BLM tested the water quality at the Fly Ranch water source in October 2011, including US EPA-designated Primary and Secondary MCLs, where MCLs have been designated for constituents tested at Fly Ranch. The Fly Ranch water source would not provide drinking water for the Event; the purpose of comparing Fly Ranch water quality results to MCLs for drinking water is to provide a basis of comparison in characterizing potential impacts of applying this water on the ground surface in Black Rock City. Fly Ranch water source tested above the US EPA-designated primary MCLs for drinking water in concentrations of coliform, *E. Coli*, fluoride, and arsenic. In addition to the primary MCLs, Fly Ranch had elevated chloride concentrations of 260 milligrams per liter (slightly greater than the Secondary MCL of 250 milligrams per liter for drinking water) and a total dissolved solids (TDS) concentration of 1,100 milligrams per liter (more than twice the Secondary MCL of 500 milligrams per liter for drinking water). TDS includes any dissolved organic or inorganic constituents and minerals in water, including salt.

An increase in dust suppression application could potentially lead to impacts on surface and groundwater quality, depending on the quantity of water applied to the playa. Under Alternative A (Proposed Action), approximately 21.5 million gallons of Fly Ranch water would be applied on the playa (assuming 16.5 million gallons under the current Event), which could potentially lead to surface or groundwater contamination if the water is absorbed by playa sediments or if the playa were inundated. Considering water would be applied in quantities appropriate for dust abatement, and there are no surface water bodies near the areas where water would be applied for dust suppression, it is reasonable to conclude that salts and minerals present in the form of TDS would not have potential to be transported to existing surface water bodies. Large applications of water could lead to surface or groundwater quality impacts if the water is absorbed by the playa sediments, as the playa is an intermittent waterbody.

Surface water and/or groundwater quality could also be degraded if hazardous materials, such as oil or wastewater, leak onto the playa surface during the Event. Due to the increase in population, Alternative A (Proposed Action) could increase the hydrocarbon waste and result in a change of composition of the lake surface. Playa soils also support aquatic invertebrates that are specially adapted to the prolonged drought and occasional inundation cycles of the playa. Implementing Monitoring Measure WHS-2 (**Appendix E**) to study oil drips and hazardous material spills could inform future actions to limit impacts on water quality within the Event area and the adjacent springs.

Groundwater. No local groundwater resources would be pumped to meet water supply requirements associated with the Burning Man Event, and none of the Administered Groundwater Basins would be affected by the Event. The playa has been classified as a "discharging playa," which means that through evaporation and capillary forces, groundwater is actively discharged into the atmosphere, resulting in a vertical hydraulic gradient. Furthermore, as described above, hydrocarbons deposited on the playa would be subject to biological, physical, and chemical breakdown and dispersion, and would therefore likely be eliminated from the system over time (BLM 2003). Therefore, groundwater quality is not anticipated to be greatly affected by the Event because groundwater is actively discharged to the atmosphere due to evaporation and capillary forces. The application of water from the Fly Ranch source for dust suppression could affect groundwater quality, if the water was of sufficient quantity to reach the groundwater table.

The deposition of water and hydrocarbons on the playa associated with oil leaking from vehicles during the Burning Man Event would likely not result in substantial groundwater quality degradation, as the hydrocarbon waste would likely become airborne instead of reaching the groundwater table (see **3.6.1**, Air).

Springs. Bathers create soaking "tubs" by diverting or impounding spring flows, which can alter the hydrological conditions. Soaps and other chemicals introduced by bathers can alter water quality (Sada et al. 2001). Recreational use does not alter water quantity from the spring source. Under Alternative A (Proposed Action), Event participants may use area hot springs for camping or soaking prior to or after the Event, resulting in the potential for increased use levels before and after the Event. As noted above, several area springs are popular, well-known soaking and camping destinations. Increased use could lead to impacts such as hydrological modifications and water quality alterations.

The impact intensity could increase between 2019 and 2023, as the Event adds capacity for additional participants. The BLM's proposed monitoring of participant use at hot springs during the Closure Order (Recommended Monitoring Measure WET-1; see **Appendix E**) would record any changes in water quality conditions, which could result in future mitigation actions to reduce impacts on water quality. Springs are discussed further in **Section 3.3.5**, Wetlands and Riparian Areas. Impacts on water quality would indirectly affect native invertebrates that use these springs as habitat, as springs serve as habitat for invertebrates that are adapted to the constant temperatures and distinctive geothermal environments that some springs provide, as discussed in **Section 3.3.6**, Wildlife.

Wastewater. Alternative A (Proposed Action) would require participants to take out whatever material they bring to the Event, including wastewater and sewage, if they are in a recreational vehicle camper or camp trailer. A small percentage of Burning Man participants are still anticipated to dispose of gray water on the playa, with gray water primarily characterized by soaps and detergents used in dish washing and bathing. These materials readily break down in the sunlight and do not pose substantial impacts on surface or groundwater. The BLM and BRC's proposed monitoring of wastewater spills on the playa in the Closure Area during the Closure Order (see Recommended Monitoring Measure WTR-1 in **Appendix E**) would reduce potential impacts on water quality. Volumes of wastewater disposed have not been observed as being large enough to result in percolation of the material to the groundwater table (BLM 2006). An increase in participants could increase the quantity of wastewater deposited on the playa surface, which, if sufficient in quantity, could degrade groundwater quality.

Portable toilets are placed within the Closure Area. It is highly unlikely that human wastes would spill or leak from these locations. Toilet banks have tipped annually despite anchors, and vandalism has occurred. BRC has addressed such occurrences via their Operating Plan. Human wastes from the portable toilets are removed from the playa by the toilet vendor, taken to the Washoe County Waste Treatment Center, treated, and disposed of in an appropriate manner under approved permits. If the portable toilets are insufficient for the increased population at the Event, or if the portable toilets are not placed or lit such that access is readily available after dark, Event participants would be more likely to use areas that are not designated facilities, thereby resulting in increased wastewater. As the Event populations increases, the amount of human waste deposited in areas that are not designated facilities would increase.

Under Alternative A (Proposed Action), an increase in participants could increase the quantity of wastewater deposited on the playa surface, which, if sufficient in quantity, could degrade groundwater quality. Mitigation Measures WHS-4 through WHS-6 and waste management would reduce or eliminate potential impacts on groundwater quality from human waste.

Alternatives Analysis—Alternative B

Impacts on water quality under Alternative B would be similar to those described under Alternative A (Proposed Action). The potential for water quality impacts at area hot springs would be somewhat decreased, given that there would be fewer Event participants. Less water would likely be needed for dust suppression, as the Closure Area would be smaller than under Alternative A (Proposed Action), and a reduced population size would likely result in less area disturbance requiring water use. Less water from Fly Ranch applied on the playa would lead to less potential for surface water contamination of the playa. A smaller Event would also reduce the potential for wastewater contamination and oil drips, as less vehicles would be used than under Alternative A (Proposed Action). The same measures to discourage recreational hot spring use, reduce oil drips, and reduce wastewater contamination during the Event, as described in Alternative A (Proposed Action), would be in place under Alternative B to reduce impacts.

Alternatives Analysis—Alternative C

Impacts on water quality under Alternative C would be the same as those described under Alternative A (Proposed Action).

Alternatives Analysis—Alternative D

Impacts on water quality under Alternative D would be similar to those described under Alternative A (Proposed Action), but the impact intensity would not increase between 2019 and 2023.

Alternatives Analysis—Alternative E

Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. Impacts on water quality, as discussed under Alternative A (Proposed Action), could still occur. In the short term, the impact intensity would likely be elevated, as mitigative measures would not be implemented by BRC. For example, there would be no measures in place to dissuade recreationists from using area hot springs, reduce oil drips, or dispose of wastewater. Therefore, impacts from wastewater disposal and recreational hot spring use would likely increase, increasing the potential for degraded water quality and hydrological modifications at area springs. The BLM may implement management strategies to reduce these impacts. In the long term, the impact intensity would most likely be reduced as word of the Event closure is spread. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

3.7 SOCIAL VALUES AND ECONOMICS

3.7.1 Economics

Affected Environment

A summary of Assessment Area (see **Figure 3-10,** Economics, Environmental Justice, and Social Values, in **Appendix A**) current conditions is provided in this section. See the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b), for a full description. The economics section includes a characterization of the Assessment Area employment and income and key economic sectors that may be affected by the Burning Man Event. Spending in Nevada by Event attendees is examined based on the BRC Census collected after the 2017 Event. Event-related data, including costs and capacity of services provided at the Event, were from previous Events and were provided by BRC. In addition, it includes descriptions of government fiscal conditions and spending. Finally, impacts on the wider region and nonmarket impacts are examined.

Assessment Area Economic Baseline Conditions

Median household income and per capita income are two measures of the economic stability of an area, when compared with that at the state or national level. In the Assessment Area in 2016, median household income and per capita income were above the state average in Washoe and Humboldt Counties and

below that of the state in Churchill, Lyon, and Pershing Counties and PLPT's Reservation. At the municipality level, median household and per capita income are highest in Reno and Sparks and lowest in Nixon and Wadsworth (see The Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b], Table 1).

Employment trends in the Assessment Area have generally followed state averages based on annual data over the last 10 years. Of Assessment Area counties, only Lyon County had an unemployment rate consistently higher than the state unemployment rate, reaching a ten year high of 17.5 percent during 2010. Annual unemployment rates are not available for individual municipalities or the PLPT's Reservation from the Bureau of Labor Statistics. Based on 2012–2016 data collected for the US Census Bureau, some of these geographic areas have higher unemployment than that of the state. For example, Nixon had an estimated unemployment rate of 26.8 percent, Wadsworth 20.1 percent, and the PLPT's Reservation 19.5 percent for 2012–2016 data, as compared with the state rate of 9.5 percent over the same period (see The Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b], Table 2 and Table 3).

Spending and employment related to the Burning Man Event is most likely to be related to retail trade; arts, entertainment, and recreation; and accommodation and food services economic sectors. Operational expenditures by BRC for the Event can also include spending in other sectors such as waste management, and transportation and warehousing, as well as contributions to healthcare and utilities sectors. Percent employment in the arts and entertainment sector ranged from a low of 1.7 percent in Humboldt County to a high of 5.5 percent in Lyon County. In the accommodation and food services sector, employment ranged from a low of 5.4 percent employment in Lyon County to a high of 11.7 percent in Washoe County. Administrative support and waste management ranges from a low of 3.5 percent of employment in Humboldt County to 7.1 percent in Washoe County, while transportation and warehousing represent a low of 3.2 percent of employment in Humboldt County to a high of 6.1 percent in Churchill County (see The Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b], Table 4).

Income in the arts and entertainment and food and accommodation sectors are often lower than overall average income and earnings. In Assessment Area counties, the arts and entertainment sector represented between 0.4 percent (Humboldt County) and 1.5 percent (Washoe and Churchill Counties) of total personal income and earnings. The accommodation and food services sector represented between 0.9 percent (Lyon County) and 4.6 percent (Washoe County) of total income and earnings. Income and earnings in sectors related to operational expenditures also varied. For the administration and waste management sector, income and earnings are below overall averages, with a low of 1.0 percent of total income and earnings in Lyon County and a high of 3.0 percent in Washoe County. The transportation and warehousing sector earnings were similar to the overall average, with a low of 3.2 percent of income and earnings in Humboldt County to a high of 6.1 percent in Churchill County (see The Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b], Table 5).

Event Economic Activity

The Burning Man Event includes direct and indirect spending in the socioeconomic Assessment Area, throughout the state of Nevada, in the region. In the section below, spending on Event operations and participant spending are examined.

Operational Spending

BRC also provided data about their operational spending during 2017. This included expenditure information for the Burning Man Event itself such as vendor costs for waste disposal, potable water, and Event fencing. In addition, operations expenditures include costs of other services that support the Event, including property rentals such as those for warehousing Event materials, and social contributions for local communities to support the BRC principles. Specific operational spending information provided by BRC

was used in economic modeling but is proprietary. Of the total BRC reported spending on payments to vendors providing goods and services in support of the Event, social contributions, and property rentals during 2017, about 47 percent was identified as being spent directly on vendors, goods, and services in Nevada and is input into the model to determine regional and state economic contributions (BRC 2017b). Based on public documents from 2016 tax records (BRC 2017d), BRC spent an estimated $18 million on program service expenses, excluding payments for salary and benefits (discussed below) and permits and fees (accounted for in the fiscal analysis discussion). A portion of these expenses represent costs associated with directly operating the Event.

Based on publicly available data, BRC had 858 permanent and temporary employees in 2016 (BRC 2017d). Based on BRC-provided information, it is estimated that approximately 10 permanent employees resided in Nevada, with the remaining employees living primarily in California. In addition to the goods and services spending described above, BRC also incurred $12.5 million in labor expenditures (including salaries and other compensation) in 2016 (BRC 2017d). Approximately 7,500 volunteers were identified as supporting the Burning Man Event in 2016 (BRC 2017d).

Participant Spending

Average participant spending data were obtained from the BRC Census (BRC 2017c). Based on spending ranges, Event participants spent a median of $1,500 total dollars to travel to and from the Event, including fuel, food, lodging, airfare, and supplies, but excluding the price of the ticket. The average level of total spending may be substantially higher than the median. Of total spending, an average of $666 was spent in Nevada in 2017. Self-reported spending by category is included in **Table 3-14**, below. The location in which spending occurred was not reported in the survey; however, participants were requested to list all towns in which they stopped while traveling to or from the Event. Approximately 86.5 percent of reported stops occurred in cities within the Assessment Area (BRC 2017c).

Table 3-14
Average Participant Spending (2017)

Category	Assessment Area*	Nevada Total
Food	$151.38	$175.00
Lodging	$134.77	$155.80
Fun	$100.17	$115.80
Fuel	$97.23	$112.40
Survival	$93.07	$107.60
Total	$576.61	$666.60

Source: BRC 2017c
*Based on approximately 86.5 percent of participant stops within the Assessment Area

Using areas where participants stopped to approximate locations of spending, approximately $576.66 per attendee would occur in the Assessment Area, and the remaining $89.94 would be spent elsewhere in Nevada. Assuming that reported stops correspond with the location of Event spending, the highest levels of Assessment Area spending on supplies and lodging are likely to occur in Washoe County (particularly in the communities of Reno and Sparks), in Lyon County (Fernley), and to some degree in Humboldt County (Winnemucca). While Empire and Gerlach in Washoe County also report a high number of participant stops, the limited retail and lodging opportunities in these areas likely result in a lower level of participant spending. Similarly, participant spending would occur on the PLPT's Reservation in the communities of Wadsworth and Nixon, but these communities are also small in size and have more limited services as compared with some larger area communities.

Fiscal Analysis and Demand and Capacity of Public Services

BLM Event Revenue

All SRPs are subject to use fees. BLM collects fees from BRC for the Event as well as from vendors covered by SRPs. Per the regulations outlined in the BLM Recreation Permit and Fee Administration Handbook (H-2930-1), the Burning Man Event fee is based on a Commercial Use Fee equal to three percent of gross income generated by the permit. This amount includes 3 percent of BRC gross revenue as well as 3 percent of vendor gross revenue. Gross revenue fees are distributed to the BLM Black Rock Field Office. In 2017, the BLM's commercial use fee collected was $1,254,778.

In addition, BRC is responsible for compensating the BLM for actual costs of administering the SRP, including all direct and indirect costs, for labor and operations by BLM staff. This is known as the cost recovery fee. An indirect cost rate of approximately 20 percent, which fluctuates annually, is included in this fee, this represents payment to the BLM National Operations Center. Cost recovery fees collected in 2017 were $2,503,453.

Local and State Government Revenue

Event participants likely affect government revenues in several ways, notably, due to taxes and revenue collected from spending by attendees traveling to and from the Event, including tax on retail spending and motor vehicle fuel, lodging tax, and gambling revenue.

Attendees also may stay over in hotels or motels before or after the Event, for which counties collect transient lodging taxes. Lodging tax rates are set at the city/county level. Due to the proximity and availability of rooms, the largest impact is likely in Washoe County. Washoe County's lodging tax rate is from 13.0 to 13.5 percent, with an additional surcharge of $2 in Reno as of 2015. Taxable room revenue collected in Reno-Sparks for August and September of 2017 was 44 million and 41.6 million, respectively (see the Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b], Table 9). August and September represent the highest annual taxable room rate revenue in the Reno-Sparks area, likely due to Burning Man as well as other events.

Attendees traveling to and from the Event purchase motor vehicle fuel in local communities. Fuel taxes are collected at the federal, state, and county level. In Nevada, all areas include an 18.4 cents per gallon federal tax, an 18.455 cent per gallon state gasoline tax, and a county mandatory tax of 6.35 cents per gallon and an additional county option gas tax of tax of 0 to 9 cents per gallon. The optional county tax is 9 cents per gallon for all Assessment Area counties. These taxes help to fund road repairs. In addition, Washoe County currently has approved inflation indexing for fuel taxes. As a result, fuel taxes increase with rising inflation rates based on the Producer Price Index (Nevada Department of Transportation 2016). See the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b), Table 10 for annual taxes collected.

The specific contribution of Event attendees to fuels tax revenue is dependent on the location and amount of motor fuel purchases by those traveling to or from the Event and cannot be calculated based on available information.

Effective October 2015, a 9 percent live entertainment tax is collected on ticket sales by the state of Nevada from the Burning Man Event. Based on 2017 ticket sales, approximately $3,291,725 was collected for this tax in 2017 (BRC 2017b).

Local agencies also charge permit fees to BRC to cover services. The Nevada State Health Division can charge a fee per day when attendance exceeds specified levels for inspection and enforcement of temporary food services permits. Fees collected at the 2017 Event were $31,690 (BRC 2017b).

Demand, Cost, and Capacity of Community Services

The Burning Man Event results in costs for local government for services provided at the Event site and surrounding the Event, as described below.

Emergency Medical Services and Fire Protection

The Gerlach Fire Department, supervised by the Sierra Fire Protection District, provides services in the Gerlach area. The Gerlach Volunteer Fire Department typically has two paid personnel that can respond to emergencies on a regular basis. To address the increased demand for services before, during, and after Burning Man, the Fire Department has brought on an additional two paid personnel, authorizes overtime, and brings on additional volunteers starting in July and continuing through October, with peak demand at Event entry and Exodus (Gerlach Fire Department 2017). Donations in 2017 by BRC included a donation to the Gerlach Volunteer Fire Department (BRC 2017b). The Gerlach Volunteer Fire Department does not provide emergency or fire protection services at the Burning Man Event.

The PLPT aids with emergency medical services at the event. Tribal representatives stated that calls for emergency medical services for the Event leave the tribal population without services. This can affect the ability to provide the necessary level of community services. In 2018, the PLPT Emergency Medical Services handled an additional 29 service calls connected to the Event, which included 8 medical calls, 5 fires, 13 vehicle crashes, and 3 mutual aid to assist Gerlach calls, as well as transports to area hospitals during the 21 days they provided services (PLPT 2018).

Fire protection services at the Burning Man Events have been provided by a BLM-certified fire contractor and the volunteer Black Rock City Emergency Services Department. In 2016, emergency medical services were provided by Crowd RX, a contracted service, at a cost to BRC of $736,050 (BRC 2017d). The price for these services varies by year and the contractor may change; in 2017, services were provided by National Event Services (BRC 2017b).

Law Enforcement

The Washoe County Sheriff's Office maintains a substation in Gerlach with two resident deputies. During Burning Man, Washoe County Sheriff's Office temporarily assigns an additional seven deputies and a sergeant to the Gerlach substation during the Event. In 2017, the contracted amount with BRC for services was $110,500 (Washoe County 2017a). The Sheriff's office uses the money to pay for the salaries of additional deputies needed in the area, as well as their lodging, daily food expenses, and vehicle cost reimbursements.

Law enforcement concerns from participants traveling through tribal lands can occur within the PLPT's Reservation. In 2018, the department had nine sworn officers available to participate in the Event for a 24-day operational period (PLPT 2018).

BRC has an agreement with the PLPT for services provided, including law enforcement. In 2017, the total payment to the PLPT was $117,043. With the agreed upon 3 percent annual increase in payment, the 2018 payment was $120,554. Tribal records indicate that the funding provided by the BRC falls short of the incurred cost for the tribe, which vary by year, but were $147,662 in 2017 and $152,118 in 2018 (PLPT 2018).

BLM officials and the Pershing County Sheriff's Office are present to enforce federal, state, and county laws at the Event. In 2016, there were 46 arrests and 559 citations issued by the Pershing County Sherriff's Office and BLM. Based on a 2013 settlement agreement with BRC, Pershing County is paid for joint services provided at the Event, which included 15 to 24 officers per 24-hour period. Under this agreement, BRC agreed to pay $240,000 annually to Pershing County, including approximately $70,000 to the district attorney's office, $5,000 to the county assessor's office, and the remainder to the Sherriff's office. Pershing

County has indicated that the agreed amount no longer covers the full law enforcement costs to the county. For example, the expenditures incurred by the Sherriff's department associated with the 2017 Event were approximately $35,000 over budget (Pershing County 2017). Law enforcement and safety concerns are further discussed in **Section 3.5.1**, Public Health and Safety and the BLM Public Health and Safety Baseline Report (BLM 2018b).

Traffic and Road Maintenance

Increased state and local government expenditures on road maintenance can be attributed to the substantial increased daily traffic volumes on several roads (see **Section 3.9.2**, Transportation and Traffic), particularly SR 447 and CR 34. BRC provides funding for professional flaggers and barricades and NDOT assistance during the Event. Traffic citation services along highway travel routes were also provided in coordination with the Nevada Department of Transportation, with funding for services provided by an agreement with BRC. Based on the day of the Event, services included 6 to 24 officers per 24-hour period, with the peak demand during Event entry and Exodus (BRC 2017c).

Washoe County Public Works maintains CR 34. Initial costs for pre-Event repair to Washoe County to mitigate 2016 Event road damage were $340,000. Post Event inspections identified the need for additional repairs for road damage that occurred during the 2017 Event, or prior repairs which had failed, at an additional cost of $248,000 to Washoe County. Included in these costs were man-hours used to complete road repairs, which for the 2017 Event equaled 245.5 compared with the 155 combined man hours for 2015 and 2016 Events (Washoe County 2017b).

Trash and Waste Disposal

The Burning Man Event is a Leave No Trace® Event. All Event participants are required to remove their own garbage from the Event. Following the Event, BRC, in coordination with BLM, removes any remaining waste. All Event participants are required to remove their own garbage from the Event. Event participants are provided information with locations of authorized dump sites upon arrival, but not all trash is disposed of properly.

Following the Event, BRC, in coordination with the BLM, removes any remaining waste. As part of the post-Event cleanup, BRC also collects and disposes of roadside waste. All Event participants are required to remove their own garbage from the Event. Event participants are provided information with locations of authorized dump sites upon arrival. The PLPT and BRC have an agreement to help collect waste from participants traveling from the Event on a fee basis. When costs were accounted for, 2018 revenue from trash collection was minimal. The PLPT also noted that transferring and processing trash generated by the Burning Man Event burdens the waste management/transfer station, which was designed to handle a tribal population of less than 3,000 (PLPT 2018).

In addition, not all trash is disposed of properly. It is difficult to quantify the specific cost of additional waste disposal services to take care of unauthorized dumping in each individual community. Local community representatives and stakeholders who participated in socioeconomic interviews noted disposal of waste on the roadsides and in area dumpsters as an issue. Some of the costs of disposal may be borne by individual businesses rather than local government; in socioeconomic interviews, businesses noted that they order additional dumpsters in anticipation of the Event, which county and city government do not typically provide increased services. Abandoned vehicles and the cost of transport and disposal were also noted as issues in socioeconomic interviews.

Water

Potable water for the Event is purchased by BRC from the Gerlach General Improvement District, which manages Gerlach's municipal water supply.

Regional Impacts

Impacts from the Event occur throughout a wider region than the six-county Assessment Area. Based on the 2017 BRC Census data, approximately 79.5 percent of participants reside in the US; of this group, approximately 48.5 percent currently reside in California (BRC 2017c). As a result, economic impacts of purchasing supplies for, and travel to, the Event can also occur along travel corridors from California. Some analysis has even suggested that economic spending in San Francisco over Labor Day weekend may be affected by the large number of residents who attend the Event; a *Fortune* magazine article from 2014 published data indicating that some neighborhoods saw as much as a 20 percent drop in credit card sales compared with a typical week (Fortune 2014).

In addition, BRC is based in San Francisco. Some expenditures for the organization do not occur directly in the Assessment Area but would contribute to the regional economy. As discussed in the Event Economic Activity-Operational Expenditures section, approximately 47 percent of Event operational expenditures in 2017 were estimated to be spent within Nevada, with the remainder associated with vendors based or materials sourced from outside the area. Based on 2016 publicly available data, BRC employed approximately 858 temporary and permanent employees. The majority of employees are temporary (approximately 89 percent in 2017). Many of these temporary employees are likely to reside outside of the Assessment Area. Similarly, the majority of permanent employees reside outside of the Assessment Area (approximately 89 percent resided in California in 2017). Direct labor expenditures for California permanent and temporary staff represent approximately 73 percent of total labor expenditures in 2017 (BRC 2017b).

Official and unofficial spinoffs from the Burning Man Event occur throughout the year around the US and the world, which can also contribute to the economy outside of the Assessment Area. Regional groups support activities for Burners in their hometowns, including but not limited to decompression Events and regional burns. These gatherings often generate some form of economic activity in the local area.

Environmental Consequences

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. Considering 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 the Event's economic activity in two regions: the five-county Assessment Area and the remainder of Nevada. IMPLAN's multiregional input-output capability was used to link county models between the two regions, so that the direct spending in one region that results in indirect spending in the other region could also be captured. 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 quantitative assessment of the impacts on local government revenues associated with the Event. This analysis was based on permitted levels of participants under each alternative and the BLM revenue 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.

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for economics is depicted on **Figure 3-10,** in **Appendix A**. The Burning Man Event results in costs for local government for services provided at the Event site and surrounding the Event, as described below.

Under all Event alternatives, operational spending by BRC and spending by participants traveling to and from the Event would continue to represent direct and indirect spending as discussed in the Affected Environment section. A summary of economic contributions from spending in the Assessment Area and Nevada is provided in **Table 3-15**. Details are provided in the Alternative A (Proposed Action) discussion.

Table 3-15
Comparison of Total Annual Economic Contribution in the Assessment Area and in Nevada by Alternative

Location	Alternative	Total Output (Millions 2018$)	Total Labor Income (Millions 2018$)	Total Jobs
Assessment Area	A-Proposed Action	$68.2	$41.9	626
	B-Reduced Population	$34.1	$20.9	313
	C-Alternate Location	$68.2	$41.9	626
	D-No Population Change (current Event population)	$54.6	$33.5	501
	E-No Event	–	–	–
State of Nevada	A-Proposed Action	$79.0	$49.4	722
	B-Reduced Population	$39.5	$24.7	361
	C-Alternate Location	$79.0	$49.4	722
	D-No Population Change (current Event population)	$63.2	$39.5	578
	E-No Event	–	–	–

Source: ECONorthwest 2018

– = Less than the No Population Change Alternative, declining over time to zero.

Participant and operational spending as reported in the BRC Census (BRC 2017c) was examined to provide an estimate of state and local tax revenue. A summary is provided in **Table 3-16**.

Table 3-16
Comparison of Tax Contributions from Participant and Operational Spending in the Assessment Area by Alternative

Participant Spending

Category	Tax Per Participant	A-Proposed Action (Total)	B-Reduced Population (Total)	C-Alternate Location (Total)	D-No Population Change (Current Event Population) (Total)	E-No Permit/ Event (Total)
Food	$10.40	$1,040,000	$520,000	$1,040,000	$832,000	–
Lodging	$17.27	$1,727,000	$863,500	$1,727,000	$1,381,600	–
Fun	$6.88	$688,000	$344,000	$688,000	$550,400	–
Fuel	$5.24	$524,000	$262,000	$524,000	$419,200	–
Survival	$6.40	$640,000	$320,000	$640,000	$512,000	–
Total	**$46.19**	**$4,619,000**	**$2,309,500**	**$4,619,000**	**$3,695,200**	–

Operational Expenses

Category	Tax Per Participant	A-Proposed Action (Total)	B-Reduced Population (Total)	C-Alternate Location (Total)	D-No Population Change (Current Event Population) (Total)	E-No Permit/ Event (Total)
Vendor	N/A	$347,431	$173,715	$347,431	$277,945	–
Fuel	N/A	$53,706	$26,853	$53,706	$42,964	–
Live Entertainment	N/A	$4,114,656	$2,057,328	$4,114,656	$3,291,725	–
Property	N/A	$18,116	$9,058	$18,116	$14,493	–
Total	N/A	**$4,533,909**	**$2,266,955**	**$4,533,909**	**$3,627,127**	–
Grand Total	N/A	**$9,152,909**	**$4,576,455**	**$9,152,909**	**$7,322,327**	–

Source: BRC 2017c
– = Less than the No Population Change Alternative, declining over time to zero.

Alternatives Analysis—Alternative A (Proposed Action)

Event Economic Contributions: Under Alternative A (Proposed Action), once the population reaches 100,000 in year 5 of the permit, the total direct annual spending related to the Event associated with BRC nonlabor operational expenditures and participants spending in Nevada would be $74.2 million at the peak Event size. This includes the direct spending by BRC and total participant spending based on the reported average expenses to travel to and return from the Event. Participant spending calculations do not account for additional spending by BRC staff and volunteers above the average spending levels or spending participants that did not account for under supplies or lodging, and therefore may underestimate participant spending levels. Calculations exclude labor expenditures and government transfers for permit fees and other payments.

Total economic output in Nevada is estimated at over $78 million (**Table 3-15**). Almost $68 million of this would occur in the Assessment Area. Of the $68 million, about 60 percent is labor income, supporting 626 jobs in the Assessment Area. Statewide, spending contributes almost $50 million in labor income supporting over 720 jobs. In year 1 through 4 of the permit, when the population increases by 5 percent each year, spending and the economic contribution would increase commensurately until it reaches the year 5 amounts described above.

Although economic impacts of the Event would occur throughout the Assessment Area, certain communities and counties would likely see a proportional higher level of impacts. As discussed in the

Affected Environment section, based on participant stop data and services available, direct participant spending and the associated economic output would most likely occur in Washoe County (particularly in the communities of Reno and Sparks) and Lyon County (Fernley), as well as to some degree in Humboldt County (Winnemucca). In terms of operational expenditures, because Reno is the largest city in proximity to the Event, many vendors are based in the Reno/Sparks metropolitan area; therefore, economic impacts may be concentrated in this area. As discussed in the Affected Environment section, a significant portion of participant spending and Event operation costs are spent outside of the Assessment Area and Nevada. Due to the headquarters of BRC in San Francisco, and the fact that 48.5 percent of Event attendees from the US currently reside in California, it is likely that a large portion of the out-of-area spending occurs in California (BRC 2017b).

In addition to BRC nonlabor operational expenditures, labor expenditures are likely to increase. While the exact level of increase and associated economic contributions cannot be estimated here, it can be assumed that contributions to jobs and income directly from BRC would be maintained at current levels reported in the Affected Environment or increased to support the larger Event as the population increases to maximum levels in 5 years.

Fiscal Analysis and Demand and Capacity of Community Services: Federal government costs and revenue associated with administration of the SRP permit and operation at the Event are anticipated to rise as the Event size increases. Because the SRP permit includes cost recovery fees, it is anticipated that all increased costs would be recovered. Revenue provided to the Black Rock Field Office and National Operations Center associated with SRP fees could be anticipated to increase by approximately 25 percent at the maximum population size, assuming that vendor revenue increases in proportion with the population size and that ticket prices remain the same with the exception of an adjustment for inflation.

The level of services required for BLM Event law enforcement and management would also be increased with the Event size. Public health and safety indicators, to include BLM citations, reported sexual assaults, and arrests made by the Pershing County Sheriff's Office, can be expected to increase proportionately with population size. Inclusion of mitigation measures as discussed in **Section 3.5.1**, Public Health and Safety, would reduce the level of some health and safety issues, but the level of services required would remain elevated. Analysis in **Section 3.5.1** concludes that at a population of 100,000, the number of BLM law enforcement staff needed for the Event would represent approximately 50 percent of all BLM law enforcement staff in 2018. This staffing level may not be feasible and, if met, would reduce the BLM's ability to execute other agency missions. Refer to the BLM Public Health and Safety Baseline Report (BLM 2018b) for additional details.

As discussed in the Affected Environment section, the Event increases demand for and thus costs associated with various state and local government services. Some notable examples include law enforcement costs for various counties (both for on-playa services as well as an increase in staffing around the time of the Event), court costs (Pershing County), road repair costs for Washoe County, and water supply in Gerlach. Revenues associated with the Event for local counties and communities come in two main forms: direct agreements with the BRC and revenue from taxes collected.

The level to which the increase in revenue with increased Event size would offset increased demand and costs of services is uncertain and would likely vary by service and agency. Currently, law enforcement service costs for cooperating agencies on the playa (Pershing County), and in the surrounding area and along travel routes (i.e., Washoe County, Nevada Highway Patrol, and PLPT) are offset, at least in part, by agreements with BRC. In socioeconomic interviews, counties and city representatives generally indicated that with these payments, current demand for services did not result in budget constraints or outpace the capacity to provide services. The exceptions are Perishing County and the PLPT's Reservation, which stated that their costs associated with the Event typically overrun compensation. If BRC contributions

remained at current levels, additional counties would likely have demands exceeding capacity. If BRC contributions increased in accordance with the population size, agencies may be able to provide staffing in accordance with Event demands without impacts on budgets. Increased demand for services may result in a strain on available resources or affect the ability to provide other services. In addition, agencies may face a shortage of qualified workers. In Pershing County and the PLPT's Reservation in particular, issues of cost overruns would be likely to be maintained or increased with an increased Event size.

Costs for road repair services would continue to be offset, at least in part, by taxes collected from Event participant spending. For example, road repair costs in Washoe County for 2017 were estimated at $248,000, and fuel taxes (which help fund road repairs) collected were estimated at $524,000, a portion of which would be distributed to Washoe County. In total, an estimated $4,619,000 in taxes would be collected from Event participant spending under Alternative A (Proposed Action). In addition, an estimated $4,533,909 in taxes would be collected from nonlabor operational expenditure spending in the Assessment Area (**Table 3-16**). Establishing a cost-sharing agreement with Washoe County for road repairs on CR 34 associated with Event traffic could minimize impacts (see Mitigation Measure ECON-1 in **Appendix E**).

For potable water purchased from Gerlach General Improvement District, impacts could occur with an increased Event size. Unless alternative sources of water were utilized, increased water purchases for the Event may strain Gerlach's resources.

Alternatives Analysis—Alternative B

Event Economic Contribution. Under Alternative B, total direct spending on nonlabor BRC expenditures and by participants in Nevada is estimated to decrease to approximately $39.3 million. Total economic contributions would decrease to a total economic output in Nevada of $40 million. Almost $35 million of this would occur in the Assessment Area. Statewide, spending contributes almost $25 million in labor income supporting almost 370 jobs (see **Table 3-15**).

Fiscal Analysis and Community Services. Impacts on government revenue and costs would be similar in nature to those described under Alternative A (Proposed Action). With a reduced Event size, the potential for strains on resources and budgets would be reduced, as demand and costs for all services would be assumed to decrease in accordance with a population decrease. Law enforcement demands would likewise decrease with a decreased Event size, and existing resources at the BLM, Pershing County, the PLPT, and other cooperating entities may be sufficient to provide services. Decreased attendance would result in decreased contributions to local and state taxes from participant spending. Total tax revenue under Alternative B is estimated as $2,309,500. In addition, an estimated $2,266,955 in taxes would be collected from operational expenditure spending in the Assessment Area (see **Table 3-16**).

Alternatives Analysis—Alternative C

Event Economic Contributions. Alternative C would result in moving the Event to a different location on the playa. The location on the playa may change BRC's Event costs somewhat, but insufficient information is available at this time to determine how or by what magnitude. Thus, for the purpose of this analysis, it is assumed that it would be the same level of spending as that estimated for Alternative A (Proposed Action). Participant spending is also assumed to be the same as that for Alternative A (Proposed Action).

Fiscal Analysis and Community Services. Impacts would be similar to those described under Alternative A (Proposed Action). Due to the more remote location of the alternative location for the Event, there is the potential that cost and time required to provide services, such as law enforcement support and emergency response, could be increased.

Alternatives Analysis—Alternative D

Event Economic Contributions. Under Alternative D, the total direct nonlabor, operational spending related as reported by BRC and participants in Nevada would be $59.3 million. Economic contributions from spending in Nevada are estimated at $63 million. Almost $55 million of this would occur in the Assessment Area. Statewide, spending contributes almost $40 million in labor income supporting almost 600 jobs (see **Table 3-15**).

Fiscal Analysis and Community Services. Impacts on government revenue and costs would be similar in nature to those described under Alternative A (Proposed Action). Under Alternative D, no increase in population size or related increases in cost and demand for services would occur above current conditions. Impacts would remain similar to those discussed in the Affected Environment. With the Event population remaining at current population levels, total tax revenue under Alternative D is estimated as $3,695,200. In addition, an estimated $3,627,127 would be collected from operational expenditure spending in the Assessment Area (see **Table 3-16**).

Alternatives Analysis—Alternative E

Event Economic Contributions. Should the BLM choose to not issue an SRP for the Event, it is likely that an informal, unpermitted gathering would still occur on the playa. Economic contributions from participants traveling to and from the Event would likely still occur, although the specific amount cannot be determined. Because no BRC spending would occur to organize and hold the Event, no contributions would occur from this spending. In the long term, economic contributions would most likely be reduced as word of the Event closure is spread and the Event size is decreased.

Fiscal Analysis and Demand and Capacity of Community Services. In the absence of a formal SRP permit and an Event run by BRC, it is likely that BLM staff, as well as local law enforcement and state highway patrol, would remain needed to manage informal event crowds and traffic. Agencies would no longer receive compensation for services from BRC or have assistance from BRC staff. As a result, demand for services and costs would be increased. In the long term, impacts would most likely be reduced as word of the Event closure is passed along, and unauthorized use is decreased.

3.7.2 Environmental Justice

Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority, low-income, and tribal populations. The initial screening for low-income and minority populations included an examination of the US Census Bureau data. The PLPT and the cities of Gerlach, Nixon, and Wadsworth were identified for further consideration in the impacts analysis as low-income populations. Refer to The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b) for details of screening methodology and relevant US Census Bureau data.

For minority population classification, the combined minority population was calculated by taking the total population minus those of white, non-Hispanic descent. No county-level populations were defined as minority populations for further consideration. Communities identified for further consideration are the PLPT's Reservation and Nixon, which are predominantly Native American, and Wadsworth, which is predominantly Hispanic. Refer to The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b) for additional details and supporting US Census Bureau data.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for environmental justice is depicted on **Figure 3-10,** in **Appendix A**. Key Nevada communities that have been identified as potential "environmental justice populations" of concern include Gerlach, based on the percentage of the population with low income, and the PLPT's Reservation, Nixon, and Wadsworth, based on the percentage of the population with low-income and minority status. Due to the location of the Event, the greatest potential for impacts under all Event alternatives would occur in Gerlach and the PLPT's Reservation, as discussed in detail under Alternative A (Proposed Action).

Alternatives Analysis—Alternative A (Proposed Action)

Under Alternative A (Proposed Action), impacts may occur on identified low-income or minority communities. The Event would be approximately 8.5 miles northeast of the town of Gerlach, and therefore has the potential to result in direct impacts on the members of that community. Similarly, the PLPT's Reservation is located along a major travel route to the Event, and proximity to the Event has led to impacts on this population.

With the proposed phased increase in the Event population to 100,000 bodies on the playa at the maximum Event size, the following impacts brought forward in economic interviews, public outreach meetings, and official public scoping could be maintained or increased:

- Trespassing on private property in Gerlach and the PLPT's Reservation by Event participants
- Vandalism or illegal excavation of cultural artifacts in the PLPT's Reservation
- Noise levels from the Event in Gerlach
- Traffic during the Closure Order period
- Disposal of solid waste by participants
- Water quantity
- Air quality
- An increase in criminal activities including drug use in local communities
- Disruption of community values for the PLPT

Additional details are provided in the Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b).

While impacts described above would occur indiscriminately on area communities, there is the potential for disproportionate adverse impacts on low-income and minority populations in Gerlach and the PLPT's Reservation due to the proximity of these populations in relation to the Event and common Event travel routes. The inclusion of mitigation measures (such as requiring BRC to place dumpsters along Gate Road before the intersection with CR 34 [Mitigation Measure NAT-2; **Appendix E**]) and communication with communities regarding Event issues would minimize the level of impacts, as discussed in relevant resource sections. Implementing Mitigation Measure PHS-6 would reduce impacts that strain emergency services before and after the Event for the PLPT and other local communities that contain low-income and minority populations. Short-term impacts may remain at locally significant levels on traffic (based on unacceptable levels of service [LOS] for some area roads at peak use) as discussed in **Section 3.9.2**, Transportation and Traffic.

EO 12898 requires federal agencies to ensure opportunities for effective public participation by potentially affected low-income populations, minority populations, or tribes. Meetings to gather input on Event issues were conducted in December 2017. These meetings were announced by press release and conducted in Gerlach, Reno, and Lovelock, Nevada. Official public scoping meetings were then held in Fernley and Lovelock in July 2018. These meetings provided opportunity for input from all community members,

including those in identified environmental justice communities. In addition, a socioeconomic interview was conducted with members of the Gerlach Community Advisory Board to gather input on social and economic concerns specific to that community. Consultation and informational meetings to discuss Alternative A (Proposed Action) were also held with the PLPT on August 16, 2017; January 24, 2018; and August 28, 2018.

Specific measures have also been undertaken by BRC to involve local community members in Event planning and to reduce impacts on these communities. BRC is highly involved with the Gerlach community. Approximately eight year-round employees live in Gerlach, and BRC employees and volunteers are involved in the Gerlach Community Advisory Board. BRC also maintains permanent building space in town for storage of materials and operations. BRC provides free internet for citizens of the town year-round.

Measures included in Alternative A (Proposed Action) would facilitate coordination with local communities and provide opportunities to address environmental justice concerns. BRC would meet with Event cooperators to plan, prepare, and debrief each year. Event cooperators would include the BLM and those agencies with federal, state, or county jurisdiction, such as the FAA, Pershing County, Washoe County, the PLPT, and the State of Nevada.

Alternatives Analysis—Alternative B

Under Alternative B, the Event size would be reduced to a population of 50,000. With the reduction in the Event size, it is anticipated that identified concerns for environmental justice communities, as discussed under Alternative A (Proposed Action), would likewise be decreased in intensity, assuming implementation of measures to minimize impacts as discussed above.

Alternatives Analysis—Alternative C

Under Alternative C, the Event would shift to a different location on the playa. Primary access would remain at Eight Mile Road. As a result, impacts on Gerlach and the PLPT's Reservation are anticipated to remain similar to those described in Alternative A (Proposed Action). Moving the Event may result in a reduction in the potential for traffic congestion-related impacts on local communities, especially along CR 34. This is because vehicles would be able to que in the 16-lane on-playa entrance road rather than a comparable distance of the single-lane CR 34. Compared with Alternative A (Proposed Action), a larger on-playa vehicle queuing capacity would result in correspondingly less traffic congestion and delays along SR 447, allowing for a freer flow of traffic.

Alternatives Analysis—Alternative D

Under this Alternative, the BLM would issue an SRP for the Burning Man Event with the same persons on playa cap and conditions as the 2018 Event, including total population of 80,000. Potential impacts on identified environmental justice communities would occur similar to that described in Alternative A (Proposed Action). Without the phased increase in population size, the intensity of impacts would remain similar to current conditions.

Alternatives Analysis—Alternative E

Under Alternative E, the BLM would not issue an SRP, and BRC would not implement Event control and management measures. Due to the historical nature of the Event, Alternative E would likely result in an unauthorized gathering on the playa. In the absence of an organized Event structure, some issues in identified environmental justice communities could be increased in the short term. For example, with a lack of limits on vehicles accessing the playa or organized traffic management, local traffic impacts could be elevated. The BLM may implement management strategies to reduce these impacts. The potential for sustained participation in an unauthorized Event would likely dissipate over time; therefore, related impacts would likewise decrease over time.

3.7.3 Social Values

Affected Environment

The social conditions section is an overview of the Assessment Area demographic conditions, historical social context and demographic trends of the Burning Man Event. Information about values and perceptions of the Burning Man Event is provided for Event participants and local communities, based on data from the BRC, interviews with local stakeholders, and surveys provided at public outreach meetings. Finally, nonmarket contributions are discussed. A summary is provided below, and additional details are provided in The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b).

Socioeconomic Assessment Area Demographic Conditions

Based on 2010 to 2025 population data and forecasts, Churchill, Lyon, and Reno Counites are expected to continue a trend of gradual population increase, with populations remaining static or declining in Humboldt and Pershing Counties. At the municipality level, between 2010 and 2016, the population increased in Reno and Sparks, remained similar in Wadsworth, and declined in the PLPT's Reservation, Empire, Fernley, Gerlach, Lovelock, and Nixon. Additional details are included in The Assessment of Economics, Social Values, and Environmental Justice (EMPSi 2018b).

Event Attendee Demographics

Survey questions in the BRC Census provide insight into Event attendee demographics. Data over the last five years shows an increasing percent of international participants. In 2013, approximately 81.7 percent of attendees were from the US, while in 2017, this number had declined to 76.2 percent. Of attendees from the US, approximately 47.1 percent were from California, and 5.6 percent from Nevada (see The Assessment of Economics, Social Values, and Environmental Justice [EMPSi 2018b] for details).

Surveys data on the age of participants show that the median age of attendees was 34 in 2017. The percentage of participants age 19 and below has declined over the last 5 years, from 2.4 percent in 2013 to 1.1 percent in 2017 (BRC 2017c).

BRC Census data indicate that the percentage of participants identifying as ethnic or racial minorities is increasing; however, the population of Event participants remains less diverse than the general population. In 2017, approximately 17.1 percent of the population identified as belonging to a minority group (i.e., a group other than white/non-Hispanic). In 2017, this number had increased to 22.9 percent. In contrast, in the US population as a whole, the percentage of minorities increased from 36.0 in 2013 to 37.9 in 2017 estimates based on US Census Bureau data (US Census Bureau 2017).

Median personal income levels of Event participants have been increasing over the past 5 years, climbing from $51,100 in 2013 to $60,700 in 2017 (BRC 2017c), an 18.8 percent increase in nominal values (not corrected for inflation). In addition, the percentage of the population who makes over $100,000 in income has increased from approximately 21.2 percent in 2013 to 27.1 percent in 2017. This is a greater increase than the per capita personal income reported for the US, which increased from $44,489 in 2013 to $50,392 in 2017, a 13.3 percent increase in nominal terms (Bureau of Economic Analysis 2017). While the higher income of participants may indicate the potential for higher spending for the Event, it should be noted that some of the highest earning participants fly directly to the Event at the Black Rock City airport, and therefore are less likely to spend money in the local economy on route to the Event.

Values and Perceptions by Event Participants

The ten principles of Burning Man were established in 2004, by Burning Man co-founder Larry Harvey. These principles provide guidelines for the Burning Man Event ethos and culture, and include radical inclusion, gifting, decommodification, radical self-reliance, radical self-expression, communal effort, civic responsibility, Leave No Trace®, participation, and immediacy.

As the Burning Man Event has grown from an Event with less than 50 people on Baker Beach in San Francisco, to the current Event of 70,000 participants in the Nevada desert, change has been inevitable. Burning Man has become a cultural phenomenon. Every year, media coverage around the time of the Event results in a barrage of viewpoints about the Event and Event growth, both positive and negative. The original Burning Man Event has expanded to include other activities and initiatives throughout the year, based on the ten principles, including but not limited to the Burning Man arts programs and civic initiatives such as the Burners Without Borders community volunteer program. In addition, participants have opportunities to participate in global and regional networking events to connect with like-minded individuals. Additional information on the history, principles, and general information related to the Event is available at the Burning Man website; see https://burningman.org/culture/.

The BRC Census collects data on values and perceptions from participants. In the 2017 BRC Census, 78.7 percent of attendees felt that the ten principles were important or very important to them, and 73.3 percent of all respondents felt that the ten principles were essential to creating an authentic Burning Man experience (BRC 2017c). Attendees also reported that they had brought these principles back to their lives off the playa, 64 percent reported they incorporated the ten principles into their workplace, and 45 percent noted changes in their neighborhoods or communities after the Event in line with the ten principles (BRC 2017c).

Some participants feel that recent changes in the Event are not in keeping with the principles of Burning Man. For example, recent years have seen an increase in turnkey camps where participants can contribute a fee to a private party to have all Event food and accommodations provided. Use of such turnkey camps has become popular with celebrities and technology industry executives. BRC does not sponsor these camps, and information on costs for services is not available. Media coverage recently has discussed luxury camps and reported that some cost as much as $50,000 for all-inclusive services (see, for example, the *New York Post* 2018, *SFGate* 2017, *New York Times* 2014, and *Washington Post* 2018). BRC notes that a camp that is truly commercial in nature, meaning that it seeks to reap financial gain, publicly advertises for customers, and does not contribute to the greater community, is not in line with Burning Man's principles (BRC 2018a). Some participants feel that Burning Man's radicalism is being challenged by its appropriation (Fortune 2018). Others feel that the presence of celebrities and other nontraditional burners does not diminish the overall spirit and experience on the playa, if those participants embrace the principles of Burning Man (Washington Post 2018).

Minors at the Event were noted as a concern by local communities. In 2016, the BRC Census polled participants on the issue of child safety; 70.5 percent of respondents believed that children were safe at the Event, 19.3 percent cited that they were unsure, and 10.5 percent felt that children were not safe. Of those who felt that children were unsafe, 8.5 percent cited physiological dangers, and 6.8 percent cited physical dangers and as the primary concern. In addition, regarding the question of whether the Event should be age restricted, 68.4 percent of respondents said no, and 13.2 percent said yes in 2017 data (BRC 2017c).

Social Contributions

BRC provides social contributions for local communities in the form of cash and noncash contributions. Some contributions include Event credentials to community members of Gerlach and the PLPT's Reservation, civic partnerships, as well as approximately $36,500 of cash donations to organizations throughout Nevada, including local organizations in Lovelock, Gerlach, and northern Nevada in 2017 (BRC 2017b).

Values and Perceptions by Local Communities

Based on input received from public scoping, socioeconomic interviews with local communities and stakeholders, and input from tribal leaders, there is a wide range of perception of the Burning Man Event.

When asked if the Event was in alignment with local community cultures and values, answers varied based on the community. City of Reno participants stated that the community has an "overwhelmingly positive" perception of Burning Man, and the art and culture that it contributes to the city are in alignment with the values of that community. Participants also stated that Burning Man has changed the image of the Reno area on a global scale, making it more attractive to younger people and associating the area with progressive thinking. In contrast, representatives from Pershing County, which cited its small-town agrarian values, felt that the actions permitted at the Event (such as drug use and nudity) were in conflict with the values of their community. Of particular concern was exposure of minors to these issues.

In the PLPT's Reservation, representatives expressed concern about the increased risk of drug use and other criminal elements brought through the reservation by Event participant traffic. The PLPT recently released a Burning Man Safety Plan that provided goals to reduce potential issues with drugs, particularly opioids. Representatives also noted that tribal values include respect for and support of tribal elders. Representatives feel that nudity and the conduct of participants as well as congestion from the Event are not in alignment with the values and affect the ability to support tribal elders (PLPT 2018).

There was also a spectrum of responses related to the impacts that the Event had on local communities. Participants in Fernley, Reno, and Washoe County socioeconomic interviews noted that there can be significant sales increases and sales tax contributions due to the purchase of supplies by participants on route to the Event. Grocery stores, gas stations, storage units, and other shops experience increased sales during this time. Socioeconomic interviews with local hotels and casinos highlighted the contributions to hotel taxes and impacts on room occupancy; hotels experience full capacity even with rate increases during the Event. In addition to the above impacts, Reno reported that the impact of the Event on the airport is significant. The Event increases revenue at the airport between 11 and 15 million dollars. On the other end of the spectrum, in Pershing County, the Event is seen to result in costs to community services (such as law enforcement and courts) and with little economic contributions, as Lovelock and other Pershing County towns are not main stops along participant travel routes.

Participants in the socioeconomic interviews in Washoe County, Lyon County, Fernley, and Gerlach also noted that there are tradeoffs related to the Event. Interviewees identified a wide range of impacts on community services caused by the Event, but the issue identified by almost all communities was the increased demands on waste management. Businesses require extra dumpsters to keep pace with waste, and communities as a whole see increased needs for waste management, as well as an uptick in litter during and after the Event. Law enforcement, fire, and emergency medical services also experience an increase in demand related to entry and exit to the Event. These reports varied between communities. Most communities reported impacts from traffic. Air quality declines due to increased dust were also noted as a concern. Damage to roadways and the costs associated with disposal of waste and abandoned vehicles along roads were also noted in multiple interviews.

For local residents or business owners along travel routes to and from the playa, the traffic of tens of thousands of participants traveling through the area can be a substantial inconvenience and disruption to daily life for the time leading up to, during, and immediately after the Event. This may represent impacts on the quality of life for area residents. Impacts are the highest in the area immediately surrounding the Event, in particular in the town of Gerlach. Representatives from the PLPT also noted that the economic benefits of the Event did not outweigh the impacts on the community. Although some tribal members who act as roadside vendors may receive some economic benefit from the increased traffic from participants on route to the Event, the interruption of daily life, and costs to services outweigh these benefits. Specific social concerns noted include loss of productivity (i.e., at tribal clinic) and the ability to perform daily activities due to traffic associated with the Event, and lack of cultural respect and service for tribal members in local stores due to overcrowding during the Event. Other community services affected due to increased

demand include the public utilities district trash and waste management, emergency medical services, and law enforcement.

Most communities interviewed did not specifically report that the demand of services outpaced their ability to meet them with current staffing levels. Increased demand was noted as a concern, particularly for Pershing County and the PLPT. Gerlach Fire Department noted that a quarter of their demand over the entire year occurs during the Event, with staff doubling at that time. Gerlach also reported that it had increasing concerns related to their water supply due to increased demand during the Event. The community relies on supplemental water supply sales to keep delivery low for residents, but some feel that a cap on sales is needed to ensure a sufficient supply for the community for needs like fire control.

In addition, comments received at socioeconomic scoping and in interviews noted that the Event can affect other uses in the NCA, which are important to local community members, by making the playa temporarily unavailable, as well as by limiting access to other portions of the NCA. These include activities such as hunting and rocket launching as discussed in **Section 3.8.1**, Recreation.

Nonmarket Values

Economists sometimes divide all goods and services into two broad categories: market, and nonmarket. "Market" goods and services are those for which a market exists or can exist, meaning that it is possible to buy and sell those goods and services. Nonmarket values reveal the benefits individuals attribute to experiences of the environment, uses of natural resources, or the existence of particular ecological conditions that do not involve market transactions, and therefore lack prices. Public lands provide both market and nonmarket goods and services. An example of a nonmarket value affected by the management of public lands is the supply of clean water for people and wildlife. Ecosystem goods and services include a range of human benefits resulting from appropriate ecosystem structure and function, such as flood control from intact wetlands. Some involve commodities sold in markets. Others do not commonly involve markets, and thus reflect nonmarket values.

A broad range of ecosystem services are supported by the playa and the NCA on which the Burning Man Event is located. Some examples of goods and services with potential to be affected by proposed management are shown in **Table 3-17**, below, following the Millennium Ecosystem Assessment Classification System (MEA 2005).

Table 3-17
Assessment Area Ecosystem Goods and Services Supported by BLM-Administered Lands

Provisioning	Supporting	Regulating	Cultural
• Drinking water • Hunting habitat and resources	• Waste treatment and nutrient cycling • Habitat for fish and wildlife	• Contribution to clean, fresh air and water • Regulation of climate	• Views and scenery for local recreationalists and communities • Cultural or spiritual resources • Recreation sites

Source: based on MEA 2005

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The assessment area for social values is depicted on **Figure 3-10,** in **Appendix A**. The Event has the potential to result in impacts on local communities' social setting. While most impacts would be short term and limited to disruption due to the temporary population increase in the area associated with the Event, Event actions that conflict with social values of local communities may be perceived as longer-term impacts. Mitigation Measure PHS-5 would require BRC to minimize disruptions of services to the PLPT and local communities, reducing social values and environmental justice impacts. In addition, all Event

alternatives have the potential to result in short-term impacts on nonmarket values provided by the playa. These include values associated with air quality, climate, playa resources, noise and visual impacts for other land users or communities, and water quality impacts. The level of impacts would vary by alternative as described below.

Alternatives Analysis—Alternative A (Proposed Action)

Values and Perceptions of Community Members. Under Alternative A (Proposed Action), Event activities have the potential to affect community values and social setting. These impacts are short term in nature and include but are not limited to increased traffic, trash, dust, and other waste along roadsides. Impacts could occur over the 78 days of occupancy of the playa each year over the 10-year planning period but would be concentrated in the few weeks surrounding the Event each year. As discussed in **Section 3.9.2**, Transportation and Traffic and **Section 3.5.2**, Waste, impacts would be highest for communities closest to the Event, such as Gerlach. With an incremental increase in the Event size, there is the potential for impacts to be elevated over the current condition with a gradual increase in impacts, with maximum impacts at maximum Event size. Measures included in Alternative A (Proposed Action) and mitigation proposed in **Appendix E,** as detailed in relevant resources sections, to minimize impacts would reduce the impacts on the community social setting, but localized impacts may remain.

Additional impacts may occur where community members feel a disconnect between Event actions and community values. Alternative A (Proposed Action) does not include an age limitation on minors; therefore, this issue would continue to conflict with some local communities' values, including Pershing County and the PLPT's Reservation. Concerns about exposure of minors to nudity and illegal drug use as well as concerns about the safety of minors would continue to be an issue. BRC's Plan for Safety & Welfare of Minors at Burning Man included in the annual operation plan would provide protocols to minimize impacts on minors.

Similarly, overall use of drugs and alcohol at the Event are likely to remain a concern. In Alternative A (Proposed Action), BRC has an illegal substance policy that would be communicated to all participants and staff to minimize impacts. Terms on the back of the Event ticket state that the ticketholder agrees to read and abide by all rules in the Burning Man Survival Guide and to follow all applicable federal, state, and local laws. In addition to these terms, BRC would educate participants and staff about federal, state, and local laws concerning the sale and use of illegal substances.

Positive contributions to local communities from BRC would also continue or be elevated under Alternative A (Proposed Action). For example, social contributions from BRC would likely continue under Alternative A (Proposed Action), supporting the arts. BRC has previously provided art from the Event for display in Reno. Money collected from ice sales at the Event supports donations to local organizations; therefore, increased ice sales could support increased contributions.

Impacts on Other Land Users. Other recreationalists may continue to be affected by the Event under Alternative A (Proposed Action). As detailed in **Section 3.9.1**, Recreation, the two-phased Closure Order under Alternative A (Proposed Action) would allow other permitted activities to operate closer to the Event perimeter once the Closure Order boundary retracts in size after the Event. Following the Event, the smaller Closure Order boundary and traffic associated with takedown activities and debris cleanup could preclude access to preferred launch locations for rocket launching; therefore, this activity is likely to be affected.

Similarly, heavy congestion on nearby roadways, especially during peak Event arrival and departure times, would deter or limit access for non-Event attendees. The greatest potential impact would be on those participating in big game hunting, camping, and OHV use. Outside of the Event time period, visitors to the NCA, and the values and perceptions of these visitors, may be altered by the Event. Past participants are

often interested in returning to the NCA. These visitors may desire different experiences and land uses than those who have traditionally visited the NCA. As a result, there is a potential for conflicts between users in the NCA.

Values and Perceptions of Event Participants. With increased Event size, there may be increased potential for changes to the values and setting of the Event. Increasing the number of participants arriving via bus or plane due to limitations on vehicle passes may result in the need for additional turnkey camps to support burners who cannot transport supplies. An incremental increase of Event size may result in gradual changes over time and allow adaptation of the Event, reducing the level of impacts on the Event setting. As noted in the Affected Environment, if attendees attend the Event in the spirit of the ten principles, nontraditional burners and population size may not affect the setting and values at the Event.

Nonmarket Values. An increase to the Event size under Alternative A (Proposed Action) has the potential to result in elevated impacts on nonmarket values supported by the playa, as identified in the Affected Environment. Impacts on air quality and climate conditions, as discussed in **Section 3.6.1**, Air Quality, may occur as a result from increased emissions from vehicles and aircraft and due to increased particulate matter from playa dust. These impacts may degrade the quality of air or contribute to changing climate conditions affecting the value of these services. Similarly, any degradation of water quality could result in direct impacts on this supporting service, as well as impacts on hunting or drinking water. Likewise, impacts on habitat for fish and wildlife could affect the intrinsic value from these species, or the value from hunting certain species. In addition, noise and visual impacts from the Event may affect the recreational setting for users or the setting for communities, affecting the value of recreation experiences or other cultural services. Measures included in Alternative A (Proposed Action) and detailed in relevant resources sections to minimize impacts could reduce the reduction in nonmarket values as a result of Event activities; however, impacts are likely to remain.

Alternatives Analysis—Alternative B

Impacts under Alternative B would be similar in nature to those under Alternative A (Proposed Action). Under Alternative B, reducing the Event population size to 50,000 would reduce the intensity of impacts on local communities as compared with Alternative A (Proposed Action). In addition, the potential for impacts on nonmarket values would be reduced. Impacts on other land users may be reduced by decreased traffic levels, but Alternative B would not include a phased Closure Order; therefore, a smaller area would be closed for a 42-day Closure Order period as compared with Alternative A (Proposed Action), potentially decreasing effects on access and other activities.

Reducing the Event size would reduce the ability of participants to attend the Event, as well as the connection with the ten principles that participants value from the Event.

Alternatives Analysis—Alternative C

Impacts under Alternative C would be similar to those described under Alternative A (Proposed Action). Moving the Event location to an alternative site on the playa is not likely to result in additional impacts on the community or participant social setting; Gerlach would remain the closest town to the Event, and travel routes would remain similar. Moving the Event may result in a reduction in the potential for traffic congestion-related impacts on local communities and related quality of life impacts. This is because vehicles would be able to que in the 16-lane, on-playa entrance road rather than a comparable distance of the single-lane CR 34. Impacts on recreation could be increased under Alternative C due increased conflicts with ongoing Events.

Removing the incremental increase in the Event size may result in more rapid changes to the setting and increase the potential for changes to perception of the Event by participants.

As under Alternative B, not including a phased Closure Order would result in a larger area remaining closed throughout the entire 78-day closure period as compared with Alternative A (Proposed Action), potentially affecting access to other activities.

For nonmarket values, impacts could be increased should the Event occur in areas with previously undisturbed resources or with unique values.

Alternatives Analysis—Alternative D

Impacts under Alternative D would be similar in nature to those described under Alternative A (Proposed Action). Due to the lack of an incremental population increase, impacts on local communities from trash, traffic, and other factors would be reduced compared with Alternative A (Proposed Action). Similar to the affected environment, issues noted of concern would likely remain but could be mitigated by measures included in Alternative A (Proposed Action) or as stipulations to reduce impacts on local communities. The potential for impacts on Event participants, nonmarket values, and other land uses would remain as described under existing conditions.

Alternatives Analysis—Alternative E

Under Alternative E, the BLM would not issue an SRP, and BRC would not implement Event control and management measures. Due to the historical nature of the Event, Alternative E would likely result in an unauthorized gathering on the playa. In the absence of an organized event structure, some identified social issues associated with the Event could be increased in the short term. For example, the potential impacts of trash and traffic concern, as well as concerns about illegal substance abuse and law enforcement issues, could all be increased in the absence of a formal SRP. BLM management would be required to minimize impacts on local communities' quality of life and nonmarket values in the area.

Additional impacts would occur for those in local communities. Those who value the arts and cultural contributions of the Event would be affected by a lack of a formal event and discontinued coordination of social contributions. As discussed in socioeconomic interviews, Reno values the Event for cultural contributions as well as for the changes it has brought to the perception of the city. In interviews with community representatives in Gerlach, attendees noted that the Event brings in new life to a community that might otherwise die. Without the economic contributions and social interactions with the Event, the social and economic setting of Gerlach would be drastically altered.

In addition, the lack of a sanctioned Event would affect participants. As discussed in the Affected Environment, participants place a high value on the principles of the Event and the opportunities to expand the experience through interactions with the Event community throughout the year in networking and cultural events. In the absence of a sanctioned Event, these opportunities would be reduced.

The potential for sustained participation in an unauthorized event would likely dissipate over time. As such, impacts on law enforcement, trash, crowds, and other issues affecting the quality of life of local communities would be reduced; however, the potential impacts for those that value the contributions of the Event as local community members or participants would be increased.

3.8 SPECIAL DESIGNATIONS

3.8.1 National Conservation Areas

Affected Environment

The Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 (NCA Act of 2000) established this NCA in Nevada 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

and surrounding areas (Pub. L. No. 106-554 Appendix D-1) (see **Figure 3-11**, Special Designations in **Appendix A**).

The NCA Act of 2000 designated specified lands in Nevada as wilderness, for inclusion in the National Wilderness Preservation System (Pub. L. No. 106-554 Appendix D-1). These lands are in Black Rock Desert, Pahute Peak, North Black Rock Range, East Fork High Rock Canyon, High Rock Lake, Yellow Rock Canyon, Little High Rock Canyon, High Rock Canyon, Calico Mountains, South Jackson Mountains, and North Jackson Mountains Wilderness Study Areas (WSAs).

The Black Rock Desert-High Rock Canyon Emigrant Trails NCA hosts a multitude of recreational opportunities and encompasses nearly 120 miles of emigrant trails, the Black Rock Desert, and High Rock Canyon. The most popular attractions are the Black Rock Desert playa, the narrow gorge of High Rock Canyon, the natural hot springs, and historic wagon trails (BLM 2017c). See **Section 3.9** for more information on recreation and visitor use in the Black Rock Desert-High Rock Canyon NCA.

The NCA Act of 2000 contains language that supports the permitting of large-scale events, such as the Event. The act states that, "The Black Rock Desert Playa is a unique natural resource that serves as the primary destination for the majority of visitors to the [NCA], including visitors associated with large-scale permitted events. It is expected that such permitted events would continue to be administered in accordance with the management plan for the [NCA] and other applicable laws and regulations" (Pub. L. No. 106-554 Appendix D-1). The number of Burning Man Event participants was approximately 25,400 people in 2000 (BRC 2018k).

Environmental Consequences

Direct and Indirect Impacts from Alternatives

The assessment area for national conservation areas is depicted on **Figure 3-11** in **Appendix A**. As described in the *Affected Environment*, above, the 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 the analysis of direct and indirect impacts from the Burning Man Event on these values, refer to the following sections: **3.3.3**, Threatened and Endangered Species; **3.3.5**, Wetlands and Riparian Areas; **3.3.6**, Wildlife; **3.4.1**, Cultural (Including National Historic Trails); **3.4.3**, Paleontology; **3.6.4**, Visual Resources (Including Night Skies); **3.7**, Social Values and Economics; and **3.8.2**, Wilderness.

Alternative A (Proposed Action)

Under Alternative A (Proposed Action), impacts on the NCA could occur due to increased use by visitors introduced to the area by the Burning Man Event. Primary activities during visits to the NCA include camping, hunting, model airplane and rocket launching, OHV use, and social gatherings or festivals, such as the Burning Man Event. Approximately 16 percent of Event participants are thought to return to the Black Rock Desert outside of the Event period, which would result in an estimated 12,800 to 16,000 additional visitors to the NCA with Event populations of 80,000 to 100,000 (BRC 2017c). Other potential impacts on recreational activities are summarized in **Section 3.9.1**, Recreation.

Mitigation measures could be implemented to reduce impacts on the NCA, such as requiring the proponent to post a reclamation bond to remove large art installations and theme camps that are left behind after the Event. This bond would remove the risk of unnecessary or undue degradation to the NCA. Also, the BLM could provide permittees of other events or uses of public lands with car passes for easy transit across the playa during the Event to reduce user conflicts (Mitigation Measures NCA-1 and NCA-2; **Appendix E**).

Alternative B

Impacts would be similar to those described under Alternative A (Proposed Action), but they would occur to a lesser degree due to fewer bodies on the playa and a shorter Closure Order period. An estimated 8,000 visitors would return to the Black Rock Desert outside of the Event period (BRC 2017c).

Alternative C

Impacts on the NCA would be the same as those described under Alternative A (Proposed Action).

Alternative D

Impacts on the NCA would be similar to those described under Alternative A, but they would occur to a lesser degree due to fewer bodies on the playa and a longer Closure Order period. An estimated 12,800 visitors would return to the Black Rock Desert outside of the Event period (BRC 2017c).

Alternative E

If an unpermitted event occurred, it could cause some of the same impacts described for Alternative A (Proposed Action), but to a lesser degree due to fewer people on the playa. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. If a substitute event occurred on lands not administered by the BLM, impacts on the NCA would depend on where within the NCA a substitute event would occur.

3.8.2 Wilderness

Affected Environment

Wilderness Areas in the Assessment Area are shown on **Figure 3-11** in **Appendix A** and are summarized in **Table 3-18**.

The Black Rock Desert–High Rock Canyon Emigrant Trails NCA Act of 2000 (Public Law 106-554) designated these eight and two other Wilderness Areas and added them to the National Wilderness Preservation System. Of the Wilderness Areas designated by the NCA Act of 2000, only North Jackson Mountains and South Jackson Mountains are completely excluded from the Assessment Area. The eight Wilderness Areas wholly or partially within the NCA surround the area of the Black Rock playa.

Table 3-18
Wilderness Areas in the Assessment Area

Wilderness Area	Acres[1]	Location Relative to Event Closure Area
Black Rock Desert	314,800	18 miles northeast
Calico Mountains	65,000	6 miles north
East Fork High Rock Canyon	52,600	34 miles north
High Rock Canyon	46,500	32 miles northwest
High Rock Lake	59,100	19 miles north
Little High Rock Canyon	48,400	25 miles northwest
North Black Rock Range	30,700	39 miles northeast
Pahute Peak	56,900	22 miles northeast
Total	**674,000**	**-**

Source: BLM GIS 2018

[1] Acreages have been calculated in GIS and rounded to the nearest hundred acres.

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

In general, discussions of impacts on Wilderness Areas tend to be more qualitative in nature, measured by the overall visual quality and naturalness of an area that could be affected by changes to levels of recreational activities, development, and surrounding land use. Although public access to nearby

Wilderness Areas would be retained during the Event, Event-related traffic congestion could inconvenience Wilderness visitors. Effects would be greatest during periods of Event ingress and egress, but increased traffic volume would also be expected before, after, and throughout the Event period.

Impacts on air quality that could degrade a visitor's scenic experience could result from increases of fugitive dust, vehicle exhaust emissions, and particulates in the vicinity of the Event as a result of increased traffic, ground disturbance, and fires. Increased visitation, noise, and night sky impacts from activities occurring during the Event could affect the ability of Wilderness visitors to enjoy predominantly natural, solitary, and quiet recreation.

Alternatives Analysis—Alternative A (Proposed Action)

The Wilderness Areas in the Assessment Area are north of the Closure Area. Wilderness Areas closest to the Event site under Alternative A (Proposed Action) are the Calico Mountains and Black Rock Desert Wildernesses, which are 6 and 18 miles from the Closure Area, respectively.

Access to most Wilderness Areas in the Assessment Area is generally provided by a number of semi-primitive and primitive roads and the maintained Soldier Meadows Road north of CR 34 (see **Figure 3-13** in **Appendix A**). Under Alternative A (Proposed Action), vehicle traffic congestion could inconvenience Wilderness Area visitors to varying degrees before, during, and after the Event. As summarized in the Traffic Analysis (Solaegui Engineers 2018), CR 34 would operate at unacceptable levels of service for a few days of the year during the Event, which could directly affect access to Wilderness Areas. Traffic operations on CR 34 are mostly dependent on the release of traffic at the Event main gate, so the degree of impact would be determined by the control of traffic in and out of the Event. State licensed flaggers would be used along CR 34, which would help ensure that traffic flows more smoothly during peak Event travel times.

Under Alternative A (Proposed Action), two passenger airport runways and one medical evacuation runway would be used, and approximately 2,200 people would arrive by Burner Express Air. There is no specific prohibition of overflight of Wilderness Areas by aircraft, but this activity could disrupt the Wilderness visitors' experience (BLM 2012c). Requiring the BRC to inform all pilots landing at Black Rock Airport of nearby Wilderness Areas (see **Appendix E**) would reduce the impact of low-flying aircraft on visitors' opportunities for solitude. Other potential impacts related to vehicles and aircraft are summarized under **Section 3.9.2**, Transportation and Traffic.

Wilderness Areas near the Event are managed as Class II air quality attainment areas, as designated by the Clean Air Act and summarized in the Black Rock Desert–High Rock Canyon NCA RMP (BLM 2004c). Air quality within the Wilderness Areas is considered good due to their remote locations, but dust storms and wild fires temporarily reduce air quality with increased particulate matter within the region (BLM 2012a). Alternative A (Proposed Action) could affect the scenic quality of Wilderness Areas visitors. As summarized in the Air Resources Baseline Technical Report (Strohm 2018a), for data collected during the 2017 Event, the Event site was above the health-based thresholds for all Event periods when air quality monitors were operating. Although wildfire smoke may have had an impact on playa particulate concentrations, the mass of crustal playa material on monitoring filters suggests that the main contributor to playa concentrations emissions generated from vehicular and human traffic on the playa. This increase in fugitive dust, vehicle exhaust emissions, and particulates in the vicinity of the Event is expected to increase under Alternative A (Proposed Action) as a result of increased traffic, ground disturbance, and fires. Alternative A (Proposed Action) would temporarily reduce air quality impacts by implementing dust abatement along designated routes and streets within the Event. Other potential impacts related to air quality are summarized under **Section 3.6.1**, Air.

Noise created from Event activities under Alternative A (Proposed Action) are not expected to significantly affect the solitude experience of Wilderness Area visitors. The LT-4 Monitor station was placed on the eastern boundary of the Calico Mountains Wilderness along Soldier Meadows Road to measure noise levels during the 2017 Event. As summarized in the Noise Impact Assessment (Salter 2018), for data collected during the 2017 Event, measured noise that exceeded ambient levels was mostly due to wind storms and airplane flybys and not from Event activities. Other potential impacts related to acoustics are summarized under **Section 3.6.2**, Noise.

There could be impacts on opportunities for solitude in Wilderness Areas due to increased use by visitors introduced to the area by the Burning Man Event. Approximately 16 percent of Burning Man participants are thought to return to the Black Rock Desert outside of the Event period (BRC 2017c), which would result in an estimated 12,800 to 16,000 visitors with Event populations of 80,000 to 100,000 people. Although not all of these people would visit Wilderness Areas, a small increase in visitors would represent a large relative change. Other potential impacts on recreational activities are summarized under **Section 3.9.1**, Recreation.

Under Alternative A (Proposed Action), scenic values and activities, such as stargazing, could be affected within Wilderness Areas. Due to the varied topography and hummocks between Wilderness Areas near the Event, direct scenic impacts and artificial light pollution would mostly occur in the far southern areas of the Calico Mountains, Pahute Peak, and Black Rock Desert Wilderness Areas. As summarized in the Artificial Light at Night Assessment (Craine and Craine 2018), increasing the population of Event attendees would be expected to have a relatively small impact on the average radiance per night. Other potential effects on visual resources and night skies are addressed under **Section 3.6.4**, Visual Resources (Including Night Skies).

Alternatives Analysis—Alternative B

Impacts would be similar to those described under Alternative A (Proposed Action), but they would occur to a lesser degree due to fewer participants and a shorter Closure Order period.

Alternatives Analysis—Alternative C

Impacts would be similar to those described under Alternative A (Proposed Action), but would occur to a greater degree, due to the Event occurring closer to nearby Wilderness Areas. The Wilderness Areas nearest the Event site under this alternative are the Calico Mountains and Black Rock Desert Wilderness Areas, which are approximately 4.2 and 14.2 miles from the Event site, respectively.

Alternatives Analysis—Alternative D

Impacts would be the same as those described under Alternative A (Proposed Action) but impacts would not increase over time.

Alternatives Analysis—Alternative E

If an unpermitted event occurred, it could cause some of the same impacts as described for Alternative A (Proposed Action), but to a lesser degree, due to fewer event participants. BLM regulations would remain in effect even if the event were not officially permitted and stipulated. If a substitute event occurred on lands not administered by the BLM, impacts on Wilderness Areas would depend on the proximity of Wilderness Areas to a substitute event. In addition, impacts would decrease over the long term as participation declines.

3.8.3 Wilderness Study Areas

Affected Environment

WSAs in the Assessment Area are shown on **Figure 3-11** in **Appendix A** and are summarized in **Table 3-19**.

The Nevada BLM Statewide Wilderness Report (BLM 1991) describes each WSA in detail.

Table 3-19
Wilderness Study Areas in the Assessment Area

Wilderness Study Area	Acres[1]
Fox Range	75,700
Massacre Rim	101,400
Mount Limbo	24,900
Pole Creek	13,000
Poodle Mountain	141,700
Selenite Mountains	32,000
Twin Peaks	92,100
Total	**480,800**

Source: BLM GIS 2018

[1] The acreages have been calculated in GIS and rounded to the nearest hundred acres; therefore, they may slightly differ from the acres provided in the wilderness report to Congress. Detailed descriptions of the characteristics and other resource values and uses found in each of the WSAs are included in the Nevada BLM Statewide Wilderness Report (BLM 1991).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

Actions associated with each alternative in which the Event would be held could affect the indicators of WSAs in the Assessment Area. Impacts common to all Event alternatives for WSAs are the same as those described under **Section 3.8.2**, Wilderness.

Alternatives Analysis—Alternative A (Proposed Action)

The Assessment Area WSAs nearest to the Event site are the Selenite Mountains, Poodle Mountain, and Fox Range WSAs, which are approximately 1.5 miles south, 11 miles west, and 12 miles southwest from the Closure Area, respectively. Access to these WSAs is generally provided by a number of semi-primitive and primitive roads and SR 447 (see **Figure 3-13** in **Appendix A**). Under Alternative A (Proposed Action), vehicle traffic congestion could inconvenience WSA visitors to varying degrees before, during, and after the Event. As summarized in the Traffic Analysis (Solaegui Engineers 2018), SR 447 would operate at a low level of service (E) during peak arrival and departure times of the Event, which could directly affect access to WSAs.

Due to the similar indicators for WSAs and Wilderness Areas, impacts on WSAs from overflight operations, fugitive dust, and night skies would be the same as those described in **Section 3.8.2**, Wilderness.

Because of the close proximity of the Selenite Mountains, Poodle Mountain, and Fox Range WSAs, it is possible that some waste from the Event could be blown onto the WSAs. Cleanup procedures, such as the BRC's playa restoration crew cleaning all areas within the perimeter fence and the BRC's highway restoration crew cleaning debris along roads and highways surrounding the Event, would minimize potential effects related to wastes and the potential for litter to be blown onto nearby WSAs.

Noise created from Event activities under Alternative A (Proposed Action) are not expected to significantly affect the solitude experience of WSA visitors. The LT-1 Monitor station was placed along Transfer Station Road (see **Figure 3-13** in **Appendix A**) to measure noise levels during the 2017 Event. As summarized in the Noise Impact Assessment (Salter 2018), for data collected during the 2017 Event, measured noise that exceeded ambient levels was mostly due to wind storms and airplane flybys, and not from Event activities. Other potential impacts related to acoustics are summarized in **Section 3.6.2**, Noise.

Alternatives Analysis—Alternative B

Impacts would be similar to those described under Alternative A (Proposed Action), but they would occur to a lesser degree due to fewer participants and a shorter Closure Order period.

Alternatives Analysis—Alternative C

Impacts would be similar to those described under Alternative A (Proposed Action) but would occur to a lesser degree because of the Event's location further from nearby WSAs. The WSAs closest to the Event site under Alternative C are the Selenite Mountains, Poodle Mountain, and Fox Range WSAs, which would be approximately 4.6, 5.6, and 16.8 miles from the Event site, respectively.

Alternatives Analysis—Alternative D

Impacts would be the same as those described under Alternative A (Proposed Action) but would not increase over time.

Alternatives Analysis—Alternative E

If an unpermitted event occurred, it could cause some of the same impacts described for Alternative A (Proposed Action), but to a lesser degree, due to fewer event participants. BLM regulations would remain in effect, even if the event was not officially permitted and stipulated. If a substitute event occurred on lands not administered by the BLM, impacts on WSAs would depend on the proximity of any WSAs to a substitute event site.

3.9 VISITOR USES

3.9.1 Recreation

Affected Environment

Most aspects of the affected environment described in the Burning Man 2012–2016 SRP EA (BLM 2012a) still apply and are incorporated into this EIS by reference. Information not included in the EA, or elements of the affected environmental that have changed since 2012, are summarized below.

Visitor Use

Most visitors come to the NCA when the playa is dry (usually June through October), with most people participating in organized special recreation events (BLM 2003), including the Burning Man Event in late August through early September. Dispersed users of the playa and NCA are generally seeking solitude in the vast undeveloped region. Visitation from 2010 to 2018 to the BLM Black Rock Field Office is provided in **Table 3-20**, below.

The BLM permits commercial guides and outfitters to operate in the NCA and wilderness and on designated routes in the Assessment Area. Commercial uses include hunting, hiking, and OHV tours on boundary roads and cherry stem roads. The BLM's Winnemucca District Office is responsible for issuing guide and outfitter permits.

Table 3-20
Annual Visitation to Black Rock Desert–High Rock Canyon NCA (2010–2017)*

Visitors	2010	2011	2012	2013	2014	2015	2016	2017
Number of visitors per year to BLM Black Rock Field Office	107,311	110,772	154,977	116,857	128,723	131,300	170,825	168,164

Source: BLM GIS 2018
*For prior fiscal year ending September 30

Recreation

The NCA and surrounding public lands host a multitude of recreation opportunities, which are described in the 2012 Burning Man EA (BLM 2012a). Recreation on the Black Rock Playa can be categorized as either a permitted activity or casual, dispersed recreation. Multiple activities occur in each category. Visitor use for selected activities in the NCA are provided in **Table 3-21**, below.

Table 3-21
Visitor Use by Activity (2010–2017)*

Activity**	2010	2011	2012	2013	2014	2015	2016	2017
Camping and picnicking	35,294	87,216	80,129	93,453	103,528	105,479	156,104	90,372
Driving for pleasure	14,301	14,445	14,262	12,219	12,362	13,673	735	7,573
Fishing	278	281	231	281	265	273	100	75
Hunting	8,240	7,991	7,975	7,899	8,414	8,406	529	15,107
Interpretation, education, and nature study	15,738	21,795	20,266	22,483	23,763	24,597	12,970	20,828
Nonmotorized travel	22,137	22,436	21,855	21,843	22,301	22,950	64,934	3,644
OHV travel	34,421	56,042	52,330	57,613	62,692	64,255	41,950	60,706
Hang gliding and parasailing	179	181	166	181	185	195	250	200
Land and sand sailing	1,067	2,180	2,074	2,133	2,346	2,470	1,750	2,400
Model airplane and rocket flying	1,449	315	138	N/A	N/A	12	N/A	14
Photography	10,742	10,850	10,525	9,537	9,778	10,548	54,942	5,476
Rockhounding and mineral collection	2,678	2,705	2,490	2,477	2,730	2,894	1,700	4,860
Social gatherings, festivals, and concerts***	51,515	N/A	52,385	N/A	N/A	N/A	70,000	60
Specialized sports and nonmotor events	498	677	513	366	N/A	435	N/A	700
Target practice	5,860	5,919	5,523	5,691	N/A	6,172	2,823	4,486

Source: BLM 2018
*Data in this table will be verified and updated for the Final EIS
**Visitors may report engaging in more than one activity
***Includes the Burning Man Event for 2010, 2012, and 2016

Camping

Recreational camping is described in detail in the Burning Man 2012–2016 SRP EA (BLM 2012a). EWH31 and Coyote Dunes are in the Closure Area and are closed during the Burning Man Event (see **Figure 3-12,** Recreation, in **Appendix A**). Additional campsites in the Assessment Area are on private lands.

Other dispersed campsites are established near the ends of the cherry stem routes that lead into some of the wilderness areas, near the Trego, Black Rock, and Double Hot Springs, and along roads throughout the NCA. Several primitive campsites have also been established at Cassidy Mine and Flowing Wells, which are on the western fringe of the playa.

Hiking, Equestrian Use, and Rock Climbing

There is only one designated walking trail in the NCA. Hiking is a popular activity on lands surrounding the NCA, including the ten wilderness areas in the Assessment Area. Overnight use with horses or pack stock in the wilderness areas occurs rarely. Bicycling is allowed everywhere in the NCA but not in the wilderness areas. There are several canyons in the NCA that provide rock climbing opportunities. Rock climbing is allowed in all areas except for High Rock Canyon.

Off-Highway Vehicle Use and Access

OHV touring, including along historic trail segments, is popular in the Assessment Area. Visitors can travel between trail markers on the Applegate and Nobles Trails. There are various interpretive signs and, for historic trail markers, informational signs. ATV riding, as well as other driving, in the NCA. No motorized or mechanized equipment (e.g., OHVs and bicycles) is allowed in the wilderness areas.

Hunting, Fishing, and Wildlife Viewing

The Assessment Area provides opportunities for both consumptive and non-consumptive wildlife-dependent recreation. Unique opportunities for viewing herds of wild horses and burros are available throughout the Assessment Area, except for on the playa. Many game species provide opportunities for both wildlife observation and hunting. Hunting is allowed in the NCA, including in the wilderness areas.

The Assessment Area for analyzing direct impacts is mostly in NDOW hunting management units 012, 034, and 041 (NDOW 2013). The Assessment Area for analyzing cumulative impacts includes management units 014, 032, and 035. Each year, NDOW establishes tag quotas and controls the hunting seasons and the number of permits issued for each management unit. Hunters must obtain permits from the NDOW to hunt in the Assessment Area (see Nevada Department of Wildlife Management Units in **Figure 3-12** in **Appendix A**).

In 2017, the BLM reported approximately 7,900 visitors in the NCA who participated in big game hunting. This is an increase of approximately 3,400 visitors, compared with the 2014 hunting season (BLM 2017a). Much of this is day use, which is concentrated on the fringe of the wilderness, particularly near established camping areas, small game guzzlers, and maintained county roads.

Hot Springs

Trego Hot Springs, Black Rock Springs, Double Hot Springs, Soldier Meadows Hot Springs, and Hidden Hot Springs are in the Assessment Area (see Recreation Facilities/Sites on **Figure 3-12** in **Appendix A**). Associated policies and procedures regarding hot springs in the area are described in the Burning Man 2012–2016 SRP EA (BLM 2012a).

Frog Springs, also known as Frog Pond, Frog Farm, and Garrett Ranch, is on private property just south of the east side of Black Rock Playa. Frog Pond water temperatures are typically below 100 degrees Fahrenheit (All Around Nevada 2017).

SRP Activities

Most events permitted through the SRP system are for activities on the playa (see Special Recreation Permit Activities on **Figure 3-12** in **Appendix A**). In addition to the SRP historically issued for the Burning Man Event, the BLM also issues SRPs for other activities on the playa that are unrelated to the Burning Man Event.

Burning Man Event SRP

The Burning Man Event is a permitted Event and is the largest single Event that has occurred on the playa. It is also the largest SRP issued by the BLM nationwide. Since 2014, the BLM has authorized vending activities to occur at the Event. These activities fall into the following categories: RV, air carrier, camp services, transportation, and commercial film or photography.

RV services include delivery and set up of RVs, travel trailers, and other living accommodations for customers at the Event. Air Carrier services include the use of temporary airstrips and airport parking allowing vendors to shuttle participants to and from the Event.

Camp services include transportation of equipment rentals, Event participants, supplies, towing services, water tenders, generator rentals and technicians, bicycle rental and repair, theme camps, and other services needed to support Event participants.

Transportation services include charter buses shuttling participants to the Event and those camps affiliated with them.

Film or photography permits are for individuals or groups creating projects or documentaries that could be sold for financial gain later. This does not include general news media.

The BLM evaluates and discusses each application with BRC before authorizing any vending or commercial film SRP. Not all authorized vendors go through the BRC Outside Service Program, which if approved, can use the Point 1 Gate for entry to the Event. Others who do not have Outside Service Program access are required to purchase an Event ticket and enter through the main gate.

SRPs Events not associated with the Burning Man Event

SRP events not associated with the Burning Man Event include amateur and experimental rocket launching events, 4-wheel drive tours, land speed trials, land sailing, weddings, guided and outfitted camping and horseback trips, and commercial filming and photography. These SRPs provide important recreation opportunities that depend on the unique flat terrain of the playa. In the past, there have been concerns about conflicts between permitted users and dispersed recreationists during events. These concerns remain and may have increased over time.

Table 3-22, below, provides the number of participants between 2010 and 2017 by type for events other than the Burning Man Event.

Table 3-22
Number of Participants Per Special Recreation Permit Event (2010–2017)*

Activity Type	2010	2011	2012	2013	2014	2015	2016	2017
Rocketry	0	890	1,304	185	144	0	117	0
Historic reenactments	380	0	45	0	0	0	0	0
Outfitters and guides	0	11	64	103	77	106	81	7

Source: BLM 2017
*Data in this table will be verified and updated for the Final EIS.

Rocketry groups use the playa to launch, test, and recover prototype satellites. These events typically request usage beginning in late March and could extend as late as November, weather depending.

Outfitters and guides provide a range of organized activities, including land sailing, OHV tours of the Lassen-Applegate Emigrant Trail, and hunting expeditions. As of 2017, the BLM Winnemucca District Office has issued 18 outfitter and guide permits. These events typically occur in the summer and early fall. Other events include weddings, commercial filming, and photography, which occur year-round throughout the Assessment Area.

Other BLM field offices also issue state-wide outfitter and guide permits for guided hunts in the Assessment Area. The State of Nevada controls hunting seasons and the number of big game hunting permits issued. The actual commercial use in the wilderness areas associated with these permits is largely determined by tag quotas established by the NDOW.

Having permitted groups involved in Black Rock Desert resource management allows BLM recreation staff to continue evaluating and authorizing SRPs on a case-by-case basis. Some events are under 5-year permits because their locations remain the same and their events tend to be small in size, duration, and number of

participants. Periodically, the BLM receives a special request, such as an international event or a major location change to Black Rock Desert from somewhere else. Before events are permitted, a NEPA analysis is conducted, taking into consideration the nature of the event, potential impacts on resources, conflicts with other events, and adverse impacts on the quality of other visitors' experiences. All SRPs authorized by BLM are discretionary actions.

Other Activities

Other informal activities and events occur periodically on the playa. These events, while not officially associated with the Burning Man Event, take place in a similar location on the playa. The Fourth of Juplaya, for example, is an informal, unpermitted gather that takes place over the Fourth of July. Several hundred or more participants gather on the playa during this time, including representatives from BRC departments such as gate and perimeter greeters, public works, and Rangers. The Golden Spike ceremony also draws large crowds to the Burning Man Event location in late July. This gathering is informally known as the unofficial kickoff to the Burning Man Event, when Event organizers identify the location of the Man. In the past it has taken place before the Closure Order period. Finally, commercial filming and photography for the Burning Man Event takes place periodically on the Black Rock Desert.

Other activities occur on the playa that are not covered by SRPs but are sponsored or organized by the BLM itself or its partners. These activities include the Black Rock Rendezvous (generally occurring around Memorial Day weekend with roughly 200 participants) and National Public Lands Day (generally occurring on the last weekend of September with roughly 50 participants).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

The Event would affect two primary types of visitors: those attending the Event and those engaged in other forms of recreation not associated with the Event. Under all Event alternatives, the BLM would enforce the 2018 BLM Event SRP stipulations, which would protect visitors' recreation experiences.

Alternatives Analysis—Alternative A (Proposed Action)

Setting and Experiences. Air quality, noise, light, traffic, and overall activity on the playa associated with the Event would influence the quality of the physical setting that contributes to positive recreational experiences for Event and non-Event populations. Air quality monitoring during the 2017 Event showed particulate matter (PM_{10} and $PM_{2.5}$) to be at levels 10 times those of the NAAQS. Moving vehicles on Gate Road, vendors entering and exiting at the 12-Mile access road, and activity within the Event perimeter are the greatest contributors of PM_{10} and $PM_{2.5}$. While the prevailing wind direction is from the southwest, variable wind speeds and directions can direct dust to portions of the Assessment Area outside the Closure Area. Visitors could experience unhealthy air quality and the potential for respiratory health issues, especially for sensitive groups (US EPA 2018), which would limit the extent, location, and type of activities in the Assessment Area. Diminished air quality and the associated impacts on recreation would be greatest during the build week and the 9.5-day Event. The duration, location, and intensity of impacts from reduced air quality conditions on recreation would depend on wind speed and direction (see Strohm 2018c and BLM 2018c).

For the Burning Man Event population, unhealthy air quality conditions would influence the quality of the recreational experience. While participants would expect dust as part of their experience on the playa, prolonged periods of poor visibility and frequent dust storms that would result in whiteout conditions inside the Event perimeter would temporarily preclude certain activities in the Event, such as driving art cars, riding bicycles, and participating in outdoor theme camp activities. Some participants may choose to limit their exposure to unhealthy air quality conditions, which could result in participants spending more time inside vehicles, structures, or other temporary indoor spaces. This could diminish social interactions and the overall quality of the Event experience for some participants. Rerouting Gate Road to an area

north of the Event perimeter (see **Appendix E**) would reduce the potential for impacts on Event participants, but it would increase the potential for air quality to affect other visitors north of the Closure Area.

Noise also affects the recreation setting and user experiences, particularly for those seeking solitude in a backcountry setting. The distance of the Event from the wilderness areas, combined with winds that often influence ambient noise levels in the Assessment Area, would result in negligible noise-related impacts on recreation in those areas. This would be the case for all phases of Alternative A (Proposed Action). Visitors to areas directly outside the Closure Area could experience temporary audible noise during build week and the week of the Event, particularly at nighttime when the ambient noise levels are lower. The average noise levels attributable to this period would be less than the average ambient levels, resulting in no impacts on non-Event visitors from the Event (Salter 2018).

For the Burning Man Event population, there is an expectation that loud noise would be part of the experience of attending the Event. Although noise levels inside the Event perimeter during the 2017 Event were observed to exceed 80 dBA in several locations, Event participants would not likely perceive these levels as detracting from the quality of their experience.

Visual qualities, including night sky conditions, in the Assessment Area contribute to visitor satisfaction and positive recreation outcomes. Components of Alternative A (Proposed Action) would introduce structures, vehicles, and dust that are otherwise not present on the playa but would be visible from popular recreation areas surrounding the proposed Closure Area. For recreationists seeking limited interaction with other visitors, Components of Alternative A (Proposed Action) would diminish the physical and social setting. In parts of the Assessment Area where the Event would not be visible because of topographic obstructions, there would be negligible daytime visual impacts on recreation. The greatest potential for impacts would be during build week and 9.5 days of the Event when activity in the Closure Area is greatest. The NCA is intended to protect and preserve the physical and social setting of the playa. Components of Alternative A (Proposed Action) would restrict the ability of recreationists seeking limited interaction during the Closure Order, and the duration of the Event increases the potential for physical degradation in the long run.

Impacts on non-Event visitor experiences from nighttime visual conditions would be more acute and geographically dispersed than daytime conditions. Most of the year, the area is subject to almost no artificial light at night (ALAN; Craine and Craine 2018). ALAN from the Burning Man Event would directly influence visitors' ability to experience night sky conditions in the Assessment Area and would be inconsistent with the NCA designation. Non-Event visitors expecting unobstructed night sky conditions would have a high sensitivity to artificial light and would be most affected by ALAN from the Event. Radiance at higher zenith levels stemming from the Event would be visible from many locations in the Assessment Area, even at sites where the Event is obstructed by topographic features. Recreation sites further from the Event perimeter would experience fewer impacts as the intensity of the light diminishes.

This ALAN would disrupt stargazing and other activities that benefit from a lack of ALAN (Craine and Craine 2018). For example, the annual Perseid Meteor Shower occurs during the Closure Order, and ALAN resulting from the pre-Event activities would restrict the ability of recreationists from fully observing the meteor shower, both from on the playa or nearby sites. Proposed mitigation requiring the shielding of mast-mounted work lights and preventing high-intensity laser and search lights from being pointed straight up would partially reduce the amount and intensity of ALAN and the associated impacts on the recreation setting outside the Closure Area (Mitigation Measures SPEC-2 and VIS-3; **Appendix E**). For the Event population, art pieces, mutant vehicles, theme camps, and the Man are elements of the daytime and nighttime visual landscape that contribute to positive recreation experiences at the Event.

Alternative A (Proposed Action) would allow up to 100,000 people to experience the unique visual aspects of the Burning Man Event within a 3,900-acre Event perimeter.

Compared with previously permitted Events, an Event size with a population up to 100,000, with up to 100 vendors and up to 1,000 mutant vehicles, would result in more crowded conditions within the Event, especially at key locations such as the Man, Temple, and along the Esplanade. With a population of 100,000, participants could experience a feeling of crowding and competition with other participants to experience desired aspects of the Event, such as the Man and Temple Burns on the final Saturday and Sunday, respectively. To protect participants, the BLM may impose operational controls, which could also limit attendees' ability to experience the desired aspects of the Event.

Limiting the number of BRC staff, volunteers, and contractor vehicle passes to 35,000 (Mitigation Measures TRAN-1 and TRAN-2; **Appendix E**) would result in approximately three persons per vehicle. While this measure would limit the number of vehicles on the playa, if more people arrive in large vehicles, such as RVs or moving trucks, the result would be the city having an increasingly dense environment, which could influence participants' experiences.

Alternative A (Proposed Action) would indirectly influence the recreation setting outside of the Closure Order period. Although the Burning Man Event under Alternative A (Proposed Action) would be a Leave No Trace® Event, micro-debris, such as bits of paper, clothing particles, and can tabs from a population of 100,000 could escape the perimeter fence or become buried by activity during the Event. These items could be overlooked during Event cleanup efforts. Over the course of the proposed 10-year permit, micro-debris accumulation would incrementally alter the playa's physical setting. Visitors to the Assessment Area during non-Event periods that encounter debris could experience a diminished sense of naturalness and remoteness.

Additionally, past participants are often interested in returning to the NCA outside of the Event time period. These visitors may desire different recreational experiences and outcomes compared with those who have traditionally visited the NCA and have not attended the Event. Based on these differing desired outcomes, there is a potential for conflicts between visitors in the NCA.

There would be the potential for Event participants to recreate at nearby hot springs, such as Trego Hot Springs, especially before and after the Event, resulting in the potential for conflicts among Event and non-Event visitors. To protect public health and safety, BRC education materials, volunteer Black Rock Rangers, and agency personnel would discourage hot spring use during the Event. This would limit the potential for impacts at those locations.

Visitors accessing the Event would inadvertently or purposely leave behind litter and debris along roadways. Effects on the recreation setting from roadside debris would depend on the size and magnitude of the litter or debris left behind and how long it remains in place. Litter cleanups provided by BRC staff under the 2018 SRP Stipulations could temporarily close portions of the roadway, and debris may create a distraction for Event participants and non-Event populations. These factors would temporarily affect access for non-Event visitors. Placing trash receptacles along Gate Road during Exodus (Mitigation Measure NAT-2; **Appendix E**) would reduce the potential for these impacts.

Access. Under Alternative A (Proposed Action), the two-phased Closure Order would directly restrict non-Event visitors' ability to access recreation opportunities on the playa. Prior to the Event, the 29-day Phase 1 Closure Order would restrict 9,570 acres for recreational use from non-Event populations. Following this period, Phase 2 of the Closure Order would then restrict 14,820 acres for recreational use by non-Event populations for 14 days. Following the Event, the Closure Order would reduce to Phase 1 levels, but the acreage would continue to be unavailable for recreational use for 28 days. The closure would displace visitors that would otherwise recreate on the playa during these times.

The 78-day Closure Order would displace visitors for more than 50 percent of the peak visitation season, which is typically considered to be the approximately 150 days from the beginning of June to the end of October. The timing of the Closure Order would have the potential to displace more visitors than if it occurred for the same or longer duration during another time of year. The Closure Order would preclude dispersed forms of recreation and organized permitted groups.

The two-phased Closure Order under Alternative A (Proposed Action) would allow other permitted activities to operate closer to the Event perimeter during Phase 1 levels of the Closure Order. During the 28-day period following the Event, the smaller Closure Order and traffic associated with take down activities and debris clean up could preclude access to preferred rocket launch locations. The Phase 1 Closure Area would continue to displace recreation activities on 9,570 acres through the end of September. Use of the playa for recreational rocket launches after the Closure Order would be weather dependent.

Off the playa, traffic associated with Alternative A (Proposed Action) would increase travel times on SR 447, CR 34, CR 447, and Soldier Meadows Road for visitors seeking access to recreational opportunities elsewhere in the Assessment Area. Though Alternative A (Proposed Action) would include provisions to control the number of vehicles entering and leaving the Event, heavy congestion on nearby roadways, especially during peak Event arrival and departure times, could deter or limit access for non-Event attendees. The greatest potential impact would be on those visitors participating in big game hunting because Exodus and subsequent takedown activities would overlap with the September 1 start of the hunting season. Longer travel times for hunters and other recreationists would directly influence visitors' overall hunting experience.

For Event participants, traffic congestion during arrival and departure would be an expected aspect of the Event. With proposed traffic volumes that result in LOS E—an operational roadway status indicating unstable traffic flow—on CR 34 and SR 447 (Solaegui Engineers 2018), Event access would affect participants' overall experience. Long wait times on the first and last days of the Event could result in some participants arriving later and leaving earlier, which would reduce their overall time spent at the Event. For some, access delays could be a deterrent for attending future Events. Limiting the total number of vehicle passes to 35,000 (Mitigation Measures TRAN-1 and TRAN-2; **Appendix E**) would encourage carpooling and the use of other transportation modes, such as Burner Express Bus and Burner Express Air. This would prevent future increases in congestion and the related impacts on access and visitor experiences.

Effects of Alternative A on the topography of the playa are described in **Section 3.6.3**, Soils (Playa Sediments). Over the course of the 10-year permit period, modifications to the playa surface resulting from the displacement of playa surface material during the Event would influence recreation opportunities outside the Closure Order. These changes to the topography of the playa surface could affect recreation that relies on a smooth playa surface, such as land sailing, recreational driving, and dirt-bike activities that have historically taken place on the playa. These activities depend on a smooth surface. Small mounds, ruts, ridges, depressions, and other playa surface deformations could reduce or eliminate the viability of those activities. Other activities, such as land speed activities, have already been eliminated due to surface degradation resulting from the Event (Reno-Gazette Journal 2017a). Requiring BRC to restore playa contours by the end of the Closure Order (Mitigation Measure SOIL-3; **Appendix E**) would reduce the potential for future impacts.

Alternatives Analysis—Alternative B

Setting and Experiences. The nature and types of impacts on the recreation setting and experiences for non-Event visitors would be similar to those described under Alternative A (Proposed Action), above, but they would have an overall lower intensity. However, capping the total Event population at 50,000, with a 14,150-acre Closure Area, 42-day Closure Order period, fewer vendors, and no more than 17,000

vehicle passes, would reduce the intensity and duration of those impacts. Impacts would occur on a smaller portion of the Assessment Area. Alternative B would displace recreationists from accessing the Closure Area for 28 percent of the playa's peak visitation season.

The potential for impacts from airborne playa material would be highest in areas directly outside the Closure Area, especially northwest of the Event where prevailing winds typically transport the dust, and during the Closure Order, especially during the 9.5-day Event. Airborne particles and the presence of structures, vehicles, and human activity on the playa would be visible from popular recreation locations in the Assessment Area. Nearby recreational sites would be affected by the reduced air quality associated with 50,000 Event participants interacting, riding bikes, and driving mutant vehicles within the Closure Area.

The amount of radiance from ALAN associated with earlier Events with a similar population as proposed under Alternative B indicates that there would be approximately 60 percent less radiance than what was observed during the 2017 Event (Craine and Craine 2018). The actual radiance and associated impacts on the nighttime recreation setting and visitor experiences would depend on the type of lights used during the Event. An Event population of 50,000 could include high-intensity lights, fireworks, and other sources of high zenith radiance that could disrupt stargazing and other activities in the Assessment Area. Impacts on visitor experiences would be highest during build week and the 9.5-day Event but would decrease following the Event. Proposed mitigation requiring the shielding of mast-mounted work lights and preventing high-intensity lasers and search lights from pointing straight up (see Mitigation Measures SPEC-2 and VIS-3; **Appendix E**) would partially reduce the amount of ALAN and the associated impacts on the recreation setting outside the Closure Area.

For areas directly adjacent to the Closure Order boundary, there may be temporary increases in noise levels associated with theme camp construction during build week. Firework displays during the Event would increase noise levels for several minutes, resulting in temporary but high-intensity impacts on non-Event visitors throughout the Assessment Area. The intensity of impacts would depend on the type of firework display, visitors' locations, wind direction and speeds, and topographic obstructions.

For Event participants, a total population of 50,000 would allow participants to experience the various aspects of the Event that contribute to positive recreation experiences with few instances of crowding or competition with other participants. There would be limited need for the BLM to impose operational controls that would limit attendees' ability to experience the desired aspects of the Event.

Access. For non-Event visitors who use the playa and the surrounding area, an Event size of 50,000 people with 17,000 vehicle passes would result in traffic congestion and associated travel delays and increased potential for accidents and vehicle fire impacts, especially at the start of the Event and during Exodus. Compared with Alternative A (Proposed Action), the intensity of these impacts would be less, as there would be fewer vehicles and people.

A 14,150-acre Closure Order boundary would preclude access to the playa within the Closure Area for the full 42-day duration of the Order. Rocket launching groups and other specially permitted and dispersed recreation users would be displaced during this time. Rocket launching activities that typically take place after the Event week overlap with the Closure Order boundary and would be restricted until after the closure period.

Surface formation and quality would be affected by the degradation and micro-debris dispersal associated with a population of 50,000 individuals participating in Event activities. Land sailing, recreational driving, and other Events that depend on a smooth playa surface would experience effects similar to those described in Alternative A (Proposed Action), but to a lesser degree.

Restricting the Event population to 50,000 participants would displace potential attendees interested in accessing the playa for the Burning Man Event. Other Events, such as "Fourth of Juplaya," have Burning Man "defectors" who no longer agree with the Event structure and motivations. These former Event participants may return to the Event if it returns to a reduced size. Increased demand for the Event coupled with limited availability would likely increase ticket prices, which would result in some individuals not being unable to attend. This would diminish the recreational experience and opportunities for those visitors. The reduced capacity of Alternative B could indirectly contribute to the growth of "Fourth of Juplaya" and other new or similar events and result in a sustained environmental impact from July through the end of October.

Alternatives Analysis—Alternative C

Setting and Experiences. Under Alternative C, the types of impacts from the Burning Man Event would be the same as Alternative A (Proposed Action); however, the location and intensity of impacts would be different because of the alternative location and single-phase Closure Order. Alternative C would preclude recreational access of the 18,940-acre boundary for over 50 percent of the playa's peak visitation season.

The Event location would be approximately 4.2 miles south of the Calico Mountains Wilderness and 4.6 miles from the Selenite WSA, resulting in the potential for airborne playa material, high-intensity noise events, and daytime and nighttime visual conditions associated with the Event to affect recreationists seeking solitude in nearby wilderness settings. These impacts would be as described under Alternative A (Proposed Action), but with greater likelihood to be experienced by non-Event visitors in adjacent wilderness areas and WSAs. The greatest source of impact on the recreation setting would be from ALAN, which would be directly visible from the Calico Mountain Wilderness and would diminish the quality of night sky conditions in the wilderness area. Impacts associated with ALAN, noise, and the general quality of experience would adversely affect recreationists accessing nearby wilderness areas and resulting experiences would be inconsistent with those expected under a wilderness designation. Proposed mitigation requiring the shielding of mast-mounted work lights and preventing high-intensity lasers and search lights from pointing straight up (Mitigation Measures SPEC-2 and VIS-3; **Appendix E**) would partially reduce the amount of ALAN and the associated impacts on the wilderness recreation setting. Given the 10-year period associated with the SRP, it is possible that recreational access of nearby wilderness areas would decrease over time due to a reduced quality of experience.

The recreation experience for Event participants would be nearly the same as described for the Proposed Action. The only exception would be that a longer Gate Road would slightly increase the travel time to the Event because vehicle speeds on the playa would be slower compared with on paved surfaces.

Access. Under Alternative C, an 18,940-acre Closure Order boundary would preclude access to that portion of the playa for the entire 78-day Closure Order period. The Closure Order boundary would directly conflict with the historically preferred location for specially permitted amateur rocket launching and could reduce or eliminate the viability of that Event. The closed portion of the playa would be unavailable for land sailing, camping, and other dispersed forms of recreation that are popular in late summer and early fall.

For Event and non-Event visitors, impacts on recreation from traffic associated with the Event would be nearly the same as described for Alternative A (Proposed Action). Under Alternative C, vehicles would be able to queue in the approximately 9-mile-long, 16-lane on-playa entrance road rather than a comparable distance on the single-lane CR 34. A larger on-playa vehicle queuing capacity may or may not allow for reduced traffic congestion and delays along SR 447. It is possible that this larger on-playa queuing capacity may allow for a freer flow of traffic for Event and non-Event visitors.

Indirect impacts from micro-debris would be the same as Alternative A (Proposed Action). Under Alternative C, micro-debris has the potential to migrate into nearby wilderness areas due to a closer proximity. Moving the Event site to a new location from its historic location under Alternative C would expose the playa to additional disturbance and subsequent deformation. Combined with potential deformation from previous Events, new disturbance at a new location would more than double the area of the playa where small undulations associated with Event activity could affect the viability of land speed and other events that rely on a smooth playa surface. Requiring the playa to be restored following the Event (Mitigation Measure SOIL-3; **Appendix E**) would reduce the potential for impacts at the new location, but it would not require restoration of previous locations.

Alternatives Analysis—Alternative D

Under Alternative D, the proposed Event would result in the same types of impacts on recreation as Alternative A (Proposed Action). Compared with Alternative A (Proposed Action), the location and intensity of impacts would be slightly different because the Event boundary and Closure Area would be smaller, and the population would be a maximum of 80,000. Alternative D would prevent recreationists from accessing the Closure Order boundary for over 50 percent of the playa's peak visitation season.

Setting and Experiences. With a maximum population of 80,000, Alternative D would have the same characteristics as described for the 2017 Event; the types of impacts on the recreation setting and visitor experiences from air quality, noise, daytime and nighttime visual conditions, changes to the playa surface, and micro-debris would be the same as described for Alternative A (Proposed Action). The location and intensity of impacts would be associated with the Event site of 3,410 acres and a maximum population of 80,000 participants on the playa. The population's impacts on airborne playa material, ALAN, noise, micro-debris, and changes to the playa surface would be similar to those experienced during the 2017 Event.

Changes to the daytime and nighttime recreation settings would directly influence visitors' ability to experience the Assessment Area's remote backcountry setting. Outside of the Closure Order period, micro-debris observed by recreationists could influence visitors' perception of the playa as an area little influenced by human activity. Small undulations resulting from the movement of playa materials during the Event could influence the viability of land speed and land sailing events. Proposed measures to restore the playa surface, collect trash during Exodus, and reduce ALAN from high-intensity lasers and other light sources (Mitigation Measures SPEC-2, NAT-2, SOIL-3, and VIS-3; **Appendix E**) would reduce the potential for impacts compared with the 2017 Event. The greatest potential for impacts during build week and the 9.5-day Event would be from dust and ALAN.

A maximum population of 80,000 in a 3,410-acre Event site would maintain the types of experiences had by Event visitors to the 2017 and 2018 Events. There would continue to be opportunities to observe art and participate in the various Event activities, including the burning of the Man and Temple. There would be some crowding and queuing for popular activities, which would influence the experiences of Event participants. Compared with Alternative A (Proposed Action), the intensity of these impacts would be less.

Access. A two-phased Closure Order would directly restrict non-Event visitors' ability to access recreation opportunities on the playa during the Closure Order period. During the Phase 1 Closure Order, there would be no recreation opportunities within a 9,570-acre portion of the playa. Phase 2 would displace non-Event recreation activities on 14,330 acres for the 14-day period covering build week and the Event. During the Closure Order, there would be no opportunities for any form of recreation other than participation in the Burning Man Event. This would displace visitors that would otherwise recreate on the playa.

Reducing the Closure Order boundary back to the Phase 1 area after the Event would allow non-Event recreationists, including permitted events such as rocket launching, to resume use of the playa outside the

Phase 1 Closure Area. The Phase 1 Closure Area would continue to displace recreation activities through the end of September, at which time colder temperatures and precipitation make outdoor recreation on the playa less viable.

The nature and types of impacts from reduced access to recreation opportunities within the Assessment Area would be similar to those experienced during the 2017 Burning Man Event. Traffic congestion and LOS would be as described in the Affected Environment and Burning Man Event Traffic Study (Solaegui Engineers 2018) for the 2017 Event. Maintaining LOS C or better on SR 447 and CR 34 would result in delays for those seeking access to the Event and other recreational opportunities in the Assessment Area, particularly for northbound traffic during the first weekend of the Event and southbound traffic following Exodus. Outside of these peak Event-related travel times, those seeking access to the Event and other recreation opportunities in the Assessment Area would likely experience only minor delays with almost no impact on access or recreational experiences.

Alternatives Analysis—Alternative E

Under Alternative E, the BLM not issuing an SRP for the Burning Man Event would eliminate the opportunity for visitors to participate in the specially permitted Event. This would result in the loss of a unique recreational opportunity.

Given the historical nature of the Event, Alternative E could result in the continued activity of visitors seeking a Burning Man Event experience on the playa during the traditional time frame. Initially, this would result in similar impacts on the recreational setting and experiences as described for the Event alternatives. Individuals seeking a Burning Man Event experience would come in conflict with non-Event recreationists accessing the previously unavailable playa space. The magnitude of these impacts would depend on the population of those participating in the unauthorized gathering and would likely decrease over time as participants learned the Event has become unsanctioned. Without stipulations provided by the SRP, no responsible party to manage the Event, and no Closure Area, there would be the potential for unsafe recreational conditions, with some impacts on the recreation setting. If the BLM applied, managed, and enforced a Closure Order, the impact intensity would be further reduced, compared with Event alternatives, because an informal gathering at the playa would be precluded.

Under Alternative E, the full playa would be available during the 150-day peak visitation season. The magnitude of individuals using the playa under Alternative E would depend on the desirability to access the playa for recreational purposes free from the impacts of the Burning Man Event described above. Recreational activities like land sailing and rocket launches would not be restricted by the Closure Order described under Alternative A; however, a modified Closure Order could restrict some activities and temporarily preclude access. Other events wanting to apply for an SRP during the traditional period of the Burning Man Event would now be able to apply.

Under Alternative E, it is possible that more recreationists would be willing to travel to the playa due to the reduced congestion associated with Burning Man Event traffic. Roadways to the playa would likely operate at existing LOS daily conditions typical of non-Event times. Congestion on roadways may experience a sustained increase during the traditional time frame of the Burning Man Event due to the increased availability of the playa.

Alternative E could increase the number and size of other events providing similar experiences to the Burning Man Event, such as "Fourth of Juplaya." Unpermitted events would be difficult for the BLM to control and could conflict with other recreational activities on the playa. Permitted and unpermitted events with a similar character as the Burning Man Event would result in similar direct and indirect impacts as those described above for the Burning Man Event.

Participants of playa gatherings in late August and early September could opt to camp or recreate at the hot springs. High visitation would result in the potential for conflicts among visitors and degradation of the recreation settings at those locations. The most intense impacts would likely occur in the first 1 to 3 years and diminish over time, eventually returning to the use levels that are typical throughout other times of the summer recreation season when there is no Event.

3.9.2 Transportation and Traffic

Affected Environment

The Assessment Area for transportation and traffic includes the primary transportation routes and other modes used by Burning Man Event participants and administrative personnel to access the Event site (see **Figure 3-13,** Transportation and Traffic in **Appendix A**). The Assessment Area includes the following:

- SR 447 (from Interstate 80 to Gerlach)
- CR 447 (from the California-Nevada border to Gerlach)
- CR 34 in the Closure Area
- Jungo Road (from Winnemucca to Gerlach)
- On-playa routes to and within the Black Rock City perimeter
- Surprise Valley Road (from SR 445 to SR 447 north of Gerlach)
- BRCMA and flight paths

Roadways

The roadway network in the Assessment Area consists mainly of rural two-lane paved roads, unpaved maintained gravel roads, and unmaintained dirt roads. Nearly 99 percent of Burning Man participants arrive at the Event site via one of the routes listed above (BRC 2017c). Major roadways in the Assessment Area are described the 2017 Burning Man Event Traffic Study (Solaegui Engineers 2018). Other roadways are described below.

Jungo Road

CR 49, most commonly known as Jungo Road, is a generally east-west rural roadway that connects Winnemucca at the eastern terminus with Black Rock Desert to the west. At the eastern edge of Black Rock Desert, Jungo Road turns southwest; it intersects SR 447 approximately 1 mile south of Gerlach. Between Winnemucca and the Hycroft Mine near Sulphur, Jungo Road is a maintained gravel-surface roadway, with a width equivalent to a two-lane roadway. West of the mine, the roadway is largely dirt surfaced and of variable width, and it has unsigned obstacles, such as potholes, dips, and humps. The posted speed limit is 45 miles per hour.

On Playa

On the playa, there are no designated state or county roadways. The BLM allows cross-country motorized and mechanized travel, subject to playa surface conditions. When the Burning Man Event Closure Order is not in effect, there is unrestricted travel on the playa.

During the Event, playa travel is restricted in the Closure Area. Primary ingress and egress for Event participants is limited to Gate Road, which begins at CR 34 and generally travels northward toward the Event site. To accommodate the large volume of participants entering the Event, Burning Man Gate Road splits into 16 lanes, with two check points (greeter stations) on each lane. The requested speed limit on Gate Road is 5 miles per hour.

During the Event, vendors and emergency services personnel access the site from CR 34 at Point 1, also known as the 12-Mile access. This playa route provides direct access to the JOC during the Event; it does not provide participant access to the Event.

Other Roadways

On CR 34, approximately 13 miles north of Gerlach, is the southern terminus of Soldier Meadows Road. This gravel-surfaced, maintained roadway provides access along the western edge of the playa and Event site.

Although not in the Assessment Area, Interstate 80 is a major east-west transportation corridor connecting the Assessment Area to major population centers, such as Reno, Sacramento, and San Francisco to the west and Salt Lake City to the east. From Interstate 80, drivers can access SR 447 via exit 43 in Wadsworth or exit 46 in Fernley. Interstate 80 is the southern terminus of SR 447.

Surprise Valley Road is a north-south gravel road that begins at the terminus of SR 445 and traverses north through the PLPT's Reservation. At the northern portion of the Smoke Creek Desert, Surprise Valley Road turns northeast and becomes Smoke Creek Road before it intersects SR 447 north of Gerlach. From Sutcliffe, Nevada through the Smoke Creek Desert, Surprise Valley Road runs alongside Pyramid Lake before it continues north through Sand Pass. Surprise Valley Road is a rural, two-lane roadway.

Air Travel

The BRCMA (FAA Airport Identifier Code 88NV) supports private air service to the Event. The Reno-Tahoe International Airport is the nearest commercial airport to the Event site. Air service at the BRCMA typically begins during build week (immediately prior to the Event) and ends on the final day of the Event. During the 2016 Event, approximately 1 percent of participants arrived at the Event via air. Outside of the Event, there is no staffed airport on the playa. Except for flights entering and leaving via the BRCMA, the BLM Closure Order restricts aircraft use to emergency aircraft only. When the Closure Order is not in effect, there are no airspace restrictions on the playa.

Mass Transit

There is no public transportation service to Black Rock Desert; however, BRC offers participants the option of using the Burner Express bus service to travel to and from the Event. The Burner Express collects and drops off participants at the San Francisco and Reno airports. In 2016, nearly 8 percent of Burning Man Event participants arrived via the Burner Express.

Daily Roadway Segment Traffic Volumes

In support of this EIS, the BLM conducted traffic counts before, during, and after the 2017 Burning Man Event. On August 3, 2017, a traffic engineer installed traffic counters at milepost 74 (south of Gerlach) and milepost 101 (north of Gerlach) on SR 447. The counters tabulated the number of vehicles passing the milepost each day from August 4 through October 20. Between August 25 and September 8, the BLM also collected hourly data to more expressly understand the traffic volumes experienced during the peak travel times associated with the Burning Man Event. **Table 3-23** summarizes the observed data by depicting the average daily traffic (ADT) counts for the 23 days before the Event, 9 days during the Event, and 46 days after the Event. For a complete depiction of observed daily traffic volumes and hourly volumes during the Event, see Solaegui Engineers 2018.

The highest observed ADT volumes for both counter locations were on the first day of the Event (Sunday, August 27) and last day of the Event (Monday, September 4). Egress from the Event on Monday resulted in the highest observed ADT for both locations for the entire monitoring period—13,355 and 1,579 ADT, respectively. Observed traffic volumes on the final day of the Event peaked at 812 vehicles between 8 a.m. and 9 a.m. The average number of vehicles on SR 447 between 6 a.m. and 6 p.m. on September 4 was 664. The peak number of vehicles on SR 447 on the first day of the Event was 633, which was observed between 1 a.m. and 2 a.m. For both counter locations, the observed ADT for Friday, September 1, was the least of any day during the Event —2,895 and 229 ADT, respectively.

Table 3-23
Average Daily Traffic Volumes and Levels of Service

Observation Period	Counter 1 ADT (SR 447 Milepost 74)	Counter 1 Min/Max ADT	Counter 2 ADT (CR 447 Milepost 101)	Counter 2 Min/Max ADT
Pre-Event (August 4–26, 2017)	1,416	496/6,679	243	88/956
Event (August 27–September 4, 2017)	6,773	2,895/13,355	714	229/1,579
Post-Event (September 5–October 20, 2017)	884	298/5,979	170	100/651

Source: Solaegui Engineers 2018

Observed ADT for the SR 447 location was generally higher during the pre-Event time frame than for the post-Event time frame, whereas the observed ADT for the milepost 101 location was generally lower before the Event, particularly before build week (August 20–26, 2017). Observed ADT for the SR 447 counter indicates higher traffic volumes during the weekends, compared with weekdays.

Level of Service

LOS describes the operational status of a roadway network. An intersection or roadway segment's LOS can range from LOS A, which indicates free-flowing traffic conditions with little or no delay, to LOS F, which indicates oversaturated conditions where traffic flows exceed design capacity, resulting in delays and higher probability for accidents. NDOT strives to maintain LOS D or better on all of its roadways (Solaegui Engineers 2018).

Using recorded traffic data from August through October 2017 and an LOS methodology based on the Highway Capacity Manual (Transportation Research Board 2016), traffic volume on SR 447 in Empire during the 2017 Burning Man Event equated to a LOS C during the peak arrival hour and LOS D during the peak departure hour. For other segments of SR 447 and CR 34, the LOS was C or better for traffic conditions during the 2017 Burning Man Event. The only roadway segment in the Assessment Area operating at LOS F was Interstate 80, east of Pyramid Highway (Solaegui Engineers 2018).

Traffic Incidents

According to NDOT data for three segments of SR 447/CR 447, there were 22 reported accidents during the combined 30 days associated with the 2014-2016 Burning Man Events. Given the recorded traffic volume during this time, the accident rate was 108 accidents per one million vehicles. For the same segments, during non-Event periods, the accident rate was 63 accidents per one million vehicles (Solaegui Engineers 2018).

Environmental Consequences

Direct and Indirect Impacts from Alternatives-Impacts Common to All Event Alternatives

Under all Event alternatives, vehicular access to the Black Rock Playa and the Burning Man Event would be primarily via CR 34, CR 447, SR 447, SR 427, SR 446, and Interstate 80. Access to the Event would also be available via the private, temporary Black Rock City Municipal Airport and Burner Express Bus. The number of participants arriving by vehicle, air, or Burner Express Bus would vary by Event alternative.

NDOT strives to maintain LOS D or higher on state highways. Under all alternatives, the segment of Interstate 80 east of Pyramid Highway would operate below the NDOT acceptable levels of service with a daily traffic volume of 94,000 for a 4-lane freeway. Any Event participant or recreational user accessing the

playa or its surrounding recreational areas through Interstate 80 east of Pyramid Highway could experience increased potential for collision, congestion, and delays.

It is anticipated that stipulations from the 2018 SRP (see **Appendix B**) would be implemented for future years, with modifications by the BLM as necessary, to address potential impacts of vehicles traveling to and from the Event. Additional mitigation and monitoring measures in **Appendix E** would contribute to fewer potential traffic-related impacts on surrounding roadways, including those within the PLPT's Reservation. For example, collecting traffic count data from Gate Road and the 12-Mile access road (see recommended Monitoring Measure TRAN-1 in **Appendix E**) would inform subsequent actions related to traffic management, including for vendors entering and exiting via the 12-Mile access road.

Alternatives Analysis—Alternative A (Proposed Action)

An Event population of 100,00 would result in an average daily volume of 35,854 vehicles on roadways in the Assessment Area. The largest traffic volume increase would be on SR 447 from Interstate 80 to Gerlach. Compared with the observed 2017 Burning Man conditions, Alternative A (Proposed Action) would increase total daily volume for this roadway by 64,490 vehicles (24.3 percent). All segments of SR 447 would continue operating at acceptable LOS conditions, except for SR 447 north of SR 446 in Nixon, which would fall to LOS E. BRC would manage the vehicle ingress and egress through CR 34, and coordinate with government personnel to ensure traffic flows through communities on SR 447 and CR 34. This would affect traffic and transportation by increasing congestion, the potential for vehicular and pedestrian accidents, and delays during the pre-Event, week-long Event, and post-Event periods.

During the pre-Event and build week, large vehicles would be transporting BRC staff and volunteers, Event infrastructure, pieces of the Man, theme camp materials, and Event art displays to the playa. Some larger mutant vehicles would also be accessing the Event at this time to be licensed. Travelers would experience an increase in traffic volume but would mostly be affected by the type of vehicles accessing the playa. Larger vehicles traveling at slower speeds would cause delays for other travelers, especially on SR 447. Larger vehicles could also degrade the roadway surface, particularly on CR 34, resulting in the potential for vehicle damage, accidents, and delays, requiring costly repairs.

For those attempting to cross the playa, the 9,570-acre Phase 1 and 14,820-acre Phase 2 Closure Orders would reduce access for 78 days. Nonparticipants would only be able to access the playa through the 3-Mile and 12-Mile access roads. These roads would also be used by BRC staff and volunteers bringing Event supplies to the Event, resulting in the potential for delayed access for non-Event travelers.

During the Event, water tankers, sanitation trucks, other vendors and contractors, and BLM and law enforcement vehicles would be consistently accessing the Event site through the 12-Mile access point. During the Closure Order period, and especially during build week and the 9.5-day Event, non-Event participants accessing the playa through 12-Mile road would encounter traffic congestion from these vehicles.

Other parts of the Assessment Area would experience short-term impacts during the Closure Order period. Population centers in the region would experience Burning Man Event-related traffic. On Interstate 80 and SR 447 near Wadsworth, large, slow-moving vehicles carrying Burning Man infrastructure would slow traffic speeds, especially at intersections. With up to 1,000 mutant vehicles being transported to the playa, the potential for vehicle accidents resulting from drivers being distracted by the unique art vehicles would increase.

With a population of 100,000 and up to 35,000 vehicle passes, there would be the potential for congestion and delays, especially during peak arrival times. Alternative A (Proposed Action) would impose an estimated peak arrival volume of 770 vehicles per hour at Empire along SR 447, which would equate to

LOS D. A segment of SR 447 in Nixon and CR 34 in Gerlach would operate at LOS E; this would be an unacceptable level of service. SR 445 south of LaPosada Drive would also operate at LOS E (Solaegui Engineers 2018).

Delays associated with Alternative A (Proposed Action) could cause Event travelers to take alternate routes to the Event. In 2017, roughly 3 percent of Event participants used Jungo Road from Winnemucca to access the Event (Solaegui Engineers 2018). Under Alternative A (Proposed Action), the potential for more Event travelers electing to take Jungo Road to avoid the expected traffic on SR 447 would increase. Travelers attempting this unpaved route would incur extended travel times and potential for vehicle damage because the road is not suited for most vehicles.

Limiting the total number of vehicle passes to 35,000 (see **Appendix E**) would encourage carpooling and the use of other transportation modes, such as Burner Express Bus and Burner Express Air. This would prevent future increases in congestion and the related impacts on access and visitor experiences. Burner Express Bus or Burner Express Air could alleviate traffic and provide an alternative opportunity for participants to reach the Event. Participants using Burner Express Bus would still experience delays caused by congestion but would be relieved from driver distress and fatigue. High cost and limited capacity would preclude most participants from using Burner Express Air.

Upon reaching the playa by vehicle, Event travelers would have only one access point to the Event via Gate Road along the 8-Mile access. Alternative A (Proposed Action) would result in an average wait time of five or more hours on Gate Road during the peak arrival period. There would be the potential for periodic vehicle breakdowns and collisions, resulting in longer travel and wait times to the Event and along Gate Road. Carpooling has become more popular among Event participants, with more people arriving by Burner Express Bus and the BRC Airport (BRC 2018l). This trend could relieve congestion along Gate Road and reduce average wait times.

During Exodus, employing a metered release to ensure no more than 1,000 vehicles per hour exit on CR 34 from Gate Road would help mitigate any reduction to roadway LOS on SR 447. Peak departure from the Event along SR 447 at Empire would be expected to reach 960 vehicles per hour and operate at LOS E. Peak departure would result in delays for participants heading home, with similar effects as those described for peak arrival.

Traffic congestion, particularly during peak arrival and departure times, would affect the ability of Gerlach residents to use roadways for work, leisure, or daily activities. High traffic volumes during the Event would create unsafe conditions for pedestrians and strain local roadway infrastructure. Event travelers using Jungo Road as an alternative egress route could indirectly impede employee access to the Hycroft Mine.

Alternative A (Proposed Action) would also result in traffic volumes at primary population centers in the Assessment Area during peak arrival and peak departure. In Reno, Interstate 80 east of Pyramid Highway would increase from 2017 Burning Man conditions by 3 percent to daily traffic volume of 108,500 vehicles, and Interstate 80 east of Keystone would increase by 2 percent to daily traffic volume of 105,000 vehicles. Interstate 80 east of Keystone would operate at acceptable LOS C conditions, while Interstate 80 east of Pyramid would continue to operate at unacceptable LOS F conditions. Interstate 580 would increase by 1 percent to a daily traffic volume of 165,400 vehicles and operate at LOS D conditions. In Fernley, Interstate 80 west of Wadsworth would increase by 6 percent to daily traffic volume of 165,400 vehicles and maintain acceptable LOS B conditions. Within the PLPT's Reservation, SR 447 at Nixon would operate at LOS E conditions.

In Reno, Sparks, and Fernley, during peak arrival times Event participants stopping at local stores to gather supplies would create localized delays and congestion. This type of congestion and delay would be less

pronounced during departure, because more Event participants would pass through communities on their way home without stopping to stock up on supplies.

It is possible that the estimated traffic volumes during peak arrival and departure could cause Event travelers to choose to arrive during nonpeak travel times, such as Monday or Tuesday, and leave before the peak departure times. This would reduce the short-term impact of peak arrival and departure but lead to sustained high-volume traffic conditions throughout the week. Effects on transportation from Event-peak times would spread throughout the week rather than be isolated to the start and end of the Event.

Post-Event conditions would be similar to the pre-Event and build week. Most traffic delays would be associated with large vehicles transporting Event infrastructure from the playa. Non-Event travelers traveling northbound on SR 447 and CR 34, such as those accessing nearby hunting areas, would experience fewer delays because Event-related traffic would be moving southbound. Vendor vehicles returning to the playa post-Event and entering at 12-Mile access road would create localized increases in traffic on CR 34. Reversion to the Phase 1 Closure Order boundary after the end of the Event would provide access to portions of the playa that were unavailable during the Phase 2 Closure Order period.

Roadway cleanups following the Event could cause temporary lane closures and delays. These impacts would be mainly along SR 447 and CR 34.

Alternatives Analysis—Alternative B

The nature and types of impacts on travel and transportation for non-Event visitors would be similar to those described for Alternative A (Proposed Action). Compared with Alternative A (Proposed Action), there would be less potential for congestion under Alternative B due to the decreased Event population. Traffic volumes would be highest on SR 447, but all roadway segments would continue to operate at acceptable LOS conditions. The duration of effects on traffic would be less than Alternative A (Proposed Action). Traffic and transportation would be affected by congestion, potential for vehicle and pedestrian accidents, and driver frustration.

During pre-Event and build week, large vehicles could impede traffic and result in noticeable delays along SR 447 and CR 34. Access to the playa would be available along the 3-Mile and 12-Mile access roads for recreational use of the playa. There would be no phased Closure Order, and 10,760 acres would immediately be unavailable for access at the start of the closure period and would be unavailable to the public for 42 days. Population centers within the Assessment Area would experience an increase in Event-related traffic during the pre-Event period, but to a lesser degree compared with Alternative A (Proposed Action).

Travel times to the playa for Event participants would be less that those described in Alternative A (Proposed Action). Using estimates from the 2017 Burning Man Event Traffic Study, Alternative B would have a peak arrival of 386 vehicles per hour with acceptable LOS conditions (Solaegui Engineers 2018). Alternative B would reduce the level of traffic and reduce the potential of participants using undesirable routes to access the Event. Fewer vehicles and participants would allow for more free-flowing traffic and reduced potential for vehicle accidents or breakdowns. With the employed metered release protocol onto CR 34 from Gate Road upon Exodus, peak departure from the Event along SR 447 is estimated to be 485 vehicles per hour (Solaegui Engineers 2018). Event participants heading home would experience minor delays as roadway LOS conditions would operate as acceptable.

Nonparticipants near the playa would experience a short-term impact from peak arrival and departure. Alternative A (Proposed Action) would increase the difficulty of accessing the playa during peak arrival due to the restrictions on the 8-Mile access road, but the reduction in Event participant, vendor, and staff and volunteers' vehicles compared with Alternative A (Proposed Action) would allow nonparticipants to more

freely using the 3-Mile and 12-Mile entrance points. Gerlach residents would experience similar impacts as described during Alternative A (Proposed Action), but to a lesser degree. Access to the playa during peak departure should not be a significant issue, as Event participants would be traveling in the opposite direction.

Under Alternative B, Event participants would stop at population centers to gather supplies before traveling to the Event and congest urban traffic conditions. Effects on transportation would include delays and increased potential for collision for nonparticipants during peak arrival.

Non-Event travelers accessing the playa along the 12-Mile access road would experience the same types of impacts described for Alternative A (Proposed Action), but to a lesser degree. Compared with Alternative A (Proposed Action), traffic conditions under Alternative B would be less likely to discourage Event travelers from arriving during nonpeak times to avoid traffic conditions. This would result in minimal nonpeak arrival and departure traffic.

The nature and types of post-Event impacts would be the same as those described for Alternative A (Proposed Action), but to a lesser degree. Most delays for participants would be from the large vehicles transporting Event infrastructure. There would be localized traffic and minor decreases in vehicle speed for travelers encountering water trucks, sanitation vehicles, and other vendor vehicles associated with the Event. BRC roadway cleanup crews could interfere with normal travel conditions in the Assessment Area, but litter and debris left along the roadways would be less than Alternative A (Proposed Action).

Alternatives Analysis—Alternative C

Alternative C would result in nearly the same nature, types, location, and intensity of impacts described for Alternative A (Proposed Action). One exception would be that there would be no phased Closure Order under Alternative C. The 18,940-acre Closure Area under Alternative C would immediately become unavailable for access across the playa. The duration of the Closure Order would be the same as Alternative A (Proposed Action). Non-Event travelers would still be able to access the playa along the 3-Mile and 12-Mile access roads with the same potential for vendors, contractors, staff and volunteers, and law enforcement vehicles to create localized congestion at 12-Mile access road.

The other exception would be that compared with Alternative A (Proposed Action), a 9-mile-long, 16-lane Gate Access road would accommodate more vehicles during peak arrival times. Alternative C could also disincentivize participants from leaving the Event during nonpeak times due to the extended travel distance along Gate Road. These factors would reduce the potential for congestion on CR 34 and SR 447.

Alternatives Analysis—Alternative D

Under Alternative D, the Burning Man Event would result in the same types of impacts on travel and transportation as Alternative A (Proposed Action). The location and intensity of impacts would be slightly different because the Event boundary and Closure Area would be smaller, and the population would be a maximum of 80,000. Alternative D would have equivalent traffic volume levels as the 2017 Burning Man Event described in the affected environment and 2017 Burning Man Event Traffic Study (Solaegui Engineers 2018).

Most impacts on travel and transportation would occur during peak arrival and departure time. The 2017 Burning Man Event Traffic Study describes the estimated peak arrival and departure conditions along SR 447. Peak arrival would operate at acceptable levels, but there would be periodic congestion, which could lead to driver fatigue and the corresponding potential for accidents. The trend toward participants carpooling through Black Rock Express or Black Rock Air would mitigate the congestion and associated effects on transportation along SR 447.

Employing a metered release program and capping the number of vehicle passes to 35,000 would help mitigate potential reductions to roadway LOS along SR 447. The roadway is estimated to operate at LOS D, and there would be associated high congestion levels and delays (Solaegui Engineers 2018).

Like Alternative A (Proposed Action), a two-phased Closure Order would preclude access on the playa during the Closure Order period. During the Phase 1 closure, there would be no access within a 9,570-acre portion of the playa. Phase 2 would preclude access on 14,330 acres for the 14-day period covering build week and the Event. Access to the playa would remain restricted to the 3-Mile and 12-Mile access roads. Transportation impacts in Gerlach would be the same as those described for Alternative A (Proposed Action), but to a lesser degree.

Alternative D would result in the traffic volumes in nearby population centers described in the 2017 Burning Man Event Traffic Study (Solaegui Engineers 2018). The nature and types of impacts would be as described for Alternative A (Proposed Action).

Following the Event, the Closure Order boundary would revert to the Phase 1 9,570 acres. This would restore access to a 4,760-acre portion of the playa.

Alternatives Analysis—Alternative E

Under Alternative E, the BLM would not issue an SRP, and BRC would not implement traffic control or stipulations. There would be no limit to the number of vehicles accessing the playa, no Burner Bus Express, and no BRC regulated airport. Under Alternative E, traffic would likely resort to daily existing conditions as described in the 2017 Burning Man Event Traffic Study (Solaegui Engineers 2018). With the availability of the playa, recreationists seeking access during the previously unavailable time frame may contribute to increased traffic conditions.

Individuals may still visit the playa for recreational purposes. Without a Burning Man Event Closure Order, all playa acreage and access points would be available for public use. Impacts on transportation and access to the playa would depend on the number of recreationists and other populations interested in accessing the previously unavailable playa space unimpeded by the recreational impacts associated with the Event. While there would be no Burning Man Event Closure Order, BLM may impose a closure order for other reasons. Access to the playa would ultimately be subject to any BLM management decisions. Given the historical nature of the Event at the Black Rock Desert, it is possible for an unauthorized gathering to occur on the playa. Population centers within the Assessment Area could experience similar traffic conditions as described above, if those seeking a Burning Man Event experience stock supplies. Access to the playa for participants would come in conflict with populations accessing the playa for recreational purposes. There would likely be a sustained impact on transportation during the traditional Burning Man Event time frame, and those gathered on the playa would be more likely to leave the Event to restock on supplies under this alternative. Traffic impacts from restocking would be greatest in communities near the playa, because those gathered on the playa would not likely travel the distance to population centers to restock on supplies.

Following the Event, there would likely be some leftover material. Leftover trash and debris would impede future access to the playa. There would be no managed roadway clean up, and while travelers would not be affected by associated lane closures, drivers could be distracted by litter and debris left on the roadway. Overall impacts on transportation associated with Alternative E would likely decrease over time as participants realized the Event has become unsanctioned.

3.10 CUMULATIVE IMPACTS SUMMARY

Appendix C outlines the methodology used to assess cumulative impacts in the Assessment Areas. Table D-1 in **Appendix D** lists the past, present, and reasonably foreseeable future actions that may contribute

to cumulative impacts in the Assessment Areas. **Appendix D** also provides a more detailed cumulative impacts analysis for each of the resources and resource uses in this chapter. The following summarizes the nature and types of potentially overlapping cumulative impacts for multiple resource areas.

3.10.1 Biological, Cultural, and Physical Resources

The types of past, present, and reasonably foreseeable future actions that have and would continue to affect biological, cultural, and physical resources include human-related activities, such as motorized and nonmotorized recreation in the NCA; transportation and communication rights-of-way (ROWs); geothermal and minerals development; livestock grazing; landscape treatments, such as wildlife habitat improvement projects and wildfire suppression and fuels-reduction treatments; climate change; and wildfire. Reasonably foreseeable future actions are summarized in **Appendix D** (Table D-1) and in Table 5-2 of the Burning Man 2012–2016 SRP EA (BLM 2012a).

The Event has contributed to playa surface disturbance, loosened sediment, and associated wind erosion at the Event location. 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). The actual amount of wind erosion in the area would vary based on climate, but the increase in soil eroded would be expected to be proportionate to the increase in area disturbed. Combined with previous Events, a continuation of the Event under Alternatives A–D would add 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, mound formation, and dust storms on the playa from all human uses (BLM 2006).

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 surface disturbance over approximately 5 percent of the playa. This would lead to an increased potential for erosion and dust storms associated with the Event, which as the Event occurs year after year, could result in ongoing and repeated surface disturbances to the playa, including routes of the Nobles Trail. This increased potential would be short term, as rains that generally occur in the winter months would promote the formation of a surface crust on the playa, which would decrease the ability of winds to move dust. Playa restoration efforts would also reduce the potential for these impacts.

The potential for an unpermitted gathering is likely under Alternative E. Under this alternative, participants would not be restricted to one playa access point, and the potential for unauthorized off-road vehicle use, burning directly on the playa, and other activities that could potentially lead to playa deformation and mound formation could be increased. Under Alternative E, wind erosion and mound formation from other unrelated recreational activities and from natural conditions would continue. The approximately 14,810 acres of surface disturbance from Event-related activities within the 169,000-acre playa surface would continue to be subject to accelerated erosion associated with human-caused disturbance. The BLM may implement management strategies, which would reduce cumulative impacts less than under Alternative A.

Other recreation in the NCA alters habitat conditions and generates noise that can disturb individual species or cause habitat avoidance. Potential cumulative impacts could occur from recreation in the NCA, such as rocket launches, jeep tours, OHV races, and other activities that release tailpipe emissions. The construction of the Granite Creek Ranch recreational cabins could also result in emissions by encouraging vehicle travel in the area, which can result in criteria air pollutant and greenhouse gas emissions. Road ROWs, the SR 445 Pyramid Highway improvements, and other road construction projects would support additional vehicle traffic and result in increased criteria air pollutant and greenhouse gas emissions. Recreation in the NCA, both motorized and nonmotorized, has affected playa materials by breaking the surface crust and creating wind erosion and subsequent mound formation.

Under all alternatives, surface disturbance would continue to affect biological, cultural, and physical resources by cumulatively degrading resource qualities or the quantity of the resource that exists in each resource's respective Assessment Area (see **Appendix A** and **Table E-12** in **Appendix E**). These types of impacts are expected to increase in the future as demand for infrastructure increases along with human populations in the Assessment Areas. 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. Geothermal and mineral development, and infrastructure projects identified in **Appendix D** could all contribute to cumulative impacts on air quality through emissions associated with the construction of facilities and transmission lines, development of energy sources, mining activities, or by facilitating increased fossil fuel use. For cultural resources, these activities can cause a loss or disturbance of cultural resources that are not protected from a change in setting, pressure from incremental and/or repeated uses, changes in access, or vandalism.

Continued and future geothermal development on and adjacent to the playa would be expected to disturb soils. 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-way and mineral extraction, have also affected water quality from construction activities that result in erosion or groundwater contamination. Disturbance to soil and water resources 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, 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.

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 $PM_{2.5}$ and PM_{10}. Combined with other past, present, or reasonably foreseeable future actions in the Assessment Area, including the nearby Hycroft Mine, cumulative impacts would be localized, short-term particulate emissions caused by the Event. The Hycroft Mine would increase the modeled impacts, particularly in the region immediately surrounding the mine facility, but would not influence the overall maximum particulate matter concentrations in the Assessment Area (see **Appendix D** and Strohm 2018c). The intensity and timing of these impacts would depend on population, vehicle passes, and other aspects specific to each alternative.

All Event alternatives analyzed as part of this EIS, combined with past, present, and reasonably foreseeable future actions, have the potential to contribute to the cumulative impacts on biological and cultural resources within the Assessment Area through elevated noise and ALAN. Depending on the location and scale of the actions, the sounds and light can create a permanent, or temporary increase in ambient sound and ALAN levels. Some actions involve sounds and light from energy, minerals, and transportation projects. Others involve temporary or less noticeable sounds and light from recreation activities and resource conservation.

Under all alternatives, all BLM-administered lands would continue to be managed in a manner that would minimize the generation of permanent sound and light sources. 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 and ALAN levels from traffic and Event activities. Alternatives that integrate an increase in Event attendance and Closure Area would contribute to cumulative impacts at a greater degree than those that reduce or maintain the Event size. Alternative E would have similar cumulative impacts in the short term, but to lesser extent over the long term because there would eventually be no Event. The cumulative impacts are highly influenced by sound and ALAN levels associated with past, present, and reasonably foreseeable future actions (RFFAs). Required design features and other measures incorporated as part of the activities in **Appendix D** (Table D-1), combined

with proposed mitigation in **Appendix E**, would reduce the potential for cumulative impacts from noise and ALAN.

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 RFFAs, 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 population increases. In the short term, Alternative E would have similar cumulative impacts as the Event alternatives, but to a lesser extent in the long term because there would eventually be no Event. The cumulative impacts are influenced by the likelihood of litter associated with past, present, and reasonably foreseeable future actions.

Impacts on water quality have occurred and would occur from restoration activities and resource planning. For example, 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. Hydrological modifications, including surface water diversions, channel modifications, and dams or impoundments, 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. Informal spring modifications, such as small-scale impoundments to create soaking "tubs," wooden benches and "docks" extending into soaking pools, and informal pathways along pools and spring brooks, have also removed some riparian vegetation at these locations. Though the intensity of these impacts is generally low, such impacts are widespread and would affect many hot springs in the Assessment Area under all alternatives.

Implementing traffic controls, dust abatement, and trash cleanup post-Event, as well as discouraging recreational hot spring use, would reduce impacts on the environment under all Event alternatives. Because measures to discourage recreational hot spring use would not be in place under Alternative E, cumulative impacts on biological, cultural, and physical resources at area springs could occur at a higher rate in the short term; but, if the BLM implements management strategies to protect resources, cumulative impacts would be less. In addition, as informal gatherings decline, use of and cumulative impacts on the springs in the long term would be less than for the Event alternatives.

All Event alternatives have the potential to affect water quality on the PLPT's Reservation as increased visitation and traffic increases the likelihood of accidental discharges to surface waters on the reservation. During the 2018 Event, a large moving truck traveling back from the playa overturned on a curve on SR 447 near Marble Bluff. This resulted in multiple gallons of diesel leaking onto the highway. Playa sediments from passing vehicles, as well as accidental wastewater spills, could potentially be mobilized during a storm/runoff Event and affect surface waters on the PLPT's Reservation. The potential for these impacts would be greatest under Alternatives A, C, and D. Impacts under Alternative B would be proportionately less. There would be no long-term cumulative impacts under Alternative E.

Livestock grazing, and wild horses and burros have altered habitat conditions in rangelands and especially in springs, where these animals congregate for shade and succulent forage during the warm season. 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 would be reduced under all alternatives.

Impacts on vegetation have also occurred from vegetation and weed management activities. Federal, state, and local governments would continue to monitor and treat noxious weed populations in their jurisdiction under all alternatives. 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 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 would likely see relatively greater contributions to cumulative impacts than alternatives that reduce the Event size, and to a lesser extent, keep the Event at its current size.

Increasing temperatures would contribute to biological, cultural, and physical resource impacts across all alternatives. For example, warming temperatures can alter species' temporal activities, such as migration, breeding, and reproduction (Walther et al. 2002). Delays in spring migration could increase competition for nesting sites or result in desynchronization of migration and food availability. Erosion and weathering from extreme weather events and wildfire would increase the potential for impacts on cultural resources.

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). Under all alternatives, climate change is expected to alter temperature and precipitation, including snowmelt (IPCC 2018). This could 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 saltcedar (tamarisk spp.) (Stromberg et al. 2013; Glenn and Nagler 2005).

Wildfires are becoming more frequent and intense. 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 species. Warming temperatures and drier climates would increase the probability of wildfires, thus negatively affecting biological, cultural, and physical resources under all alternatives. 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. Fire starts from vehicles along travel routes may also increase, cumulatively contributing to this impact. The potential for fire starts from vehicles would be highest under Alternatives A and C, and proportionately less under Alternatives B, D, and E.

3.10.2 Public Health and Safety

Past, present, and reasonably foreseeable future actions that have affected or could affect public health and safety in the cumulative impacts analysis Assessment Area involve recreation, communications, energy, and minerals development, transportation, and land management activities. Reasonably foreseeable future actions include Granite Creek Ranch recreational cabins, Fly Ranch development, and Black Rock Station development. These actions would increase risks of traffic incidents, potential user conflict, and impacts on air quality, and involve opportunities for wastes to be released, intentionally and unintentionally into the environment. Present and reasonably foreseeable future actions could affect public health and because these actions increase risks of traffic incidents, potential user conflict, and impacts on air quality; refer to Section 3.6.1, Air.

The cumulative impacts of the Event alternatives as analyzed include straining the resources of local communities and partner agencies. This continuous resource strain could become unsustainable and prevent the agencies from meeting other priorities, public safety operations, and public interests. Refer to Section 3.7, Social Values and Economics, for further discussion. The Event alternatives would result in traffic, contributing to impacts on emergency response and evacuation as a result of manmade or natural

disasters. Requiring use of the same evacuation routes as present and foreseeable future actions would potentially delay or impede emergency response. The Event alternatives would contribute to impacts associated with fire safety if a fire traveled offsite and resulted in an emergency response, or a wildland fire was burning nearby with aerial suppression tactics that conflicted with Burning Man Airport operations.

The Event alternatives would contribute to cumulative health-related impacts associated with playa dust during the Main Event, build week, pre-Event, and post-Event (see Public Health and Safety at the Burning Man Event; BLM 2018b).

Under all alternatives, all BLM-administered lands would continue to be managed in a manner that would minimize waste release. When combined with past, present, and reasonably foreseeable future actions, the Event alternatives could contribute to cumulative impacts on hazardous and solid wastes. The cumulative impacts would increase as the population increases. Depending on the location and scale of the actions, including transport, use, or disposal, the Event alternatives could create a hazard to the public or the environment. Non-Event actions could involve large numbers of people in specified areas, but rather smaller groups in numerous areas, which can influence the dispersal of wastes.

3.10.3 Social Values and Economics

Past, present, and reasonably foreseeable future actions that affect social values and economics include recreation in the NCA, communication, mineral and energy development projects, and roadway infrastructure projects, as well as regional tourism events, such as Hot August Nights in Reno and the Best in the West Nugget Rib Cook-off in Sparks. 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. Some of the cumulative action could have impacts on environmental justice but it is unlikely that dispersed recreation would result in effects that would disproportionately affect identified low income and minority populations.

Under all Event Alternatives, the Burning Man Event would continue to contribute to local economic contributions, supporting related industries. Depending on the timing of proposed construction and development actives in relation to the Event, there is potential for additional strains on public services including but not limited to traffic control, law enforcement, and emergency medical services. Due to the short-term nature of the Event, strains on services would be temporary and short term if they occurred. The potential for additional strain on services would be greatest under Alternatives A (Proposed Action) and C due to the highest level of services demanded under these alternatives. The dates of the Event coincide with other tourist activities occurring in the area, including the Rib Cook-off 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 have increased room rates. This could affect the level of non-Event tourists. Under other alternatives, impacts would be proportionately less based on the lower Event population.

The Event alternatives would contribute to cumulative effects on identified minority and low-income populations primarily due to an increase in waste and traffic. The Event alternatives 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 transportation and infrastructure projects identified in **Appendix D** (Table D-1), there is the potential for impacts on traffic in rural communities. Similarly, transportation projects could contribute to traffic congestion on area roadways and may further affect area traffic. 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. In the long term, roadway improvement projects could reduce congestion in certain areas once completed.

Proposed development activities would likely include mitigation and monitoring (see Mitigation Measures PHS-1, PHS-5, PHS-6, TRAN-1, and TRAN-2 and Recommended Monitoring Measures REC-1 and TRAN-1; **Appendix E**) to ensure that the effects of these actions would be minimized. Impacts under all alternatives would be limited to the Closure Order, with the peak contribution to cumulative impacts in the weeks surrounding the Event under all alternatives. The potential for contributions to cumulative impacts would be greatest under Alternative A (Proposed Action) and Alternative C, due to the increased level of impacts from an increased population size under these alternatives. It is unlikely that past, present, and reasonably foreseeable future actions would combine with the Event alternatives to result in cumulative disproportionate effects on minority populations and cause environmental justice impacts.

If an unpermitted event occurred, it would contribute some of the same economic contributions as Alternative A (Proposed Action) in the cumulative impacts 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). If a large, informal gathering occurred at the playa in the absence of a formal SRP, then contributions to cumulative environmental justice and social values effects would need to be offset by BLM management and enforcement. A BLM response would minimize impacts on local communities' quality of life and nonmarket values in the area and minimize the contribution to cumulative impacts.

3.10.4 Special Designations

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 Burning Man Event on these values, refer to the other resources described under **Section 3.10**.

Overall, wilderness areas and WSAs in the Assessment Area maintain a high degree of naturalness. Past and present actions that could affect wilderness areas and WSAs include regional population growth, dispersed recreation activities within the NCA, the BLM's Winnemucca District Vegetation Management Plan; and the BLM's Black Rock Desert–High Rock Canyon Emigrant Trails NCA Wilderness Management Plan.

As the population of cities and communities in the cumulative impacts Assessment Area grows, the demand for recreation-related opportunities would also grow under all alternatives. Foreseeable future actions include more people seeking recreation, which would 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 would continue to rise under all Event alternatives with more people visiting the vicinity to attend the Event. The cumulative effects of Alternatives B and D would be similar to those of Alternative A (Proposed Action) and Alternative C, but the incremental contribution of a smaller Event to cumulative effects would be reduced. Under Alternative E, fewer people on the playa in the longer term would reduce the intensity of impacts from unauthorized use.

The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Under all alternatives, vegetation management activities would improve ecosystem composition, structure, and diversity, which would improve the overall apparent naturalness of the area. In the short term, treatment activities combined with the Event alternatives could affect apparent naturalness due to an increase in human presence on the playa.

3.10.5 Visitor Uses

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 recreational activities, or cause physical displacement of visitors. Past, present, and reasonably foreseeable future actions listed in **Appendix D** (Table D-1) with the potential to cumulatively affect recreation in the Assessment Area are past Burning Man Events, previous wilderness designations, previous and proposed transportation infrastructure improvements, climate change, and wildfire.

Cumulative impacts on recreation and 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 period could also cumulatively change the level of traffic congestion and access in the Assessment Area.

Past Events would cumulatively affect recreation and transportation by establishing an expectation among all area visitors that there would be an Event. This expectation would likely deter some non-Event visitors from visiting the playa during the Event. Alternative A (Proposed Action) and Alternative C could increase the desire among non-Event visitors to avoid the Assessment Area during the Closure Order period. For Event attendees, Alternative A (Proposed Action) and Alternatives C and D would align with existing expectations. Alternatives B and E would be inconsistent with Event participant expectations.

The Black Rock Desert Playa is a popular location because of the Event and because of other dispersed recreational opportunities, including hunting, camping, off-road and off-highway vehicle usage, and rocketeering. Past Events, combined with future Events or gatherings on the playa, would continue to increase overall annual visitation to the playa under all alternatives, although over the long term, Alternatives B and E would result in fewer visits directly associated with the Event. Any management that would restrict recreational use to protect resource values or public health and safety, such as at hot springs, would reduce the number of recreation opportunities in the cumulative impact Assessment Area.

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' opportunities for solitude. Impacts would be proportionately less under Alternatives B and D. Short-term impacts under Alternative E would be equal to or greater than those under Alternatives A and C, but they would diminish over time.

In the short term, all alternatives would cumulatively affect traffic conditions near the Event and in surrounding urban centers within the Assessment Area. During the peak arrival and departure periods, roads would have higher traffic volumes with longer commute times for urban dwellers. Higher traffic densities can increase the potential for more vehicle-to-vehicle and vehicle-to-animal collisions and moving violations. These impacts would decrease over time under Alternative E.

As the populations of Reno and Fernley grow in response to the development of the Tahoe-Reno Industrial Center, traffic volume on SR 447 and connected roadways is likely to increase. 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 Event populations of 100,000 under Alternative A (Proposed Action) and Alternative C. The timing and management of infrastructure expansion and development could affect transportation conditions during the Event period. Roadway improvement project construction during the Closure Order period could result in increased congestion for Event participants, non-Event populations, and urban commuters in the Reno area.

Over time, roadway surface deterioration on CR 34 and SR 447 from Event and non-Event traffic may outpace Washoe County and the NDOT's ability to adequately maintain the roadway surfaces. 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. The potential for these impacts would be greatest under Alternative A (Proposed Action) and Alternative C. Under Alternatives B and E, there would be less traffic and less potential for cumulative effects on roadways and access.

The increasing threat of larger, more intense wildfires would cumulatively affect the quality of recreation and transportation conditions. In the summer of 2017, the Tohakum 2 wildfire burned 94,221 acres and Twin Buttes burned 562 acres. Both wildfires affected traffic for Event attendees. Fires could 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, especially for those with respiratory issues and other sensitive groups, including children and the elderly.

Chapter 4. Consultation and Coordination

4.1 INTRODUCTION

During the NEPA process for this EIS, the BLM formally and informally consulted and coordinated with other federal agencies, state and local governments, Native American tribes, and the interested public.

The following sections describe the public involvement, consultation, and coordination process. Included are key consultation and coordination activities undertaken to ensure the BLM's compliance with, in both the spirit and intent, 40 CFR 1501.7, 1502.19, and 1503.

4.2 PUBLIC INFORMATION MEETINGS, NOTICE OF INTENT, AND PUBLIC COMMENTS

In November 2017, the BLM issued a press release to the public for a series of public outreach meetings with the goal of soliciting early public input on the proposed renewal of the SRP for 2019 through 2028. The press release announced three public outreach meetings on December 4, 5, and 6, 2017, in Gerlach, Reno, and Lovelock, Nevada, respectively. The press release also solicited input on the issues, impacts, and potential alternatives. A total of 73 individuals attended the public outreach meetings: 25 at the Gerlach meeting, 30 at the Reno meeting, and 18 at the Lovelock meeting.

The BLM published an NOI in the *Federal Register* on June 20, 2018, announcing the beginning of the 45-day scoping period to solicit more public comments and to identify additional issues for the Burning Man SRP/EIS. The NOI announced two public scoping meetings on July 9 and 10, 2018, in Fernley and Lovelock, Nevada, respectively. These scoping meetings encouraged participants to discuss concerns and questions with the BLM, BRC, and other agency representatives. A total of 56 individuals attended[1] the public scoping meetings: 20 at the Fernley meeting and 36 at the Lovelock meeting.

A total of 77 comment submissions were received during the public outreach period in the fall of 2017, and a total of 327 comment submissions were received during the public scoping period during the summer of 2018. A total of 550 substantive comments were derived from all comment letters received during the public outreach and public scoping periods. Most of the substantive comments during both of these comment periods were related to public health and safety, conflicting uses, social values and economics, and travel and transportation.

4.3 CONSULTATION AND COORDINATION WITH AGENCIES AND TRIBAL GOVERNMENTS

Various federal laws require the BLM to consult with Native American tribes, the SHPO, the USFWS, and the EPA during the NEPA decision-making process. In addition to formal scoping, the BLM implemented collaborative outreach and a public involvement process that included inviting agencies to be cooperative partners for the EIS planning process. A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into formal agreement with the lead federal agency to help develop an environmental analysis.

4.3.1 Government-to-Government Consultation with Native American Tribes

The federal government works on a government-to-government basis with Native American tribes as they are recognized to be separate governments. This relationship was formally recognized on November 6, 2000, with Executive Order 13175 (*Federal Register*, Volume 65, page 67249). As a matter of practice, the BLM coordinates with all tribal governments, associated native communities, native organizations, and

[1] The numbers of attendees are estimated based on participants who signed in to each meeting.

tribal individuals whose interests might be directly and substantially affected by activities on public lands. In addition, Section 106 of the NHPA requires federal agencies to consult with Native American tribes for undertakings on tribal lands and for historic properties of significance to the tribes that may be affected by an undertaking (36 CFR 800.2[c][2]). BLM Manual 1780, Tribal Relations, and BLM Handbook H-1780-1, Improving and Sustaining BLM-Tribal Relations, provide guidance for Native American consultations.

Executive Order 13175 stipulates that, during the NEPA process, federal agencies consult tribes identified as being directly and substantially affected. Consultation between the BLM and interested tribal entities is summarized in **Table 4-1**, below.

Table 4-1
Tribal Consultation

Tribe Name	Correspondence Type	Date Sent	Date Received
Pyramid Lake Paiute Tribe	Letter introducing the project	November 27, 2017	November 30, 2017
Reno-Sparks Indian Colony	Letter introducing the project	November 27, 2017	November 28, 2017
Summit Lake Paiute Tribe	Letter introducing the project	November 27, 2017	November 29, 2017

Consultation and informational meetings to discuss the Proposed Action were held with the PLPT on August 16, 2017; January 24, 2018; and August 28, 2018. The PLPT emphasized that their concerns extend beyond the reservation and aboriginal territory encompasses the affected environment. Tribal and cultural committee members expressed concerns regarding unauthorized artifact collection, especially along the travel routes. They also expressed concerns regarding increased visitation and impacts on springs and other culturally important sites surrounding the playa. Other concerns expressed by tribal members are analyzed further in **Section 3.4.2**. Consultation and informational meetings between the BLM and the PLPT to address these concerns are ongoing.

4.3.2 Nevada State Historic Preservation Officer Consultation

In accordance with the requirements of Section 106 of the NHPA, the BLM is coordinating with and soliciting input from the Nevada SHPO.

4.3.3 US Fish and Wildlife Service Consultation

Consultation with the USFWS is required under Section 7(c) of the Endangered Species Act (ESA) before the BLM begins any project that may affect federally listed or endangered species or their habitat. Current surveys have indicated that ESA-listed species are not found within the Assessment Area. This indicates that a draft biological assessment would not be needed to evaluate the potential impact of the event on federally listed threatened and endangered species. The USFWS was contacted in December 2017 to help characterize wildlife resources in the Assessment Area.

4.3.4 US Environmental Protection Agency

NEPA regulations require that EISs be filed with the US EPA (40 CFR 1506.9). The draft and final Burning Man Event SRP EISs would be submitted to the EPA, as required by CEQ regulations. In addition, the US EPA has signed a Memorandum of Understanding (MOU) agreeing to be a cooperating agency for this EIS.

4.4 COOPERATING AGENCIES

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating agencies and tribes work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks.

Agencies and tribal entities that were invited and those who accepted and signed an MOU agreeing to participate as cooperating agencies for this NEPA process are presented in **Table 4-2**, below.

Table 4-2
Cooperating Agency Participation

Agencies and Tribes Invited to be Cooperators	Accepted	Declined or No Response
Churchill County	No	Yes
City of Alturas	No	Yes
City of Fernley	No	Yes
City of Lovelock	No	Yes
City of Reno	No	Yes
City of Sparks	No	Yes
Federal Aviation Administration	No	Yes
Federal Bureau of Investigation	Yes	No
Humboldt County	Yes	No
Lyon County	No	Yes
Modoc County	No	Yes
Nevada Department of Transportation	Yes	No
Nevada Department of Wildlife	No	Yes
Nevada Division of Emergency Management, Department of Public Safety	No	Yes
Nevada Highway Patrol, Department of Public Safety	No	Yes
Nevada State Fire Marshall	No	Yes
Other state agencies determined through the Nevada State Clearinghouse	No	Yes
Pershing County	Yes	No
Pershing County Sheriff's Office	Yes	No
Pyramid Lake Paiute Tribe	Yes	No
Reno-Sparks Indian Colony	No	Yes
Summit Lake Paiute Tribe	No	Yes
US Department of Homeland Security	Yes	No
US Department of the Interior, National Park Service	No	Yes
US Environmental Protection Agency	Yes	No
US Fish and Wildlife Service	No	Yes
Washoe County	Yes	No

The BLM also informed the Sierra Front-Northwestern Great Basin Resource Advisory Council of the project.

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