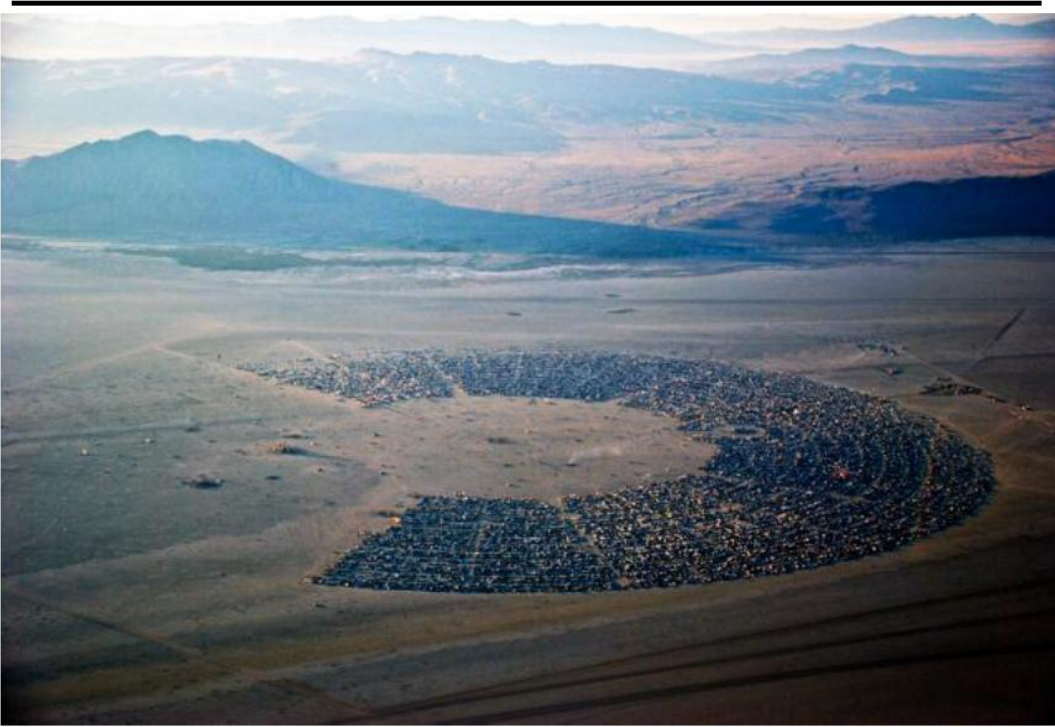


ENVIRONMENTAL ASSESSMENT

DOI-BLM-NV-W030-2012-0007-EA

Burning Man 2012-2016
Special Recreation Permit
NVW03500-12-01



June 2012

Prepared by:

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

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DOI-BLM-NV-W030-2012-0007-EA

CONTENTS

List of Acronyms	ix
1. Introduction	1-1
1.1 Background.....	1-1
1.2 Purpose and Need.....	1-2
1.3 Land Use Conformance Statement.....	1-2
1.4 Relationship to Laws, Regulations, and Other Plans.....	1-5
1.5 Issues.....	1-5
2. Proposed Action and Alternatives	2-1
2.1 Alternative 1: 58,000 to 70,000-Person Maximum Alternative (Proposed Action).....	2-1
2.1.1 Event Setup and Signage.....	2-2
2.1.2 Public Access.....	2-7
2.1.3 Traffic Control.....	2-7
2.1.4 Event Security and Public Safety.....	2-8
2.1.5 Resource Management.....	2-11
2.1.6 Fire Management.....	2-12
2.1.7 Dust Abatement.....	2-12
2.1.8 Runway and Aircraft.....	2-13
2.1.9 Sanitary Facilities.....	2-14
2.1.10 Event Take Down and Clean-Up.....	2-14
2.1.11 Permits Required.....	2-16
2.2 Alternative 2: 50,000-Person Maximum Alternative.....	2-16
2.3 Alternative 3: No Action/No Event Alternative.....	2-17
2.4 Alternatives Considered but Eliminated from Detailed Study.....	2-17
2.4.1 Private Land Alternatives.....	2-18
2.4.2 Other (Public Land) Locations Alternative.....	2-18
2.4.3 Location Rotation Alternative.....	2-19
2.4.4 Revised Access Road and Multiple Access Road Alternative.....	2-19
2.4.5 60,000-Person Maximum Alternative.....	2-20
2.4.6 Less than 50,000-Person Alternative.....	2-20
3. Affected Environment	3-1
3.1 Introduction.....	3-1
3.1.1 Background.....	3-1
3.1.2 Affected Resources.....	3-1
3.1.3 Areas of Assessment.....	3-3
3.2 Air Quality.....	3-6
3.2.1 Climate and Meteorology.....	3-6
3.2.2 Ambient Air Quality.....	3-6
3.2.3 Climate Change.....	3-7
3.3 Areas of Critical Environmental Concern (ACECs).....	3-7
3.4 Cultural Resources.....	3-8
3.5 Environmental Justice.....	3-10
3.5.1 Population.....	3-10
3.5.2 Demographics.....	3-11

3.6	Invasive, Nonnative Species.....	3-12
3.7	Migratory Birds.....	3-13
3.7.1	Raptors.....	3-14
3.8	Native American Religious Concerns.....	3-15
3.9	Threatened and Endangered Species.....	3-15
3.10	Wastes, Hazardous or Solid.....	3-16
3.10.1	Solid Waste.....	3-16
3.10.2	Hydrocarbon Wastes.....	3-17
3.10.3	Offsite Waste.....	3-17
3.10.4	Wastewater.....	3-17
3.10.5	Hazardous Materials.....	3-18
3.11	Water Quality.....	3-18
3.11.1	Surface Water.....	3-19
3.11.2	Groundwater.....	3-24
3.12	Wetlands and Riparian Zones.....	3-24
3.13	Wilderness.....	3-24
3.14	Economics.....	3-25
3.14.1	Employment.....	3-25
3.14.2	Businesses.....	3-27
3.14.3	Personal Income.....	3-27
3.14.4	Pyramid Lake Paiute Tribe.....	3-28
3.14.5	Government Fiscal Conditions.....	3-29
3.15	Noise (Quiet).....	3-31
3.16	Public Health and Safety.....	3-33
3.17	Recreation.....	3-35
3.18	Social Values.....	3-37
3.18.1	Housing.....	3-37
3.18.2	Law Enforcement.....	3-38
3.18.3	Fire Protection and Emergency Response.....	3-38
3.18.4	Emergency Medical Services.....	3-39
3.18.5	Waste and Utilities.....	3-39
3.18.6	Historic Social Context and Recent Trends.....	3-40
3.18.7	Attitudes Toward Burning Man.....	3-41
3.19	Soils and Playa Sediments.....	3-42
3.20	Special Status Species.....	3-46
3.21	Transportation and Traffic.....	3-48
3.21.1	Existing Conditions.....	3-48
3.21.2	Daily Roadway Segment Traffic Volumes and Level of Service.....	3-49
3.22	Vegetation.....	3-50
3.23	Visual Resources (including Dark Skies).....	3-50
3.23.1	Visual Resources.....	3-50
3.23.2	Dark Skies.....	3-52
3.24	Wild Horse and Burros.....	3-52
3.25	Wilderness Study Areas.....	3-53
3.26	Wildlife.....	3-54

4. Environmental Consequences	4-1
4.1 Introduction.....	4-1
4.2 Air Quality.....	4-1
4.2.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-1
4.2.2 Alternative 2: 50,000-Person Maximum.....	4-5
4.2.3 Alternative 3: No Action Alternative.....	4-6
4.3 Areas of Critical Environmental Concern (ACECs).....	4-6
4.3.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-6
4.3.2 Alternative 2: 50,000-Person Maximum.....	4-7
4.3.3 Alternative 3: No Action Alternative.....	4-7
4.4 Cultural Resources.....	4-7
4.4.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-7
4.4.2 Alternative 2: 50,000-Person Maximum.....	4-8
4.4.3 Alternative 3: No Action Alternative.....	4-8
4.5 Environmental Justice.....	4-9
4.5.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-9
4.5.2 Alternative 2: 50,000-Person Maximum.....	4-9
4.5.3 Alternative 3: No Action Alternative.....	4-10
4.6 Invasive, Nonnative Species.....	4-10
4.6.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-10
4.6.2 Alternative 2: 50,000-Person Maximum.....	4-11
4.6.3 Alternative 3: No Action Alternative.....	4-11
4.7 Migratory Birds.....	4-11
4.7.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-12
4.7.2 Alternative 2: 50,000-Person Maximum.....	4-13
4.7.3 Alternative 3: No Action Alternative.....	4-13
4.8 Native American Religious Concerns.....	4-14
4.8.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-15
4.8.2 Alternative 2: 50,000-Person Maximum.....	4-16
4.8.3 Alternative 3: No Action Alternative.....	4-16
4.9 Threatened and Endangered Species.....	4-17
4.9.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-17
4.9.2 Alternative 2: 50,000-Person Maximum.....	4-17
4.9.3 Alternative 3: No Action Alternative.....	4-18
4.10 Wastes, Hazardous or Solid.....	4-18
4.10.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-18
4.10.2 Alternative 2: 50,000-Person Maximum.....	4-22
4.10.3 Alternative 3: No Action Alternative.....	4-23
4.11 Water Quality.....	4-23
4.11.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-23
4.11.2 Alternative 2: 50,000-Person Maximum.....	4-28
4.11.3 Alternative 3: No Action Alternative.....	4-29
4.12 Wetlands and Riparian Zones.....	4-30
4.12.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-30
4.12.2 Alternative 2: 50,000-Person Maximum.....	4-31
4.12.3 Alternative 3: No Action Alternative.....	4-31

4.13	Wilderness.....	4-31
4.13.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-32
4.13.2	Alternative 2: 50,000-Person Maximum.....	4-33
4.13.3	Alternative 3: No Action Alternative.....	4-33
4.14	Economics.....	4-33
4.14.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-34
4.14.2	Alternative 2: 50,000-Person Maximum.....	4-36
4.14.3	Alternative 3: No Action Alternative.....	4-36
4.15	Noise (Quiet).....	4-36
4.15.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-37
4.15.2	Alternative 2: 50,000-Person Maximum.....	4-38
4.15.3	Alternative 3: No Action Alternative.....	4-38
4.16	Public Health and Safety.....	4-38
4.16.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-39
4.16.2	Alternative 2: 50,000-Person Maximum.....	4-41
4.16.3	Alternative 3: No Action Alternative.....	4-42
4.17	Recreation.....	4-42
4.17.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-42
4.17.2	Alternative 2: 50,000-Person Maximum.....	4-44
4.17.3	Alternative 3: No Action Alternative.....	4-45
4.18	Social Values.....	4-45
4.18.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-45
4.18.2	Alternative 2: 50,000-Person Maximum.....	4-49
4.18.3	Alternative 3: No Action Alternative.....	4-50
4.19	Soils and Playa Sediments.....	4-50
4.19.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-50
4.19.2	Alternative 2: 50,000-Person Maximum.....	4-54
4.19.3	Alternative 3: No Action Alternative.....	4-55
4.20	Special-Status Species.....	4-55
4.20.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-56
4.20.2	Alternative 2: 50,000-Person Maximum.....	4-56
4.20.3	Alternative 3: No Action Alternative.....	4-57
4.21	Transportation and Traffic.....	4-57
4.21.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-57
4.21.2	Alternative 2: 50,000-Person Maximum.....	4-63
4.21.3	Alternative 3: No Action Alternative.....	4-64
4.22	Vegetation.....	4-65
4.22.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-65
4.22.2	Alternative 2: 50,000-Person Maximum.....	4-65
4.22.3	Alternative 3: No Action Alternative.....	4-65
4.23	Visual Resources (including Dark Skies).....	4-66
4.23.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-66
4.23.2	Alternative 2: 50,000-Person Maximum.....	4-68
4.23.3	Alternative 3: No Action Alternative.....	4-68

4.24	Wild Horse and Burros.....	4-69
4.24.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-69
4.24.2	Alternative 2: 50,000-Person Maximum.....	4-70
4.24.3	Alternative 3: No Action Alternative.....	4-70
4.25	Wilderness Study Areas.....	4-70
4.25.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-70
4.25.2	Alternative 2: 50,000-Person Maximum.....	4-72
4.25.3	Alternative 3: No Action Alternative.....	4-72
4.26	Wildlife.....	4-72
4.26.1	Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).....	4-73
4.26.2	Alternative 2: 50,000-Person Maximum.....	4-74
4.26.3	Alternative 3: No Action Alternative.....	4-75
5.	Cumulative Impacts.....	5-1
5.1	Assumptions for Analysis.....	5-1
5.2	Past and Present Actions.....	5-2
5.3	Reasonably Foreseeable Future Actions.....	5-2
5.4	Cumulative Impacts.....	5-15
5.4.1	Air Quality.....	5-15
5.4.2	Areas of Critical Environmental Concern (ACECs).....	5-15
5.4.3	Cultural Resources.....	5-16
5.4.4	Environmental Justice.....	5-17
5.4.5	Invasive, Nonnative Species.....	5-18
5.4.6	Migratory Birds.....	5-19
5.4.7	Native American Religious Concerns.....	5-20
5.4.8	Threatened and Endangered Species.....	5-21
5.4.9	Wastes, Hazardous or Solid.....	5-21
5.4.10	Water Quality.....	5-23
5.4.11	Wetlands and Riparian Zones.....	5-23
5.4.12	Wilderness.....	5-24
5.4.13	Economics.....	5-25
5.4.14	Noise (Quiet).....	5-26
5.4.15	Public Health and Safety.....	5-27
5.4.16	Recreation.....	5-28
5.4.17	Social Values.....	5-29
5.4.18	Soils and Playa Sediments.....	5-30
5.4.19	Special Status Species.....	5-32
5.4.20	Transportation and Traffic.....	5-33
5.4.21	Vegetation.....	5-33
5.4.22	Visual Resources (including Dark Skies Analysis).....	5-34
5.4.23	Wild Horse and Burros.....	5-35
5.4.24	Wilderness Study Areas.....	5-36
5.4.25	Wildlife.....	5-36
5.5	Irreversible and Irrecoverable Commitment of Resources.....	5-38

6. Mitigation and Monitoring	6-1
6.1 58,000 to 70,000-Person Maximum Alternative (Proposed Action).....	6-1
6.2 50,000-Person Maximum Alternative.....	6-4
6.3 No Action Alternative.....	6-4
7. List of Preparers	7-1
8. Consultation and Coordination	8-1
8.1 General Consultation and Coordination.....	8-1
8.2 Native American Consultation.....	8-2
9. Public Involvement	9-1
10. References	10-1

TABLES

Table 1-1 Scoping Issues Identified.....	1-5
Table 2-1 Federal, State, and Local Permits Required for the Proposed Burning Man Event.....	2-16
Table 3.1-1 Supplemental Authorities (Formerly referred to as Critical Elements of the Human Environment).....	3-1
Table 3.1-2 Additional Affected Resources.....	3-2
Table 3.1-3 Summary of Assessment Areas.....	3-4
Table 3.5-1 Population Trends in the Assessment Area.....	3-11
Table 3.5-2 Minority and Low-Income Population Trends in the Assessment Area.....	3-12
Table 3.11-1 Primary MCLs for Drinking Water – Fly Ranch Water Quality Results.....	3-20
Table 3.11-2 Secondary MCLs for Drinking Water – Fly Ranch Water Quality Results.....	3-22
Table 3.11-3 No Designated MCLs for Drinking Water – Fly Ranch Water Quality Results.....	3-23
Table 3.14-1 Employment by County and Within Specific Sectors.....	3-26
Table 3.14-2 Income Measures by County.....	3-28
Table 3.15-1 Typical Sound Levels Measured in the Environment.....	3-32
Table 3.18-1 Housing Profile in the Assessment Area.....	3-37
Table 3.20-1 Soil Characteristics within the Public Closure Area.....	3-44
Table 3.20-1 Special-Status Species Occurring in the Burning Man Assessment Area.....	3-46
Table 3.21-1 Daily Roadway Segment Level of Service Thresholds (One-Direction).....	3-48
Table 3.21-2 Existing Daily Traffic Volumes and Levels of Service.....	3-50
Table 4.2-1 Emissions for 58,000 Participants, Criteria Air Pollutants.....	4-2
Table 4.2-2 Emissions for 58,000 Participants, GHG.....	4-2
Table 4.2-3 Emissions for 70,000 Participants, Criteria Air Pollutants.....	4-2
Table 4.2-4 Emissions for 70,000 Participants, GHG.....	4-3
Table 4.2-5 Emissions for 50,000-Person Maximum Alternative, Criteria Air Pollutants.....	4-5
Table 4.2-6 Emissions for 50,000-Person Maximum Alternative, GHG.....	4-5
Table 4.11-1 Burning Man Water Requirements.....	4-24
Table 4.11-2 Oil Drip Projections for the 58,000 to 70,000-Person Maximum Alternative.....	4-26
Table 4.11-3 Oil Drip Projections for the 50,000-Person Maximum Alternative.....	4-29
Table 4.14-1 Economic Impacts for 58,000 to 70,000-Person Maximum Alternative Assessment Area Derived from USFWS Studies (in 2010 dollars).....	4-34

Table 4.14-2	Public Safety Staffing Costs for 58,000 to 70,000-Person Maximum Alternative Assessment Area (in 2010 dollars).....	4-36
Table 4.15-1	Noise Levels at Sensitive Receptors for the 58,000 to 70,000-Person Maximum Alternative.....	4-37
Table 4.15-2	Noise Levels at Sensitive Receptors for the 50,000-Person Maximum Alternative.....	4-38
Table 4.20-1	Soil Units within Public Closure Area.....	4-51
Table 4.20-2	Estimated Salt or Mineral Deposition on Playa from Fly Ranch Water Source.....	4-54
Table 4.21-1	Population/Trip Comparison.....	4-58
Table 4.21-2	Burning Man Trip Generation, Daily Vehicle Trips.....	4-58
Table 4.21-3	Existing Plus Project Daily Traffic Volumes and Levels of Service.....	4-60
Table 4.21-4	Burning Man Trip Generation for 50,000-Person Maximum Alternative.....	4-63
Table 4.21-5	Existing Plus Project Daily Traffic Volumes and Levels of Service for 50,000-Person Maximum Alternative.....	4-64
Table 5-1	Summary of Cumulative Impacts Assessment Areas.....	5-1
Table 5-2	Past and Present Actions in the Burning Man Assessment Areas.....	5-3
Table 5-3	Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas.....	5-8
Table 7-1	Bureau of Land Management.....	7-1
Table 7-2	Cooperating Agencies.....	7-2
Table 7-3	Aspen Environmental Group Team.....	7-2

FIGURES

Figure 1-1	Regional Project Area.....	1-3
Figure 2-1	Burning Man Closures and Alternate Public Access.....	2-3
Figure 2-2	City Plan.....	2-5
Figure 3-1	Air Quality, Public Health & Safety and Wild Horses & Burros Affected Environment.....	3-55
Figure 3-2	ACEC, Recreation, Wilderness, and Wilderness Study Area Affected Environment.....	3-57
Figure 3-3	Cultural and Biological Resources Affected Environment.....	3-59
Figure 3-4	Economics, Social Values and Environmental Justice Affected Environment.....	3-61
Figure 3-5	Native American Religious Concerns Affected Environment.....	3-63
Figure 3-6	Water Quality Affected Environment.....	3-65
Figure 3-7	Noise Affected Environment.....	3-67
Figure 3-8	Visual Resources Affected Environment.....	3-69
Figure 3-9	Soils Affected Environment.....	3-71
Figure 3-10	Transportation and Waste Affected Environment.....	3-73
Figure 5-1	Air Quality, Public Health & Safety and Wild Horses & Burros Cumulative Assessment Area.....	5-39
Figure 5-2	ACEC, Recreation, Wilderness, and Wilderness Study Area Cumulative Assessment Area.....	5-41
Figure 5-3	Cultural and Biological Resources Cumulative Assessment Area.....	5-43
Figure 5-4	Economics, Social Values and Environmental Justice Cumulative Assessment Area.....	5-45
Figure 5-5	Native American Religious Concerns Cumulative Assessment Area.....	5-47
Figure 5-6	Water Quality Cumulative Assessment Area.....	5-49

Figure 5-7 Cumulative Assessment Area..... 5-51
Figure 5-8 Visual Resources Cumulative Assessment Area..... 5-53
Figure 5-9 Soils Cumulative Assessment Area..... 5-55
Figure 5-10 Transportation and Waste Cumulative Assessment Area..... 5-57

APPENDICES

Appendix 1 Burning Man 2011 Special Recreation Permit Stipulations
Appendix 2 Burning Man 2012 Operating Plan
Appendix 3 Black Rock LLC Controlled Substance and Alcohol Use Policy

LIST OF ACRONYMS

ACEC	Area of Critical Environmental Concern
AeroPac	Association of Experimental Rocketry of the Pacific
AIRFA	American Indian Religious Freedom Act of 1978
ARLISS	A Rocket Launch for International Student Satellites
ARPA	Archaeological Resources Protection Act of 1979
ATV	all-terrain vehicle
BLM	Bureau of Land Management
BRC	Black Rock City
BRCVFD	Black Rock City Volunteer Fire Department
BRFO	Bureau of Land Management Black Rock Field Office
BRR	Black Rock Rangers
CEQ	Council on Environmental Quality
CO	carbon monoxide
CO ₃	carbonate
DPW	Department of Public Works
DMV	Department of Mutant Vehicles
DRI	Desert Research Institute
EA	environmental assessment
EG	Entrée Gold Corp
EMT	emergency medical technician
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESD	Emergency Services Department
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act of 1976
FUP	Free Use Permits
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System
HCO ₃	bicarbonate
HMA	herd management area
IPCC	Intergovernmental Panel on Climate Change
KLLO	Lovelock Derby Field Airport
KRNO	Reno/Tahoe International Airport
LCD	Local Climate Data
LEAL	Law Enforcement Agency Liaison
LOS	level of service
MCLG	Maximum Contaminant Level Goal

MCL	Maximum Contaminant Level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NCA	National Conservation Area
NDOT	Nevada Department of Transportation
NHPA	National Historic Preservation Act of 1966
NNHP	Nevada Natural Heritage Program
NO ₂	nitrogen dioxide
NOTAM	notice to airmen
NRHP	National Register of Historic Places
OH	hydroxide
OHV	off-highway vehicle
OSHA	Occupational Safety & Health Administration
PCRD	Pershing County Road Department
PM10	inhalable particulate matter less than 10 microns in diameter
PM2.5	fine (inhalable) particulate matter less than 2.5 microns in diameter
ppb	parts per billion
PSC	Playa Safety Council
PSO	Pershing County Sheriff's Office
PVC	polyvinyl chloride
REA	Recreation Enhancement Act
REMSA	Regional Emergency Medical Services Authority
RIT	Rapid Intervention Team
RMP	Resource Management Plan
ROW	right-of-way
RV	recreational vehicle
SDWA	Safe Drinking Water Act
SO ₂	sulfur dioxide
SR	State Route
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
TCPs	Traditional Cultural Properties
TDS	Total Dissolved Solids
TRINA	Nevada Department of Transportation's Traffic Information Access database
UPRR	Union Pacific Railroad
VRM	Visual Resource Management
WD	Bureau of Land Management Winnemucca District
WMP	Wilderness Management Plan
WSA	Wilderness Study Area

**BLACK ROCK CITY LLC
BURNING MAN 2012-2016
ENVIRONMENTAL ASSESSMENT**

1 INTRODUCTION

1.1 Background

The Black Rock Desert Region (Figure 1-1) is a popular recreation area for thousands of annual visitors. Some visitors enjoy recreational pursuits individually or in small groups for casual or dispersed activities and others are involved in organized events as participants or spectators. Each year more and more people are discovering the Black Rock Desert and its many recreational opportunities. In December 2000, the 106th Congress passed The Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area (NCA) Act, (Public Law 106 554). This legislation designated almost 800,000 acres of public land as part of the NCA and approximately 752,000 acres as Wilderness areas. The legislation contains language that supports the permitting of large-scale events that were permitted to occur prior to designation, such as Burning Man: “[i]t is expected that such permitted events will continue to be administered in accordance with the management plan for the conservation area and other applicable laws and regulations.”

Special Recreation Permits (SRP) are required when a recreational activity on public lands falls into one of the following categories: (1) Competitive Uses; (2) Vending; (3) Organized Group Activities and Event Uses; or (4) Commercial Uses. Burning Man falls under the category of Commercial Uses, which is defined as “recreational use of public lands and related waters for business or financial gain. When any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services, as compensation from participants in recreational activities occurring on public lands, the use is considered commercial” (BLM 2011).

The Burning Man event is a combination art festival, social event, and experiment in community living. Burning Man was first held on the Black Rock Desert in 1990 and has continued on an annual basis. Attendance at Burning Man has grown steadily on an annual basis, with the exception of the 2009 event which had lower attendance due in large part to the economic impacts of the recent recession.

The Burning Man organization, Black Rock City LLC (applicant), applied for and received a multi-year SRP from the Bureau of Land Management (BLM) to conduct the event for the years of 1992 to 1995. The BLM completed an environmental assessment (EA) and issued the permit. Due to the increasing size of the event and issues associated with that growth, BLM completed additional environmental analysis and BRC applied for and received a second SRP from the BLM in 1996. In 1997, Burning Man was held on private land on Hualapai Flat in Washoe County, NV. In 1998 and 1999, Burning Man was moved back onto public lands at the southern end of the Black Rock Desert playa, about four miles north of Gerlach. BLM completed an environmental assessment and issued a SRP for these years. During the 2000 to 2011 period, the event was held approximately 8.5 miles northeast of Gerlach after the preparation of four Environmental Assessments and the issuance of an SRP for each year. In 2011, the event sold out for the first time.

1.2 Purpose and Need

The purpose of the Federal action is to respond to a request for a Special Recreation Permit under 43 CFR 2930 to conduct the Burning Man arts festival from 2012 to 2016 on public lands administered by the BLM Winnemucca District on portions of the Black Rock Desert playa on or near the South Playa.

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 (Section 302(b)). In addition, the need for action is established by the Federal Lands Recreation Enhancement Act (REA), which authorizes the BLM to issue special recreation permits for group activities and recreation events.

1.3 Land Use Conformance Statement

The Proposed Action and alternatives are in conformance with the BLM land use plan for the area. The Resource Management Plan (RMP), approved July 2004 for the Black Rock-Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness and other Contiguous Lands in Nevada, currently guides management of the Black Rock Desert (BLM 2004). The plan 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." Recreation decisions REC-21 through REC-27 apply to the issuance of special recreation permits:

REC-21: All recreation permittees will be required to adhere to Tread Lightly!® and Leave-No-Trace® principles. Permit stipulations will emphasize the Tread Lightly!® and Leave-No-Trace® principles.

REC-22: Permits will be assigned to one of four classes of permitted activities (I through IV). A description of the classification system is provided in Appendix J of the RMP.

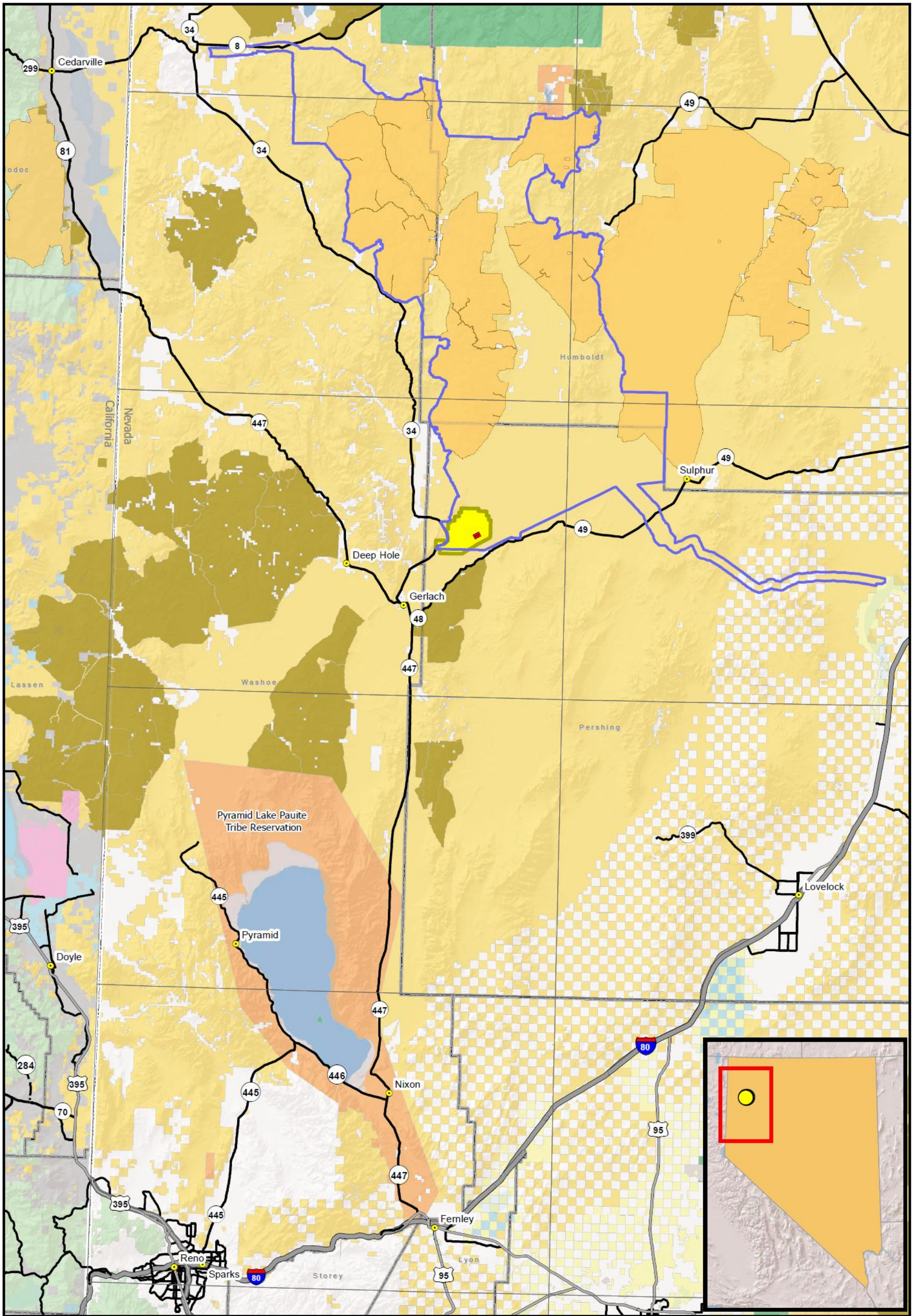
Burning Man is a Class IV event.

REC-23: SRPs will be limited to certain geographic areas based on the permit class that the proposal is given. (See Table 2-9 and Map 2-15 of the RMP).

Class IV events, which are the largest events are allowed in the Permit area of the Front Country Zone.

REC-24: To maintain solitude on northern portions of the playa, Class III and IV permitted activities will be concentrated on or near the South Playa. Northern portions of the playa may be made available for Class III and IV permits when playa conditions are unsuitable or public safety or public access may be compromised.

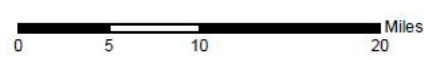
REC-25: Special recreation permits will be authorized at times, in locations and for durations consistent with providing opportunities for solitude and full public access to the playa for at least one-half of the summer season (Memorial Day through Labor Day). The number of Special Recreation Permits issued could be limited to protect resources or the visitor experience.



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 June 2012

- | | | | |
|--|---------------------------|---|--------------|
| Towns/Cities | BLM Wilderness Study Area | US Fish and Wildlife Service Wilderness | State |
| Landing Strip | BLM Wilderness Area | Forest Service | Private |
| Project Boundary - Public Closure Area | Bureau of Land Management | National Park Service | Unclassified |
| National Conservation Area | Tribal Land | Department of Defense | County lines |
| | Bureau of Reclamation | Department of Energy | |

Figure 1-1
Regional Project Area



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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REC-26: Two Class III and IV events may occur simultaneously, but only one may be a Class IV event.

REC-27: No more than two access points to the playa will be closed on the same weekend in conjunction with permitted events.

Issuance of a permit for the Burning Man event would be consistent with the RMP.

1.4 Relationship to Laws, Regulations, and Other Plans

The Proposed Action and alternatives have been reviewed for compliance with BLM policies, plans, and programs. The proposal is in conformance with the Special Recreation Permit regulations at §43 CFR 2930. Section 5(C)(3) of the NCA legislation allows the Secretary “to permit large-scale events in defined, low impact areas of the Black Rock Desert playa.” There are no known conflicts with Pershing County Planning or other State of Nevada statutes, regulations or plans.

1.5 Issues

In late 2010, a 43-day public scoping period was conducted to solicit issues and other comments from the public and cooperating agencies. The scoping period began on November 1, 2010 and was scheduled to close after 30 days. However, after numerous requests from the public, BLM extended the scoping period until December 13, 2010.

A news release was printed in several local and regional newspapers and letters were sent to individuals and organizations that had participated in the process in past years. Over 260 pages of written comments from nearly 120 commenters were received during the scoping period. Additional comments were also received at the open house meetings held in Lovelock, Gerlach, and Reno on December 7, 8, and 9, 2010, respectively.

The issues identified in scoping efforts are listed in Table 1-1.

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
Air Quality and Climate Change	
How much dust is generated by Burning Man? How far does dust travel and where does it settle?	Section 4.1
How much fuel is burned at Burning Man, and what is its carbon footprint?	Section 4.1
BLM Management	
What management and enforcement practices will be made or updated to deal with increased attendance? How will limits be monitored and enforced before, during, and after Burning Man?	Section 2 Appendix 1 Appendix 2
How will BLM determine the attendance in order to obtain the correct fees from the event?	Appendix 1
How will BLM monitor the conditions during and after the event?	Section 2 Appendix 1 Appendix 2

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
How will BLM enforce federal laws, State laws and other event requirements?	Section 2 Appendix 1 Appendix 2 Appendix 3
How will a multi-year permit be managed to ensure continued compliance with permit stipulations throughout the duration of the permit?	Section 2 Appendix 1 Appendix 2
What procedures/protocols are in place to handle inclement weather, civil unrest, or other emergency situations?	Section 2 Appendix 1 Appendix 2
Should a local citizen oversight committee be established to make locals aware of BLM/Burning Man agreements, terms, and breaches and to provide an avenue for resolving any issues?	Comment considered in the development of the EA
Should the time period for which Burning Man is permitted on the playa be more carefully enforced and potentially limited?	Section 2 Appendix 1 Appendix 2
Should unofficial events require permitting as well?	Beyond the scope of the EA. Section 5 considers other recreational events in the NCA
Will a growing local population create a management problem for BLM if the recreation area becomes more urban in character?	Section 4.17
Should the schedule for event permitting be a cycle less than five years?	Section 1.2
Cultural Resources and Native American Religious Concerns	
What consideration has been given to the significance of the playa in tribal ceremonial use, and to its location on a travel route to Summit Lake reservation?	Section 3.8 Section 4.8 Section 4.21
What law enforcement is present during Burning Man on BLM lands surrounding reservation lands?	Section 2 Section 3.19 Section 4.19 Appendix 1 Appendix 2
What effects are likely to occur in the project polygon and along access roads associated with the event to historic emigrant trails? What is the effect on the quality of the recreational experience of visitors interested in the trails as a result of the event during the set-up, the event itself, and the take-down?	Section 3.4 Section 4.4 Section 3.17 Section 4.17

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
What is the nature and intensity of effects to archaeological sites at surrounding high visitation sites, especially at hot springs caused by visitors before and immediately after the event, as well as later visitation from event participants who learned about the area as a result of their participation in the event?	Section 3.4 Section 4.4 Section 3.17 Section 4.17
Cumulative Impacts	
Are other similar gatherings considered in the cumulative impact scenario?	Section 5.2 Section 5.3
Should the following activities and potential impacts be considered in the cumulative analysis: digging and trenching; effect on other recreational users; additional time that Burning Man will be on the playa with a bigger event; size of water trucks and amount of water use for dust control; use of dust palliatives; and "bowl" effect?	Section 2 Section 4.2 Section 4.11 Section 5.4.11 Section 5.4.17 Section 5.4.19
Economics and Social Values	
What is the economic effect, positive or negative, of Burning Man on individuals, businesses, and taxpayers locally and statewide?	Section 4.14
What is the economic effect of Burning Man on the Pyramid Lake Paiute Tribe?	Section 4.14
What is the role of Burning Man in long term subsistence of surrounding communities?	Section 4.5 Section 4.14 Section 4.18
How will fees be determined and enforced?	Section 3.14 Appendix 1
How much of event profit will support impact studies?	Beyond the scope of the EA. Section 3.14 considers government fiscal conditions
What is the quantity and effect of donations to local schools, communities, utilities, artists, and philanthropic groups?	Beyond the scope of the EA. Section 3.14 Section 4.14 Section 3.18 Section 4.18 consider economic and public services, and community impacts
How will increased population growth positively or negatively affect the local economy, staffing needs, schools, and quality of life?	Section 4.5 Section 4.14 Section 4.18

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
What are the social benefits and costs of exposure to Burning Man’s unique art, diversity, community, and principles?	Section 3.18 Section 4.18
Will exposure to environmental principles, like Leave No Trace®, foster environmental stewardship within and beyond Burning Man?	Section 4.17
Is this event appropriate for minors?	Section 2.4
How will state and federal drug laws be enforced?	Section 2.1.4 Appendix 2 Appendix 3
Do the public service and utility needs of Burning Man strain resources and personnel from the rest of the state?	Section 4.14 Section 4.18
Are there moral issues associated with the event?	Section 3.18 Section 4.18
Public Health and Safety	
How will food hygiene be monitored and enforced?	Section 4.16
Will public hand sanitation be provided and adequately supplied?	Section 4.10
What are the effects of playa dust on respiratory health?	Section 4.16
How will dust abatement water be distinguished from potable water?	Section 3.16 Section 4.16
Is there capacity and planning for emergency evacuation in the event of disaster? Does this capacity tax resources and personnel in other parts of the state?	Section 3.16 Section 3.18 Section 4.16 Section 4.18
Are workers provided with adequate safety equipment and training? Are they drug tested?	Section 3.16 Section 4.16
Recreation and Wilderness	
To what extent is Burning Man’s Leave No Trace® stewardship effective in minimizing impact to the playa?	Section 3.17 Section 4.17
How much Burning Man funding supports the NCA, and what additional funds might be directed to it?	Section 3.14 Section 4.14
How will public access be maintained during the event period?	Section 3.17 Section 4.17
What are the impacts to other users of the playa and NCA (e.g., land sailing, speed racing, and rocket launching)?	Section 3.17 Section 4.17 Section 5.4.17
To what extent is Burning Man appropriate to the playa’s legislated designation as an NCA?	Section 1 Section 3.17 Section 4.17
What fraction of the NCA does Burning Man occupy?	Section 3.17

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
What authorization is required for similar gatherings on the playa?	Section 4.17
Soils and Playa Sediments	
What is the effect of Burning Man on the creation of dunes and “playa serpents” in the BRC area and in neighboring parts of the desert?	Section 3.19 Section 4.19
What are the impacts of portable toilets, holes and trenches, burn pads, and other infra-structural works on the surface of the playa?	Section 3.19 Section 4.19
What are the impacts of tire ruts, road scars, oil drip, and other automobile-related effects on the playa surface and soils?	Section 3.11 Section 4.11 Section 3.19 Section 4.19
What are the long term effects of Burning Man occupation and similar gatherings on the playa surface, and how long might impacts persist?	Section 5.4.18
What research is being conducted or proposed to determine impacts on the playa surface and the process and time needed for recovery?	Section 3.10 Section 4.10 Section 3.19 Section 4.19
What organizational mechanisms, such as art installation layout and road network design, are being considered or implemented to reduce impacts to the playa surface?	Section 4.19
Transportation and Traffic	
How will BLM address abandoned vehicles and RVs?	Section 4.10
How will unregistered vehicles be kept off the playa?	Section 2.1.4
What are the impacts of the increased traffic on State Route (SR) 447, SR-446, and I-80 on safety (especially of passing vehicles), local access and local travel times, and the condition of the playa?	Section 4.19 Section 4.21
Does the traffic generated by Burning Man exceed the acceptable level of service (LOS) for local roads?	Section 3.21 Section 4.21
What consideration is given to local community members for losses related to traffic and road closures?	Section 4.21
How will event traffic affect road conditions? Will steps be taken to maintain and improve roads, fund freeway service patrols, suppress dust, and repair or replace damaged infrastructure?	Section 2 Section 4.1 Section 4.14 Section 4.18 Section 4.21
How and with whom will Burning Man and BLM coordinate and oversee playa airport inspection and designation to ensure public safety?	Section 2.1.8 Appendix 2
How will Burning Man coordinate with the Pyramid Lake Paiute Tribe regarding the SR-447 corridor?	Section 4.8 Section 4.21 Section 8
Vegetation and Wildlife	
What measures are in place to address introduction of invasive weeds on and around the playa?	Section 3.6 Section 4.6

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
Are there species and habitats at risk? What protection is in place or proposed for specific species and sensitive habitats on the playa and its access routes?	Section 3.6 Section 4.6 Section 3.7 Section 4.7 Section 3.9 Section 4.9 Section 3.12 Section 4.12 Section 3.20 Section 4.20 Section 3.22 Section 4.22 Section 3.26 Section 4.26
Should BLM have a camp that discusses playa ecology?	Comment considered in the development of the EA; biological resources are discussed in: Section 3.6 Section 4.6 Section 3.7 Section 4.7 Section 3.9 Section 4.9 Section 3.12 Section 4.12 Section 3.20 Section 4.20 Section 3.22 Section 4.22 Section 3.26 Section 4.26
Water Quality	
Are surrounding water sources and sensitive areas being contaminated by water from Burning Man? What contaminants are found in Burning Man runoff?	Section 4.10 Section 4.11
How does water use for Burning Man impact drawdown of local water sources?	Section 4.11
Should management of water be improved to eliminate overuse and maximize efficiency of water being used?	Section 3.11 Section 4.11
What regulations and oversight are in place to ensure that water at Burning Man is not contaminated?	Section 4.10 Section 4.11

Table 1-1. Scoping Issues Identified

Scoping Topic	Section Addressed
Waste, Hazardous or Solid	
How much waste remains on and around the playa even after cleanup? Where does it occur, and what will be done to address this waste?	Section 3.10 Section 4.10
What waste, wastewater, recycling, and sewage removal measures are in effect at Burning Man? How might additional dumpsters or services improve waste management?	Section 3.10 Section 4.10
Is there an adequate supply of restroom facilities, and to what extent are these used by attendees?	Section 3.10 Section 4.10
Would fees for trash collection or fines for littering benefit local economies?	Section 3.14 Section 4.14 address the economics of the event. Section 3.10 Section 4.10 address trash collection and littering.
Should there be increased permitting requirements and enforcement of hazardous materials (e.g., fuel and propane) transported to the event?	Section 3.10 Section 4.10
What will be done to address the dumping of trash in Reno-Sparks business's dumpsters?	Section 3.10 Section 4.10

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative 1: 58,000 to 70,000-Person Maximum Alternative (Proposed Action)

Under the 58,000 to 70,000-Person Maximum Alternative (Proposed Action), the Bureau of Land Management (BLM) would issue a five-year Special Recreation Permit (2012-2016) for the Burning Man event in Pershing County, Nevada, with a maximum population from 58,000 to 70,000 people. The authorized officer would determine the maximum population within this range for each year of the five-year permit. The population includes all attendees of the event, including paid participants and volunteers. The population does not include government personnel, Humboldt General Hospital emergency service providers, vendors and contractors.

A temporary “city,” Black Rock City (BRC or the City), would be developed on the Black Rock Desert dry lake bed (“playa”) 8.5 miles northeast of the town of Gerlach (see Figure 1-1). The location of the event would be at a site mutually agreed upon by the applicant, Black Rock City LLC (applicant), and BLM each year within the boundary created by the polygon that defines the Public Closure Area for the 2011 event, as shown in Figure 2-1 (the same area has been proposed to be the 2012-2016 Public Closure Area). The total permit period would extend from approximately the first week of August through the first week of October each year, with the actual Burning Man event occurring from the weekend before Labor Day through Labor Day each year.

The event would last 192 hours (8 days) starting no earlier than 12 PM on the Sunday that falls eight days before Labor Day and ending no later than 11:59 PM on Labor Day. For 2012, the event would officially commence at 6:00 PM on August 26th, the Sunday before Labor Day, and would end at 6:00 PM on Monday September 3rd, Labor Day. The Proposed Action would potentially use daytime initial-day opening and final-day closing times on a trial basis for the first year to allow for safer ingress and egress to the event for staff and participants by maximizing use of daylight hours.

The Burning Man 2011 Special Recreation Permit Stipulations (Appendix 1) are considered a part of the Proposed Action. These stipulations would be revised as necessary for the decision made regarding the 2012-2016 permit application based in large part on this Environmental Assessment. The applicant also submitted a 2012 Operating Plan (Appendix 2) as part of its application (BRC 2011d). The Operating Plan, including portions not specifically mentioned in this chapter, is also incorporated as part of the Proposed Action.

Activities associated with the Burning Man event include technological displays, entertainment events, performing arts, spontaneous social interactions of varying themes, and numerous art and small fire pit burns including the burning of an 80-foot-tall wood and neon-light sculpture called “The Man.” Participants would camp, ride bicycles and explore within the area permitted for this event. Fuel (e.g., gasoline, diesel, wood, propane) would be used for transportation, power generators and open burning. The applicant rented 34 generators to power its operations during the 2011 event and surveys taken during the 2011 event found participants used 213 generators for art projects, 1,124 generators for theme camps and motor homes, and another 550 engines for mobile art or mutant vehicles. The level of traffic, fuel sources, and fuel use associated with 58,000 to 70,000 people would be greater than the 2011 levels in proportion with population.

The City, as depicted on Figure 2-2, would include residential areas, theme camps, art displays, and performance art areas. The City would be laid out in an arc centered on the sculpture of “The Man.” The arc would have a radius of approximately 3,020 feet for a population size of 58,000 people and would expand to 3,250 feet with a population of 70,000 people by adding an additional street and a few blocks for overflow on the left side of the City near 10:00 (see Figure 2-2).

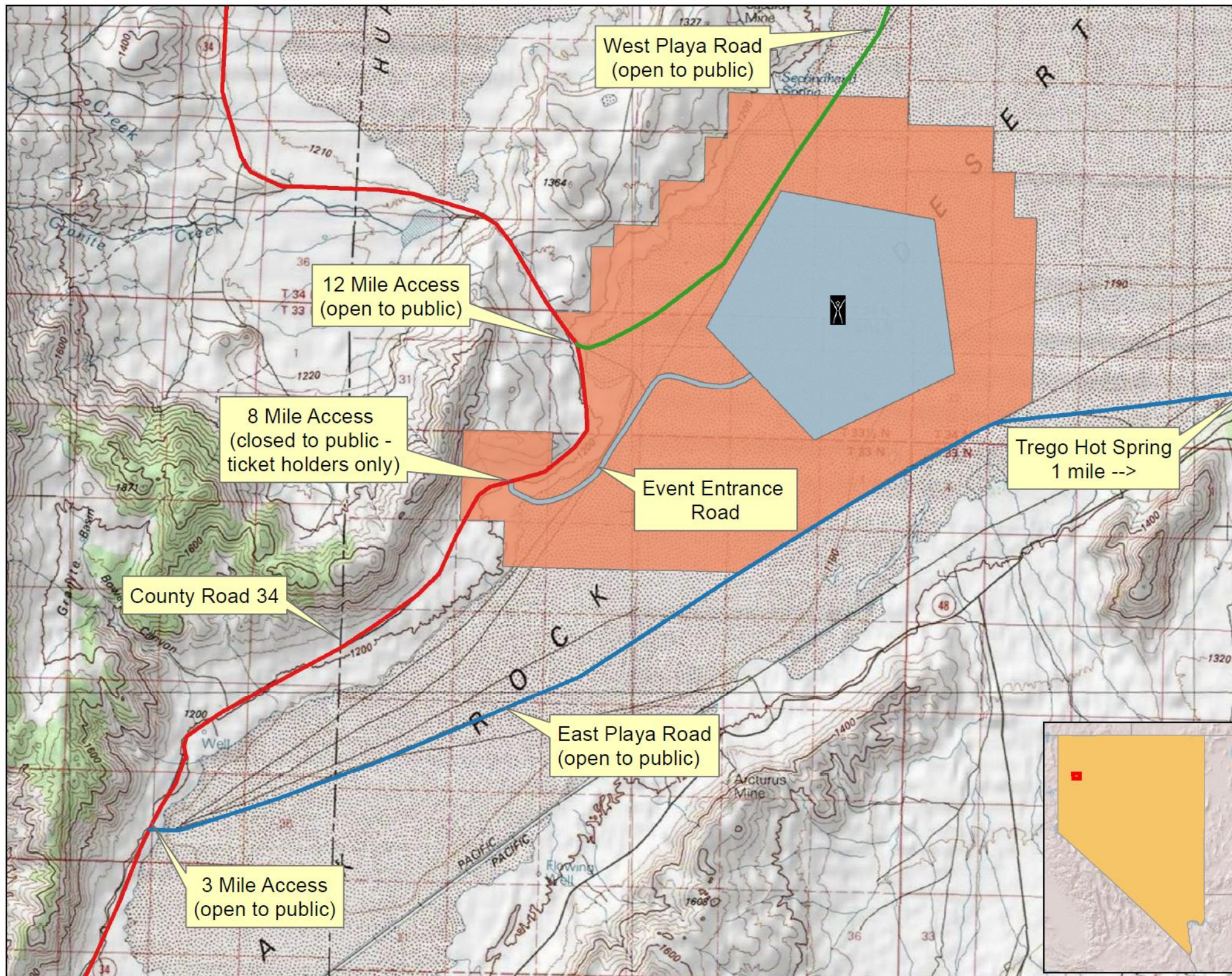
The total area encompassed by BRC within the perimeter fence (not including the event access road) would be about 3,200 acres or approximately 3 percent of the total area within the Black Rock Desert playa, and approximately 0.2 percent of the nearly 1.2 million acre Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area (NCA) planning area. Approximately 977 acres at the southern end of the Public Closure Area would be located within the “South Playa,” which is outside of the NCA but located within its Planning Area between the southern boundary of the NCA and the town of Gerlach. The Closure Area would affect approximately 15 percent of the 14,672-acre South Playa.

The residential portion of BRC would include about 820 acres for a population size of 58,000 people and would expand to up to 950 acres with a population of 70,000 people. Several hundred additional acres outside the perimeter fence would be used for access roads, a temporary airstrip, airport parking, the BLM communications center, a ticket booth, a greeters’ station, and a 50-yard buffer area immediately outside and adjacent to the perimeter fence. It is likely that gate entry points would increase in parallel with population growth by as much as 20 additional acres between populations of 58,000 and 70,000 people. Closures outside the perimeter fence would restrict or prohibit the following: motorized vehicle use (including aircraft); camping; possession and discharge of firearms; possession of firewood; and access and use by the general public. Appendix 1 of this document (Burning Man 2011 Special Recreation Permit Stipulations) presents additional detail regarding these areas and the length of fence closures.

2.1.1 Event Setup and Signage

While preparations for Burning Man activities may begin months prior to Labor Day weekend in September, site preparations on the playa begin 28 days before the beginning of the event. Burning Man site preparation would include preliminary surveying and construction of the perimeter fence. Setup for a population of 58,000 people would involve crews of 260 to 300 people with the majority of these crews drawn from populations in California and Nevada, within one day’s drive to the site. Approximately 25 to 30 additional people would be needed for setup for a population of 70,000 people.

Temporary accommodation is provided by BRC to staff and crew for setup and clean-up. This accommodation is provided on private property in the area surrounding the event location. This housing is provided during the first week of pre-event preparations. During the remainder of setup, staff and crew live on playa at the event location. The applicant would not allow camping within the event site 17 days before the event period, with the exception of authorized BRC staff, contractors, volunteers and other authorized participants either constructing or taking down art works or theme camps. The applicant would provide the appropriate identification to authorized personnel (i.e., staff ID, decals, designated camping areas, etc.).



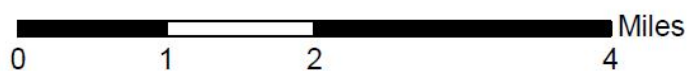
- THE FOLLOWING ACTIVITIES ARE PROHIBITED**
- Event Area (3,273 Acres) - 8/1 - 9/19
- Aircraft landing
 - Possession of alcohol by minors
 - Possession of an open alcohol container by motor vehicle drivers
 - Operation of a motor vehicle while under the influence
 - Possession of drug paraphernalia
 - Trespass of persons evicted from the area
 - Ignition of fires on a playa surface
 - Possession or use of fireworks
 - Use of a motorized vehicle
 - Public camping (except for ticket holders)
 - Public use (except for ticket holders)
 - Possession of weapons
 - Disorderly conduct
- Public Closure Area (14,153 Acres)
- 8/1 - 9/19
- Discharge of weapons
 - Disorderly conduct
- 8/29 - 9/5
- Aircraft landing
 - Trespass of persons evicted from the area
 - Ignition of fires on a playa surface
 - Possession or use of fireworks
 - Public use (except for passing through on designated routes)
 - Use of a motorized vehicle (except for passing through on designated routes)
 - Discharge of waste water
 - Possession of firearms (except in vehicles passing through on designated routes)



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 June 2012

- County Road 34
- East Playa Road
- West Playa Road

- Burning Man Location
- 2011 Event Area
- Public Closure Area

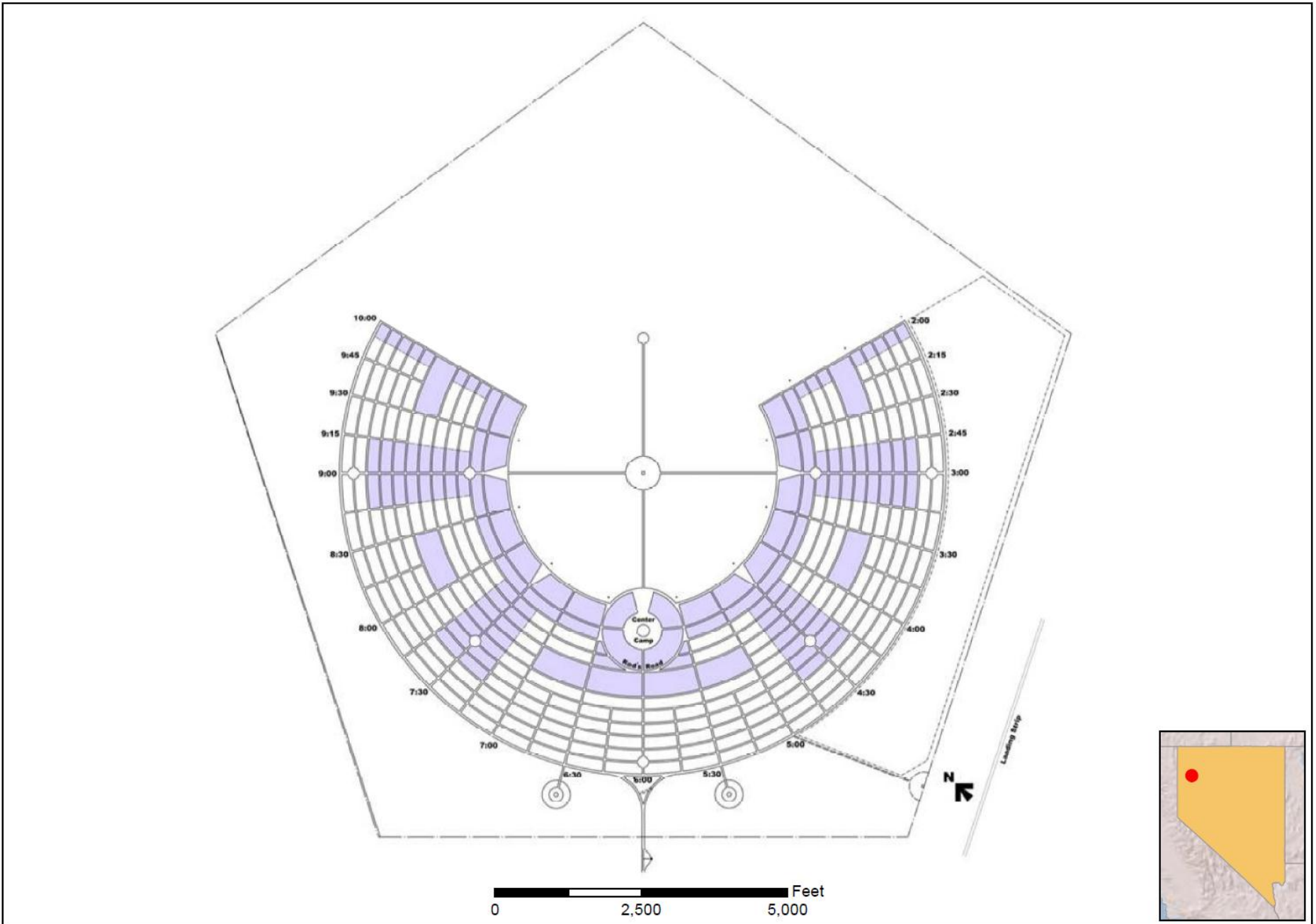


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USGS Quad Names: Gerlach

Figure 2-1
Burning Man Closures and
Alternate Public Access

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Figure 2-2
Black Rock City Plan

USGS Quad Names: Gerlach

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Surveying would begin in early August, about three weeks before the start of the event. The fence would be approximately seven miles in length and its construction would be completed about two weeks before the start of the event. The trash fence would be built using T-stakes, strung with plastic material and fitted with light reflective tape that enhances night visibility. The fence would be designed to prevent windblown trash from crossing the playa and would define the boundaries of the event. Vehicle control signs announcing the presence of the fence would be installed at sites near the City to alert drivers several days before completion of the perimeter fence.

Upon completion of the perimeter fence, installation of the following project components would begin: additional on-site and off-site signage for vehicle control, streetlights, street signs, municipal structures, large sculptures, portable toilets, the Gate Area, the main entry road, and other infrastructure.

In 2011, 1,462 postholes were dug for authorized facilities in accordance with permit stipulations. The postholes would have a nine-inch diameter and would be approximately 18 inches deep. They would then be filled in to support 4-x-4-inch posts, and when removed, they would be filled and restored. Camp infrastructure construction would be completed by the Wednesday before the beginning of the event, leaving three days before the event to complete work held up by unanticipated delays and for fine-tuning.

2.1.2 Public Access

The 2011 Public Closure Area was approximately 14,153 acres in size and the same area has been proposed for the 2012-2016 Public Closure Area. The “event area,” is defined as the portion of the Public Closure Area that is: (1) within the event perimeter fence; and includes (2) a 50-foot buffer outside of the event perimeter fence; (3) a 25-foot buffer outside of the event access road; and (4) the aircraft parking area outside the event perimeter fence.

During the period in which the temporary closures and restrictions are in place, the entire 14,153-acre Public Closure Area would be closed to public camping and possession of any weapon would be prohibited (except weapons within motor vehicles passing through the Closure Area, without stopping on the west or east playa roads). An eight-mile access road from County Road 34 across the playa to the City would be used by participants to access the event, and would be closed to general public use.

BLM, as well as the event vendors and contractors, would utilize the 12-mile access road from County Road 34 to access the event. Once on the playa, BLM staff would travel on a satellite road off of West Playa Road to the BLM Communications Center at the event. The satellite road is within the Closure Area and would be closed to the general public. The 12-mile access road would remain open to the public. All other playa access points would remain open to the public.

2.1.3 Traffic Control

An estimated breakdown of the types of vehicles traveling to the event using public roadways is: 65 percent light-duty trucks, vans, SUVs, and autos; 26 percent recreational vehicles (RVs) and motor homes; 6 percent medium-duty trucks and box trucks; and 3 percent heavy-duty trucks,

tractor trailers, and buses (BRC 2011c). Approximately 89,600 one-way motor vehicle trips (or 44,800 round trips) would occur for a population of up to 70,000 people, based on the historic trend in total vehicle trips per guest. Based on data from the applicant and Nevada Department of Transportation (NDOT), peak traffic occurs on Labor Day (Monday) and the Sunday before Labor Day as people exit the event site. Traffic exiting the event would be regulated by the applicant using real-time reports from personnel stationed at off-site locations.

Off-site traffic control and monitoring would be provided as deemed necessary by NDOT, by flaggers trained by NDOT at the following key road intersections during peak traffic periods (Sunday before Labor Day and Labor Day) in cooperation by the applicant, BLM and appropriate law enforcement agencies:

- 12-mile entrance to the Black Rock Desert and County Road 34
- 3-mile entrance to the Black Rock Desert and County Road 34
- Intersection of County Road 34 and State Route 447
- Town of Gerlach, and
- Town of Empire.

The access route to the City would be clearly marked with signs approved by NDOT and/or Washoe and Pershing Counties depending on the location of the sign(s) and the respective jurisdiction. NDOT maintains State Route 447 between Wadsworth and Gerlach, and Washoe County maintains State Route 447 north of Gerlach. County Road 34 is located in both Washoe and Pershing Counties.

On-site traffic control would require participants to park their motorized vehicles and either walk or ride bicycles inside the City. Motorized vehicle use within the event would be allowed only if permitted by the applicant or for administrative purposes. An official speed limit (10 mph) would be enforced by BLM within the Closure Area outside the event fence.

2.1.4 Event Security and Public Safety

A. Law Enforcement – On-Site

The BLM and the Pershing County Sheriff's Office (PSO) would provide law enforcement on site. These agencies would be focused on enforcement of federal, State and local laws and regulations as well as permit stipulations. The Burning Man Law Enforcement Agency Liaison (LEAL) would coordinate and work with the various law enforcement agencies and the Black Rock Rangers (BRR). The roles of the BRR are discussed under Section 2.1.4(C) below.

B. Law Enforcement – Off-Site

As discussed in Section 2.1.2, during the period in which the temporary closures and restrictions are in place, the entire 14,153-acre Public Closure Area would be closed to public camping and possession of any weapon would be prohibited (except weapons within motor vehicles passing through the Closure Area, without stopping on the west or east playa roads). Law Enforcement Officers would patrol and control outside the perimeter of BRC, enforcing closures to camping and shooting on public land within the Closure Area, but beyond the perimeter fence (Figure 2-1).

Law enforcement would also patrol other sensitive environmental and cultural resources outside the City on a daily basis, including:

- Playa entrances
- High Road (Jungo Road) access to Winnemucca, NV
- Union Pacific railroad tracks
- Applegate-Lassen and Nobles Historic Trail routes
- Trego Hot Springs
- Black Rock Hot Springs
- Soldier Meadows, and
- Double Hot Springs.

The Washoe County Sheriff's Office, the Pyramid Lake Tribal Police and the Nevada Highway Patrol would provide law enforcement support in their areas of respective jurisdiction, including the towns of Gerlach and Empire.

C. Security – On-Site

Burning Man would supply event security, using the Playa Safety Council (PSC), which includes the BRR, Perimeter, Gate & Exodus, and Department of Mutant Vehicles (DMV). The BRR would patrol the City, assist participants and coordinate with law enforcement officers and LEAL. There would be three BRR outposts situated within BRC. The BRR would generally be the first point of participant contact for stipulation violations, BRC regulations and other non-crime related concerns within BRC. Matters requiring law enforcement actions would be referred to BLM or PSO.

D. Communications

A central communication system, two-way radio, would have separate communication channels for various functions including security, public safety and health, and infrastructure. BLM and the applicant would operate independent communications systems from a common location. These two systems would operate 24 hours per day to provide security, emergency response and public safety.

In addition to the two-way radio communications infrastructure, formal onsite information dissemination mechanisms are Burning Man Information Radio (BMIR), the Tip Sheet (formerly the Black Rock Gazette-ette), along with participant driven newspapers, and BRR. BMIR would be the Emergency Alert System for the City, and would disseminate public service information, travel advisories and emergency information as necessary.

In periods of non-emergency, public service announcement would be broadcast on BMIR. In the event of an emergency, participants would be notified by BRR and/or Theme Camp Placement staff to instruct participants to tune in to BMIR. BMIR would be the centralized source for up-to-the minute accurate emergency information.

E. Illegal Substance Policy

The applicant has adopted a Controlled Substance and Alcohol Use Policy, which is included as Appendix 3. Terms on the back of the 2012 Burning Man Ticket to Black Rock City state that the ticketholder agrees to read and abide by all rules in the Survival Guide and to follow federal, State and local laws. In addition to these terms, the applicant would use its communications networks, such as Burning Man “Survival Guide” and public bulletin boards at the event, to educate participants of applicable federal, State and local laws concerning the sale and use of illegal substances.

The Burning Man “Survival Guide” would state that the use and possession of illegal drugs is against the law and would summarize the legal penalties for any participant convicted of illegal drug possession or use. It also would inform participants that there are Pershing County officers, Federal BLM Rangers, and Nevada Department of Investigations officers at the event to enforce laws and provide safety for citizens at the event. Furthermore, the Burning Man Survival Guide would warn participants of the health risks inherent in consuming alcohol or illegal drugs in the harsh desert environment and that underage drinking is against the law.

Throughout the year, applicant staff would meet with law enforcement representatives from the BLM and Pershing and Washoe Counties in order to discuss law enforcement policies at the event. When appropriate these policies would be communicated to participants. Immediately prior to the event, applicant staff would meet with law enforcement personnel in order to communicate information that would orient them within the City and inform them of key components of the organizational infrastructure.

F. Medical

Medical services would be provided through a partnership of BRC’s Emergency Services Department as first responder, with Advanced Life Support units provided by the contracted Nevada State licensed Emergency Medical Services (EMS) provider (currently Humboldt General Hospital), as secondary responder. A primary health care facility would be located in the center of BRC. The facility would be staffed to provide levels of care consistent with the estimated population of BRC, including ambulance service, medical equipment, doctors, and certified emergency medical technicians (EMTs). Medical services would also be located at the two BRR outposts within the City.

As discussed in Section 2.1.8, a medevac helipad would be designated and reserved for emergency use/evacuations at the Black Rock City Airport. The applicant would contract with a primary and secondary provider of helicopter-based medical evacuation for critically ill patients. Five helicopters are currently available under these two providers in the event of multiple critically ill patients.

G. Hazardous Materials

Hazardous materials are regulated by a number of agencies and regulations. The Occupational Safety and Health Administration’s (OSHA) mission is to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety

and health. OSHA staff establishes and enforces protective standards, and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in Title 29 CFR Part 1910. The purpose of Title 29 CFR Part 1910.1200 is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees.

The Nevada Division of Environmental Protection Bureau of Waste Management established a hazardous waste program as prescribed in NRS 459.400 “to protect human health, public safety and the environment from the effects of improper, inadequate or unsound management of hazardous waste. This is accomplished by establishing programs that regulate the storage, generation, transportation, treatment and disposal of hazardous waste ...” The Nevada State Fire Marshall and Department of Public Safety are responsible for the permitting and regulating of hazardous materials within the state of Nevada.

All participants of the Burning Man event using hazardous materials, including combustible fuels, must 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 are required to provide the location of any fuel storage to the applicant’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. Propane cylinders of 100 gallons or more would not be permitted within the City limits. The Hazardous Materials Contingency Plan (see Section V.C.3.J of the 2012 Operating Plan in Appendix 2) provides details regarding responses to any hazardous materials release. The applicant’s Emergency Services Department would be responsible for containing hazardous materials and mitigating exposure to risk. The applicant’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 clean-up if necessary. Additional hazard specific assistance would be provided by the applicant as needed.

2.1.5 Resource Management

Monitoring of public lands would be conducted by BLM and other agencies to prevent resource damage from potential participant visits to area resources near the event. Currently, BLM patrols the area hot springs at least once per day during the course of the 8-day event and immediately after the event. The duration of the patrol at each location is approximately 15 to 30 minutes (BLM 2012).

The applicant would charge an “in-out” fee to people who leave and return to the event. This requirement is designed to discourage participants from leaving the event to explore the surrounding areas on their own, thus decreasing potential disturbance to surrounding resources. The “in-out” fee also would reduce driving within the event as well as to and from the exit. BLM would enforce resource related permit stipulations before, during and after the event. Permit stipulations, as well as information provided by the applicant and in the Burning Man “Survival Guide,” include the requirement for participants to take out whatever material they bring to the event, including wastewater and sewage if they are in a RV camper or camp trailer.

2.1.6 Fire Management

Fire suppression equipment and personnel would be available 24 hours per day to respond to camp, vehicular and/or structural incidents beginning the Monday prior to the start of the event and ending the Wednesday post event. The applicant would contract fire services, which would operate under the Incident Command System for fire-related events within BRC. Fire equipment would be stationed at each end of BRC during the event. Specific events that are identified as being crowd intensive or involving licensed pyrotechnics would have, at a minimum, one engine staged near the event, and a BRC Volunteer Fire Department (BRCVFD) Rapid Intervention Team (RIT) at the performance perimeter. A minimum of 12,000 gallons of water would be stored within the City for fire suppression associated with permitted burns or emergency response.

Open fires would only be permitted by the applicant on burn platforms or in barrels raised above the playa surface. All fires, including campfires and small unpermitted art burns, directly on the playa surface would not be permitted. The applicant would provide public education through the Burning Man website, radio stations, brochures and other literature to encourage compliance of this rule. The restrictions would be enforced by BLM Law Enforcement Officers and compliance monitoring personnel. Failure to comply with the terms of the closure orders may result in a federal ticket/fine.

The burning of “The Man” and other large art structures would be permitted by the applicant. Permitted burns would use approximately four inches of decomposed granite under the burning objects to eliminate surface scarring. Decomposed granite has historically been provided by Courtney Rock & Transport, which obtains a permit with BLM for use of a pit outside of Gerlach. Approximately five- to six-hundred cubic yards of decomposed granite would be used on an annual basis for each year under the Proposed Action, but the total amount would vary based on the quantity and scale of burnable art projects rather than the population size. Between 25 and 30 truck trips would be required to take all of the decomposed granite along County Road 34 to the gravel pit south of Soldier Meadow Road for staging. As needed, trucks would then bring the decomposed granite to the event via the 12-mile access road to Point 1.¹ Following the event, the vendor would be responsible for hauling away any used and leftover decomposed granite to private land in the region.

2.1.7 Dust Abatement

The applicant would provide as many water trucks as necessary (up to 14) for dust suppression along City-designated roads, as warranted by weather and the condition of the playa surface. Alley ways and other pathways would be created organically and would not receive dust suppression. These trucks would operate from one week prior to the commencement of the event through cleanup, as needed.

Water trucks would operate two to three trips per truck per day from Fly Ranch, located approximately eight miles north of the event entrance along County Road 34, to the City to suppress dust

¹ Point 1 is a separate road and entrance point for BRC staff that is located the bottom left corner of the pentagon of the trash fence that surrounds the City (see Figure 2-2).

during the event and over the entire site after the event to decrease blowing dust. During the final sweep phase of clean-up, the playa surface would be soaked by water trucks to increase the likelihood of creating a crust to reduce the potential for subsequent wind erosion. Truck entry points from Point 1 to the 12-mile access road, as well as all dunes throughout the City would be dragged or graded and then watered down.

Approximately 55 miles of street and five miles of gate road would be watered daily for a population of 58,000 people. For a population of 70,000 people, an additional five miles of road to be watered. Compared to the number of trucks used for a population of 58,000, a population of 70,000 people would require use one additional water truck, but the overall number would not be expected to exceed 14 trucks in total dependent upon weather conditions or the need for additional watering. In 2011, eight trucks were utilized, which resulted in each truck watering approximately 7.5 miles of roads per day.

Overall approximately six million gallons of water per year would be obtained from groundwater wells at Fly Ranch for the range of the Proposed Action. With the exception of those roads authorized in advance by BLM, dust control palliatives would not be used or added to water for dust suppression activities. During the event, water trucks would be labeled to indicate that the water is non-potable and not suitable for human contact, as required by State regulations.

2.1.8 Runway and Aircraft

The Black Rock City airport runway would be a Federal Aviation Administration (FAA)- and NDOT-approved temporary public runway facility and the applicant would coordinate with the FAA for runway set-up, operations and management of airspace above the City. Facilities include a single landing strip, two helipads for medevac and private helicopters, a tie-down area, and camping.

The runway, located southeast of the perimeter fence, would be approximately 60 feet wide and 5,000 feet long. Due to prevailing winds, the runway would be set up in a southwest to northeast direction. The runway would be delineated by placement of orange cones and signing to deter land-based vehicle traffic from entering the area. Numbers painted at both ends of the runway would indicate the compass bearing and would help define runway boundaries. A compass rose would also be painted on the playa surface. All painted features at the airport would use a calcium carbonate/water suspension that fades and breaks down within a few weeks of application. The painted markers would be raked or washed away following the event. An area for aircraft parking would be delineated outside the perimeter fence and adjacent to the runway. A helipad would be designated and marked for emergency use. An ultra-light aircraft take-off and landing area would be designated in the area to the southeast of the airport camp.

There would be no provisions for night operations (no lights) with the exception of the helipad reserved for medical evacuations. The medevac helipad would be outlined with reflective material and steady red lights in addition to the outline of a cross, created with colorant. The helipad would be placed to allow flights in and out without interference with fixed-wing traffic using the runway.

Windsocks on 20-foot steel poles would be installed adjacent to the runway. Radio communication with pilots would be provided through a Common Traffic Advisory Frequency and would inform pilots of landing pattern direction and safety information. The airport runway use would be limited to small general aviation. Single and twin piston engine, fixed wing aircraft, ultra lights, hot air balloons, skydiving, rotocraft, and helicopters (private and medevac) would be allowed to use the airport. Use of the air strip and helipad would not be restricted to participants; the applicant would have control over who would enter the event and a gate would be staffed to provide entry to the event for ticketed participants arriving by air.

The applicant would prepare a notice to airmen (NOTAM) to the FAA, which would be posted as required. The applicant would report to FAA authorities and military bases any non-event aircraft operating in an unsafe manner, or any aircraft related incidents or accidents near the event. More detailed information on the Black Rock City Airport is included in Appendix 2 (Burning Man Five-Year Operating Plan, 2012-2016).

In 2010, 1,253 total operations and 630 landings occurred during the Burning Man event, and in 2011, there were 2,062 total operations and 978 landings during the event (BRC 2012a).

2.1.9 Sanitary Facilities

In accordance with the Burning Man 2012 Operating Plan (see Appendix 2), banks of portable toilets and hand-sanitizing stations would be distributed throughout the City. The number of toilets would be based on BRC's expected population (e.g., there were approximately 900 toilets available for the 2011 event). Additional toilet banks would be placed near "The Man." Each toilet would be emptied and cleaned daily with all waste material being disposed appropriately off-site. Toilets would be anchored to prevent winds from toppling them. (BRC 2011b and 2011d)

Human wastes removed from the site would be treated and disposed of off-site by the portable toilet vendor as required under applicable State and local permits at the Washoe County Waste Treatment Center.

2.1.10 Event Take Down and Clean-Up

A. On-Site

Public service messages on event radio stations, as well as other means, would encourage participants to clean up their sites and take their garbage home or to an approved landfill. Structure and site clean-up would begin on the Tuesday after Labor Day and would occur for up to 30 days after the event.

Take down and clean-up would involve approximately 120 people at a population of 58,000 people and 150 people at a population of 70,000 people, with most crews drawn from populations in California and Nevada, within one day's drive to the site.

Five days after the event, the majority of the crew would move off playa, except for 20 to 30 people who would stay on playa for a total of 13 days after the event. Temporary accommodation is provided by BRC to staff and crew during the last three weeks of clean-up. This accom-

modation is provided on private property in the surrounding area. The applicant would not allow camping within the event site two weeks after the event period, with the exception of authorized BRC staff, contractors, volunteers and other authorized participants taking down art works or theme camps. The applicant would provide the appropriate identification to authorized personnel (i.e. staff ID, decals, designated camping areas, etc.).

Structure disassembly and general on-site garbage removal would begin four days after the end of the event and would be completed within two weeks.

The applicant's clean-up crews would patrol a grid system at 7- to 10-foot intervals. Crews of at least 15 people, including a line boss, would walk the entire permitted area. Applicant staff would sort solid waste on the playa and dispose of debris 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. The perimeter fence would be the last structure to be removed. Dunes formed as a result of dust blowing into the perimeter fence would be dragged or graded and then watered.

Each year BLM would conduct a detailed site inspection in October and a follow-up inspection in the spring, if deemed necessary by BLM. The exact timing of the inspections would depend on playa and weather conditions. Post event debris would not be allowed to exceed 1.0 ft²/acre. According to Burning Man 2011 Special Recreation Permit Stipulations (see Appendix 1), if clean-up studies indicate the clean-up standard has been or is likely to be exceeded, the permit would be suspended until the site has been cleaned up to a level not to exceed 50 percent of the standard.

B. Off-Site

Off-site clean-up would include litter and debris pickup and disposal along roads and highways surrounding the event with a focus along the following public roadways, which are depicted on Figure 1-1:

- County Road 34 from "8-Mile" Entrance to State Route 447
- State Route 447 from the town of Gerlach south to the town of Wadsworth
- State Route 447 from the town of Gerlach northwest to the California state line, and
- State Route 446 from the town of Nixon west to State Route 445 near the town of Sutcliffe.

A minimum of two roadside crews would patrol and collect all roadside trash for disposal in an approved site. If necessary, other road shoulders and sites would also be cleaned, including County Road 34 to the town of Vya, and any other sites deemed necessary by BLM (e.g., Trego Hot Springs and Black Rock Hot Springs).

Off-site clean-up would begin after event exit and would continue for approximately two weeks, as needed. Weather, traffic and other safety concerns permitting, the applicant would make every effort to begin this clean-up effort on Wednesday post-event and complete the effort as soon as feasibly possible.

2.1.11 Permits Required

Table 2-1 lists the federal, State, and local permits and authorization required for the proposed Burning Man event.

Table 2-1. Federal, State, and Local Permits Required for the Proposed Burning Man Event

Agency	Permit Required
Bureau of Land Management	Special Recreation Permit
Federal Aviation Administration	Private-use Airport Permit for Black Rock City Airport
Federal Communication Commission	Radio System Permit
Nevada State Health Department	Temporary Food Establishment Permit
Nevada Department of Transportation	Encroachment Permit to clear and flag roads and for trash removal activities Temporary airport runway
Pershing County	Fireworks Display Permit

Source: BRC 2012a.

2.2 Alternative 2: 50,000-Person Maximum Alternative

The operations of this alternative would be identical to the Proposed Action except the maximum population would be 50,000 people (the amount approved for 2006-2011) per year during the six-year period. The population includes all attendees of the event, including paid participants and volunteers. The population does not include government personnel, Humboldt General Hospital emergency service providers, vendors and contractors.

The event location would remain within the boundary of the polygon defined by the 2011 Public Closure Area. The City would be laid out in an arc centered on the sculpture of “The Man.” The arc would have a radius of approximately 3,020 feet and the residential portion of BRC would include about 820 acres for each year of the five-year period. The event schedule would be one of the two sub-alternatives described for the Proposed Action (Alternative 1).

Motor vehicles traveling to the event on public roadways would be of a mix similar to that of the Proposed Action (Section 2.2.3), and, approximately 64,000 one-way motor vehicle trips (or 32,000 round trips) would occur with a population of 50,000 people. Fuel (e.g., gasoline, diesel, wood, propane) would be used for transportation, power generators, and open burning. The applicant rented 34 generators to power its operations during the 2011 event, and surveys taken during the 2011 event found participants used 213 generators for art projects, 1,124 generators for theme camps and motor homes, and another 550 engines for mobile art or mutant vehicles. The level of traffic, fuel sources, and fuel use associated with a population 50,000 people would be comparable to the 2011 levels.

Approximately six million gallons of water per year would be obtained from groundwater wells at Fly Ranch to water approximately 55 miles of street and five miles of gate road on a daily basis and all truck entry points and dunes within the City would be watered during event clean-up.

Approximately five- to six-hundred cubic yards of decomposed granite would be used on an annual basis, but the total amount would vary based on the quantity and scale of burnable art projects. Between 25 and 30 truck trips would be required to take the decomposed granite along

County Road 34 to the gravel pit south of Soldier Meadow Road for staging. Additional truck trips would be required to bring the decomposed granite to the event location via the 12-mile access road as needed. Following the event, the vendor would be responsible for hauling away any used and leftover decomposed granite to private land in the region.

While preparations for Burning Man activities may begin months prior to Labor Day weekend in September, site preparations on the playa would begin in early August with approximately 260 to 300 people, and clean-up would follow the event for up to 30 days after the event with approximately 100 people. The majority of these crews would be drawn from populations in California and Nevada within one day's drive to the site. During site preparation and clean-up, these crews would camp at the event location on the playa.

The Burning Man 2011 Special Recreation Permit Stipulations (Appendix 1) are considered part of this alternative. If this alternative is selected for implementation, these stipulations would be revised as necessary for the decision made regarding the 2012-2016 permit application based in large part on this Environmental Assessment. The applicant also submitted a 2012 Operating Plan (Appendix 2) as part of its application (BRC 2011d). The Operating Plan, including portions not specifically mentioned in this chapter, is also incorporated as part of this alternative.

2.3 Alternative 3: No Action/No Event Alternative

Just as the event moved from Baker Beach to Black Rock Desert in 1990, the event could move again. If the event were to move and to continue to have the potential to result in impacts on public lands, it could still necessitate a SRP. Three likely scenarios under the No Action Alternative are:

- A large informal gathering at the playa, smaller than the Proposed Action and comprised of an unknown portion of participants intending to attend the Burning Man event;
- Smaller gatherings spread out over the year at various locations; and/or
- A substitute event located off of BLM Winnemucca District-managed lands.

For instance, an informal event known as "4th of Juplaya" has attracted roughly 2,000 to 3,000 people (BLM 2011). Although not officially affiliated with BRC or Burning Man, it is a similar gathering since many of the attendees are Burning Man participants. Additionally, with the sell-out of Burning Man in 2011, alternative (unpermitted) gatherings were advertised on the Internet. Because actual numbers of event participants or locations are not possible to predict, qualitative impacts have been described for the No Action/No Event Alternative.

2.4 Alternatives Considered but Eliminated from Detailed Study

Alternatives suggested in scoping efforts and that have been considered but eliminated from detailed analysis in this document include:

- Hold Burning Man on private land or an alternate BLM location to reduce impacts (see Sections 2.4.1 and 2.4.2).
- Rotate the site annually to reduce impacts on a single area (see Section 2.4.3).

- Split Burning Man into several smaller events to reduce its “boom and bust” impacts on the local environment, community, and economy (see Section 2.4.6).
- Limit the attendance at an arbitrary cap or set a limit based on winter water on the playa (see Section 2.4.6).
- The Summit Lake Paiute Tribe believes that the land needs to “heal” after the Burning Man festival. The Event needs to alternate between the playa and a more distant location, for example, from the just north of Empire, or Cedarville, or closer to the Burning Man Ranch near Hualapai (see Sections 2.4.1, 2.4.2 and 2.4.3).

A minimum age limit for attendance was suggested during scoping. The Burning Man website (<http://www.burningman.com>) states that “[a]nybody under 18 years of age must be accompanied by an adult of 21 or older.” The Burning Man event complies with all laws and regulations, none of which require an age restriction. Participants have chosen to be at the event and/or have paid for a ticket. Therefore, whether a minor should attend is up to the discretion of his or her parent or legal guardian.

Additionally, as stated in the Operating Plan (Appendix 2), the applicant would develop and implement a plan to address exposing minors to adult activities at the event. The plan would include measures to implement these goals, such as educating and requiring parents/guardians to supervise their children, zoning the City, promoting kids’ camps, continuing child registration and lost child protocols, training of Black Rock Rangers and Emergency Services Department regarding lost children, and making every effort to educate adult-related theme camps about behavioral standards and the need for having a gatekeeper during hours when the camp might not be suitable for minors (BRC 2012b).

2.4.1 Private Land Alternatives

Under this alternative, the Burning Man event would be held on private land. Private land alternatives have been eliminated from consideration, because they would not meet the purpose and need for the Proposed Action.

Although approval of a private land alternative is not a decision that can be made by BLM, its impacts are discussed in part under the No Action Alternative. If BLM does not approve the Proposed Action, the applicant may move the event to another location, which could be on private land or non-BLM land.

2.4.2 Other (Public Land) Locations Alternative

Under this alternative, the location of the event would be on public (BLM) land outside of the Black Rock NCA, such as in the Mojave Desert in California. All other event location alternatives would transfer the event and its associated impacts to another location. Other public land alternatives have been eliminated from consideration because they would not meet the purpose and need for the Proposed Action.

2.4.3 Location Rotation Alternative

Under this alternative, the event would either (1) remain within the Black Rock NCA, but the specific closure area would move to a new designated area each year so that the closure area would not overlap with a prior location within the five-year period, or (2) the event would move to a more distant location on some years. This alternative was suggested during scoping in response to concerns about soil compaction, trash accumulation, dust, and degradation of the playa surface.

Currently, the location of the City is adjusted each year within the boundary created by the polygon that defines the Closure Order area for the 2011 event (see Figure 2-1). The event cannot be feasibly moved north, because there is a recreation decision (REC-24) in the 2004 Resource Management Plan (RMP) for the Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area (NCA) that says that Class III and IV permitted activities will be concentrated on or near the South Playa to maintain visitor solitude on northern portions of the playa. In accordance with REC-24, the southern boundary of the 2011 Closure Area is already at the southern boundary of the South Playa, as defined in the Black Rock–High Rock RMP. The event cannot feasibly be moved south of the 2011 Public Closure Area location because there is a gradient change on the playa that pushes water to its southern edge and increases the likelihood of the presence of water during the event period, which could affect event access and participant safety. Therefore, it is not feasible to move the event south of the 2011 Closure Area location.

The effects of holding the event outside of the NCA on some years would be similar to the No Action Alternative and are therefore not analyzed separately.

2.4.4 Revised Access Road and Multiple Access Road Alternative

This alternative was considered due to traffic and playa surface (road scar) concerns. Under the Revised Access Road Alternative, participants would access the playa at its south-southeastern end via Jungo Road/State Route 49 or along the Union Pacific Railroad (UPRR) right-of-way (ROW) instead of using the proposed 8-Mile playa entrance.

Approval by UPRR would be required for use of the railroad ROW as the access road. In addition, there would be traffic safety concerns associated with crossing and encroachment of the access road along the active UPRR ROW. Due to the playa gradient, water is retained in the South Playa area, which would increase the likelihood that access from the southern end of the playa via Jungo Road/State Route 49 would be difficult and/or infeasible during the event period. Additionally, if the turn-off to the event was south/east of Gerlach as it would be for either of these options, traffic would turn into the event from a more traveled section of roadway along State Route 447, which could increase traffic congestion and safety concerns. The alternative would reduce vehicle traffic through the Town of Gerlach, which would likely reduce visitors to the town and the associated economic benefits.

An alternative to add additional access roads during event exodus was suggested. As discussed in Section 1.3, Chapter 2 of the Black Rock NCA Resource Management Plan Section 2.2.20 Recreation Management REC-27 states that "No more than two access points to the playa will be closed on the same weekend in conjunction with permitted events." The Proposed Action would close one road to the public during the event. As such, one additional exit road could be

permitted. An additional exit, such as at the 12-Mile or 3-Mile playa access points, would potentially reduce the wait time for participants exiting the playa to County Road 34. However, an additional exit would not reduce impacts to traffic along County Road 34, which would still require traffic control to remain at an acceptable level of service. Because this alternative would not reduce impacts to traffic off of the playa, it has not been considered for further discussion in this document.

2.4.5 60,000-Person Maximum Alternative

The operations of this alternative would be the same as the Proposed Action except the maximum population would be 60,000 people. The event location would remain within the boundary of the polygon defined by the 2011 Closure Order. The event schedule would be one of the two sub-alternatives described for the Proposed Action (Alternative 1).

Although this alternative would reduce the proposed event size, it is within the range of impacts described for Alternative 2 (50,000-Person Maximum Alternative) and the Proposed Action (58,000 to 70,000-Person Maximum Alternative). Therefore, this alternative has not been considered for further discussion in this document.

2.4.6 Less than 50,000-Person Alternative

This alternative would be similar to the Proposed Action except the event would be fewer than 50,000 people each year from 2012 to 2016. Various population sizes less than 50,000 people were suggested as potential alternatives during scoping due to personal preference of event size. A Less than 50,000-Person Alternative is within the range of alternatives considered, namely Alternative 3 (No Action) and Alternative 2 (50,000-Person Maximum). Therefore, this alternative has not been carried forward in this document.

3 AFFECTED ENVIRONMENT

3.1 Introduction

3.1.1 Background

The Black Rock Desert landscape consists of a large barren playa and adjacent wind-formed mounds, sheet sands, dunes, alluvial slopes, terraces, foothills and mountains. The Black Rock Desert playa encompasses about 265 square miles (169,000 acres). Of the proposed Burning Man closure area (14,153 acres), 12,758 acres are within the Black Rock Desert–High Rock Canyon National Conservation Area (NCA). Almost 1,396 acres along the southern border of the closure area are outside the NCA. The NCA was established by legislation in 2000 (Public Law 106-554). The act includes language related to permitting of large-scale recreation events: “[t]he Secretary may continue to permit large-scale events in defined, low impact areas of the Black Rock Desert playa in the conservation area in accordance with the management plan...”

Alternatives 1 and 2 are located in the southwestern portion of the playa. The playa surface is a flat, non-vegetated ephemeral lakebed. Variations in surface relief develop seasonally. Wind and water changes the shape and size of dunes, sheets of silt and sand, and mounds.

3.1.2 Affected Resources

The Proposed Action has been analyzed to assess direct, indirect, and cumulative impacts to the supplemental authorities (formerly referred to as critical elements of the human environment) and additional affected resources listed below in Tables 3.1-1 and 3.1-2. Those elements or resources marked as “not present” in Table 3.1-1 and 3.1-2 are not present within or adjacent to the project/event area. Those elements or resources marked as “unaffected” may be present within or adjacent to the event area but would not be impacted by the Proposed Action. Those elements or resources marked as “present” and “affected” may be found within or adjacent to the event area and may be impacted by the Proposed Action. Elements or resources discussed further in this EA are identified in the column marked as “reference section,” with the appropriate section listed for the affected environment and environmental consequences analysis. Elements or resources which contain information in the “comment” column reflect any negative findings and are not discussed further in this EA.

Table 3.1-1. Supplemental Authorities (Formerly referred to as Critical Elements of the Human Environment)

Element	Not Present	Present Not Affected	Present Affected	Comments/Rationale
Air Quality			X	Direct and indirect
Areas of Critical Environmental Concern (ACECs)			X	Indirect impact associated w/ visitation before and after the event (e.g., Soldier Meadows ACEC, High Rock Canyon ACEC).
Cultural Resources			X	Direct (emigrant trails cross closure area and indirect camping at archeological sites before and after event)

Table 3.1-1. Supplemental Authorities (Formerly referred to as Critical Elements of the Human Environment)

Element	Not Present	Present Not Affected	Present Affected	Comments/Rationale
Environmental Justice			X	Gerlach, Pyramid Lake Paiute reservation, Sutcliffe, Nixon, and Wadsworth
Floodplains	X			Neither the event area nor the public closure areas fall partially or wholly within a floodplain as mapped by the Federal Emergency Management Agency.
Invasive, Nonnative Species			X	Indirect (increased activity in and around the playa especially areas w/ springs and meadows)
Migratory Birds			X	Indirect (increased activity in and around the playa, may result in increased disturbance to migratory bird activity, vehicular collisions, displacement, foraging disruption). No impact to migratory bird nesting season.
Native American Religious Concerns			X	Camping at the hot springs and physical nature of the playa changing. Playa considered sacred by some tribes. Traffic & trash associated w/participants traveling to and from the event.
Prime or Unique Farmlands	X			None
Threatened and Endangered Species			X	Indirect impact: Desert Dace, Lahontan cutthroat trout, driving and hiking (camping and bathing at/near hot springs)
Wastes, Hazardous or Solid			X	Direct and indirect
Water Quality (Surface and Ground)			X	The event area and Closure Area occur in a location that can occasionally be inundated by a seasonal, ephemeral lake. Any residues, including all soluble substances and some insoluble, can rapidly disperse under these conditions affecting surface water quality and potentially affecting groundwater.
Wetlands and Riparian Zones			X	Indirect (increased activity in and around the playa especially areas w/ springs and meadows)
Wild and Scenic Rivers	X			None
Wilderness			X	Indirect (increased visitation and mechanized trespass)

Table 3.1-2. Additional Affected Resources

Additional Affected	Not Present	Present Not Affected	Present Affected	Comments/Rationale
Economics			X	Direct and indirect
Lands with Wilderness Characteristics	X			Not present
Noise (quiet)			X	Direct and indirect

Table 3.1-2. Additional Affected Resources

Additional Affected	Not Present	Present Not Affected	Present Affected	Comments/Rationale
Paleontological Resources	X			Low probability of indirect impact
Public Health and Safety			X	Traffic accidents, fine particulate matter, livestock, wild horses, and wildlife
Rangeland Management • Livestock Movement • Range Improvements	X			Livestock do not utilize the playa. Reference Public, Health and Safety (Sections 3.16 and 4.16) for vehicle collision risk on roads.
Recreation			X	Direct and indirect
Social Values			X	Direct and indirect
Soils • Playa Sediments			X	Direct and indirect
Special Status Species			X	Similar potential indirect impacts as under T&E Species
Transportation			X	Access, capacity, traffic control
Vegetation			X	Indirect impacts (increased activity in and around the playa especially areas with springs and meadows)
Visual Resources • VRM • Night Skies			X	Direct and indirect; baseline data collected at 2011 event (August 29 between 21:20 and 23:30)
Water Quantity		X		Water used for dust abatement is obtained from an offsite continually flowing, artesian source with prior agreement from the water right holder/ user. Water used by participants is generally brought from their trip origin, purchased at retailers along the way, or taken from other potable sources along the way. The overall source of this water is dispersed and no measurable impact is anticipated to any individual source.
Wild Horse and Burros			X	Indirect
Wilderness Study Areas			X	Indirect (increased visitation and mechanized trespass)
Wildlife			X	Similar potential indirect impacts as under T&E

3.1.3 Areas of Assessment

Table 3.1-3 describes the assessment areas for evaluation of direct, indirect and cumulative impacts within this Environmental Assessment, and identifies the figure on which each assessment area is depicted (see Figures 3-1 to 3-10 at the end of this section). The resource areas described below reflect those resources determined to be present and affected in Table 3.1-1 (Supplemental Authorities) and Table 3.1-2 (Additional Affected Resources). Resource areas with overlapping issues and areas of assessment have been grouped together.

Table 3.1-3. Summary of Assessment Areas

Element	Affected Area			Figure
	Direct	Indirect	Cumulative	
Air Quality	Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)	Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)	Air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer)	3-1
ACECs, Recreation, Wilderness, Wilderness Study Areas	Closure Area (14,153 acres), including event access road	Playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), access roads, Selenite Mountains WSA and Poodle Mountains WSA, High Rock Canyon and Soldier Meadows ACECs and travel routes (with 0.5-mile buffer)	Playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), access roads, Selenite Mountains WSA, and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs and travel routes (with 0.5-mile buffer)	3-2
Biological Resources <ul style="list-style-type: none"> • invasive, nonnative species • migratory birds • threatened & endangered species • wetlands and riparian zones • special-status species • vegetation • wildlife 	Closure Area (14,153 acres), including event access road	Playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater	Playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater	3-3
Cultural Resources	Closure Area (14,153 acres), including event access road	Playa, adjacent dunes, points of interest (hot springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with 0.5-mile buffer)	Playa, adjacent dunes, points of interest (hot springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with 0.5-mile buffer)	3-3
Environmental Justice	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	3-4

Table 3.1-3. Summary of Assessment Areas

Element	Affected Area			Figure
	Direct	Indirect	Cumulative	
Native American Religious Concerns	Black Rock Desert playa, Pyramid Lake Reservation, Summit Lake Reservation, Fort McDermitt Indian Reservation, Fallon & Reno-Sparks Reservations, travel routes to event via Summit Lake Reservation and via Pyramid Lake	Black Rock Desert playa, Pyramid Lake Reservation, Summit Lake Reservation, Fort McDermitt Indian Reservation, Fallon & Reno-Sparks Reservations, travel routes to event via Summit Lake Reservation and via Pyramid Lake	Black Rock Desert playa, Pyramid Lake Reservation, Summit Lake Reservation, Fort McDermitt Indian Reservation, Fallon & Reno-Sparks Reservations, travel routes to event via Summit Lake Reservation and via Pyramid Lake	3-5
Wastes, Hazardous or Solid	Closure Area (14,153 acres) and travel routes (with 0.5-mile buffer)	Closure Area (14,153 acres) and travel routes (with 0.5-mile buffer)	Closure Area (14,153 acres) and travel routes (with 0.5-mile buffer)	3-10
Water Quality (Surface and Ground)	Surface water: Black Rock Desert playa, Fly Ranch, springs of interest; Ground water: Black Rock Desert Hydrographic Basin	Surface water: Black Rock Desert playa, Fly Ranch, springs of interest; Ground water: Black Rock Desert Hydrographic Basin	Surface water: Black Rock Desert playa, Fly Ranch, springs of interest; Ground water: Black Rock Desert Hydrographic Basin	3-6
Economics	Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties	3-4
Noise (quiet)	Direct line of sight to Closure Area and travel routes (with 0.5-mile buffer)	Direct line of sight to Closure Area and travel routes (with 0.5-mile buffer)	Direct line of sight to Closure Area and travel routes (with 0.5-mile buffer)	3-7
Public Health and Safety	Closure Area (14,153 acres), including event access road	Closure Area, travel routes (with 0.5-mile buffer) and air basin	Closure area, travel routes (with 0.5-mile buffer) and air basin	3-1
Social Values	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	3-4
Soils (Playa Sediments)	Soil units that intersect Closure Area (14,153 acres), including event access road	Soil units that intersect Closure Area (14,153 acres), including event access road	Soil units that intersect Closure Area (14,153 acres), including event access road	3-9
Transportation	Travel routes and event landing strip (including takeoff/landing)	Travel routes and event landing strip (including takeoff/landing)	Travel routes and event landing strip (including takeoff/landing)	3-10
Visual Resources (VRM & Night Skies)	Viewshed and Key Observation Points	Viewshed and Key Observation Points	Viewshed and Key Observation Points	3-8
Wild Horse & Burros	Closure Area (14,153 acres), including event access road	Travel routes (with 0.5-mile buffer) and air basin	Travel routes (with 0.5-mile buffer) and air basin	3-1

Supplemental Authorities

3.2 Air Quality

The assessment area for analysis of air quality is the Black Rock Desert Hydrographic Basin/Subarea (Area #28) of the Black Rock Desert Hydrographic Region of Nevada (Region #2) and the travel routes to the event, which includes portions of three rural counties and urban Washoe County, as shown on Figure 3-1. Nevada air quality basins generally follow the boundaries of the hydrographic basins.

3.2.1 Climate and Meteorology

The Proposed Action would occur in rural Pershing County, within the Black Rock Desert hydrographic region, where the climate is semi-arid and characterized by warm, dry summers. The playa is semi-arid with mean annual precipitation of 6.75 inches. During each year in the month of August and September, an average of 0.25 inches of precipitation occurs per month; in any typical 10-day period in August or September, there is an average of 0.57 days of precipitation greater than 0.01 inch (WRCC 2011). Average daily high temperatures are 91 degrees Fahrenheit (° F) each August and 82° F each September (WRCC 2011). Local climatological data from Lovelock and Reno indicate that during each August and September, daily average peak gusts are around 23 mph, and on average, one day in each August and September is likely to experience a peak gust over 40 mph (WRCC 2011).

3.2.2 Ambient Air Quality

Air quality in the assessment area is classified as attainment/unclassified for the ambient air quality standards, and the nearest nonattainment area occurs in the urban portion of the Truckee River Basin (Truckee Meadows groundwater basin, hydrographic area 87) of Reno and Sparks. The applicable ambient air quality standards, attainment designations, and baseline inventory for Pershing County and the remainder of the assessment area appear in the *Burning Man 2012-2016 Environmental Assessment Technical Report: Air Quality*, January 2012, prepared by Aspen Environmental Group, incorporated by reference herein.

Existing background concentrations of criteria pollutants: nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), inhalable particulate matter less than 10 microns in diameter (PM₁₀), and fine particulate matter less than 2.5 microns in diameter (PM_{2.5}) are lower than the maximum allowable concentrations of the federal Clean Air Act or the National Ambient Air Quality Standards (NAAQS). However, natural events (e.g., high winds and wildfires) can cause 24-hour PM₁₀ concentrations to exceed the NAAQS, and the Nevada Division of Environmental Protection indicates that exceedances in the rural counties are related to uncontrollable high wind events (BAQP 2011).

In the vicinity of the Black Rock City (BRC) Public Closure Area, there is only one major stationary source, operated in 2010 by U.S. Gypsum Company south of Empire, Nevada,¹ about 15.5 miles (25 kilometers) south of the Public Closure Area. Other nearby stationary source

¹ In December 2010, U.S. Gypsum “temporarily idled” its gypsum wallboard and plaster production facilities and gypsum quarry in Empire (U.S. Gypsum 2010).

facilities with notable emissions are not in the Black Rock Desert hydrographic region and therefore unlikely to degrade air quality in the vicinity of the Public Closure Area.

3.2.3 Climate Change

Global climate change is influenced by anthropogenic (man-made) greenhouse gas emissions (GHGs) primarily as a result of fossil fuel use. Most anthropogenic GHG emissions are from fuel combustion by motor vehicles and for transportation, industrial facility operations, electricity generation, and use of commercial and residential buildings; agricultural activities also contribute substantially to GHG emissions. Anthropogenic GHG emissions are dominated by carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Sources in the four counties of the assessment area emitted approximately 6.3 million tons of GHG in 2008. Climate change effects are long-term, global, and cumulative in nature, and they include increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level, as observed by the Intergovernmental Panel on Climate Change (IPCC).

The CEQ published draft guidance in February 2010 for federal agencies to consider the direct and indirect greenhouse gas emissions from proposals for federal actions under NEPA and to quantify and disclose those emissions in the environmental document (Council on Environmental Quality, Draft NEPA Guidance, dated February 18, 2010). The draft guidance provides practical tools for agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent (MTCO₂e) annual emissions (27,558 tons) from an agency action to trigger a quantitative analysis.

3.3 Areas of Critical Environmental Concern (ACECs)

ACECs are designated and managed by BLM in the western United States. The ACEC program was established in the Federal Lands Policy and Management Act of 1976. ACECs are public lands where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes or to protect life and safety from natural hazards. The restrictions associated with an ACEC designation are determined at the time the designation is made.

The geographic extent for analysis of ACECs is shown on Figure 3-2 and includes High Rock Canyon and Soldier Meadows ACECs, which are near the wilderness areas discussed in Section 3.13 (Wilderness Areas) (BLM 2011). Most of the High Rock Canyon ACEC is located between the High Rock Canyon Wilderness and the East Fork High Rock Canyon Wilderness. The Soldier Meadow ACEC is just north of the High Rock Lake Wilderness. High Rock Canyon ACEC is 33.8 miles and Soldier Meadow ACEC is 35.4 miles from the Public Closure Area.

High Rock Canyon ACEC contains approximately 5,664 acres encompassing the High Rock Canyon Road corridor, Stevens Camp and the Pole Corral area. The ACEC houses canyons and volcanic tablelands, perennial springs, meadows, and wildlife including California bighorn sheep and high densities of nesting raptors. Cultural resources in the ACEC include extant emigrant graffiti on cliff walls, homestead sites, and stone tool fragments. (BLM 2004)

Soldier Meadows ACEC covers 2,077 acres. The area is a spring fed wetland housing endemic fish and springsnails. The area houses endemic desert dace (*Eremichthys acros*); four endemic springsnails, including elongate mud meadows springsnail (*Pyrgulopsis notidicola*); and Soldier Meadow cinquefoil (*Potentilla basaltica*), a perennial wildflower. Desert dace are federally listed as threatened, and elongate mud meadows springsnail and Soldier Meadow cinquefoil are candidates for listing. (BLM 2004; USFWS 2010; Nevada Natural Heritage Program 2001) The ACEC is also near the Applegate Trail and contains important archaeological sites. Hot springs in the Soldier Meadows ACEC are popular for recreation, although BLM does not manage them for human use (BLM 2004). There are seven designated campsites within the ACEC (Friends of Blackrock Desert, n.d.). Solider Meadows is one of the most highly visited areas in the High Rock Canyon-Black Rock Desert NCA (BLM 2012).

There are also several existing and proposed ACECs in the region, but outside the impact assessment area. The 60-acre Osgood Mountain Milkvetch ACEC is approximately 100 miles east-northeast of the Public Closure Area, outside the impact assessment area. In 2006 BLM also recommended the designation of ACECs for Pine Forest, Stillwater, and Raised Bog, and these three ACECs are proposed in Appendix F of the Winnemucca District Office Draft Resource Management Plan and Draft Environmental Impact Statement, which was published in June 2010 and is expected to be finalized in 2012 (BLM 2010).

3.4 Cultural Resources

A Class I inventory of six cultural resources assessment areas was conducted by Aspen Environmental Group and Far Western Anthropological Research Group in October 2011. The six areas included in the inventory are: the 3,200-acre proposed Public Closure Area, Black Rock Hot Spring, Double Hot Spring, Great Boiling Hot Spring (Gerlach, NV), Soldier (Mud) Meadows, and Trego Hot Spring. As discussed in Table 3.1-3, direct impacts are possible in the Public Closure Area, including the event access road, while indirect impacts as the result of increased visitation could occur on the playa, at adjacent dunes, and at all five springs within the NCA, see Figure 3-3. A Class III inventory of these areas was not performed as the playa is not considered to be archaeologically sensitive and the springs have been surveyed as part of previous projects.

The Public Closure Area and the required one mile buffer area surrounding it have been subject to three cultural resources surveys. These surveys took place in the 1970s and were associated with geothermal leasing. Two prehistoric sites (CrNV-02-715, CrNV-02-1009), one historic site (CrNV-02-718), eight prehistoric isolates, and one historic isolate were identified. None of the sites have been formally evaluated. In addition, segments of the Applegate-Lassen (CrNV-02-822) and Nobles Routes (CrNV-02-4665) of the California National Historic Trail are known to be present.

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 U.S. Several other historic trail routes cross the Black Rock Desert. The 1843-1844 John C. Fremont 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), segments of the Nobles Route have been determined eligible, and Fremont Route has not been evaluated.

One cultural resources survey is reported for the vicinity around Black Rock Hot Spring. However, based on the site records available, at least three surveys have taken place in the area. These surveys have resulted in the identification of at least 21 isolated artifacts, ten prehistoric sites, two multicomponent sites, one unidentified site, and a segment of the Applegate-Lassen (CrNV-02-822) Route of the California National Historic Trail. Historic documents report that this historic campsite, lush meadow, and waterhole along the Historic Trail were the junction of the 1852 Nobles Route and the Applegate-Lassen Trail. From here, the Nobles Route headed to the southwest to Granite Creek and Great Boiling Springs (future site of Gerlach, NV). Recorded sites in this vicinity tend to be prehistoric quarries with associated lithic scatters. Five of the 14 sites, including segments of linear sites, are considered eligible for NRHP.

At least three cultural resources surveys have taken place in the vicinity of Double Hot Spring. These surveys have identified six sites, including three prehistoric sites, two unidentified sites, and one segment of the Applegate-Lassen (CrNV-02-822) Route of the California National Historic Trail. Historic documents report that the meadows and springs here served as a campsite along the Applegate-Lassen Route. Like Black Rock Hot Spring, sites in this area tend to be prehistoric quarries and associated lithic scatters. Five of these sites have not been formally evaluated for listing on the NRHP.

Twelve surveys have been conducted in the vicinity of Great Boiling Hot Springs, the modern location of Gerlach. Prehistoric resources identified in this area include six isolates, 13 lithic scatters, four campsites, and two rock shelters. Seven historic resources were identified including five debris scatters. Historic documents report that the springs at this location served as a campsite at the intersection of the Fremont and Nobles Routes along the California National Historic Trail. This important trail is commemorated by Nevada State Landmark 152.

In 1906 the Western Pacific Railroad was constructed through the area and the town of Gerlach, named after a local ranch owner, was established as a depot. Six multi-component resources were also identified. Built environment resources include the historic town of Gerlach (CrNV-02-6814), two historic buildings in Gerlach, the Gerlach cemetery (CrNV-02-6150), a segment of the Western Pacific Railroad (CrNV-02-6736), and the Gerlach water tower. While 19 of these resources have been determined eligible for the NRHP, only the water tower is actually listed on the NRHP.

Two cultural resources surveys have taken place in the vicinity of Soldier Meadows (also called Mud Meadows), one reconnaissance survey and one associated with the installation of water level recorders at the springs. These surveys recorded one prehistoric isolate and two prehistoric sites (26HU1032 and CrNV-02-3250). One of the sites, a small lithic scatter, is considered ineligible for the NRHP while the large artifact scatter has not been formally evaluated. Historic documents report that the meadows and springs here served as a campsite along the Applegate-Lassen (CrNV-02-822) Route of the California National Historic Trail. This was a location where emigrants experienced problems with local Native Americans, resulting in the loss of animal stock and the death of at least one individual. No archaeological remains of the trail or campsite have been recorded.

The Trego Hot Springs vicinity has been included in seven cultural resources surveys. These surveys recorded one historic isolate, five prehistoric sites, one large multi-component site, and three historic linear features. Historic documents report that this spring served as a campsite and waterhole along the Nobles Route of the California National Historic Trail. A segment of an historic telegraph line (CrNV-02-7745), a segment of the Nobles Route (CrNV-02-4665), and the large multi-component site (26PE118) which includes multiple prehistoric artifact concentrations and the ruins of an historic dugout, are considered eligible for the NRHP, while a segment of the Western Pacific Railroad (CrNV-02-6736) and one of the prehistoric lithic scatters (CrNV-02-4602) are considered ineligible. Four of the prehistoric lithic scatters have not been evaluated.

The Class I inventory identified 75 cultural resources within the six assessment areas. Each segment of a linear resource is counted individually. Thirty of these resources have been determined eligible for the NRHP, and one resource is actually listed. Isolates are not included in this total. All of the isolated finds are categorically not eligible for the NRHP per the State Protocol Agreement between BLM and the Nevada State Historic Preservation Officer (SHPO).

3.5 Environmental Justice

The evaluation of environmental justice impacts seeks to identify any disproportionate impacts on high-minority and low-income populations. Consequently, analyzing environmental justice impacts requires two steps: (1) identifying minority and low-income populations, and (2) identifying any impacts that disproportionately affect these populations as compared to non-minority and middle- and upper-income populations. For purposes of consistency and in compliance with U.S. BLM guidelines, U.S. Census data is used to determine minority and low-income population percentages in the assessment area. For this analysis, minorities are individuals that are not classified as non-Hispanic and white. Low-income, for this analysis, is defined as the proportion of the population below the poverty level.

The geographic extent of analysis for environmental justice is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties. Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein.

3.5.1 Population

Table 3.5-1 (Population Trends in the Assessment Area) provides 2000 and 2010 population data for counties, cities, and communities in the assessment area as well as the Pyramid Lake Paiute Tribe. Year 2020 and 2030 population projections are also provided for the counties in the assessment area. Between 2000 and 2010, among the counties, Washoe County grew by the largest number of residents (81,921 residents, 24 percent increase) and Lyon County grew by the greatest proportion (17,479 residents, 51 percent increase). Similarly, population projections for Washoe County indicate that it will grow by the greatest amount (96,482 residents between 2010 and 2030, a 23 percent increase). Lyon County is projected to grow by the greatest proportion, increasing by 18,612 residents between 2010 and 2030, an increase of 36 percent. The population within the Pyramid Lake Paiute reservation decreased by 74 residents between 2000 and 2010, a 4 percent reduction in population. Among communities in the assessment area between

2000 and 2010, Reno and Sparks both increased by the greatest total numbers of residents (44,741 and 23,918 residents, respectively). Fernley grew by the greatest proportion, increasing by 10,825 residents, an increase of 127 percent. While most populations of the other communities in the assessment area grew slightly between 2000 and 2010, Lovelock, Nixon, and Wadsworth all decreased in population. The residents of Empire, which had been a company town for U.S. Gypsum employees and their families, were told in December 2010 that the U.S. Gypsum facility would be closing and residents would be required to vacate company-owned housing. Workers were allowed to remain in town until the end of the spring so that their children could finish the school year. While the 2010 Census listed Empire as having a population of 217, as of June 20, 2011 the population is zero and the zip code is no longer in service (Aspen 2011).

Table 3.5-1. Population Trends in the Assessment Area

Jurisdiction	2000	2010	2020	2030
State of Nevada	1,998,257	2,700,551	3,069,268	3,363,704
Churchill County	23,982	24,877	29,753	31,628
Humboldt County	16,106	16,528	23,527	27,311
Lyon County	34,501	51,980	64,561	70,592
Pershing County	6,693	6,753	7,692	7,766
Washoe County	339,486	421,407	473,616	517,889
Pyramid Lake Paiute Reservation	1,734	1,660	N/A	N/A
Gerlach-Empire	499*	217	N/A	N/A
Fernley	8,543	19,368	N/A	N/A
Lovelock	2,003	1,894	N/A	N/A
Nixon	418	374	N/A	N/A
Reno	180,480	225,221	N/A	N/A
Sparks	66,346	90,264	N/A	N/A
Sutcliffe	211	253	N/A	N/A
Wadsworth	881	834	N/A	N/A

* While Empire and Gerlach were counted together as a single Census Designated Place: Gerlach-Empire in the 2000 Census, in the 2010 Census, Empire and Gerlach are counted as two separate Census Designated Places. The separate 2010 populations of Empire and Gerlach are combined for the 2010 Census population listed above.

Source: U.S. Census Bureau 2000a; U.S. Census Bureau 2000c; U.S. Census Bureau 2010a; Nevada State Demographer's Office 2011.

3.5.2 Demographics

As shown in Table 3.5-2, Minority and Low-Income Population Trends in the Assessment Area, minority populations in the assessment area generally ranged between approximately 15 and 35 percent in 2000, with the notable exceptions of the Pyramid Lake Paiute reservation and the communities of Nixon, Sutcliffe, and Wadsworth. Minority populations in almost all jurisdictions increased between 2000 and 2010, with minority populations increasing to between approximately 22 and 39 percent. Exceptions included Gerlach with a relatively low minority population of 9.2 percent, and the Pyramid Lake Paiute reservation, Nixon, Sutcliffe, and Wadsworth with relatively high minority populations of 81.7, 97.1, 60.1, and 79.5 percent, respectively.

Low-income populations in the assessment area in 2000 generally ranged from 8 to 15 percent, with Fernley having a relatively lower low-income population of 6.3 percent, and the Pyramid Lake Paiute reservation, Sutcliffe, and Nixon having relatively higher low-income populations of

18.0, 30.5, and 26.3 percent, respectively. In most of the jurisdictions, the proportion of residents below poverty level increased between 2000 and 2010, with the notable exception being the Pyramid Lake Paiute reservation and Sutcliffe, which saw decreases in low-income populations from 18.0 to 13.6 percent and 30.5 to 9.0 percent, respectively. Low-income populations in the assessment area generally ranged from approximately 12 to 18 percent, with Churchill County having a relatively lower low-income population of 8.5 percent.

Table 3.5-2. Minority and Low-Income Population Trends in the Assessment Area

Jurisdiction	Minority Population (%) 2000	Low-Income Population (%) 2000	Minority Population (%) 2010	Low-Income Population (%) 2010
State of Nevada	34.8	10.5	26.3	13.0
Churchill County	20.1	8.7	23.5	8.5
Humboldt County	25.6	9.7	31.1	13.5**
Lyon County	16.6	10.4	21.8	11.7
Pershing County	30.3	11.4	31.8	12.1**
Washoe County	27.0	10.0	34.0	14.4
Pyramid Lake Paiute Reservation	78.3	18.0	81.7	13.6
Empire	14.8*	14.6*	24.9	10.0**
Fernley	13.9	6.3	22.4	6.8**
Gerlach	14.8*	14.6*	9.2	10.0**
Lovelock	34.4	14.2	36.6	19.0**
Nixon	98.3	26.3	97.1	11.2**
Reno	30.8	12.6	37.5	18.3
Sparks	30.5	8.0	38.6	11.9
Sutcliffe	58.4	30.5	60.1	9.0**
Wadsworth	74.8	8.5	79.5	8.2**

* While Empire and Gerlach are counted as two separate Census Designated Places in the 2010 Census, in the 2000 Census, Empire and Gerlach were counted together as a single Census Designated Place: Gerlach-Empire.

** Year 2010 poverty estimates are not yet available for all of the jurisdictions in the Assessment Area, consequently 2009 estimates are provided for Humboldt and Pershing Counties and the communities of Empire, Fernley, Gerlach, Lovelock, Nixon, Sutcliffe, and Wadsworth. Year 2010 poverty estimates are drawn from the 2008-2010 American Community Survey 3-year estimates, which provide an average proportion of the jurisdictions' population in poverty between the years 2008 and 2010. Year 2009 estimates are drawn from the 2005-2009 American Community Survey 5-year estimates, which provide an average proportion of the jurisdictions' population in poverty between the years 2005 and 2009. Empire and Gerlach are again counted together as a single Census Designated Place: Gerlach-Empire.

Source: U.S. Census Bureau 2000b; U.S. Census Bureau 2000c; U.S. Census Bureau 2000d; U.S. Census Bureau 2009; U.S. Census Bureau 2010b, U.S. Census Bureau 2010c.

3.6 Invasive, Nonnative Species

The BLM identifies target noxious weeds from the USDA Federal Noxious Weed List (USDA 2011) and the Nevada State Noxious Weed List (Nevada Department of Agriculture 2011). From these lists, 47 invasive, nonnative plant species are present in Nevada that require control. Of these, 13 species have been inventoried and are known to occur in the Winnemucca District (BLM 2011). The playa is devoid of vegetation, including noxious weeds. Indirect effects resulting from invasive, nonnative species could occur along adjacent dunes, at points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and along access roads and travel routes (see Figure 3-3). Weed inventories conducted for Black

Rock NCA Administrative Facility at the south end of the playa documented several occurrences of the noxious weed, Russian knapweed (*Acroptilon repens*), along County Road 34 and perennial pepperweed (*Lepidium latifolium*) along Nevada State Route (SR) 447 (BLM 2009). These species are also of concern in spring and wet meadow areas within the assessment area. Other invasive non-native species associated with spring and wet meadow areas include: sulfur cinquefoil (*Potentilla recta*), hoary cress (*Cardaria draba*), water hemlock (*Cicuta occidentalis*), and salt cedar (*Tamarix*, spp.). Invasive species of concern in disturbed upland areas, travel routes, and camp sites in the playa region include puncturevine (*Tribulus terrestris*), yellow star thistle (*Centaurea solstitialis*), medusahead (*Taeniatherum caput-medusae*), Scotch thistle (*Onopordum acanthium*), and Canada thistle (*Cirsium arvense*) (BLM 2011).

3.7 Migratory Birds

The geographic extent for analysis of migratory birds is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater. The playa provides seasonal habitat for migratory birds during periods of inundation. When flooded, the playa supports phytoplankton, microbes and crustaceans that are a food source for these birds. Species occasionally present on the playa may include: common snipe (*Gallinago gallinago*), American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis*), killdeer (*Charadrius vociferous*), western snowy plover (*Charadrius alexandrinus nivosus*) and willet (*Tringa semipalmata*). The playa is not a Nevada Important Bird Area as recognized by the Audubon Society (Audubon Society 2011).

In addition, salt-desert scrub and sagebrush scrub surrounding the playa provide shelter and foraging habitat for migratory bird species including: black-throated sparrow (*Amphispiza bilineata*), Brewer's blackbird (*Euphagus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), canyon wren (*Catherpes mexicanus*), gray flycatcher (*Empidonax wrightii*), green-tailed towhee (*Pipilo chlorurus*), loggerhead shrike (*Lanius ludovicianus*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), sage thrasher (*Oreoscoptes montanus*), western meadowlark (*Sturnella neglecta*), and vesper sparrow (*Pooecetes gramineus*) (Great Basin Bird Observatory, 2003).

The following vegetative types and associated migratory birds may also be found in the assessment area.

Pinyon-juniper woodland may include: black-throated sparrow (*Amphispiza bilineata*), Brewer's blackbird (*Euphagus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), canyon wren (*Catherpes mexicanus*), gray flycatcher (*Empidonax wrightii*), green-tailed towhee (*Pipilo chlorurus*), loggerhead shrike (*Lanius ludovicianus*), rock wren (*Salpinctes obsoletus*), sage sparrow (*Amphispiza belli*), sage thrasher (*Oreoscoptes montanus*), western meadowlark (*Sturnella neglecta*), vesper sparrow (*Pooecetes gramineus*), gray vireo (*Vireo vicinior*), pinyon jay (*Gymnorhinus cyanocephalus*), mountain bluebird (*Sialia currucoides*), western scrub-jay (*Aphelocoma californica*), juniper titmouse (*Baeolophus ridgwayi*), black-throated gray warbler (*Dendroica nigrescens*), Cassin's finch (*Carpodacus cassinii*), chucker (*Alectoris chukar*), common raven (*Corvus corax*), and common nighthawk (*Chordeiles minor*).

Montane riparian areas may include: MacGillivray's warbler (*Oporornis tolmiei*), Wilson's warbler (*Wilsonia pusilla*), warbling vireo (*Vireo gilvus*), Lewis' woodpecker (*Melanerpes lewis*), red-naped sapsucker (*Sphyrapicus nuchalis*), Virginia's warbler (*Vermivora virginiae*), calliope hummingbird (*Stellula calliope*), broad-tailed hummingbird (*Selasphorus platycercus*), orange-crowned warbler (*Vermivora celata*), fox sparrow (*Passerella iliaca*), song sparrow (*Melospiza melodia*), dark-eyed junco (*Junco hyemalis*), Lincoln's sparrow (*Melospiza lincolni*), willow flycatcher (*Empidonax traillii*), dusky flycatcher (*Empidonax oberholseri*), brown-headed cowbird (*Molothrus ater*), American robin (*Turdus migratorius*), house finch (*Carpodacus mexicanus*), and Cassin's finch (*Carpodacus cassinii*) (Great Basin Bird Observatory 2003).

Lowland riparian areas may include: American robin (*Turdus migratorius*), bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), Bewick's wren (*Thryomanes bewickii*), black-chinned hummingbird (*Archilochus alexandri*), black-headed grosbeak (*Pheucticus melanocephalus*), broad-tailed hummingbird (*Selasphorus platycercus*), brown-headed cowbird (*Molothrus ater*), downy woodpecker (*Picoides pubescens*), house finch (*Carpodacus mexicanus*), house wren (*Troglodytes aedon*), lazuli bunting (*Passerina amoena*), lesser goldfinch (*Carduelis psaltria*), northern flicker (*Colaptes auratus*), northern mockingbird (*Mimus polyglottos*), northern oriole (*Icterus galbula*), northern rough-winged swallow (*Stelgidopteryx serripennis*), song sparrow (*Melospiza melodia*), spotted sandpiper (*Actitis macularia*), tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassina*), warbling vireo (*Vireo gilvus*), western kingbird (*Tyrannus verticalis*), western wood-pewee (*Contopus sordidulus*), willow flycatcher (*Empidonax traillii*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*) (Great Basin Bird Observatory 2003).

3.7.1 Raptors

Migratory birds visiting the playa during periods of inundation provide forage for raptors. Desert scrub and other habitat types in the assessment area also provide foraging habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and Cooper's hawk (*Accipiter cooperii*), Swainson's hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), barn owl (*Tyto alba*), long-eared owl (*Asio Otus*), merlin (*Falco columbarius*), northern harrier (*Circus cyaneus*), northern saw-whet owl (*Aegolius acadicus*), osprey (*Pandion haliaetus*), rough-legged hawk (*Buteo Lagopus*), sharp-shinned hawk (*Accipiter striatus*), short-eared owl (*Asio flammeus*), turkey vulture (*Cathartes aura*), western screech owl (*Otus kennicottii*), and burrowing owl (*Athene cunicularia*). Mature trees in the assessment area may support nesting northern goshawk (*Accipiter gentilis*), and great-horned owl (*Bubo virginianus*). Cliff and rim habitats in the assessment area, particularly near High Rock Canyon, support high densities of nesting raptors such as golden eagle (*Aquila chrysaetos*) and peregrine falcon (*Falco peregrinus*), and prairie falcon (*Falco mexicanus*).

Of these, golden eagle, Swainson's hawk, ferruginous hawk, northern goshawk, peregrine falcon, burrowing owl, Lewis' woodpecker, Brewer's sparrow, sage thrasher and loggerhead shrike are special-status species (refer to Section 3.21, Special-Status Species, for more information).

3.8 Native American Religious Concerns

Numerous laws and regulations require the BLM to consider Native American concerns. These include the National Historic Preservation Act of 1966 as Amended (NHPA), the American Indian Religious Freedom Act of 1978 (AIRFA) as amended, Executive Order 13007 (Indian Sacred Sites), Executive Order 13175 (Consultation and Coordination with Tribal Governments), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), the Archaeological Resources Protection Act of 1979 (ARPA) as well as NEPA and FLPMA. Through consultation with area tribes, the BLM must attempt to identify specific traditional/cultural/spiritual sites, activities, and resources and limit, reduce, or possibly eliminate any negative impacts. BLM also utilizes H-8120-1 General Procedural Guidance for Native American Consultation and National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (TCPs). Order No. 3317, issued in December 2011, updates, expands and clarifies the Department of Interior's policy on consultation with Indian Tribes.

The AIRFA and Executive Order 13007 apply to sites used for religious ceremonies or sacred sites. These authorities do not specify criteria for determining whether a project would affect such places. For purposes of the analysis in this EA, sites used for religious ceremonies and to sacred sites, a project effect is considered substantial if it restricts access to such sites; impedes the exercise of ceremonies at such sites in some way or form; or affects the physical integrity of such sites. Traditional cultural properties, which may or may not be sacred sites, have similar substantial project effects thresholds, plus damage to the setting or physical integrity of the TCP.

Letters were sent on November 1, 2010 requesting consultation on the Proposed Action to the following tribes: Fallon Paiute and Shoshone Tribe, Fort McDermitt Paiute and Shoshone Tribe, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Summit Lake Paiute Tribe, and Susanville Indian Rancheria. Consultation and informational meetings to discuss the Proposed Action were held with the Pyramid Lake Paiute Tribe on February 15, 2011 and June 3, 2011 and with the Summit Lake Paiute Tribe on December 11, 2010 and January 21, 2012. Phone conferences were held with the Pyramid Lake Paiute Tribe representatives on April 12, April 20 and April 27, 2012. The Pyramid Lake Paiute Tribe did not voice any concerns related to spiritual beliefs and sacred sites. The Summit Lake Paiute Tribe voiced no specific concerns on sacred sites. The geographic extent for analysis of Native American Religious Concerns is the Black Rock Desert Playa, Pyramid Lake reservation, Summit Lake reservation, Fort McDermitt Indian reservation, Fallon & Reno-Sparks reservation, and travel routes and is shown on Figure 3-5.

3.9 Threatened and Endangered Species

The geographic extent for analysis of threatened and endangered species is shown on Figure 3-3 and includes the Public Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert-High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater. No species listed as threatened or endangered species under the Endangered Species Act occur on the playa. A species list provided by the U.S. Fish and Wildlife Service indicated that the following listed species occur in the assessment area: desert dace (*Eremichthys acros*; Threatened) and Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*; Threatened) (USFWS 2011).

Desert dace occurs in the hot springs and associated outflows south and west of Soldier Meadows Ranch. Designated critical habitat for this species encompasses 50 feet on each side of thermal springs and their outflow streams (Federal Register 1985). Threats to desert dace include habitat modifications due to agricultural diversions, geothermal exploration/development, introductions of nonnative fishes and associated parasites, and increased recreational use of spring systems (USFWS 1997).

Within the assessment area (Figure 3-3), Lahontan cutthroat trout occurs in Colman Creek, North Fork Battle Creek, and Snow Creek. The assessment area also encompasses Donnelly Creek, which is an unoccupied designated recovery stream. Threats to the species include isolation due to physical and biological fragmentation and invasion by non-native species (USFWS 1995).

See Section 3.20 (Special Status Species) for a discussion of species that are candidates for listing under the federal Endangered Species Act (ESA), including: greater sage-grouse (*Centrocercus urophasianus*), elongate mud meadows springsnail (*Pyrgulopsis notidicola*), Columbia spotted frog (*Rana luteiventris*), and Soldier Meadows cinquefoil (*Potentilla basaltica*).

3.10 Wastes, Hazardous or Solid

The geographic extent for analysis of wastes is shown on Figure 3-10 and includes the Closure Area and travel routes with a 0.5-mile buffer. The two primary types of hazardous material sites on or near public land, including the Black Rock Desert playa, are related to mining or agricultural use or storage. Other waste sites are generally occupancy-related and/or both authorized and unauthorized shooting ranges (BLM 2010a). The playa was used as a military gunnery range during and after World War II and occurrence of ammunition debris is still common. Solid waste issues on public lands typically include illegal dumping and littering along roadsides and in areas frequented by off-highway vehicles (OHV) users, such as sand dunes (BLM 2010a).

3.10.1 Solid Waste

BRC is responsible for all solid waste (trash) removal and cleanup and transports any trash at the site to an appropriate landfill. BRC establishes a clean-up crew that employs methods developed between 1998 and 2008. The clean-up crew divides the site into an extensive grid system that is patrolled at 7- to 10-foot intervals. The clean-up crew picks up any trash founds within their grid and quantifies the amount found. The protocol has a clean-up standard of 1.0 ft² of trash per acre patrolled. Data from the trash survey is documented in post-event inspection reports. In addition to debris surveys associated with the Burning Man event; additional surveys were initiated in 2003 for the entire playa area to establish background debris levels.

Between 2006 and 2009, residual debris associated with the Burning Man event decreased with the levels of debris holding steady between 2009 and 2010 (BRC 2010a). Preliminary results from the 2011 Burning Man event indicate that the event passed the site inspection; the level of debris compared with 2010 increased slightly (BRC 2011a; BRC 2011c). The increase in debris was due to a greater number of moderate impact trace areas while the number of high impact trace areas² remained generally even (BRC 2011c).

² High impact trace areas, also known as hot spots, are areas where the impact trace conditions (i.e., debris embedded into the playa and/or or playa conditions) were heavily problematic and spread over a vast area during clean-up.

3.10.2 Hydrocarbon Wastes

Hydrocarbon wastes are deposited on the playa from dripping vehicles. The Burning Man website (<http://www.burningman.com>) provides participants with information regarding the potential for oil drips from parked vehicles, including how to make an oil drip pan to place below the car. Vehicle-related oil leaks associated with the event would be limited to within the Public Closure Area, and transportation routes to and from the event.

3.10.3 Offsite Waste

Offsite waste along the access roads and in neighboring towns is an annual concern as large amounts of full trash bags are found along the roadside after Burning Man 8-day events (BRC 2011d). The applicant provides guidance to participants on how to reduce their trash, a list of available locations for trash disposal and recycling, and information on the restrictions regarding trash disposal. Additionally, the Nevada Highway Patrol may issue littering tickets to anyone placing trash on the ground (BRC 2011d). The applicant staff is responsible for patrolling the areas of special concern cleanup of event-related trash: County Road 34 from the 8-Mile entrance to State Route SR-447; SR-447 from the intersection with County Road 34 to Wadsworth and from Gerlach to the California state line; and SR-446 from Nixon to SR-445 near Sutcliffe (BRC 2011b and 2011e).

3.10.4 Wastewater

In 2011, the 8-day event generated a total of 545,000 gallons of effluent which included all grey water and black water generated by infrastructure, portable toilets, commissary, showers, and café as well as all the RVs that were serviced. Grey water is waste water that has been used for some activity such as washing or cooking and black water contains fecal matter or urine. Some grey water and black water may be deposited on the playa during the 8-day event either deliberately by participants or because of leaks and spills from RVs. Event permit regulations prohibit dumping waste water on public lands directly from a vehicle, trailer, wash basin, shower stalls, bath tubs, barrels, pools, or wastewater containment receptacle. All grey and black water must be collected and packed out of the Closure Area. Grey water may also be evaporated.

Human waste collected from portable toilets or “port-a-potties” is removed from the site by the sanitation vendor and disposed of in an approved manner. The applicant provides port-a-potties and hand sanitizer based on the anticipated peak population at the event and targets the locations where large numbers of spectators are expected to visit (BRC 2011e). The applicant’s Proposed Action Operating Plan (see Appendix 2) states that banks of toilets are placed at regular intervals along the exit road during the peak exodus periods. They would also be placed in the Art area and would be prominently lit at night (BRC 2011e). During the 2011 event, the port-a-potties nearest the Art area (i.e., on the open playa itself) were not highly visible and easily accessible (Aspen 2011). Trash thrown in the port-a-potties has been a problem; the applicant has undertaken outreach efforts during the event to educate visitors about appropriate use of the port-a-potties (BRC 2010b). The vendor hauls the effluent to the Washoe County Waste Treatment Center and disposes of it appropriately as required by federal, State and local permits.

Human waste collected in private port-a-potties or other containers is not removed by the applicant. RV servicing is available at the event for a fee. After the 2011 event the Gerlach Fire Department found a 35-gallon trash can of human waste along the access roads and filed a report with the Nevada Health Department (GVFD 2011).

3.10.5 Hazardous Materials

Hazardous and flammable liquids are also used at the event, including combustible fuel and paints. Hazardous materials are regulated by a number of federal and state regulations, as discussed in Section 2.1.4. Additionally, the burning of materials, such as polyvinyl chloride (PVC), rebar, or other plastic or decorative objects used in art pieces, could release toxins and result in exposure to hazardous materials. In 2010, the Fire Branch responded to 39 fire-related calls for service, none of which required substantial responses. Call types include evaluations of various planned and unscheduled burns for safety, performance support, and hazard mitigation. The Fire Branch statistics of the Emergency Services Department Afterburn Report identifies hazard mitigation as one type of call received on an annual basis between 2006 and 2011. In 2011, the Fire Branch response to 28 total fire-related calls for service, including hazard mitigation.

The applicant provides guidance on fuel and hazardous materials including how to store compressed and liquefied gasses and liquid fuels and what fuel absorbent should be kept near any potential spills basin. A 30-foot safety perimeter must be maintained for compressed gases and liquid fuel containers. The applicant's Emergency Services Department must be notified of the presence on the playa of acetylene (gas used frequently for welding) cylinders of any size. The applicant also requires 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 uses this information to plan for emergencies. The Emergency Services Department established a hazardous materials clean-up unit in 2003 to address fuel spills and similar minor hazardous materials incidents. The Hazardous Materials Contingency Plan (Section V.C.3.J of the 2012 Operating Plan, see Appendix 2) provides details on the clean-up procedure for a hazardous material release.

3.11 Water Quality

The geographic extent of analysis for water resources is the Black Rock Desert playa, Fly Ranch and springs of interest for surface water and the Black Rock Desert Hydrographic Subarea (Area #28) of the Black Rock Desert Hydrographic Region of Nevada (Region #2) for groundwater (see Figure 3-6, Water Quality Affected Environment). The event's identified water source is Fly Ranch in Hualapai Valley, approximately eight to 10 miles west/northwest of the event site. This source is a thermal, continually flowing artesian source; water is taken from a reservoir down-gradient from 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 Black Rock City LLC to allow for application of this water on the event site. The applicant contracts for six million gallons of water and does not track the amount of water used unless it exceeds the contracted amount in which case the applicant renegotiates the contract.

The climate of the Black Rock Desert 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. The playa is semi-arid with a mean annual precipitation of 6.75 inches. Maximum summer temperature rarely exceeds 95° F, and minimum winter temperatures are often below negative 4° F. Summers are warm with a July daily mean temperature of 75° F and winters are cool with January daily mean temperatures of about 35° F. (Adams and Sada 2010)

3.11.1 Surface Water

The proposed event is located within 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 includes 17 hydrographic subareas (NDWR 2011). The Black Rock Desert Hydrographic Basin within the region is 2,179 square miles. The closest cities/towns are Sulfer, Jungo and Summit Lake.

The Burning Man site itself is situated on the terminal lake/playa surface, which receives intermittent surface water flow from the Quinn River drainage, the Mud Meadow Creek drainage, and other smaller streams (BLM 2006). Both the Quinn River drainage and the Mud Meadow Creek drainage receive flow primarily from mountains that receive far more precipitation than the playa itself (Adams and Sada 2010). Other sources of water on the playa include local precipitation and inflow from small drainages and springs on the playa's periphery (Adams and Sada 2010)

Surface flows and inundation are seasonal, normally associated with springtime snowmelt and occasional thunderstorms. During late fall, winter and spring, when 70 percent of the annual precipitation occurs, the playa surface is normally wet and may be covered with as much as five inches of standing water (Bilbo 2008). During high precipitation years, the playa is partially covered with standing water, typically from March into June. The extent and duration of standing water is dependent on weather conditions, annual precipitation rates, and temperature regimes. Between 1973 and 2008, only one year had conditions which lead to a year-long playa lake (Adams and Sada 2010). 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 Desert playa in 1990, no year has been too wet from prior moisture to hold the event (this does not include precipitation during the event). In 2011, water reached the Burning Man site as late as June 24th (Spatial-Ed 2012).

The playa has been classified as a discharging playa, due to the relatively shallow water table (see discussion of groundwater below) (BLM 2006).

Maximum water depth (as estimated from satellite imagery) between 1973 and 2008 was approximately 3.3 feet, which equaled a maximum surface area of approximately 115.8 square miles with a volume of about 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. Flooding of the playa and growth of lakes do not occur every year; however, there have only been five years between 1973 and 2008 when a lake has not formed on the playa. (Adams and Sada 2010)

Fly Ranch Water Source

Water quality testing has been conducted at the Fly Ranch source, and water quality results are presented below in Tables 3.11-1 through 3.11-3. Although the use of Fly Ranch water for the event is not subject to the federal Safe Drinking Water Act (SDWA), Maximum Contaminant Levels (MCLs) are identified in the following tables to provide a basis of comparison in characterizing potential impacts of the event. There is not currently any State-mandated requirement to provide water quality data in order to secure a water transfer permit for use of water from Fly Ranch on the playa for the Burning Man event (NDEP 2011a). The State of Nevada is currently in the process of developing a program to require water quality data for special events, such as Burning Man (NDEP 2011a).

The federal SDWA, implemented by the U.S. Environmental Protection Agency (EPA), defines public water systems and sets drinking water monitoring requirements and standards called MCLs for constituents that are known to cause health problems (NDEP 2011b). The State of Nevada was granted authority to enforce the SDWA within the state in 1978 (NDEP 2011b). The Fly Ranch water source identified for the event is not a public water system and would not provide drinking water for the event so it would not be subject to SDWA standards. Water from Fly Ranch would be used for dust suppression. The following tables identify Primary and Secondary MCLs solely to provide a basis of comparison in characterizing potential impacts of the proposed event.

Primary MCLs are legally enforceable standards that apply to public water systems and protect public health by limiting the levels of contaminants in drinking water (EPA 2011). Table 3.11-1 shows the concentrations of water quality constituents at the Fly Ranch source for which the EPA has designated a Primary MCL, and provides summary of potential health effects associated with long-term exposure to such constituents in drinking water, and potential sources of the constituents in drinking water.

Table 3.11-1. Primary MCLs for Drinking Water – Fly Ranch Water Quality Results

Constituent	Fly Ranch Water Source	Primary MCL for Drinking Water	Potential Health Effects from Long-Term Exposure in Drinking Water	Potential Sources of Constituents in Drinking Water
Total Coliform	1,732.9 mg / 100 mL	0.0 mg/L ¹ / 5% ^{2,3}	Not a health threat in itself; it is used to indicate whether other potentially harmful bacteria may be present. ⁴	Coliforms are naturally present in the environment, as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.
Escherichia Coli (e. Coli)	11.0 mg / 100 mL	0.0 mg/L ¹ / 5% ^{2,3}		
Fluoride	8.4 mg/L	4.0 mg/L	Bone disease (pain and tenderness of the bones); Children may get mottled teeth	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories

Table 3.11-1. Primary MCLs for Drinking Water – Fly Ranch Water Quality Results

Constituent	Fly Ranch Water Source	Primary MCL for Drinking Water	Potential Health Effects from Long-Term Exposure in Drinking Water	Potential Sources of Constituents in Drinking Water
Nitrate + Nitrite Nitrogen	0.15 mg/L	1 – 10 mg/L ⁵	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
WAD cyanide	<0.010 mg/L	0.2 mg/L	Nerve damage or thyroid problems.	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Beryllium	<0.0010 mg/L	0.004 mg/L	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	<0.0010 mg/L	0.005 mg/L	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium	<0.0050 mg/L	0.1 mg/L	Allergic dermatitis	Discharge from steel and pulp mills; erosion of natural deposits.
Copper	<0.050 mg/L	1.3 mg/L ⁶	Short term exposure: Gastrointestinal distress; Long term exposure: Liver or kidney damage	Corrosion of household plumbing systems; erosion of natural deposits
Mercury	0.00029 mg/L	0.002 mg/L	Kidney damage	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands.
Antimony	0.019 mg/L	0.006 mg/L	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic	<0.025 mg/L	0.010 mg/L	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards, runoff from glass & electronics production wastes.
Lead	<0.0025 mg/L	0.015 mg/L ⁶	Infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities; Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits.

Table 3.11-1. Primary MCLs for Drinking Water – Fly Ranch Water Quality Results

Constituent	Fly Ranch Water Source	Primary MCL for Drinking Water	Potential Health Effects from Long-Term Exposure in Drinking Water	Potential Sources of Constituents in Drinking Water
Selenium	<0.025 mg/L	0.05 mg/L	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines.
Thallium	<0.0010 mg/L	0.0005 mg/L ¹ / 0.002 mg/L ²	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.

Source: EPA 2011; WETLAB 2011.

- 1 - MCLG (Maximum Contaminant Level Goal) = The level of a contaminant in drinking water below which there is no known or expected risk to health; MCLGs allow for a margin of safety and are non-enforceable public health goals.
- 2 - TT (Treatment Technique) = A required process intended to reduce the level of a contaminant in drinking water.
- 3 - No more than 5.0% samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli if two consecutive TC-positive samples, and one is also positive for E. coli fecal coliforms, system has an acute MCL violation.
- 4 - Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Disease-causing microbes (pathogens) in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. These pathogens may pose a special health risk for infants, young children, and people with severely compromised immune systems.
- 5 - Nitrate (measures as Nitrogen) MCL = 10 mg/L; Nitrite (measured as Nitrogen) MCL = 1.0 mg/L
- 6 - Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

The water quality results presented in Table 3.11-1 indicate that water at the Fly Ranch water source tested above the EPA-designated Primary MCLs for drinking water in concentrations of coliform, E. Coli, fluoride, and arsenic. The EPA also designates Secondary MCLs, which are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water (EPA 2011). Table 3.11-2 shows the concentrations of water quality constituents at the Fly Ranch source for which the EPA has designated a Secondary MCL (EPA does not identify potential health effects and sources of Secondary MCL constituents).

Table 3.11-2. Secondary MCLs for Drinking Water – Fly Ranch Water Quality Results

Constituent	Fly Ranch Water Source	Secondary MCL for Drinking Water
pH	8.04	6.5 – 8.5
Chloride	260 mg/L	250 mg/L
Sulfate	200 mg/L	250 mg/L
Total Dissolved Solids	1,100 mg/L	500 mg/L
Aluminum	<0.045 mg/L	0.05 – 0.2 mg/L
Iron	0.086 mg/L	0.3 mg/L
Manganese	<0.0050 mg/L	0.05 mg/L
Silver	<0.0050 mg/L	0.10 mg/L
Zinc	<0.010 mg/L	5.0 mg/L

Source: EPA 2011; WETLAB 2011.

The water quality results presented in Table 3.11-2 indicate that the Fly Ranch water source tested above the EPA-designated Secondary MCLs for drinking water in concentrations of chloride and Total Dissolved Solids (TDS). Water quality testing conducted at the Fly Ranch source also produced results for constituents for which Primary or Secondary MCLs have not been designated. Water quality results for these constituents are provided below, in Table 3.11-3.

Table 3.11-3. No Designated MCLs for Drinking Water – Fly Ranch Water Quality Results

Constituent	Fly Ranch Water Source
Bicarbonate (HCO ₃)	420 mg/L
Carbonate (CO ₃)	<1.0 mg/L
Hydroxide (OH)	<1.0 mg/L
Total Alkalinity	340 mg/L as CaCO ₃ *
Total Kjeldahl Nitrogen	0.73 mg/L
Total Nitrogen	0.9 mg/L
Magnesium	4.2 mg/L
Nickel	<0.010 mg/L
Potassium	10 mg/L
Sodium	410 mg/L
Anions	18.8 meq/L
Cations	20.1 meq/L
Error	3.3%

Source: EPA 2011; WETLAB 2011.

*CaCO₃ = Calcium carbonate

Springs

Coyote Dunes spring mound formed around a seep that is located approximately three miles from the Public Closure Area. The spring mound is highly impacted by recreational off-highway vehicle (OHV) use and other recreational uses, but receives little to no use associated with the 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: removal of vehicle tracks from the dune and the most obvious approaches from the playa, replacement of eroded dune material, transplanting of indigenous vegetation to facilitate the retention of wind-blown native seeds, removal of litter and other debris, construction of sections of rustic-looking buck and pole fence around much of the dune, and installation of signage to indicate that the area is closed to vehicle traffic (FBRHR 2009). Camping is not allowed at this location.

There are no springs, seeps, wells, streams, or permanent lakes located within or adjacent to the Public Closure Area. Several hot springs including Great Boiling Spring, Trego, and Black Rock Hot Springs are located adjacent to the playa, but are more than seven miles from the Burning Man site. 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 individual biologic communities to persist. (BLM 2006)

Wastewater

There is no wastewater disposal system(s) located on the event site or within the vicinity of the Public Closure Area.

3.11.2 Groundwater

Groundwater in the Public Closure Area varies seasonally and is at most five 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 actively discharged into the atmosphere, resulting in a vertical hydraulic gradient. As described in the 2006 EA for the Burning Man 2006-2010 Special Recreation Permit, the USGS has conducted water quality testing at several springs and wells throughout the Black Rock Desert, and found high concentrations of evaporate minerals indicating generally poor water quality conditions. (BLM 2006)

3.12 Wetlands and Riparian Zones

The geographic extent for analysis of wetlands and riparian zones is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes. In the Black Rock Desert surface water resources and their associated riparian plant communities are sparse. Permanent and intermittent streams as well as cold water and thermal springs occur occasionally throughout the NCA. Often these features support riparian vegetation or meadows.

The proposed project site and access road are located on the Black Rock playa, which can flood in years of high precipitation, generally during the months of March into June. In late August/early September, when the proposed Burning Man event would take place, the playa is typically completely dry. The playa is classified as a lake by the National Wetlands Inventory (NWI 2011). Additionally, the NWI delineates a freshwater emergent wetland north of the town of Gerlach between County Road 34 and the playa as well as scattered freshwater emergent wetlands west of the playa near Fly Ranch Reservoir and along the northern edges of the playa. Within the assessment area, several springs surround the playa, including Trego Hot Springs to the southeast, Black Rock Hot Springs to the northeast, Double Hot Springs to the north, and numerous springs to the west. Riparian vegetation is associated with some of these springs.

3.13 Wilderness

The geographic extent for analysis of wilderness is shown on Figure 3-2. The impact assessment area for wilderness includes the western wilderness areas within the Black Rock Desert-High Rock Canyon NCA. The wilderness areas included in the assessment area are: Calico Mountains, High Rock Lake, Little High Rock Canyon, High Rock Canyon, East Fork High Rock Canyon, North Black Rock Range, Pahute Peak, and a small southwestern corner of the Black Rock Desert Wilderness. The boundary of the Calico Mountains Wilderness, which is the closest wilderness area to the event, is 5.7 miles north of the Public Closure Area. The Black Rock Desert Wilderness Area is 17.4 miles from the Public Closure Area; High Rock Lake Wilderness is 18.5 miles; Pahute Peak Wilderness is 22.2 miles; Little High Rock Canyon Wilderness is 24.7 miles;

High Rock Canyon Wilderness is 32.3 miles; East Fork High Rock Canyon Wilderness is 34.3 miles; and North Black Rock Range Wilderness is 38.6 miles.

The Wilderness Act of 1964 identifies wilderness uses and prohibited activities. To qualify for wilderness designation an area must appear natural; must have outstanding opportunities for solitude or a primitive and unconfined recreation; and must be at least 5,000 acres. The area may also contain ecological, geological, or other features of scientific, scenic, or historic value. Nevada has 45 wilderness areas covering over two million acres (BLM 2007).

The Black Rock Desert–High Rock Canyon Emigrant Trails NCA Act of 2000 as amended (Public Law 106-554 Dec. 21, 2000; amended Nov. 6, 2001) added 10 wilderness areas to the National Wilderness Preservation System. The NCA legislation designated 800,000 acres of public land as part of the NCA and 752,000 acres as wilderness areas. Of the wilderness areas designated by the NCA only North Jackson Mountains and South Jackson Mountains are completely excluded from the impact assessment area. The NCA wilderness areas are clustered together approximately 120 miles northeast of Reno and 80 miles northwest of Winnemucca in Humboldt, Pershing and Washoe Counties (see Figure 1-1, Regional Project Area; note that the wilderness areas are not labeled separately in this figure). The NCA Act contains language that supports the permitting of large-scale events such as Burning Man; the Act states that “[i]t is expected that such permitted events will continue to be administered in accordance with the management plan for the conservation area and other applicable laws and regulations” (Public Law 106-554, Section 2[8]).

The NCA wilderness areas contain a diverse representation of Great Basin landforms, plants, animals, and habitats (BLM 2011a). The Calico Mountains Wilderness, which is nearest to the Public Closure Area, covers almost 65,000 acres and contains many varied and brightly colored, twisted geologic formations exposed by erosion which give the area a calico appearance (BLM 2011a). The Calico Mountains Wilderness receives approximately 1,500 visitors annually (BLM 2011b).

Additional Affected Resources

3.14 Economics

The Economics section for the assessment area includes a characterization of employment and unemployment; a profile of businesses affected by Burning Man; measures of income and income growth; and descriptions government fiscal conditions and government spending. The affected environment for economics is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties. Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein.

3.14.1 Employment

Table 3.14-1, Employment by County and Within Specific Sectors, shows the employment within each county in the assessment area for 2007 as reported by the Nevada Department of

Employment, Training and Rehabilitation (Nevada Workforce Informer 2011a). Employment in the sectors likely most affected by attendance at Burning Man is shown from the 2007 Economic Census (U.S. Census Bureau 2009). These sectors include Retail Trade, Arts, Entertainment and Recreation, and Accommodation and Food Services.

Washoe County employs 83 percent of the assessment area workforce and approximately 30 percent of Washoe County jobs are in the affected sectors. The proportions in the other four counties are much lower, ranging from 12 percent in Lyon County to 23 percent in Humboldt County. This implies that Burning Man attendance may directly touch more jobs in Washoe County. Given the relatively large size of the workforce in Washoe County, the effects of the event may not be as evident in Washoe County as in the other counties.

Table 3.14-1. Employment by County and Within Specific Sectors

Jurisdiction	Total Employment	Unemployment Rate (%)	Employees in Specific Sectors		
			Retail Trade (NAICS 44-45)	Arts, Entertainment, and Recreation (NAICS 71)	Accommodation and Food Services (NAICS 72)
	2007	Sep 2011	2007	2007	2007
Churchill	12,356	10.4%	1,195	—	725
Humboldt	7,535	8.1%	1,042	—	1,024
Lyon	20,473	16.8%	1,080	870	798
Pershing	2,325	11.6%	154	0	226
Washoe	209,044	12.6%	25,025	4,970	35,447
Nevada (Statewide)	1,247,491	13.4%	139,829	30,274	325,544

Note: “—” – Census data not available or withheld for this geographic location.
 Source: Nevada Workforce Informer 2011; U.S. Census Bureau 2009.

The September 2011 unemployment rate in the assessment area is generally lower than the state average of 13.4 percent and ranges from of 8.1 percent in Humboldt County to 16.8 percent in Lyon County (Nevada Workforce Informer 2011a). The recent recession has strongly affected the state of Nevada, including downturns in both the tourism and construction industries that have been a large share of the state’s economic activity.

The Nevada Department of Employment, Training & Rehabilitation Research and Analysis Bureau forecasts that statewide employment will grow 6.9 percent between 2008 and 2018 (Nevada Workforce Informer 2011b). In the Reno-Sparks Metropolitan Statistical Area (MSA), employment growth is expected to outpace statewide employment growth at 8.4 percent. In the West Central Counties, including Churchill, Lyon, Douglas, and Mineral Counties, employment is projected to grow at 9.7 percent. Employment in arts, entertainment, and recreation is expected to decline statewide and in the assessment area, and accommodation and food services to grow more slowly than the economy as a whole.

3.14.2 Businesses

A large number of businesses could be affected by festival attendance but that varies by county and sector. For the retail sector the number of businesses potentially affected ranges from 1,555 for Washoe County to 18 for Pershing County; for arts, entertainment, and recreation the number ranges from 196 for Washoe County to 1 for Pershing County; and for accommodation and food services, the number ranges from 990 for Washoe County to 14 for Pershing County. Washoe County has 86 percent of the establishments potentially affected (in part because farms are excluded), but has a similar proportion of establishments in the affected sectors compared to other counties in the assessment area. The proportion of retail, arts and entertainment, and accommodation and food services establishments in the assessment area ranges from 7 percent in Washoe County to 12 percent in Humboldt County. That Washoe County has the same share of businesses but a larger share of employees in the affected sectors implies that the Washoe County businesses in the three sectors are larger on average than those in the other counties.

Annual payroll by county within specific services sectors was also considered. Washoe County has 87 percent of the payroll in the assessment area and a disproportionate share in the three affected sectors with 18 percent (U.S. Bureau of Economic Analysis 2011). This reflects that Washoe County businesses in retail, entertainment and accommodations are larger on average in terms of payroll and employees than in the other counties. The other counties annual payrolls for retail, arts and entertainment, and accommodation and food services range from 9 percent in Pershing County to 12 percent in Lyon County.

Due to the number of Burning Man participants traveling to the event from out of state, lodging figures can be used to measure economic activity influenced by Burning Man. Occupied rooms peaked in the 2000-2001 fiscal year, with a distinct decline starting in 2005-2006. Annual lodging has fallen 24 percent from that peak. September lodging figures followed a different pattern, rising by 2.1 percent from 2001-2002 to 2005-2006 at the same time that Burning Man participation increased more than 50 percent while annual room rentals fell by 3.3 percent (Aspen 2011). Notably, September lodging then declined at the same rate as the annual values after 2006 when attendance at Burning Man stabilized. September surpassed July as generally being the second busiest month behind August over the 13-year period.

The room tax and occupancy statistics collected by the Reno-Sparks Convention and Visitors Authority for 2011 show an increase in recreation vehicles space usage in September in contrast to an overall seasonal decrease in occupied rooms (Aspen 2011).³ It is possible that this observation could be explained, in part, by a higher likelihood of Burning Man attendees to use RV parks or campgrounds for their trips compared to other travelers.

3.14.3 Personal Income

Payroll is the largest contributor to personal income. Table 3.14-2, Income Measures by County, provides personal income, household income, and per capita income figures and compares these to statewide measures. The relationship of individual incomes to the statewide average varies

³ Equivalent lodging data is not collected for areas outside the purview of the Reno-Sparks Convention and Visitors Authority such as Fernley.

significantly (U.S. Census Bureau 2011a). Washoe County generates 85 percent of the assessment area income and at the midrange for the counties' median household incomes (i.e., 50 percent are above and 50 percent are below this average), and 7 percent above the average for per capita means (i.e., total income divided by population) (U.S. Census Bureau 2011b). Humboldt County has similar income measures but with a lower per capita income. Pershing County has a very low per capita income, 34 percent below the state average, and a median household income 15 percent less than the state level. While Pershing County has a relatively high share of employees in the affected sectors, it has a low proportion of the payroll. This implies that Pershing County employees in those sectors are paid significantly less than in the other counties. Lyon County, similarly, has a significantly lower income, both per capita and per household. The employees in the affected sectors appear to be paid at the regional average. Churchill County's per capita income is 4 percent above the state average, but its household median is 2 percent less than the state benchmark.

Table 3.14-2. Income Measures by County

Jurisdiction	Total Personal Income (\$ Millions)	Median Household income	Percent of State Average	Average Per Capita Income	Percent of State Average
	2009	2009		2009	
Churchill	\$947	\$52,055	97.6%	\$38,032	104.1%
Humboldt	\$605	\$57,309	107.5%	\$33,142	90.8%
Lyon	\$1,437	\$51,151	96.0%	\$27,300	74.8%
Pershing	\$152	\$45,644	85.6%	\$24,224	66.3%
Washoe	\$17,629	\$53,036	99.5%	\$42,499	116.4%
Nevada (Statewide)	\$98,041	\$53,310		\$36,519	

Source: Nevada Workforce Informer 2011c (from U.S. Census and BEA data).

Income growth has been somewhat uneven across the assessment area, particularly with marked differences during the recent recession. The compounded rate over 10 years shows that Lyon County incomes grew more than two and a half times greater than Pershing County incomes (Aspen 2011). Lyon County incomes showed the strongest growth over the decade and had the second least decline in 2009. Humboldt County had the second lowest growth in incomes over the decade, but uniquely experienced income growth during the recession.

3.14.4 Pyramid Lake Paiute Tribe

The Pyramid Lake Paiute Tribe reservation is located within Washoe and Lyon Counties, as well as a portion in Storey County. In 2005, the tribe had 2,263 enrolled members, of which 1,054 were eligible for Bureau of Indian Affairs Services (U.S. Bureau of Indian Affairs 2005). Of the eligible population, the unemployment rate was 51 percent. The tribal web pages states, "(m)uch of the economy on the Pyramid Lake reservation is centered around fishing and recreational activities at Pyramid Lake" (Pyramid Lake Paiute Tribe 2011). The tribe recently adopted an economic development plan that intends to focus on "creating a high quality recreation area at Pyramid Lake." Given that the tribal economy emphasizes serving outdoor recreational demand and the proximity of the reservation to the Black Rock desert, the tribal economy is likely affected by the Burning Man event. While no quantitative analysis has been conducted on the

economic impacts, the tribe has noted the increased activity within the three communities on the reservation related to the event (Lundahl 2010).⁴

Mr. Wayne Burke, Tribal Chairman, stated the following before the Nevada State Senate Select Committee on Economic Growth and Employment:

Allowing Tribe members to become vendors to the Burning Man Festival will bring money into the Tribe. We can offer resources to assist Tribe members to do that. We are looking to have our current law and order code pass through the Tribal Council. When it is passed, we will be able to receive traffic citation fines (Nevada State Senate 2011).

The Paiute also have received additional funding from BRC outside of the event period. Mr. Scott Carey, Tribal Planner testified before the Senate Select Committee, stating:

The Tribe is proud of our partnership with Black Rock Solar, the fund-raising arm of the Burning Man Festival. Using the solar demonstration systems program that the State Legislature approved, we have been able to construct eight solar projects on the reservation. This has led to substantial savings for the Tribe. For example, the community of Nixon has more solar panels per person than any other community in the United States. State Route 447 has more solar panels per mile than any other road in the United States and has been declared "America's Solar Highway." We are looking to expand our solar projects into commercial-sized projects (Nevada State Senate 2011).

3.14.5 Government Fiscal Conditions

Government Revenues. Festival participants likely affect government revenues in several ways. Attendees would make taxable purchases of various items including food and fuel. The Nevada sales tax rate is 6.85 percent. Counties and cities in Nevada are allowed to charge an additional local sales tax on top of the Nevada state sales tax, as approved by voters or local legislatures. The maximum sales tax after local surtaxes is 8.1 percent. In the assessment area counties sales tax peaked in 2006-2007 and 2009-2010 sales fell below those of the six previous years. Attendees also may stay over in hotels or motels before or after the festival for which counties collect transient lodging taxes.

Attendees may also gamble within casinos in the state for which Nevada collects revenue based on a complex schedule of gaming license fees and taxes (Aspen 2011). Annual Gaming Revenue by County and Statewide, peaked in the 2006-2007 fiscal year, but has since fallen below 2003-2004 levels. Washoe County gaming revenues have declined since 2004-2005, and dropped precipitously in 2008-2009. Revenues in the three smaller counties for which reports are available, Churchill, Humboldt and Lyon, show a much smaller decline, and in the case of Humboldt County, even a new peak in 2010-2011.

⁴ The Pyramid Lake Paiute Tribe has not provided data on the expected impacts of the festival on its government operations.

Local agencies also charge permit fees to BRC to cover particular services. The Nevada State Health Division (NSHD) can charge a fee per day when attendance exceeds specified levels for inspection and enforcement of temporary food services permits (Aspen 2011).

Bureau of Land Management. BLM collects fees from BRC for the festival as well as for other uses covered by Special Recreation Permits. All Special Recreation Permits are subject to use fees. Since 2007, the Burning Man fee schedule has been a Commercial Use⁵ Fee which must be paid by BRC. Fees for commercial use permits are intended to provide a fair return to the government for the opportunity to make a profit for using public lands. Although commercial permittees normally pass this cost of doing business on to their guests, there are no use fees on guests. Commercial SRP fees are equal to three percent of gross income generated by the permit.

In addition to BLM standard conditions and stipulations included on the Special Recreation Permit application form, most activities require compliance with special permit stipulations. Permittees would be required to understand and comply with permit stipulations and would be held responsible for violations. Violations may be ground for permit termination, probation or other administrative repercussions. Black Rock City LLC is responsible for payment of the actual costs of administering the Special Recreation Permit, including all direct and indirect costs, in addition to the commercial use fees. The fees that BLM collected for the designated event period in 2008, 2009 and 2010 ranged from \$989,000 to nearly \$1.3 million. In 2010, the BLM's cost recovery from BRC for issuing the permit totaled \$795,533.55, and BRC's commercial use fees totaled \$500,483.98 (Aspen 2011).

Government Spending. Government agencies provide a range of services for Burning Man events, including public safety, public health, waste and utility services, and road construction and maintenance. Using security guard wage rates for temporary personnel hired for Pershing County and assuming that additional deputies and sergeants for Washoe County would be overtime hours for existing employees, it is estimated that these counties currently spend approximately \$127,000 on additional law enforcement associated with Burning Man (Nevada Workforce Informer 2011d). Assuming that additional firefighters for the Gerlach Volunteer Fire Department would be overtime hours for existing Sierra Fire Protection District employees, it is estimated that the Gerlach Volunteer Fire Department/Sierra Fire Protection District spend approximately \$54,000 on temporary personnel for the Burning Man event (Nevada Workforce Informer 2011d). In each of these cases, the agencies are reimbursed by BRC for these additional expenses on an annual basis.

Increased state and local government expenditures on road maintenance can be attributed to the substantial increased daily traffic volumes on several roads (see Section 4.21, Transportation and Traffic), particularly SR-447 and County Road 34. Washoe County Public Works maintains County Road 34 and has indicated that the department incurs annual road maintenance costs that are, in part, attributable to the Burning Man event (Pratt 2011). The Nevada Department of

⁵ For the purposes of SRPs, "Commercial Use" is defined as recreational use of public lands and related waters for business or financial gain. When any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services, as compensation from participants in recreational activities occurring on public lands, the use is considered commercial (BLM 2008).

Transportation also estimated that 18.5 percent of trips on SR-447 are attributable to Burning Man in 2009 (Aspen 2011). That increased to 26.2 percent in 2010. NDOT did not estimate the road maintenance costs incurred on that segment of SR-447, so no cost allocation has been computed. Based on the data provided by NDOT on event logistics such as road patrol and trash pickup, NDOT incurred an additional \$6,600 in costs from the event (Aspen 2011).

3.15 Noise (Quiet)

The geographic extent of assessment for noise and quiet encompasses areas that may have a direct line of sight to the Public Closure Area or traffic routes (with a 0.5-mile buffer), see Figure 3-7. General information on noise and sound levels in the environment appear in the *Burning Man 2012-2016 Environmental Assessment Technical Report: Noise*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein.

Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale presents the levels in a convenient and manageable way. Since the human ear is not equally sensitive to all frequencies within the entire spectrum, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented herein are expressed in terms of dBA, unless otherwise indicated. Table 3.15-1 shows some representative noise sources and their corresponding noise levels in dBA (USHUD 1985).

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines are as follows: sleep disturbance can occur at levels above 35 dBA; interference with human speech begins at about 60 dBA; and hearing damage can result from prolonged exposure to noise levels in excess of 85 to 90 dBA (U.S. EPA 1974).

Distance attenuates sound levels due to spreading of the sound waves through the atmosphere. Sources of noise configured along a line, such as traffic along roadway, attenuate (lessen) at a rate of 3.0 dBA to 4.5 dBA per doubling of distance from the source, based on the inverse square law and the equation for cylindrical spreading of sound waves over hard and soft surfaces. Point sources of noise, including stationary or idle mobile sources such as idling vehicles or noise-generating equipment fixed in location, attenuate at a rate of 6.0 dBA to 7.5 dBA per doubling of distance from the source, based on the inverse square law and the equations for spherical spreading of sound waves over hard and soft surfaces.

Table 3.15-1. Typical Sound Levels Measured in the Environment

Examples of Common, Easily Recognized Sounds	Decibels (dBA) at 50 feet	Subjective Evaluations
Near Jet Engine	140	
Threshold of Pain (Discomfort)	130	Deafening
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	
Noisy Urban Street	90	Very Loud
Noisy Factory	85	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60	Moderate
Average Office	50	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

Note: Continuous exposure above 85 dBA is likely to degrade the hearing of most people. Range of speech is 50 to 70 dBA.

Source: USHUD 1985.

The ambient noise levels of the natural environment and the area of potential effects including the playa are generally represented with day-night noise levels (Ldn) below 35 decibels (dBA), based on the low population density of the assessment area. Near traffic on roadways entering the community of Gerlach, the noise levels caused by existing traffic without the Proposed Action are calculated to be approximately 45 dBA Ldn (Aspen 2011).

The “noise-sensitive areas” nearest to Public Closure Area are recreational resources (campsites and other natural areas), where serenity and quiet are of extraordinary significance, and the residences along the primary traffic routes, primarily in Gerlach and along County Road 34.

Noise-sensitive areas considered for analysis include:

- Campsites EWH32 and EWH33, within 0.2 miles north of the Public Closure Area.
- Designated BLM Wilderness Area boundary, approximately six miles north of the Public Closure Area.
- Local ranches or residences along County Road 34, near the community of Gerlach, approximately nine miles southwest of the Public Closure Area.

All campsites within the confines of the Public Closure Area for the event (including campsites EWH31 and Coyote Dunes) would be temporarily closed during the event, and thus would not be noise-sensitive.

The noise-sensitive areas having a direct line of sight to the activities of the event are of most concern because measurable attenuation of noise levels can be accomplished by “shielding” if

terrain exists to redirect sound waves away from the receptor. The amount of noise level reduction provided by shielding by terrain or a barrier close to the noise source is dependent on the potential for reflection of noise around the barrier and the frequency spectra of the noise. Atmospheric conditions such as wind speeds, wind direction, humidity, and temperature gradients also affect noise propagation at greater distances.

3.16 Public Health and Safety

The assessment area for analysis of public health and safety is the Public Closure Area, traffic routes (with a 0.5-mile buffer), and the air basin (Black Rock Desert Hydrographic Region of Nevada), as shown on Figure 3-1.

Public health and safety management is intended to protect public health and safety on BLM-administered public lands, to comply with applicable federal and state laws, to prevent waste contamination, and to minimize physical hazards due to any BLM-authorized actions or illegal activities on public lands. When health and safety hazards from past grazing, mining, or milling activities, illegal dumping, and natural hazards are identified, they are reported, secured, or cleaned up according to federal and state laws and regulations, including the federal Comprehensive Environmental Response, Compensation, and Liability Act. Parties responsible for contamination are liable for cleanup and resource damage costs, as prescribed by law. The public health and safety hazards presented below are those that would potentially result in an effect before, during, or after the event. Public health and safety hazards focus on effects to the non-participant public primarily; where applicable, impacts to the participant public have been addressed.

Hot Springs. Hot springs may be associated with geothermal power sites or be located in isolated areas. Hot springs on public lands can be extremely hot and dangerous. Use can result in scalding, contact with chemical fumes, cuts and abrasions, and bacterial irritations or diseases. The BLM maintains and places warning signs at dangerous hot springs with temperatures above 100° F. Hot springs with a temperature above 120° F are fenced to discourage entry. The nearest hot springs to the event are the Trego Hot Springs. BRC stations off-site volunteers at the Trego Hot Springs and Black Rock Hot Springs during the event to educate and discourage use by Burning Man participants and charges an exit-reentry fee for any participants exiting the event. The hot springs remain open to the general public. Because off-site volunteers are stationed at the nearest hot springs, impacts at the hot springs are not anticipated and hot springs are not addressed further for public health and safety.

Emergency Response and Evacuation. The applicant prepares health and safety guides for the Proposed Action. Emergency medical services are available 24 hours a day and emergency medical evacuation is available (BRC 2011a). Emergency evacuation routes from the event would be required during a natural or man-made emergency situation. The emergency routes used are Country Road 34 and SR-447. Burning Man Information Radio (94.5 FM) broadcasts travel, emergency, and general information 24-hours daily (BRC 2011a). Further discussion of access routes is provided in Section 3.21.

Natural emergency situations are most likely weather related. Excess rain would result in standing water in the playa and limit mobility to and from the event. Section 3.2.1, Climate and Meteorology, provides the average precipitation rate in the Black Rock Desert area and Section

3.19, Soils and Playa Sediments discusses water on the playa surface. During August and September, an average of 0.25 inches of precipitation occurs; a high of 1.45 inches and 2.05 inches of precipitation has occurred during August and September, respectively (WRCC 2011).

Explosives. Public health and safety could be affected by the presence of mining-related explosives or unexploded ordnance on or near public lands. Incidents in Nevada have included lost live ordnance, crashes, dumped fuel tanks, and wayward missiles. Mining-related explosives from historic and active mining operations have been found on public land. BLM personnel or contractors remove accumulations of hazardous materials or solid waste from public land; this includes removing, disarming, or neutralizing explosives. The BLM coordinates with the Defense Department and Army Corps of Engineers to study and mitigate hazards from formerly used defense sites. During the Burning Man permit period, explosives, aerial flames, rockets, and fireworks are not allowed in the Public Closure Area and are not addressed further (BRC 2011a).

Fire Safety. The applicant provides fire safety guidelines for flame effects and open fires for the fire art (BRC 2011a). All projects that include fire must conform to the fire guidelines and installations using open fire, flame effects, or pyrotechnics require approval and are granted a license (BRC 2011a). The Burning Man event includes an Emergency Services Department Volunteer Fire Department that is based out of 24-hour fire stations in Black Rock City for the duration of the event.

Hygiene and Food Safety. Any camp giving away or trading food at a large-scale is considered a restaurant by the Nevada State Health Division. The Nevada State Health Division provides information and guidelines regarding food service at Burning Man on the Nevada Department of Health and Human Services website [http://health.nv.gov/BFHS_EHS.htm] including a Temporary Food Establishment Application for Food Vendor at Burning Man and a Temporary Food Booth Self Inspection Sheet for Burning Man Food Service (NDHHS 2011a). As noted in the information and guidelines for food service at Burning Man, a Temporary Food Establishment permit is required if a party wishes to share, cook or serve food or beverage to the general Burning Man population or a party will be cooking or serving food to more than 125 people in the theme camp on a consistent basis (NDHHS 2011b).

Hand sanitizer is available outside of the portable toilet or “port-a-potties” and visitors to the event are recommended to use the sanitizer on a regular basis (BRC 2011b).

Disease Vectors. A disease vector is any organism capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including mosquitoes, flies, fleas, cockroaches, mites, rats, or fungi.

Fly Ranch non-potable water is used to control dust on the playa. Section 3.11.1 describes the Fly Ranch water source; Table 3.11-1 describes the contaminant levels of the water including potential health effects. Visitors to the event are not allowed to run after the water trucks which are clearly marked non-potable. Visitors are given notice that the water in the trucks is non-potable and could result in an illness (BRC 2011b). However, visitors do run after vehicles and are often sprayed by the water trucks.

Respiratory Concerns. The Proposed Action is located on the Black Rock Desert playa which is dominated by alkaline gypsum dust (BRC 2011a). Gypsum is the dihydrate form of calcium sulfate and is found in lakes, seawater, and hot springs as deposits from volcanic vapors (ILS 2006). Humans may be exposed to gypsum via inhalation, ingestion, skin contact, and eye contact. There is concern regarding over-exposure of individuals to gypsum or other alkaline dust. The majority of studies of gypsum workers have reported no lung fibrosis or pneumoconiosis except when gypsum was contaminated with silica (ILS 2006). Silicon dioxide (silica) is present in the playa sediments (Adams and Sada 2010) and is regulated by the Occupational Safety & Health Administration (OSHA) as a known carcinogen. The National Institute for Occupational Safety and Health Recommended Exposure Limit is 6 mg/m³; illness related to silica is most closely associated with repeated occupational exposure to the material over multiple years (OSHA 2006). Impacts to children may be greater than to adults as children take in more air per unit body weight at a given level of exertion than adults (CARB 2000).

Human Health Concerns. Event participants may be exposed to a number of health related concerns due to the extreme environment at the playa. Extreme temperatures, low humidity, and a high altitude can result in extreme dehydration and sunburns. Playa dust has a high alkali content and mineral composition and can cause a chemical burn to any exposed limbs, commonly called “playa foot”.

The 2011 event had a total of 2,307 patient contacts, a decrease of over 50 percent compared with 2010; 33 patients required transport off of the playa, two of which occurred prior to scheduled ambulance deployment. EMS personnel transported 28 patients by ground, a decrease of six from the previous year, and 5 patients were flown to Reno via Care Flight (BLM 2011a). The 2010 event (population 51,525 people) Emergency Services Department and Medical Services Authority logged 4,700 patient contacts. Of the 4,700 patients 31 percent involved minor injuries (blisters or cuts), almost 8 percent involved dehydration, and 9 percent involved extremity trauma. Forty-five patients were transported to Reno hospitals for additional care, 34 were stable patients transported by ground ambulance, and 11 were flown out by helicopter. The 2009 event (population 43,558 people) logged 4,461 patient contacts, almost 58 percent of which were minor injuries. Thirty-two patients were transported to Reno hospitals for additional care in 2009, 20 were stable patients transported by ground ambulance, and 12 were flown out by helicopter.

Health impacts would also result from traffic accidents related to Burning Man. In 2011, 17 accidents were reported by Washoe County, the Nevada Department of Transportation, and by the Nevada Highway Patrol.

3.17 Recreation

The assessment area for the analysis of recreation is the Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert-High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), Selenite Mountains WSA and Poodle Mountains WSA, High Rock Canyon and Soldier Meadows ACECs and travel routes (with 0.5-mile buffer), as shown in Figure 3-2. In December 2000, the 106th Congress passed The Black Rock Desert-High Rock Canyon Emigrant Trails NCA Act, (Public Law 106 554). The NCA legislation designated almost 800,000 acres of public land as part of the NCA and approximately 752,000 acres as Wilderness areas. The Resource Man-

agement Plan (RMP), approved July 2004 for the Black Rock-Desert High Rock Canyon Emigrant Trails NCA and Associated Wilderness, and other Contiguous Lands in Nevada, currently guides management of the Black Rock Desert (BLM 2004). The plan 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.” Recreation decisions REC-21 through REC-27, detailed in Section 1.3, apply to the issuance of special recreation permits.

Recreational use on the Black Rock Desert playa can be categorized as either use associated with permitted activities or casual, dispersed recreation. Multiple activities occur in each category. The two categories of use represent near equal shares of the total recreation visitation. In 2010, there were an estimated 107,311 visits and 442,580 visitor days to the NCA, including both permitted and dispersed recreation users (BLM RMIS 2010).

The Black Rock Desert playa is administered as a Special Recreation Management Area (SRMA) and is located in the Front Country visitor management zone. The SRMA and Front Country designation reflect the need for intensive planning and management for recreation opportunities and resource protection. The RMP for the NCA included specific decisions related to SRP management that allowed for continued use of the playa for large scale permitted activities.

The Burning Man event is the largest single event that has occurred on the playa. The Public Closure Area covers almost 2 percent of the NCA and almost 30 percent of the areas of the NCA that are not wilderness areas. There were approximately 368,162 visitor days on the Black Rock playa in 2010, of which, the majority were Burning Man participants. Other permitted activities include amateur and experimental rocket launching events, land sailing competitions, 4WD tours, land speed trials, and guided horseback trips, which make up a small percentage of overall use, but provide important recreation opportunities that are dependent on use of the playa. Conflicts between permitted users and access for other permitted uses during event periods are concerns that have been raised in the past. The Association of Experimental Rocketry of the Pacific (AeroPac) and its A Rocket Launch for International Student Satellites (ARLISS) event have used the Black Rock Desert for a week in mid-September to launch, test and recover prototype satellites since 1999 on the Monday following the close of the Burning Man event.

Dispersed users of the playa and NCA are generally seeking solitude in the vast undeveloped region. The BLM is currently writing a Wilderness Management Plan (WMP) for the Black Rock Desert–High Rock Canyon Emigrant Trails NCA Act of 2000 (BLM 2011a). The WMP recognizes the need for opportunities for solitude and primitive, unconfined recreation and the importance of an unrestricted night sky for star gazing (BLM 2011). Commercial recreation in the NCA includes hunting, hiking, and 4WD tours (BLM 2011). Non-commercial hunting, wildlife viewing, hiking, equestrians use, camping, and rock and mineral collection are also common (BLM 2011).

Twenty-one campsites are located within the assessment area (see Figure 3-2). The nearest camps to the Burning Man Public Closure Area are Campsites EWH31, EWH32, EWH33, Coyote Dunes and Cassidy Mine. EWH31 and Coyote Dunes are located within the Public Closure Area and are closed during the event. Additional campsites are located in the recreational assessment area on private lands. Nevada Revised Statue 503.660 prohibits camping within 300 feet (100 yards) of any water hole in such a manner that wildlife or domestic stock would be

denied access to the water hole. Some recreation events such as land sailing or land speed records are also common occurrences on the playa.

BRC stations off-site volunteers at the Trego Hot Springs and Black Rock Hot Springs during the event to educate and discourage use by Burning Man participants. The hot springs remain open to the general public.

3.18 Social Values

The social values section for the assessment area includes profiles of housing; descriptions of law enforcement, fire protection, emergency medical services, waste and utilities providers; a primer on the historical social context and recent trends; and a discussion on attitudes toward Burning Man. The geographic extent for analysis for social values is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties. Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein. Population trends for the assessment area are provided in Section 3.5.1, Population.

3.18.1 Housing

Current housing trends for the assessment area are summarized in Table 3.18-1. The assessment area contains a high number of housing units, with all jurisdictions but the Pyramid Lake Paiute Tribe reservation, Lovelock, Reno, and Sparks having vacancy rates over 10 percent in 2010.

Table 3.18-1. Housing Profile in the Assessment Area

Jurisdiction	2000 Housing Units	2000 Vacancy Rate (%)	2000 Rental Vacancy Rate (%)	2010 Housing Units	2010 Vacancy Rate (%)	2010 Rental Vacancy Rate (%)
Churchill County	9,732	8.4%	2.9%	10,826	10.7%	9.2%
Humboldt County	6,954	17.6%	5.5%	7,123	11.7%	7.4%
Lyon County	14,279	8.9%	2.5%	22,547	12.1%	10.6%
Pershing County	2,389	17.9%	8.7%	2,464	18.1%	18.3%
Washoe County	143,908	8.2%	3.2%	184,841	11.6%	11.6%
Pyramid Lake Paiute Tribe Reservation	687	9.0%	1.6%	697	9.3%	5.5%
Empire	297*	21.2%	12.5%	126	35.7%	33.9%
Fernley	3,432	8.2%	2.4%	7,975	11.6%	10.5%
Gerlach	297*	21.2%	12.5%	945	18.7%	45.9%
Lovelock	951	18.2%	11.6%	142	9.9%	20.8%
Nixon	144	8.3%	0.0%	102,582	11.4%	4.3%
Reno	79,453	7.0%	4.2%	36,455	8.1%	12.5%
Sparks	26,025	5.5%	2.9%	350	8.9%	8.8%
Sutcliffe	113	7.1%	3.2%	120	13.3%	7.1%
Wadsworth	360	8.9%	2.8%	126	35.7%	6.2%

* Empire and Gerlach are counted as two separate Census Designated Places in the 2010 Census. However, in the 2000 Census, Empire and Gerlach were counted together as a single Census Designated Place: Gerlach-Empire.

Source: U.S. Census Bureau 2000a; U.S. Census Bureau 2010a.

Temporary accommodations in the assessment area include over 180 hotels and motels in Reno, 27 in Sparks, 7 in Fernley, and 10 in Lovelock (Aspen 2011). Overnight camping is permitted at Pyramid Lake, Sutcliffe and nearby beaches, Wadsworth, Reno, and Sparks, and RV camping is available in Wadsworth, Fernley, Lovelock, Reno, and Sparks (Aspen 2011).

Camping, as well as other recreational activities, are allowed in the Black Rock Desert, largely without a permit, at the site of Burning Man from the second week of October to the last week in July. During the months leading up to and following Burning Man, from the first week of August to the first week in October, a Public Closure Area is designated in the Black Rock Desert around the event site.

3.18.2 Law Enforcement

Law enforcement within the assessment area is performed by the Nevada Highway Patrol Northern Command and sheriff's offices of each of the counties within the assessment area, Churchill, Humboldt, Lyon, Pershing, and Washoe (Aspen 2011). Municipal police departments provide law enforcement in Lovelock (Lovelock Police Department), Reno (Reno Police Department), and Sparks (Sparks Police Department). Law enforcement on the Pyramid Lake Paiute reservation is provided by the Pyramid Lake Paiute Tribal Police (Aspen 2011).

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 for a total of 10 staff to provide additional law enforcement during the festival. Pershing County hired 22 temporary personnel to conduct law enforcement within the Burning Man event in 2011. The Nevada Department of Public Safety Highway Patrol Northern Command's Fernley Substation currently requires using troopers on overtime to patrol SR-447 between Fernley and Gerlach prior to and following Burning Man. (Aspen 2011)

Law enforcement at Burning Man events is provided by BLM Rangers, Pershing County Sheriff's Office, Nevada State Department of Investigations, Nevada State Health Division, and Nevada Highway Patrol. While the Black Rock Rangers are a volunteer organization directed by the applicant to engage with issues of Burning Man norms and rules, address safety concerns, mediate disputes, and resolve conflicts, they are not a part of a law enforcement agency and do not directly engage with violations of the law (BRC 2010a).

3.18.3 Fire Protection and Emergency Response

The Sierra Fire Protection District supervises the Gerlach Volunteer Fire Department. The Gerlach Volunteer Fire Department typically has four to five personnel that can respond to emergencies on a regular basis, with another four to five personnel available for busy periods, totaling nine to ten personnel. To address the increased demand for services before, during, and after Burning Man, the Gerlach Volunteer Fire Department has historically brought on an additional five personnel, up to two months prior and a month following Labor Day weekend, to respond to event-related incidents. The Gerlach Volunteer Fire Department does not provide fire protection services at the Burning Man events, but does provide emergency medical transport from the event site to emergency facilities in the Reno-Sparks area (GVFD 2011).

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 (ESD) Fire Branch. ESD Officers function as the Fire Branch Chief in the event of a full Incident Command System activation and act as the Incident Commander on any fire-related incidents that do not have any law enforcement concerns (BRC 2011a).

3.18.4 Emergency Medical Services

BRC has contracted to provide state-certified emergency services at previous Burning Man events. Emergency Medical Services (EMS) has been available at the paramedic level consistent with current Nevada State practices. For the 2011 Burning Man event, EMS medical facilities for participants and staff were placed at three locations. BRC's ESD has provided First Responder EMS in addition to the Advanced Life Support units provided by the contracted Nevada State licensed EMS provider. A medevac helipad has also been designated at the event's temporary airport (BRC 2011a).

Medical facilities at the event site have historically been sufficient to address the majority of medical emergencies occurring at Burning Man. Where participants have requested medical transport to an emergency facility for non-life-threatening conditions, most have opted to stay on-site when informed of the time and cost to the individual for transport (GVFD 2011). Gerlach Volunteer Fire Department provides emergency medical transportation when necessary from the event site to emergency facilities in the Reno-Sparks area, an approximately 3-hour drive. Medical service providers in the Reno-Sparks area include Northern Nevada Medical Center, Renown Health Emergency/Trauma Center, St. Mary's Regional Medical Center, and Regional Emergency Medical Services Authority. Gerlach Volunteer Fire Department also provides emergency medical services in Gerlach and in the immediate vicinity outside of the event site. During the 2011 event, 33 patients required transport off of the playa, two of which occurred prior to scheduled ambulance deployment. EMS personnel transported 28 patients by ground, a decrease of six from the previous year, and 5 patients were flown to Reno via Care Flight (BLM 2011a).

3.18.5 Waste and Utilities

Solid waste disposal and recycling services are provided across the assessment area by a range of businesses and solid waste landfills. BRC has been responsible for all waste disposal during and immediately following Burning Man events in the Black Rock Desert as well as along County Road 34 from the "8-Mile" Entrance to SR-447; SR-447 from the intersection with County Road 34 to Wadsworth and from Gerlach to the California state line; and SR-446 from Nixon to SR-445 near Sutcliffe. Trash Pros in Wadsworth and Fernley and other disposal centers offer garbage dumping for a fee (Aspen 2011).

Participants are expected to carry out any waste generated during the event. BRC's event website lists locations in nearby communities where waste and grey water may be disposed and counsel participants against disposing trash in neighboring towns, rest areas, or the dumpsters of private businesses. BRC's event materials provides recommendations for cleaning up at the end of the event, including guidelines on burning and recycling wood, reducing packaging, and collecting micro-trash (Aspen 2011). See Section 3.10 for additional information regarding wastes.

The scale of participation at Burning Man results in the disposal and recycling of waste in the neighboring towns that would typically exceed normal usage. Because the event has occurred annually for over two decades and has continued to grow over this time, waste management companies and recyclers in communities in the vicinity of the event site have developed programs to accommodate the increase in waste during the 8-day event. While BRC encourages “leaving no trace”, discourages disposal of trash in nearby communities, and continues cleaning up the event site and the travel routes described in the introduction for 30 days following the event, litter from event participants is a frequent complaint among nearby residents.

Wells within individual jurisdictions provide much of the drinking water in the assessment area – Churchill County, Lyon County, Pershing County, Empire, Fernley, and Gerlach all rely on wells for drinking water (Aspen 2011). Washoe County, Reno, and Sparks receive drinking water from the Truckee Meadows Water Authority while the Lovelock Meadows Water District provides water for Humboldt County and Lovelock (Aspen 2011). The Pyramid Lake Paiute Tribe Public Utilities District has three separate community public water systems, one in Nixon, one in Sutcliffe, and one in Wadsworth (Aspen 2011). BRC has provided water for dust control and fire suppression, but does not provide drinking water for Burning Man events. Participants are responsible for bringing their own water to the event (BRC 2011a).

Electricity at Burning Man comes from generators or portable solar or wind assemblies at the event site (BRC 2012).

3.18.6 Historic Social Context and Recent Trends

All of the counties in the assessment area with the exception of Pershing County were established as four of the original nine counties of the Nevada Territory in 1861. Pershing County was the last county to be established in Nevada in 1919 (Nevada History 2011a). While the Washoe, Northern Paiute, and Western Shoshone had settlements within the assessment area, Euro-American communities in these counties were settled by pioneers traveling west along the California Trail, or entrepreneurs coming back east from California, establishing supply stations and Army forts along the California Trail (Nevada History 2011b; Nevada History 2011c). Emigrants traveled to Nevada and California first for fur trapping, but not long after for the mining boom. Following the incorporation of the Nevada Territory in 1861, construction of the Central Pacific and other railroads encouraged the development of cities like Reno and Sparks, as well as the smaller communities in the region (Nevada History 2011c). In the 1950s, expansion of military bases and military industries in the assessment area led to community growth (Aspen 2011). In response to the housing boom and expansion of infrastructure, mining in places like Empire, which supplied gypsum for drywall, also thrived.

In 1990, a group from San Francisco, which had previously constructed and burned Burning Man statues (The Man) annually at Baker Beach in the Golden Gate National Recreation Area, was prevented from burning The Man. In response, members of the group disassembled The Man and transferred the Burning Man event to the Black Rock Desert, with approximately 90 participants (BRC 2010b; BRC 2010c). The following year, BLM required a recreation permit for the festival and prepared an environmental assessment for the event. Attendance at Burning Man has grown steadily on an annual basis, with the exception of the 2009 event which had lower attendance due in large part to the economic impacts of the recession.

With the 2008 recession, many of the communities in the assessment area have suffered with the economic downturn. Foreclosures in Nevada have led the nation and poverty has increased in most jurisdictions throughout the assessment area (Aspen 2011). In particular, the residents of Empire, which had been a company town for U.S. Gypsum employees and their families, were told in December 2010 that the U.S. Gypsum facility would be “temporarily idle” and residents would be required to vacate company-owned housing (U.S. Gypsum 2010).

3.18.7 Attitudes Toward Burning Man

Burning Man began in 1986 by a group of friends in San Francisco. Burning Man has since become an event that attracts tens of thousands of participants from all over the world (Aspen 2011). Additionally, due to the event’s reputation as a counterculture experiment in a temporary community, attitudes toward Burning Man are typically polarized between those supportive of the tenets of the Burning Man community and those who perceive the event and its activities in strong conflict with their own moral values (Aspen 2011).

The Burning Man has ten core guiding concepts, which, individually and in concert, attract participants to the event. As described by BRC, these principles include:

- Radical inclusion,
- Gifting,
- Decommodification,
- Radical self-reliance,
- Radical self-expression,
- Civic responsibility,
- Communal effort,
- Leaving no trace,
- Participation, and
- Immediacy

According to BRC, other than these guiding principles, there are no rules save those that serve to protect the health, safety, and experience of the community at large. It is up to the participant how they contribute and what they give to the community (BRC 2010d). The high social value of this event to participants is expressed in the vast information from past events, personal stories, and background information available on the Burning Man website (<http://www.burningman.com>). The applicant points specifically to the groundbreaking art and innovation that occurs in preparation and during the event as well as the global interest and dialogue that has resulted in response to the event (BRC 2012). In addition to the Burning Man event, the applicant contributes to the community through various means including the Black Rock Arts Foundation, with a mission to support and promote community, interactive art and civic participation, and Black Rock Solar, with a mission to promote stewardship, economic development and energy independence by providing not-for-profit entities, tribes and underserved communities with access to clean energy, education, and job training.

Non-participant supporters of Burning Man are typically those sharing ideological viewpoints of participants or of the events’ guiding principles. Many current advocates of Burning Man state

that they were originally critics of the event, but over time and with some attending the event, they came to support Burning Man (Aspen 2011). The population of Fernley, which is the nearest city to the event site, was originally largely critical and skeptical of the event. Over time Fernley has become more supportive of the event, and many in the city are now actively working to capture more economic benefits from participants travelling through the city (Aspen 2011). Similarly, business owners in Gerlach and other communities along routes to and from the event site may or may not be ideologically supportive of the event, but many support the event due to the influx of spending on local businesses, such as hotels, restaurants, bars, stores, and other economic benefits provided by activities during and around the Burning Man event (Aspen 2011).

Those opposed to Burning Man are most often those who disagree with the principles behind the event or the activities that occur at the event on moral or ethical grounds. Many critics were opposed to Burning Man because of illegal or immoral activities at the event, such as drug use or nudity. Some critics object to allowing minors into Burning Man because of exposure to nudity or adult activities (Aspen 2011). Many critics of the event oppose Burning Man for religious or political reasons. Some other critics oppose the event as they feel that Burning Man participants do not follow the “Leave-No-Trace®” ethic espoused in Burning Man materials and that while trash may be removed from the playa that it is dumped on the properties of local residents and business owners. Many oppose the event due to the disruption to the environment or airborne dust generated by the event which affects scenic views and health. For local residents or business owners along BRC access routes, the traffic of tens of thousands of participants traveling through the area can be an inconvenience and disruption to daily life for the time leading up to, during, immediately after the Burning Man event (Aspen 2011).

In 2008 residents and property owners in the Washoe County High Desert Planning Area, which includes the communities of Gerlach, Empire, and Vya were surveyed on a variety of topics to provide input into Washoe County’s High Desert Area Plan. The survey included questions regarding access to public lands, arts, community festivals, cultural events, and specifically, Burning Man. Of the 60 respondents to the question regarding Burning Man, 20 indicated that they value Burning Man highly, 16 gave it a moderate value, and 24 gave Burning Man a low value (Aspen 2011). The numbers indicate a fairly even range of attitudes toward Burning Man, though leaning toward those that place a low value on the event.

3.19 Soils and Playa Sediments

The assessment area for the analysis of soils and playa sediments is the soil units that intersect the Public Closure Area, as shown on Figure 3-9. The Burning Man event occurs on the Black Rock Desert playa, which is a part of the Black Rock Desert in northwestern Nevada. The Black Rock Desert playa, at approximately 185 square miles (480 square kilometers), is one of the largest flat surfaces on Earth. Elevations for approximately 120 square miles (310 square kilometers) of the playa differ within a three-foot (one-meter) range, within the elevations ranging between 3,905 and 3,908 feet (1,190.2 and 1,191.2 meters). The Black Rock Desert 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 and where evaporation greatly exceeds water inflow.

Generally 70 percent of the annual precipitation in the area occurs during late fall, winter and spring, and during this period the Black Rock Desert playa surface is normally wet and may be covered with as much as 1.6 to 3.3 feet (0.5 to 1 meter) of water (Bilbo 2008; Adams and Sada 2010). A study of Landsat imagery for 1973–2008, conducted as part of the Desert Research Institute’s (DRI) study of the physical processes and aquatic life of the Black Rock Playa, indicated that flooding and formation of a lake on the playa does not occur every year and that within this 37-year period there have only been five years when a lake did not form and four years when only a small lake (less than 0.8 square miles or two square kilometers) was formed on the Black Rock Desert playa (Adams and Sada 2010).

The Black Rock Desert playa is composed primarily of fine-grained sediments dominated by clay and silt with a small percentage of fine grained sand. The sediments are highly alkaline in character and contain varying amounts of soluble salts. The fine grained clayey sediments of the Black Rock Desert playa form a hard durable crust over the playa surface as the water that inundates the area in the winter evaporates and the sediments dry out. As the sediments dry out, polygonal desiccation cracks form that may be up to a foot or so in diameter and may extend several feet below the surface (Bilbo 2008). This hard crust reduces wind driven erosion of the fine playa sediments. 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 “fluffy” surface that is subject to wind-driven erosion. This change from hard crust to a soft and loose “fluffy” surface is not fully understood and is speculated to be caused by one or several of the following occurrences: repeated saturation of the playa surface by rainfall and subsequent drying 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 ice⁶ in the playa sediments causes surface disruption (Adams and Sada 2010).

The BLM has estimated that during the dry summer months, generally June through September, that 5 percent (about 8,400 acres) of the playa surface (about 169,000 acres) would be subject to surface disturbances from various activities that allow winds to easily carry the loosened surface sediments (BLM 2006). An additional 300 acres is also disturbed by continued vehicles use on or adjacent to 115 miles of playa “road”. Dust storms, intermittent dunes, and erosion unrelated to human activities occur on the playa. Naturally occurring dust storms, intermittent dunes, and erosion are likely to be more prevalent in periods following one or more years when lack of inundation of the playa surface has resulted in a change 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 eleven soil associations are present within the Burning Man soils assessment area. Most of the Burning Man Public Closure Area, approximately 12,672 acres or 90 percent of the total area, is underlain by a soil unit labeled playas; the playas designation is classified by the NRCS as a “miscellaneous area,” which is an area that has little to no soil material and supports little to no vegetation. The playas map unit is composed of silty clay loam and silty clay. The erosion factor for sheet

⁶ Needle ice is small (1-3 cm), vertically oriented crystals of ice that form just below the soil surface when the ground is saturated and the air temperature is below freezing.

and rill erosion⁷ by water associated with the playas unit is 0.37, which represents a slight hazard. The wind erodibility group of this unit is 4L, which indicates a moderate susceptibility to wind erosion. The event area, primarily consisting of the City, is entirely underlain by the mapped playas unit.

Soil associations for the remaining 10 percent of the Closure Area soils consist of five main soil associations and three very minor associations that are mapped on the terraces and alluvial fans along the western edge of the playa and Public Closure Area. The five associations in order of percentage occurrence within the Public Closure Area are: the Isolde-Ragtown association (3 percent), the Coldent-Isolde-Swinger association (2 percent), the Theon-Grumbler-rubble land association (2 percent), the Mazuma-Trocken association (1.5 percent), and the Toulon-Appian-Bluewing association (1.5 percent). The three very minor associations make up less than 0.25 percent of the Public Closure Area and are not discussed further. Select characteristics of the major soils underlying the Public Closure Area are summarized Table 3.20-1. The erosion factor for sheet and rill erosion by water associated with these soil associations ranges from 0.05 to 0.55 equating to a slight to moderate hazard and the wind erodibility groups for these soil associations range from 1 to 8, which correlates to high to low susceptibility to wind erosion.

Table 3.20-1. Soil Characteristics within the Public Closure Area

Soil Association	Description	Erosion Factor For Sheet And Rill Erosion*	Wind Erodiability Group**
Playa	Silty clay loam and silty clay on slopes of 0 to 1 percent that experience frequent ponding. Sediments tend to be moderately to strongly saline.	0.37	4L
Isolde-Ragtown	Fine sand, sand, silt loam, and sandy clay loam on slopes of 0 to 15 percent. Formed in lacustrine or dune deposits. Sediments may be moderately to strongly saline.	0.17 to 0.55	1 or 4L
Coldent-Isolde-Swinger	Gravelly fine sand, loamy sand, fine sandy loam, and silt loam formed in mixed alluvium of eolian deposits on slopes of 0 to 15 percent.	0.17 to 0.55	1 to 4L
Theon-Grumbler-rubble land	Very cobbly loam, very gravelly clay loam, very gravelly loam, very gravelly clay, and fragmented rock material. Forms in colluvium and volcanic rock on slopes of 15 to 50 percent.	0.10 to 0.17	6 to 8
Mazuma-Trocken	Very fine sandy loam, sandy loam, silt loam, gravelly very fine sandy loam, gravelly loamy coarse sand, and gravelly coarse sand on slopes of 0 to 8 percent. Forms in alluvial deposits.	0.17 to 0.55	3 to 4L
Toulon-Appian-Bluewing	Very gravelly fine sandy loam very gravelly sandy loam, loamy coarse sand, very gravelly loamy sand, and clay loam on slopes of 0 to 8 percent. Formed in alluvial deposits.	0.05 to 0.32	2 to 5

* Erosion factor K ranges from 0.02 to 0.69, the higher the factor the more susceptible the soil is to sheet and rill erosion by water.

** Wind erodibility groups are groups of soils that when disturbed have similar erosion properties; Group 1 is the most susceptible and Group 8 is the least susceptible.

Source: USDA NRCS 1998.

⁷ Sheet erosion is the detachment of soil particles by raindrop impact and their removal downslope 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.

Erosion of the sediments on the playa surface occurs 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 dunes, and transient dunes. Although the presence of these dunes/ripples has been increasingly noted over the past decade, their presence was documented prior to 1970 before the periods of heavy human activity on the playa surface began (Adams and Sada 2010). The dune/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 dune/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 ripple/dune features typically have a coherent crust that has resulted from wetting of the sediments. These ripple/dune features are formed when loosened sediments, by either 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/dunes features are temporary features generally less than a foot in height and the actions of wind and water over one or several winters lead to the removal of the dunes (BLM 2006; Adams and Sada 2010).

As part of a study conducted by the Desert Research Institute (DRI) to investigate the effects of playa use on physical processes on the playa and aquatic life, a survey was conducted to determine the cumulative effects of Burning Man on erosion of the playa (Adams and Sada 2010). Global Positioning System (GPS) topographic surveys were conducted on part of the road network within the Public Closure Area before and after the 2006 event (on August 26, 2006 and September 13, 2006) and comparison of the results of the surveys indicated that within the accuracy of the GPS survey (1 cm) there was no measurable change in elevation of the roads. This appears to indicate that no substantial erosion of the road bed areas occurred during the 2006 event. The report notes that abundant evidence of wind erosion at both the 2006 and 2007 Burning Man events was present in the form of crushed playa sediment, fresh granular ripples, and wind-transported sediment accumulating along various parts of the perimeter fence. Some of the sediment that accumulated along the 2007 event perimeter fence came from dust storms with saltating⁸ particles that approached the area from the southwest on August 30 and 31, 2007, with a sediment source upwind of the Public Closure Area.

Dune features were noted along the temporary perimeter fencing after the 2007 Burning Man event. During the 2007 event, intense dust storms occurred at the end of August and likely helped result in the formation of the approximately 18 inches high and 100s of yards long sand dunes that formed along the perimeter (BLM 2008). After the Burning Man 2007 perimeter fence was removed, the sand piles were dragged/bladed by clean-up crews; the presence of these dunes was still evident in a 2007 Burning Man post-event monitoring inspection conducted in June 2008 by the BLM. The “2008 Burning Man Stipulation Monitoring Report” notes that the 2007 dunes were still clearly visible and crossed through the 2008 event area; complaints from the 2008 participants indicated that the rough playa surface (dunes) made it difficult to bike or walk throughout most of Black Rock City (Levy 2008). The 2008 Burning Man Stipulation Monitoring Report indicates that while sand and dust piles along structures and dust accumula-

⁸ Saltation is a form of sediment transport in which particles are moved forward in a series of leaps or bounces.

tion along the fence lines were noted near the Dispatch area during the 2008 event, these accumulations of sediment were no longer evident during a post-event inspection in October 2008 (Levy 2008). No quantitative data has been collected regarding the number or location of dunes that have formed in the Black Rock Desert playa. Review of United States Geologic Survey aerial images of the playa in the Burning Man event area for 1999 through 2011 in late October/early November reveals that scarring and disturbance of the playa surface is visibly evident after the event sporadically.

Since 2001, the applicant has used decomposed granite under art burns, with BLM approval, to prevent burn scars on the playa surface. From 2001 to 2005, approximately four inches of decomposed granite was used overlying a Kevlar blanket. Beginning in 2005, the use of the Kevlar blankets was discontinued and about four inches of decomposed granite alone was used under the art burns to protect the playa surface (BRC 2012). Removal of the decomposed granite from the playa surface following the past events has not been complete, and both the 2007 and 2008 post-event monitoring reports, as well as public comments on the EA, note that remnant orange decomposed granite was observed at the burn sites (Levy 2008). Further, the 2008 report notes that the orange stained decomposed granite from the 2007 burn sites was still visible. Orange coloration of the partially-oxidized and weathered decomposed granite is due to the oxidation of its iron minerals from the heat of the art burn fires.

3.20 Special Status Species

The geographic extent for analysis of special status species is shown on Figure 3-3 and includes the Public Closure Area, playa, adjacent dunes, springs, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater. An assessment area-wide inventory has not been completed for this project. Rather, the potential for special-status species to occur within the assessment area was determined by reviewing existing data sources of known occurrences and suitable habitat. Based on a search of the Nevada Natural Heritage Program (NNHP) database (2011), and Nevada Department of Wildlife (NDOW) diversity database (2012), and knowledge of the area, the species listed in Table 3.20-1 are known to occur or have potential to occur within the assessment area. Other special-status species may be present in the assessment area if suitable habitat exists.

No resident special-status species occur on the playa. A population of more than 25 silver-haired bats was recorded on the playa (NHHP 2011). Roosting habitat is not present on the playa; these bats were likely foraging or observed while flying overhead. Desert dace, pyrgs (spring snails) and Soldier Meadows cinquefoil are associated with hot springs. The remainder of the special-status species listed in in Table 3.20-1 occur in suitable habitat throughout the assessment area.

Table 3.20-1. Special-Status Species Occurring in the Burning Man Assessment Area

Scientific Name	Common Name	Status
Plants		
<i>Cryptantha schoolcraftii</i>	Schoolcraft catseye	BLM sensitive
<i>Eriogonum crosbyae</i>	Crosby buckwheat	ESA Species of concern, BLM sensitive
<i>Potentilla basaltica</i>	Soldier Meadow cinquefoil	ESA Candidate, BLM sensitive

Table 3.20-1. Special-Status Species Occurring in the Burning Man Assessment Area

Scientific Name	Common Name	Status
<i>Ivesia rhypara</i>	Grimy mousetails	ESA Species of concern, BLM sensitive
<i>Mentzelia mollis</i>	Smooth stickleaf	BLM sensitive
<i>Astragalus tiehmii</i>	Tiehm milkvetch	BLM sensitive
<i>Oryctes nevadensis</i>	Oryctes	BLM sensitive
Invertebrates		
<i>Pyrgulopsis bruesi</i>	Fly Ranch pyrg	BLM sensitive
<i>Pyrgulopsis militaris</i>	Northern Soldier Meadows pyrg	BLM sensitive
<i>Pyrgulopsis notidicola</i>	Elongate mud meadows pyrg	ESA Candidate, BLM sensitive
<i>Pyrgulopsis umbilicata</i>	Southern Soldier Meadows pyrg	BLM sensitive
<i>Pyrgulopsis limaria</i>	Squat Mud Meadows pyrg	BLM sensitive
Reptiles and Amphibians		
<i>Rana luteiventris</i> , pop. 3	Columbia spotted frog	ESA Candidate, BLM sensitive, State protected
Birds		
<i>Centrocercus urophasianus</i>	Greater sage-grouse	ESA Candidate, BLM sensitive, State protected
<i>Charadrius alexandrinus</i>	Western snowy plover	BLM sensitive, State protected
<i>Falco peregrinus</i>	Peregrine falcon	BLM sensitive, State protected
<i>Aquila chrysaetos</i>	Golden eagle	BLM sensitive, State protected
<i>Athene cunicularia hypugaea</i>	Western burrowing owl	BLM sensitive, State protected
<i>Buteo swainsoni</i>	Swainson's hawk	BLM sensitive, State protected
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay	BLM sensitive, State protected
<i>Lanius ludovicianus</i>	Loggerhead shrike	BLM sensitive, State protected
<i>Spizella breweri</i>	Brewer's sparrow	State protected
<i>Asio flammeus</i>	Short-eared owl	BLM sensitive, State protected
Mammals		
<i>Brachylagus idahoensis</i>	Pygmy rabbit	BLM sensitive, State protected
<i>Lasionycteris noctivagans</i>	Silver haired bat	BLM sensitive
<i>Pipistrellus hesperus</i>	Western pipistrelle	BLM sensitive
<i>Antrozous pallidus</i>	Pallid bat	BLM sensitive, State protected
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	BLM sensitive, State protected
<i>Lasiurus cinereus</i>	Hoary bat	BLM sensitive
<i>Myotis californicus</i>	California myotis	BLM sensitive
<i>Myotis ciliolabrum</i>	Western small-footed myotis	BLM sensitive
<i>Myotis thysanodes</i>	Fringed myotis	BLM sensitive, State protected
<i>Myotis volans</i>	Long-legged myotis	BLM sensitive
<i>Tadarida brasiliensis</i>	Brazilian free-tailed bat	BLM sensitive, State protected
<i>Ovis canadensis californiana</i>	California bighorn sheep	BLM sensitive
<i>Eptesicus fuscus</i>	Big brown bat	BLM sensitive
<i>Myotis evotis</i>	Long-eared myotis	BLM sensitive

Source: NNHP 2011; NDOW 2012.

3.21 Transportation and Traffic

Transportation engineers and planners commonly use the term level of service (LOS) to measure and describe the operational status of a roadway network. An intersection or roadway segment’s level of service can range from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). This discussion is a summary of information contained within the *Burning Man Environmental Assessment Traffic Analysis*, March 5, 2012, prepared by Fehr & Peers, incorporated by reference herein.

To determine the maximum service flow for various levels of service, the Transportation Research Board *Principals of Highway Engineering and Traffic Analysis* was used to determine volume-to-capacity (v/c) ratios corresponding to LOS A–E. Using this analysis, daily LOS thresholds were established as shown in Table 3.21-1. For consistency with the other roadway types, the hourly service flow rates were converted to peak directional daily flow rates for each level of service threshold using the existing Burning Man exiting traffic profile. It is reasonable to assume that an hourly service flow rate can be maintained for 24 hours of the day; however, it is unlikely that this scenario would occur. To determine a reasonable Burning Man exiting traffic profile, hourly traffic volume data from the peak traffic day of the 2011 Burning Man event (Monday, Labor Day) was used. Table 3.21-1 shows that over the peak traffic day, each minor 2-lane highway was found to have the capacity to carry 20,070 vehicles without reaching LOS E.

Daily roadway segment LOS was determined by comparing daily traffic volumes to the thresholds shown in Table 3.21-1. The LOS thresholds are based on the roadway classification.

Table 3.21-1. Daily Roadway Segment Level of Service Thresholds (One-Direction)

Functional Classification	Daily Traffic Volume Threshold*				
	LOS A	LOS B	LOS C	LOS D	LOS E
Minor 2-Lane Highway	4,850	8,420	13,590	20,070	31,420
4-Lane, Multilane Highway	10,700	17,600	25,300	32,800	36,500
4-Lane Freeway	23,200	42,000	59,500	72,800	81,400
10-Lane Freeway	31,900	50,950	75,900	95,750	112,750

*LOS capacity threshold is for **one direction**.

Minor 2-Lane Highway includes the following NDOT classifications: Other Principal Arterials, Minor Arterials, Rural Major Collectors
 Source: Fehr & Peers 2012.

The Nevada Department of Transportation (NDOT) strives to maintain LOS D or better on all of its roadways.

3.21.1 Existing Conditions

A brief description of the key roadways used by Burning Man participants is provided below. The assessment area for analysis of transportation and traffic is the travel routes to the event and landing strip, as shown on Figure 3-10.

Interstate 80 (I-80) is an east-west interstate highway that runs through northern Nevada in Reno and Fernley. Through Reno and Sparks, I-80 has 4 to 6 travel lanes and a speed limit of 65 mph. East of Sparks, I-80 is a four lane highway with a speed limit of 70 mph. I-80 provides access to Sacramento and San Francisco, California to the west and Salt Lake City, Utah to the east.

State Route 445 (Pyramid Highway) is north-south roadway that connects to I-80 at its south end and SR-446 at its north end. Pyramid Highway is a four-lane roadway from I-80 to just north of Egyptian Drive–Sunset Springs Lane, and a two-lane roadway from north of Egyptian Drive–Sunset Springs Lane to SR-446. The speed limit on Pyramid Highway varies from 35 mph at its southerly end through downtown Sparks, to 65 mph at its northerly end as it approaches Pyramid Lake and SR-446.

State Route 446 is a rural two-lane highway that borders the southern part of Pyramid Lake. SR-446 intersects SR-447 at its east end in the town of Nixon. The speed limit on SR-446 between Pyramid Highway and SR-447 is 65 mph. There is generally a 0- to 1-foot paved shoulder along SR-446 with sporadic sections of dirt shoulder wide enough for a vehicle to pull off the road.

State Route 447 is generally a north-south, rural, two-lane highway. The speed limit on most of SR-447 is 70 mph; through the towns of Nixon and Gerlach the speed limit drops to 25 mph. The speed limit through the town of Empire drops to 45 mph, and the speed limit through Wadsworth drops to 15 mph through the school zone. There is generally a 0- to 1-foot paved shoulder along SR-447 with sporadic sections of dirt shoulder wide enough for a vehicle to pull off the road. The rural towns along SR-447 have sufficient space for vehicles to park along the roadway.

State Route 427 connects to I-80 west of Wadsworth at its west end and I-80 in Fernley to the east. SR-427 is a two-lane roadway with a speed limit that varies from 25 mph to 55 mph.

County Road 34 is a two-lane roadway that borders the northwest side of the Black Rock Desert north of Gerlach, Nevada. The speed limit of County Road 34 is 55 mph. There is generally a 0- to 1-foot paved shoulder along County Road 34 with an 8- to 10-foot-wide dirt shoulder with varying degrees of slope. County Road 34 provides access to the Black Rock Desert and Black Rock City.

3.21.2 Daily Roadway Segment Traffic Volumes and Level of Service

Volume data from NDOT's Annual Traffic Report (2010) were used to determine existing roadway segment LOS for the study roadway segments. Table 3.21-2 shows the one-directional, daily traffic volumes at various locations on the study roadway segments and the corresponding LOS. Note that data provided in the annual traffic report is two-directional data. For analysis purposes, it was assumed that traffic volumes are split evenly with 50 percent in each direction. The levels of service were determined by comparing the daily traffic volumes to the thresholds shown in Table 3.21-1.

Table 3.21-2. Existing Daily Traffic Volumes and Levels of Service

Roadway Segment	Location	Roadway Type	Daily Volume*	Roadway Capacity§	LOS	
1	State Route 447	South of County Road 34 in Gerlach	Minor 2-Lane Highway	190	31,420	A
2	State Route 447	North of County Road 34	Minor 2-Lane Highway	110	31,420	A
3	County Road 34	East of SR-447	Minor 2-Lane Highway	75	31,420	A
4	State Route 447	North of Nixon	Minor 2-Lane Highway	210	31,420	A
5	State Route 447	North of SR-446 in Nixon	Minor 2-Lane Highway	740	31,420	A
6	State Route 447	North of SR-427 in Wadsworth	Minor 2-Lane Highway	890	31,420	A
7	State Route 446	Between Pyramid Highway and SR-447	Minor 2-Lane Highway	280	31,420	A
8	Pyramid Highway	South of SR-446	Minor 2-Lane Highway	350	31,420	A
9	Pyramid Highway	North of Calle de la Plata	Minor 2-Lane Highway	2,110	31,420	A
10	Pyramid Highway	South of La Posada Drive	4-Lane, Multilane Highway	13,110	36,500	B
11	State Route 427	East of SR-447	Minor 2-Lane Highway	1,180	31,420	A
12	State Route 427	West of SR-447	Minor 2-Lane Highway	530	31,420	A
13	Interstate 80	West of Wadsworth	4-Lane Freeway	12,590	81,400	A
14	Interstate 80	East of Rock Boulevard	4-Lane Freeway	51,940	81,400	C
15	Interstate 80	East of Keystone Avenue	4-Lane Freeway	46,970	81,400	C
16	U.S. 395	North of Glendale Avenue	10-Lane Freeway	76,420	112,750	D

*One-directional volumes; based on daily traffic volume information from NDOT's Traffic Information Access (TRINA) for a Monday.

§ Roadway capacity (LOS E to LOS F threshold) based on Table 3.21-1 (Daily Road Segment Level of Service Thresholds [One-Direction]).

Source: 2010 Annual Traffic Report NDOT; Fehr & Peers 2012.

3.22 Vegetation

The playa, including the Public Closure Area, is devoid of vegetation due to highly alkaline soils. Salt-tolerant vegetation, such as greasewood (*Sarcobatus vermiculatus*), saltgrass (*Distichlis spicata*), and shadescale (*Atriplex confertifolia*), grows on the dunes and lake-plain terraces adjacent to the playa. Within the assessment area (see Figure 3-3), sagebrush scrub is the primary vegetation community in areas surrounding the playa. Indirect effects to vegetation could occur along adjacent dunes, at the hot springs, and along access roads and travel routes. In this community, dominant shrub species include big sagebrush, low sagebrush (*Artemisia arbuscula* var. *arbuscula*), black sagebrush (*Artemisia arbuscula* var. *nova*), *Ephedra* species, antelope bitterbrush (*Purshia tridentata*), spiny hopsage (*Grayia spinosa*), and rabbitbrush (*Chrysothamnus* spp.). Flowering herbaceous plants and perennial bunchgrasses such as Great Basin wild rye (*Leymus cinereus*), squirreltail (*Elymus elymoides*), and Indian rice grass (*Oryzopsis hymenoides*) occur among the shrubs. In mesic areas, secondary plant communities such as broadleaf riparian scrub and meadow occur.

3.23 Visual Resources (including Dark Skies)

3.23.1 Visual Resources

The event is located in the northern Great Basin section of the Basin and Range physiographic province, characterized by a pattern of alternating rugged, generally unvegetated mountain

ranges and broad level basins occupying a vast area of the western United States (Fenneman 1931). Locally, the event site is located in the southern portion of Black Rock Desert playa, a vast, flat, unvegetated plain that is the remnant of an ancient lakebed and among the largest level areas on Earth. The Black Rock Desert playa is dramatically flanked by tall, steep, rugged mountains including the Calico Hills and Granite Range to the west; the Black Rock Range to the north; and Selenite Range to the south and east. The assessment area for visual resources includes the event viewshed and key observation points depicted in Figure 3-8 (Visual Resources Affected Environment).

Although low-growing saltbush scrub vegetation is found within portions of the study viewshed outside of the playa, the viewshed occurs primarily within the playa, and the event occurs entirely within the playa, which is devoid of vegetation.

Geographic information system (GIS) viewshed (visibility) mapping was conducted for the event. As indicated by the map, the level terrain of the playa enables views that extend to background distances without obstruction. To the east and west, the viewshed is contained by adjoining slopes of the Calico Hills and Selenite Range. Figure 3-8 depicts the viewsheds for the Burning Man event over four consecutive years.

The BLM manages visual resources on lands within its jurisdiction with the Visual Resource Management (VRM) system. BLM lands are classified as one of four VRM classes, representing levels of visual susceptibility to impact. Within the NCA boundaries, the assessment area depicted in Figure 3-2 (ACEC, Recreation, Wilderness, and Wilderness Study Area Affected Environment) falls entirely into two VRM classes: Class II within non-Wilderness Area lands and Class I within the Calico Mountain Wilderness. Outside of the NCA, VRM ratings range from Class II in adjoining portions of the event viewshed to the west to Class III and Class IV in adjoining areas south of the NCA boundary, including nearby Highway 49. The Selenite Mountains WSA to the south is, by definition, Class I (special designation area), but it is outside of the event viewshed due to intervening low hills of the Selenite Range.

Impact thresholds for the four VRM classes are as follows (BLM Handbook H-8431-1):

- **Class I** refers to special designation areas such as Wilderness areas, only. Class I areas should be managed so that contrast of proposed actions is not evident to the casual observer.
- **Class II** areas should be managed so that contrast of proposed actions is weak (visible but does not attract attention).
- **Class III** areas should be managed so that contrast of proposed actions is moderate (begins to attract attention and begins to dominate the landscape).
- **Class IV** areas can accommodate strong contrast (demands attention, cannot be overlooked, dominates the landscape).

Visual intactness of the study viewshed is very high. Away from the roadways and railroad line, evidence of man-made intrusion is minimal in much of the study area, particularly on the playa, although OHV tracks are often visible. The Black Rock Desert playa is an OHV open area, and vehicle tracks are observed to be ubiquitous across the playa by the end of the summer season. Typically these are ephemeral and last only until the next flooding event (Adams and Sada

2010). As reflected in the VRM class ratings for the NCA, scenic quality of the study area is high, dominated by dramatic surrounding mountain ranges and vast long-distance views across the Black Rock Desert playa. Viewer sensitivity is also considered to be high. High sensitivity viewpoints include 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. Goal 1 of the Black Rock Desert–High Rock Canyon NCA Resource Management Plan is to “preserve opportunities for solitude and primitive experiences within the viewshed of historic emigrant and exploration trails.” Preservation of the visual integrity of the emigrant trail viewsheds is thus a primary visual objective in the study area (U.S. DOI 2004).

3.23.2 Dark Skies

The Black Rock Desert playa and NCA are notable for their exceptionally pristine, unpolluted night skies. Little or no man-made light is present in much of the playa and NCA, making dark skies a valued resource of the area. Light pollution in the area consists of dispersed pinpoints of lights associated with the Hycroft Mine, Blue Mountain Geothermal Development Project, and the towns of Winnemucca and Gerlach (BLM 2012). When not near the light sources, night sky showed stars that were bright and that overpowered the man-made light (BLM 2012). Burning Man has taken place on the playa since 1990 and has resulted in light pollution during the event. Light from the event such as from the burn events was visible at night for several miles.

In order to better understand the event’s impact on night skies, quantitative data began to be collected in 2011. For the present study, both qualitative and quantitative methods for evaluating potential impacts of the event on dark skies were applied. Baseline and Burning Man 2011 night time light data were collected by BLM staff on August 29, 2011, the first Monday of the event as this provided the appropriate conditions (clear skies) for the readings (Moore 2011). Sky Quality Meter, version L (SQM-L)⁹ measurements of the night sky and of Black Rock City were made at distances of 4, 6 and 8 miles from the Burning Man, see Figure 3-8. The starting location for the readings was the distance where the event light takes up less than 20 degrees of the field of vision. SQM-L devices record the level of light in the night sky, measured in star magnitudes (magnitude/square arc-second). The lower the magnitude value, the brighter the object. Baseline conditions at the site were established by pointing the meter away from the source of light. Sighting of lights from the event was recorded and described in terms of nocturnal scene (terrain illumination, light pollution domes, and shadows), visual contrast, and contrast with the natural features of the night. Photographs were taken to illustrate the event, see the *Burning Man 2012-2016 Environmental Assessment Technical Report: Natural Lightscape Impact*, November 2011.

3.24 Wild Horse and Burros

The Wild Free-Roaming Horses and Burros Act of 1971, as amended, declares all wild free-roaming horses and burros on the public rangelands to be under the jurisdiction of the Secretary of Interior, through the BLM, and the Secretary of Agriculture, through the U.S. Forest Service (BLM 2011a). The Act prohibits anyone other than an authorized agent of the Secretaries of the Interior and Agriculture from removing wild horses or burros from the public lands.

⁹ SQM-L (made by Unihedron) are typically used to measure sky zenith brightness, a measure of sky luminance. However, with a simple transformation, the data can be expressed as vertical illuminance.

Wild horses or burros are managed within herd management areas (HMA). Management of horses and burros within each HMA is determined through Multiple Use Decisions/Allotment Plans and Herd Area Management Plans (BLM 2011b). Wild horses are captured periodically in order to maintain healthy population numbers. Agencies use helicopter-driven trapping and/or roping from horseback in addition to traps. Capture sites are typically located in previously disturbed areas (BLM 2011b).

The geographic extent for the analysis of wild horse and burros includes the Closure Area, travel routes, and the air basin (see Figure 3-1). Twenty-eight wild horse and burro HMAs intersect with the impact assessment area: Coyote, Desert Queen (Humboldt River Field Office), Desert Queen (Stillwater Field Office), Wedekind, Majuba, Humboldt Sink, Ragged Top, Blue Wing-Seven Troughs, Horse Springs, Spanish Springs/Mustang, Olinghouse, White Hills, Hard-scrabble Canyon, Pah Rah, Paiute, Wilder-Quinn, Dyke Hot, Pine Forest, Deer Creek, Happy Creek, Paiute Meadows, Jackson Mountains, Knott Creek, Bottle Creek, Buffalo Hills, Soldier Meadows, Rodeo Creek, and Old Gunnery Range. There are no HMAs within the playa, including the Public Closure Area. Wild horses sometimes graze between Gerlach and the playa entrance (Struck 2012).

3.25 Wilderness Study Areas

The geographic extent for analysis of wilderness and wilderness study areas (WSA) is shown in Figure 3-2. The impact assessment area for wilderness study areas includes the Selenite Mountains Wilderness Study Area, which receives approximately 500 visitors annually (BLM 2011d) and the Poodle Mountain WSA, which receives approximately 2,500 visitors each year. The Selenite Mountains WSA is 1.5 miles directly south of the Public Closure Area, and the Poodle Mountain WSA is 11 miles to the west. The Selenite Mountains WSA covers over 31,000 acres (BLM 2011a), and the Poodle Mountain WSA covers over 142,000 acres (BLM 2011b). The nearest WSA outside the impact assessment area is the Fox Range WSA, which is 11 miles southwest of the Public Closure Area and covers over 75,000 acres (BLM 2011c). Based on a recent viewshed analysis, Black Rock City would have been visible from portions of the Selenite Mountains WSA in recent years (BLM 2011). See Section 3.23 (Visual Resources) and Figure 3-8 for viewshed details.

WSAs are roadless areas that have been inventoried and found to have wilderness characteristics, but have not been designated as wilderness by Congress. Wilderness characteristics are described in Section 603 of the Federal Land Policy and Management Act (FLPMA) of 1976 and Section 2(c) of the Wilderness Act of 1964. WSAs are managed in accordance with the "Interim Management Policy for Lands under Wilderness Review," in BLM Handbook H-8550-1 until Congress decides whether or not to designate them as wilderness. All WSAs within the BLM Winnemucca District, including the Selenite Mountain WSA, are managed under the Interim Management Policy for Lands Under Wilderness Review for preservation of their wilderness character. Nevada has 64 WSAs covering over 2.5 million acres (BLM 2007).

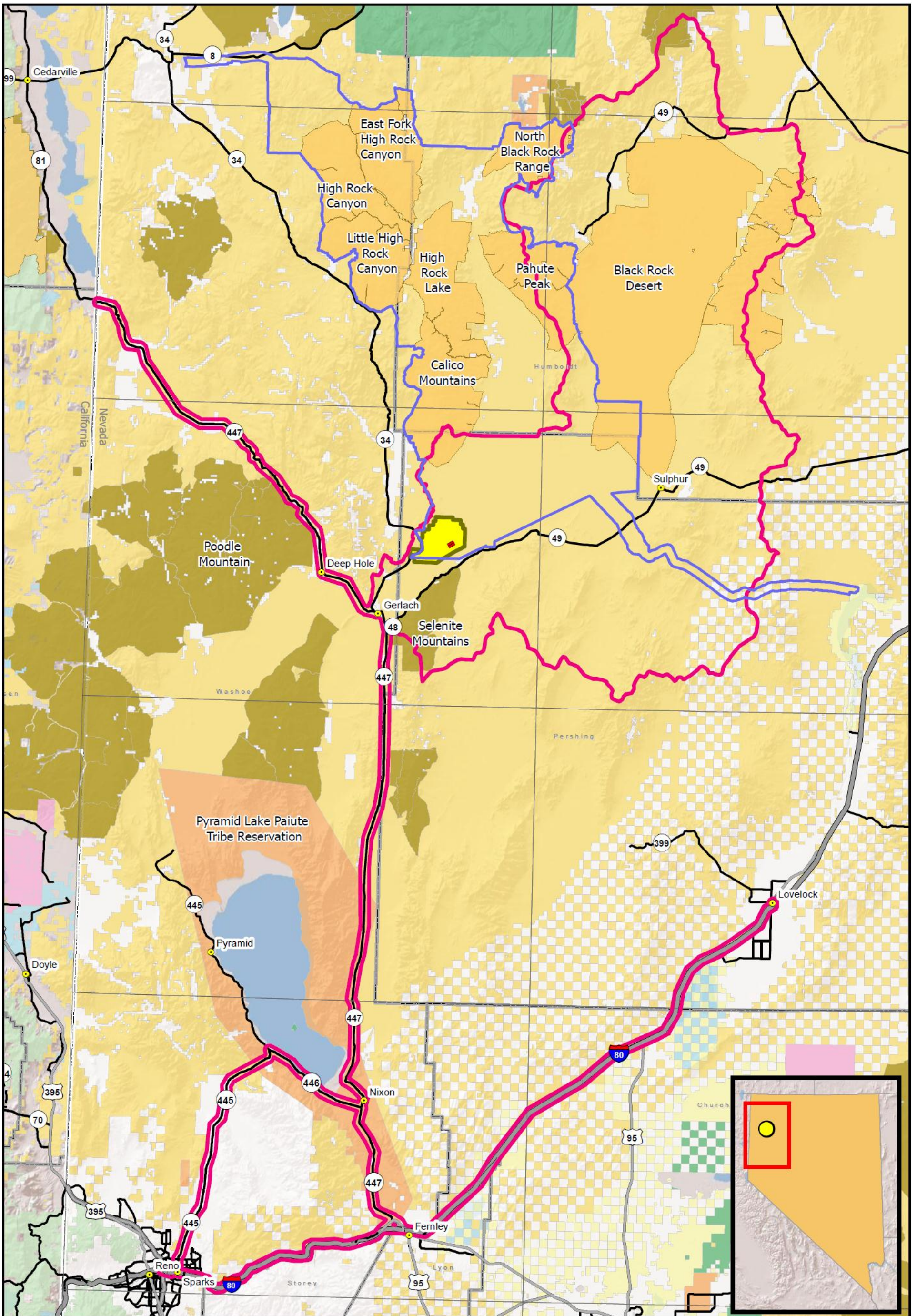
The Selenite Mountains WSA covers the north end of the Selenite Range, a north-south range flanked by alluvial desert (BLM 2011a). The Poodle Mountain WSA includes most of the Buffalo Hills, a circular basaltic plateau; the area contains basalt plateau highlands, basalt plateau canyon country, and fringing desert piedmont (BLM 2011b).

3.26 Wildlife

Given the lack of vegetation and permanent water sources, the playa does not support terrestrial wildlife species. Some species, including coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and rarely bighorn sheep (*Ovis canadensis californiana*), may occasionally cross the playa when travelling between adjacent habitat. Also, shorebirds, waterfowl, and other migratory birds may utilize temporary pools on the playa that appear after winter and spring storm events. Within the assessment area (see Figure 3-3), indirect effects to wildlife could occur along adjacent dunes, at points of interest (including hot springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and along access roads and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

When flooded, the playa supports phytoplankton, microbes and crustaceans that are a food source for these migratory birds. Playa soils also support aquatic invertebrates that are specially adapted to the prolonged drought and occasional inundation cycle of the playa. These aquatic invertebrates are primarily branchiopods, which persist as cysts encased in dry playa soil until sufficient precipitation occurs to hatch, reproduce, and complete their life cycle before desiccation occurs again (Adams and Sada 2010). According to a study conducted by Desert Research Institute, four different branchiopods occur on the playa: two types of fairy shrimp (*Branchinecta mackini* and *B. gigas*), tadpole shrimp (*Lepidurus lemmoni*), and water flea (*Moina* sp.) (Adams and Sada 2010). These species are common and widely distributed throughout Great Basin playas.

Within the assessment area, the wildlife habitat has greater diversity of topography and vegetation than the playa and supports species common to the Great Basin. The desert salt scrub vegetation surrounding the playa provides habitat for horned lizard (*Phrynosoma* sp.), Great Basin whip-tail (*Cnemidophorus tigris tigris*), rattlesnake (*Crotalus oreganus lutosus*), and other reptiles, as well as ground squirrel (*Spermophilus* sp.), kangaroo rat (*Dipodomys* sp.), and kit fox (*Vulpes macrotis*) as well as other small mammals and rodents. Mountain ranges support herds of bighorn sheep, chuckar, and mule deer. Other common wildlife species in the assessment area include, black-tailed jack rabbit (*Lepus californicus*), bobcat (*Lynx rufus*), badger (*Taxidea taxus*), and mountain lion (*Felis concolor*).

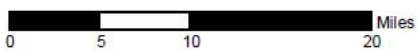


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 June 2012

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|--|-----------------------------|---|----------------|
| ● Towns/Cities | ■ BLM Wilderness Study Area | ■ US Fish and Wildlife Service Wilderness | ■ State |
| ■ Landing Strip | ■ BLM Wilderness Area | ■ Forest Service | ■ Private |
| ■ Assessment Area | ■ Bureau of Land Management | ■ National Park Service | ■ Unclassified |
| ■ Project Boundary - Public Closure Area | ■ Tribal Land | ■ Department of Defense | ■ County lines |
| ■ National Conservation Area | ■ Bureau of Reclamation | ■ Department of Energy | |

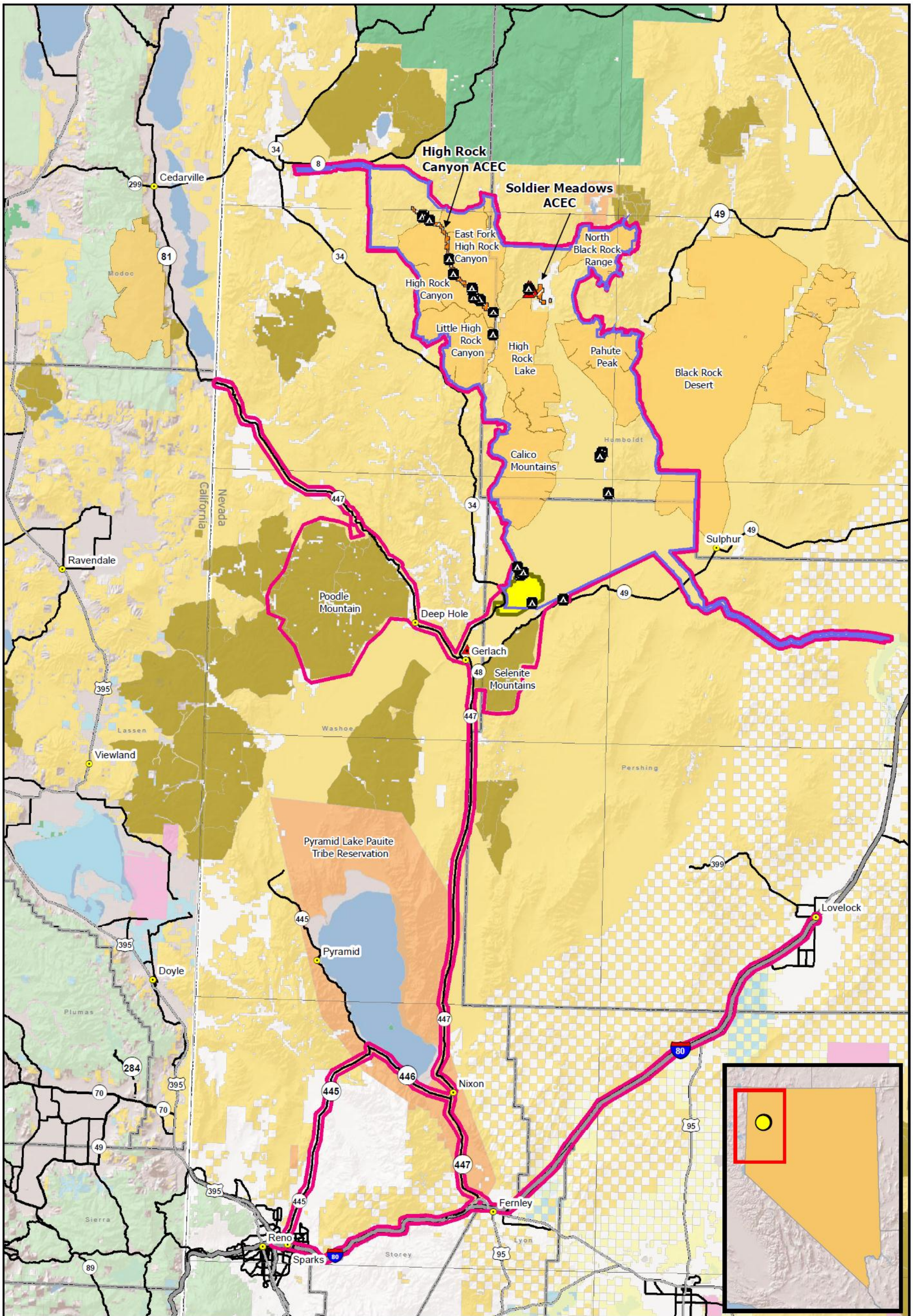
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 3-1
Air Quality, Public Health & Safety, and Wild Horses & Burros Affected Environment



USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

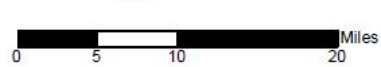
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|--|----------------------------|---------------------------|---|
| Towns/Cities | ACECs | Bureau of Land Management | US Fish and Wildlife Service Wilderness |
| Camp Sites | BLM Wilderness Study Area | Tribal Land | National Park Service |
| Hot Springs | BLM Wilderness Area | Bureau of Reclamation | State |
| Project Boundary - Public Closure Area | National Conservation Area | Department of Defense | Private |
| Assessment Area | County lines | Forest Service | Unclassified |

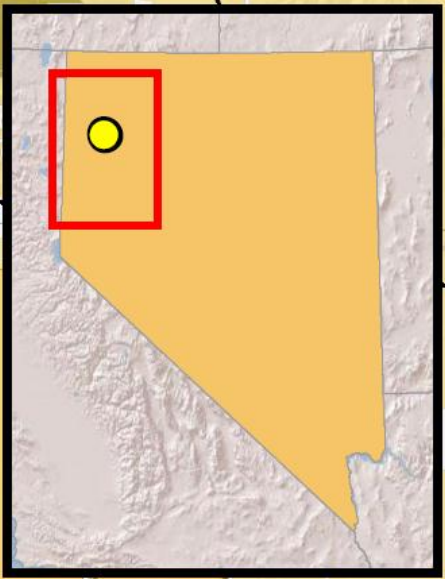
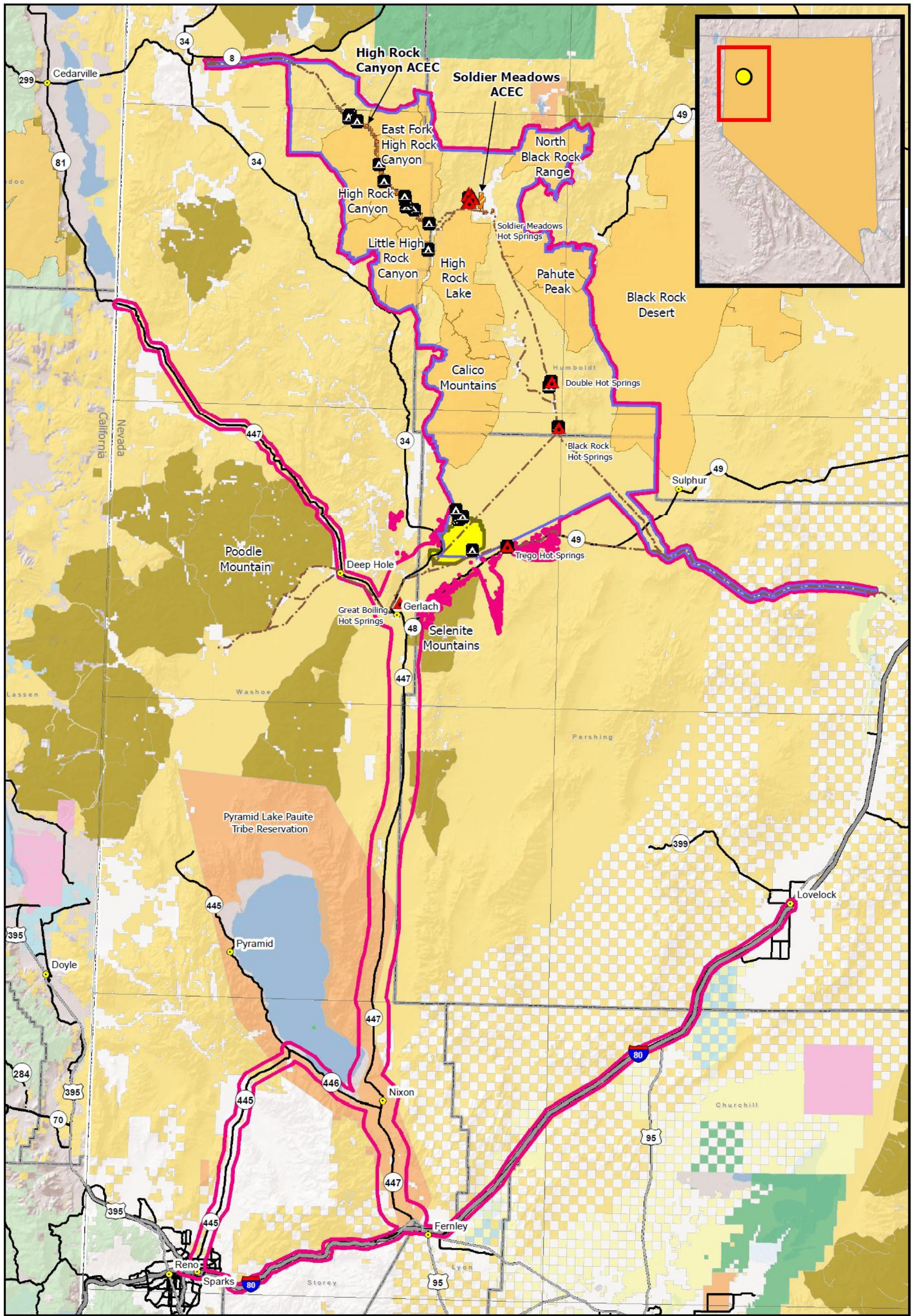
Figure 3-2
ACEC, Recreation, Wilderness, and Wilderness Study Area Affected Environment



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiwa Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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- | | | |
|--|----------------------------|---|
| Towns/Cities | Assessment Area | US Fish and Wildlife Service Wilderness |
| Camp Sites | ACECs | National Park Service |
| Hot Springs | National Conservation Area | State |
| Historic Trails | BLM Wilderness Study Area | Private |
| Project Boundary - Public Closure Area | BLM Wilderness Area | Unclassified |
| | Bureau of Land Management | |
| | Tribal Land | |
| | Bureau of Reclamation | |
| | Department of Defense | |
| | Forest Service | |

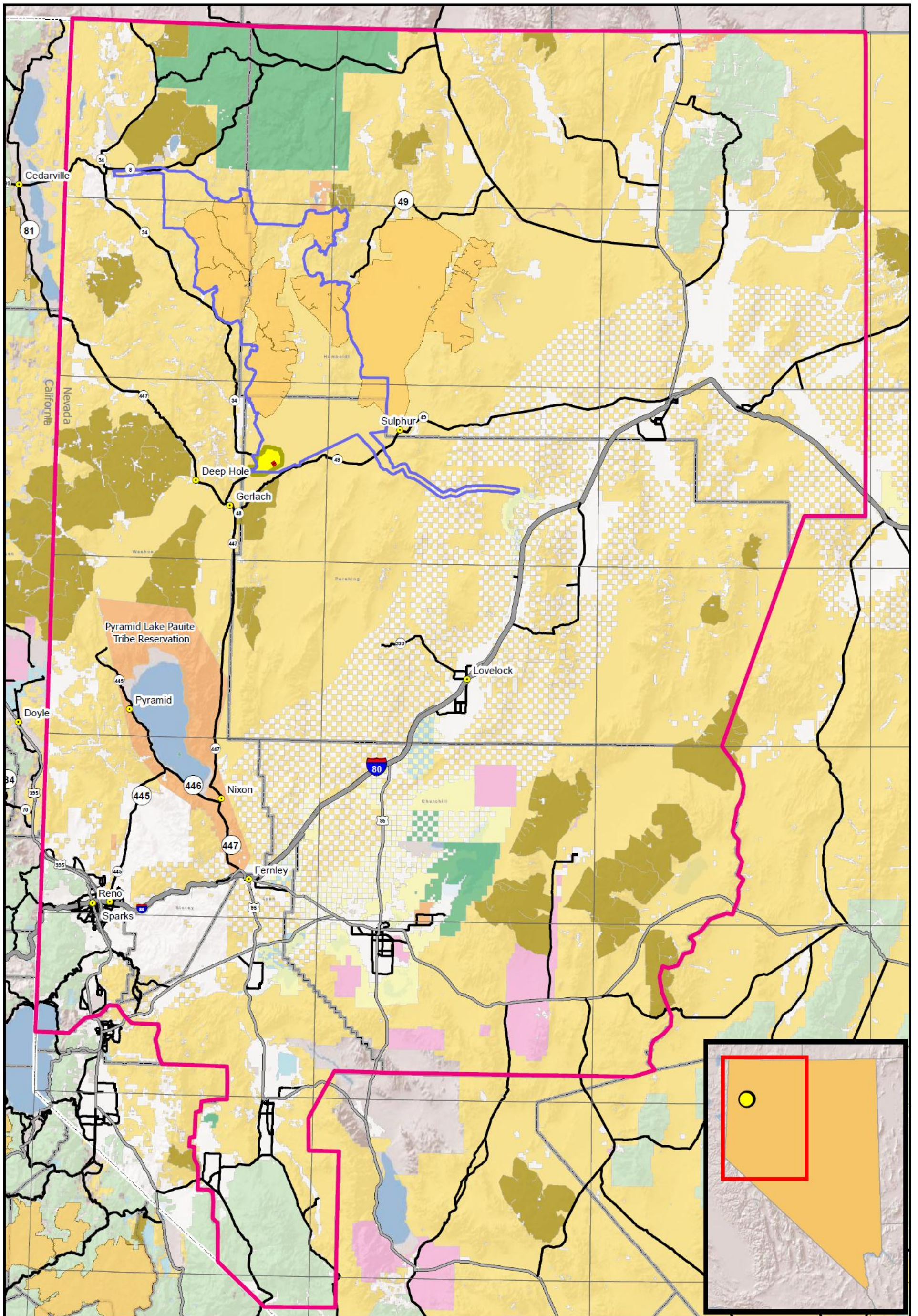
Figure 3-3
Cultural and Biological Resources Affected Environment



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Garlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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- Towns/Cities
- Landing Strip
- Assessment Area
- Project Boundary - Public Closure Area
- National Conservation Area
- BLM Wilderness Study Area
- BLM Wilderness Area
- Bureau of Land Management
- Tribal Land
- Bureau of Reclamation
- US Fish and Wildlife Service Wilderness
- Forest Service
- National Park Service
- Department of Defense
- Department of Energy
- State
- Private
- Unclassified
- County lines



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, Quinn River Valley, Bull Run Mountains, High Rock Canyon, Jackson Mountains, Osgood Mountains, Tuscarora, Gerlach, Eugene Mountains, Winnemucca, Battle Mountain, Kumiva Peak, Lovelock, Reno, Fish Creek Mountain, Crescent Valley, Reno, Carson Sink, Edwards Creek Valley, Simpson Park Mountain, Carson City, Fallon, Smith Creek Valley, Summit Mountain, Smith Valley, Walker Lake, Lone Valley, Mount Jefferson, Bridgeport, Excelsior Mountain, Tonopah, Warm Springs

Figure 3-4
Economics, Social Values and Environmental Justice Affected Environment

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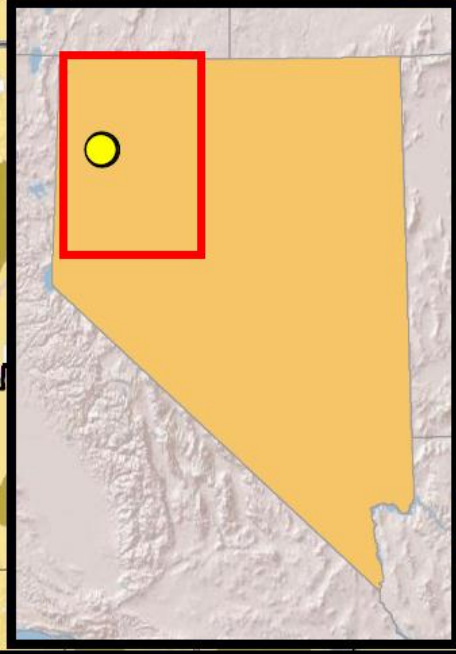
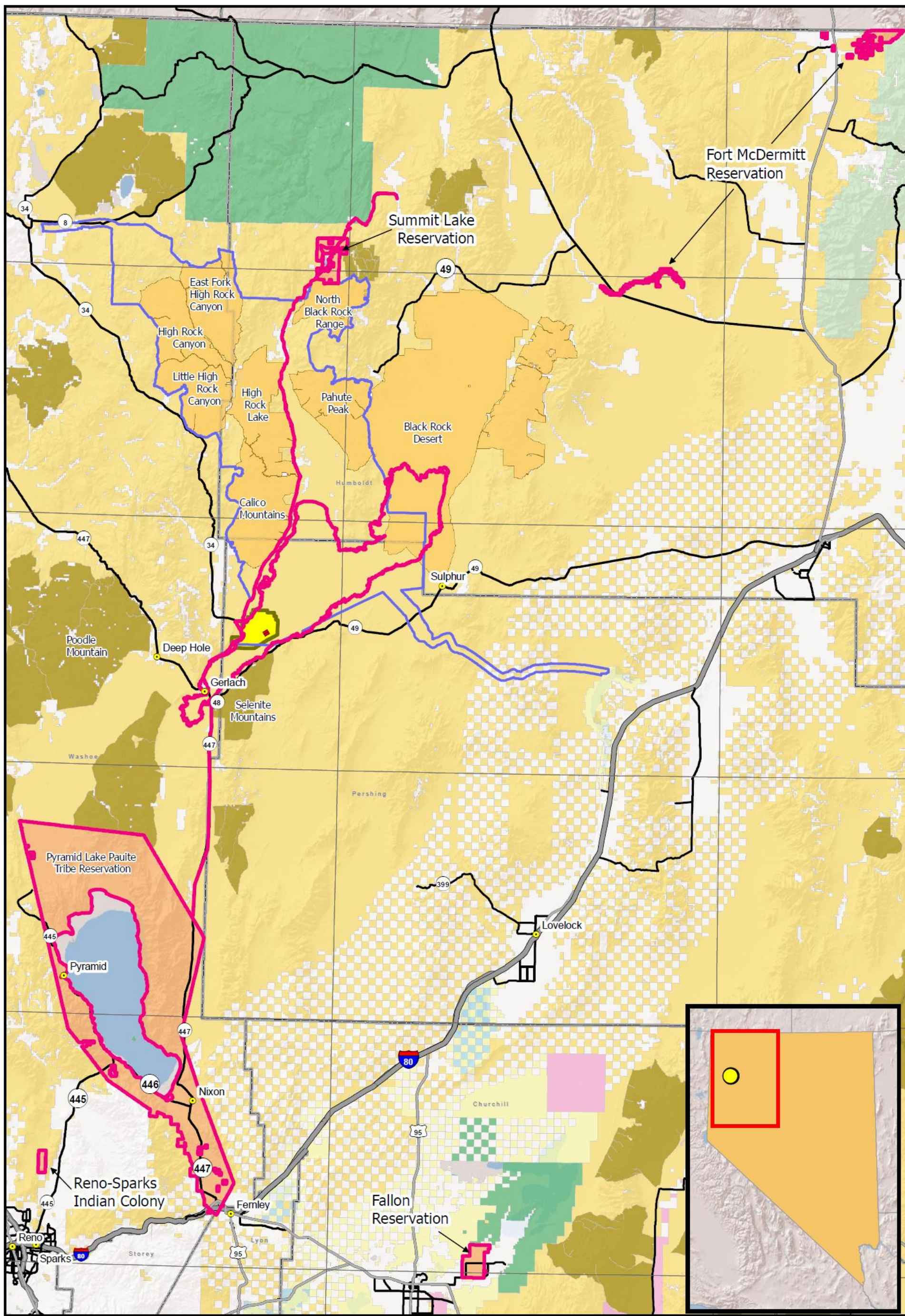


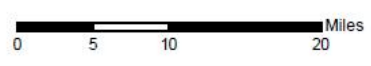
Figure 3-5
Native American
Religious Concerns
Affected Environment

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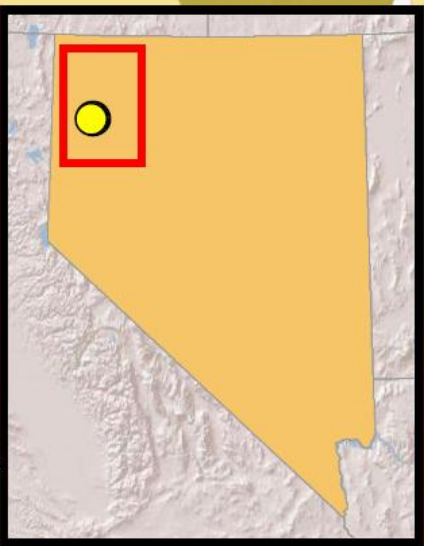
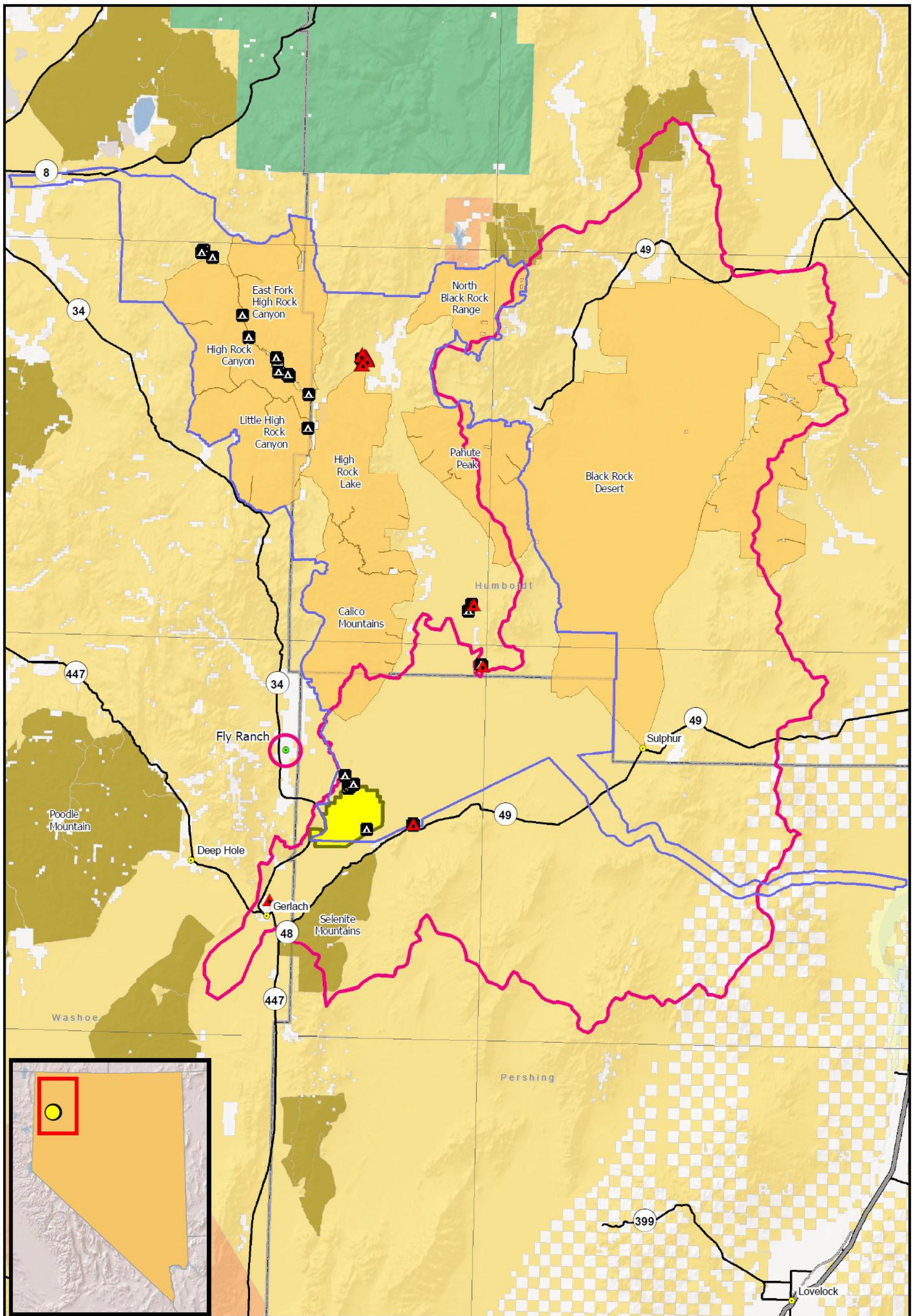
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|--|---------------------------|---|--------------|
| Towns/Cities | BLM Wilderness Study Area | US Fish and Wildlife Service Wilderness | State |
| Landing Strip | BLM Wilderness Area | Forest Service | Private |
| Assessment Area | Bureau of Land Management | National Park Service | Unclassified |
| Project Boundary - Public Closure Area | Tribal Land | Department of Defense | County lines |
| National Conservation Area | Bureau of Reclamation | Department of Energy | |

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon



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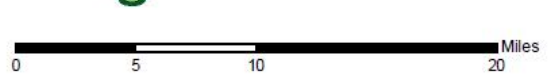
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- Towns/Cities
- Camp Sites
- Hot Springs
- Project Boundary - Public Closure Area
- Assessment Area

- National Conservation Area
- BLM Wilderness Study Area
- BLM Wilderness Area
- County lines

- Land Ownership**
- Bureau of Land Management
 - Bureau of Reclamation
 - Private
 - Tribal Land
 - US Fish and Wildlife Service Wilderness

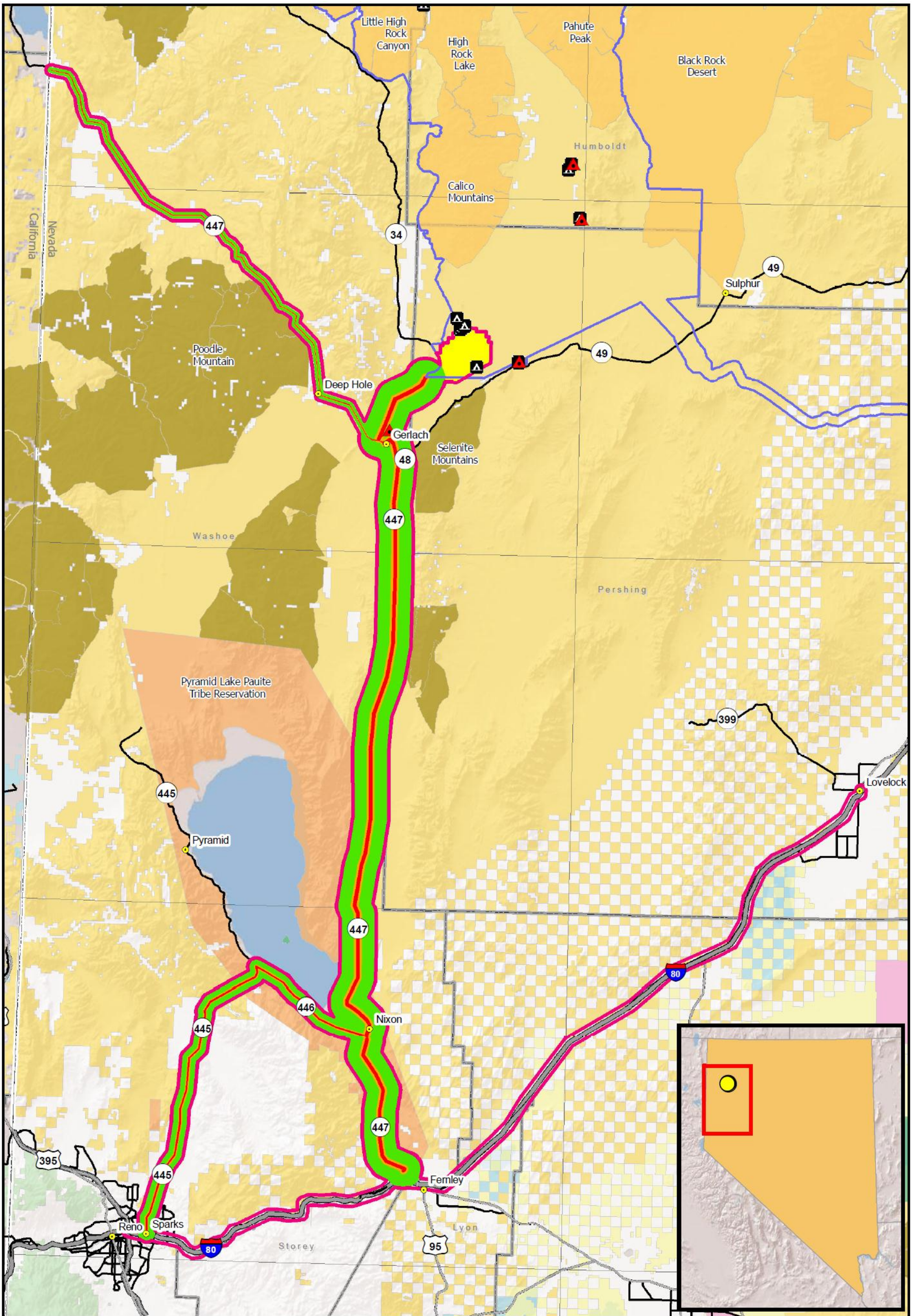
Figure 3-6
Water Quality
Affected Environment



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock

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Noise Levels

- █ >60 Decibels
- █ 55 - 60 Decibels
- █ 45 - 55 Decibels

- Towns/Cities
- Camp Sites
- ▲ Hot Springs
- Project Boundary - Public Closure Area
- Assessment Area

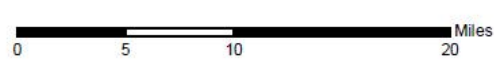
- BLM Wilderness Study Area
- BLM Wilderness Area
- National Conservation Area
- County lines

Land Ownership

- Bureau of Land Management
- Tribal Land
- Bureau of Reclamation
- Department of Defense
- Department of Energy

- US Fish and Wildlife Service Wilderness
- Forest Service
- National Park Service
- NVST
- Private

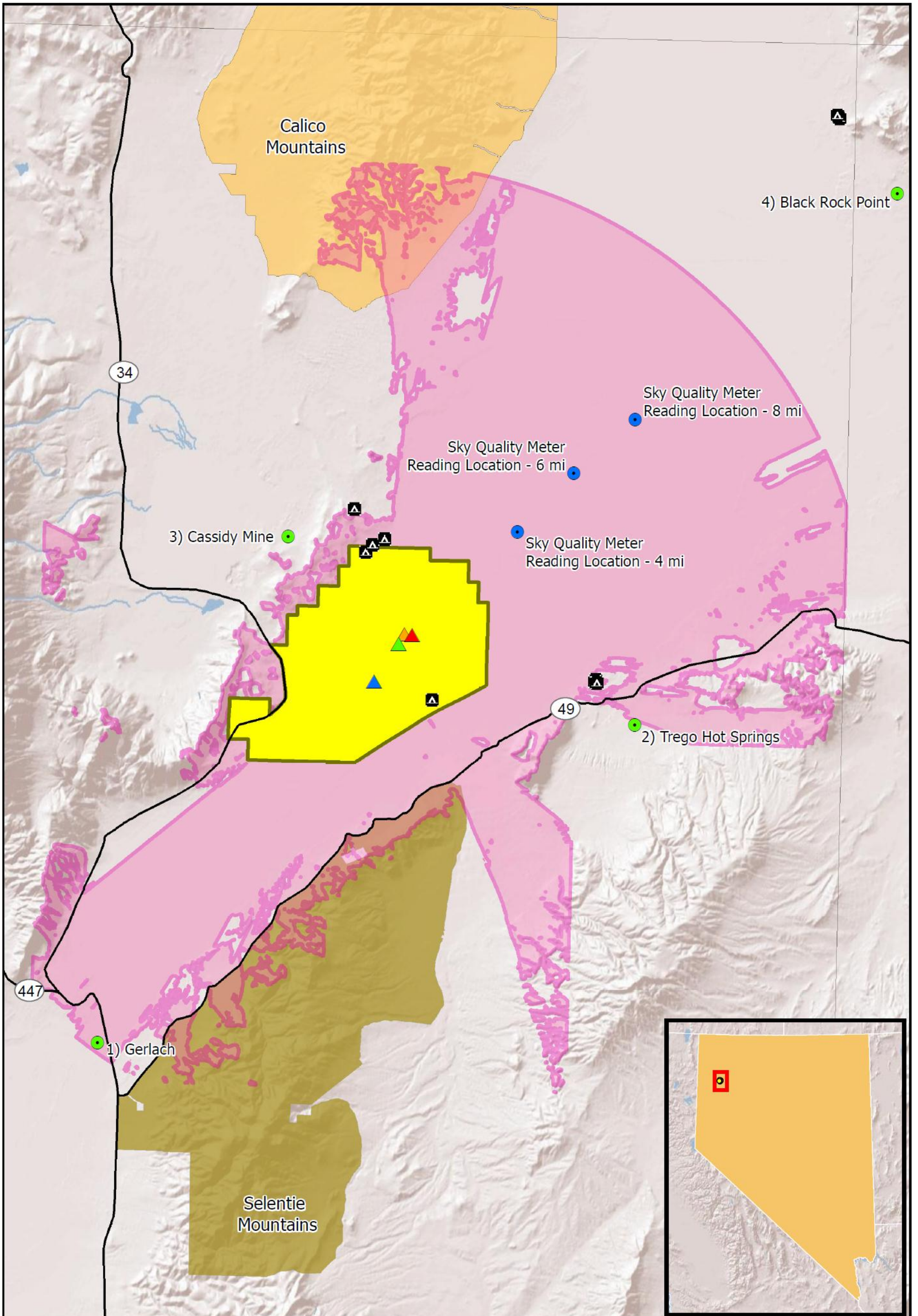
Figure 3-7
Noise Affected Environment



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USGS Quad Names: High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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- KOP
- Sky Quality Meter Reading Locations
- Project Boundary - Public Closure Area
- Main Location Viewshed - 12 Mile Buffer
- ▲ 2011 Main Location
- ▲ 2010 Main Location
- ▲ 2008 Main Location
- ▲ 2006 Main Location
- BLM Wilderness Study Area
- BLM Wilderness Area
- ▲ Camp Sites

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

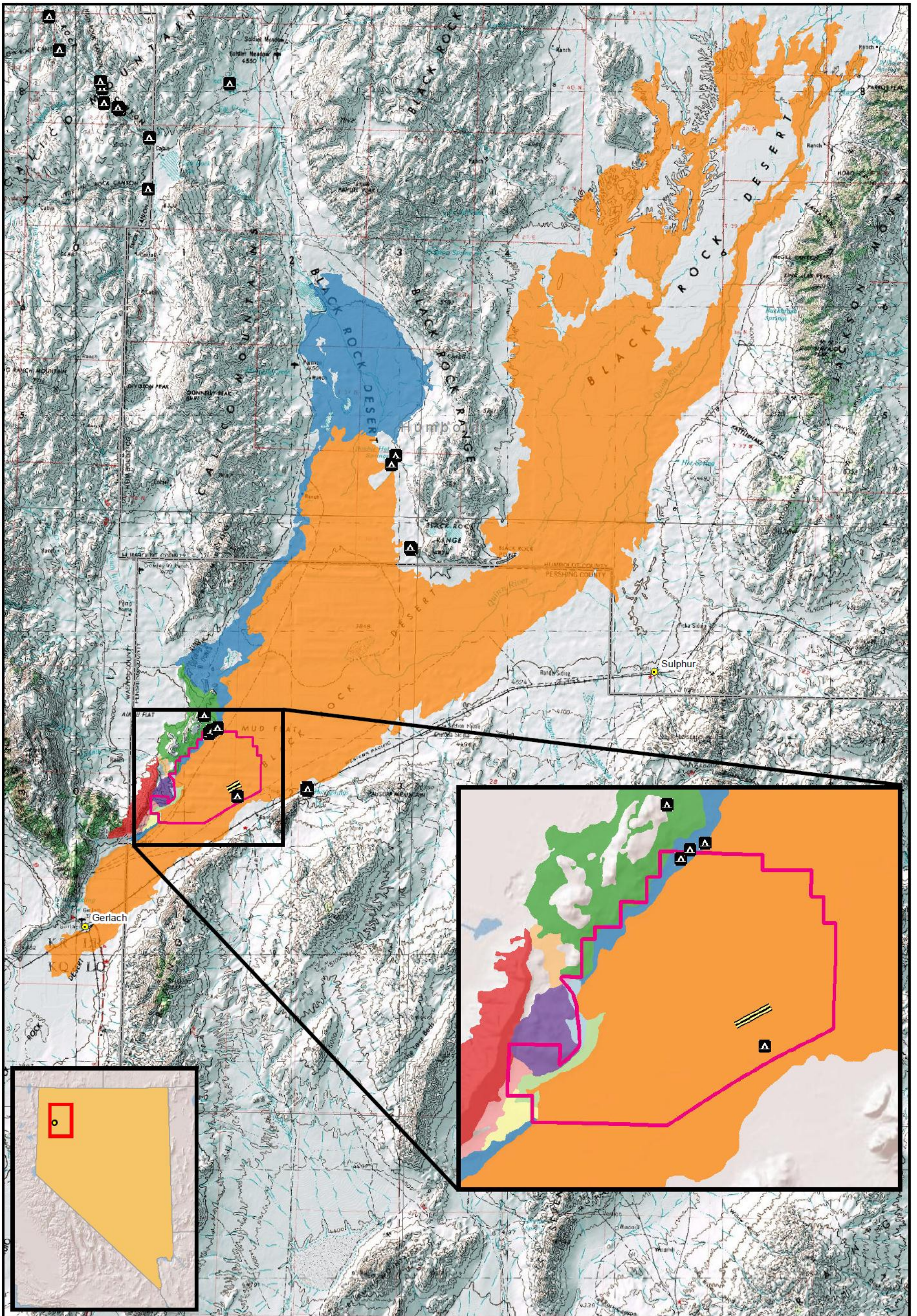
USGS Quad Names: High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains.

Figure 3-8
Visual Resources
Affected Environment

0 1 2 4 Miles



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- Project Boundary and Assessment Area
- Landing Strip
- Camp Sites

Soil Types

- Playas
- Isolve-Ragtown Association
- Sloclave-Arclay-Rock Outcrop Association
- Toulon-Appian-Bluewing Association
- Theon-Grumbler-Rubble Land Association
- Mazuma-Trocken Association
- Coldent-Isolve-Swingler Association
- Mazuma-Ragtown Association

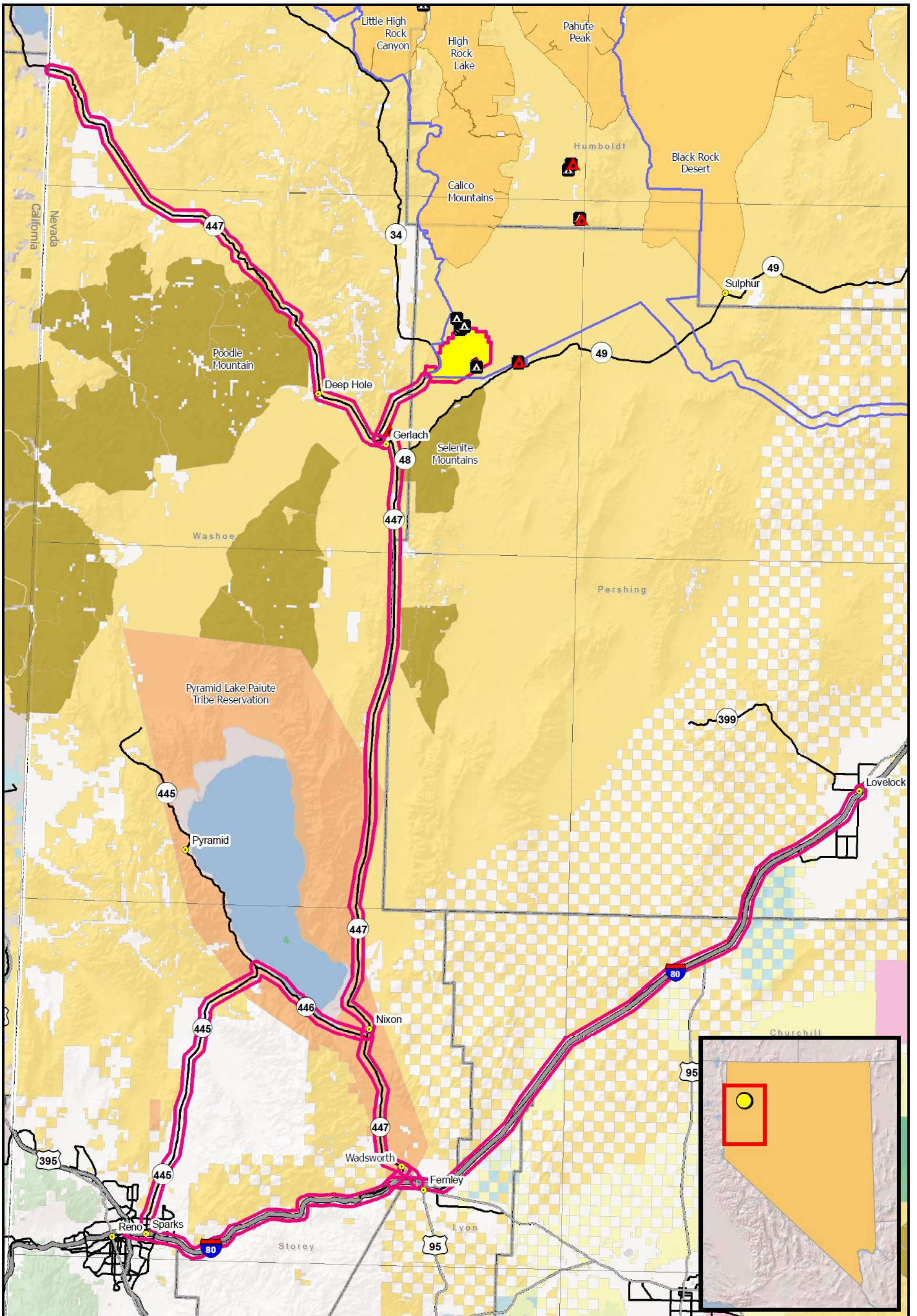
- Mazuma Silt Loam, Moderately Saline-Sodic, 0 to 2 Percent Slopes
- Badland
- Shawave-Slipback-Granshaw Association

Figure 3-9
Soils Affected Environment

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: Vya, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock

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| ● Towns/Cities | ■ BLM Wilderness Study Area | ■ Bureau of Land Management | ■ US Fish and Wildlife Service Wilderness |
| ▲ Camp Sites | ■ BLM Wilderness Area | ■ Tribal Land | ■ National Park Service |
| ▲ Hot Springs | ■ National Conservation Area | ■ Bureau of Reclamation | ■ State |
| ■ Project Boundary - Public Closure Area | ■ County lines | ■ Department of Defense | ■ Private |
| ■ Assessment Area | | ■ Forest Service | ■ Unclassified |



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: High Rock Canyon Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

Figure 3-10
Transportation and Waste Affected Environment

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4 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

The direct and indirect effects to affected resources caused by implementation of the 58,000 to 70,000-Person Maximum Alternative (Proposed Action), 50,000-Person Maximum Alternative, and the No Action Alternative are analyzed in this chapter. Cumulative impacts are discussed separately in Chapter 5.

Supplemental Authorities

4.2 Air Quality

Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Air Quality*, January 2012, prepared by Aspen Environmental Group, incorporated by reference herein. The assessment area for the analysis of air quality is the air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer), as shown in Figure 3-1.

4.2.1 **Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)**

The Proposed Action would cause emissions of criteria air pollutants and greenhouse gases (GHG) in the assessment area due to activity within the Black Rock City (BRC) Public Closure Area during the event itself and by transportation to and from the event. The criteria pollutants are nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), inhalable particulate matter less than 10 microns in diameter (PM₁₀), and fine particulate matter less than 2.5 microns in diameter (PM_{2.5}), and the GHG emissions are primarily carbon dioxide (CO₂). The Proposed Action would involve use of mobile and portable sources including generators, open burning, and an increase in fugitive dust emissions. These different sources would emit pollutants over a vast area rather than from any single location. Emissions related to fuel use for transportation would occur across all roadway segments and highways used as transportation routes in the assessment area. Within an active use area of about 3,200 acres inside the Public Closure Area, combustion-related emissions would be scattered from different types of mobile, portable, and “non-point” sources, such as open burning. Fugitive dust emissions would be caused by the playa surface being disturbed by the various activities of the event, which would physically transform and break up the crust to increase the portion of loose, dry particles exposed to potential wind erosion.

Emission rates for the Proposed Action are estimated based on the initial year scenario of 58,000 participants (Table 4.2-1 and Table 4.2-2) and up to 70,000-person population (Table 4.2-3 and Table 4.2-4). These tables summarize a reasonable and conservative estimate of potential emissions that are from mobile or portable sources, open burning, and fugitive dust, which are difficult to quantify; therefore, broad assumptions must be made regarding the use or operation of the individual sources. These types of sources are generally exempt from permitting requirements established by local air management agencies.

Table 4.2-1. Emissions for 58,000 Participants, Criteria Air Pollutants (tons per annual event)

Emission Source	NOx	VOC	PM10	PM2.5	CO	SOx
On-Road Mobile – CA Vehicles	5.76	2.19	0.33	0.19	28.01	0.02
On-Road Mobile – Non-CA Vehicles	14.47	4.00	0.45	0.32	42.92	0.05
General Aviation	0.05	0.12	0.18	0.02	9.23	0.01
Non-Road and Portable Generators	22.39	3.23	0.96	0.93	150.82	0.35
Open Burning – Wood	2.32	5.10	10.49	8.99	107.91	0.62
Open Burning – Petroleum Products	0.04	0.09	0.00	0.00	0.24	0.00
Dust – Unpaved Roads	—	—	183.51	18.35	—	—
Dust – Open Area Wind Erosion	—	—	15.09	2.26	—	—
58,000 Participants – Total	45.04	14.72	211.01	31.08	339.13	1.05

Source: Aspen 2012.

Table 4.2-2. Emissions for 58,000 Participants, GHG (tons per annual event)

Emission Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
On-Road Mobile – CA Vehicles	2,350.6	0.125	0.091	2,381.3
On-Road Mobile – Non-CA Vehicles	4,577.8	0.113	0.077	4,604.2
General Aviation	48.8	0.041	0.001	49.8
Non-Road and Portable Generators	2,099.4	0.314	0.021	2,112.6
Open Burning – Wood	1,139.8	5.096	—	1,246.8
Open Burning – Petroleum Products	96.6	0.016	—	97.0
58,000 Participants – Total	10,313.2	5.704	0.190	10,491.8

Note: CO₂e is the overall global warming potential of GHG emissions (carbon dioxide equivalents), using global warming potential multipliers of 1 to CO₂, 21 to CH₄, and 310 to N₂O.

Source: Aspen 2012.

Table 4.2-3. Emissions for 70,000 Participants, Criteria Air Pollutants (tons per annual event)

Emission Source	NOx	VOC	PM10	PM2.5	CO	SOx
On-Road Mobile – CA Vehicles	6.95	2.64	0.40	0.23	33.80	0.03
On-Road Mobile – Non-CA Vehicles	17.46	4.82	0.55	0.39	51.79	0.06
General Aviation	0.06	0.14	0.21	0.03	11.14	0.01
Non-Road and Portable Generators	27.02	3.90	1.16	1.12	182.03	0.42
Open Burning – Wood	2.80	6.15	12.66	10.85	130.24	0.75
Open Burning – Petroleum Products	0.05	0.11	0.00	0.00	0.29	0.00
Dust – Unpaved Roads	—	—	221.47	22.15	—	—
Dust – Open Area Wind Erosion	—	—	15.09	2.26	—	—
70,000 Participants – Total	54.35	17.76	251.55	37.04	409.30	1.27

Source: Aspen 2012.

Table 4.2-4. Emissions for 70,000 Participants, GHG (tons per annual event)

Emission Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
On-Road Mobile – CA Vehicles	2,836.9	0.151	0.109	2,874.0
On-Road Mobile – Non-CA Vehicles	5,525.0	0.136	0.093	5,556.8
General Aviation	58.9	0.050	0.001	60.2
Non-Road and Portable Generators	2,533.8	0.378	0.026	2,549.7
Open Burning – Wood	1,375.7	6.150	—	1,504.8
Open Burning – Petroleum Products	116.6	0.019	—	117.0
70,000 Participants – Total	12,446.9	6.884	0.229	12,662.5

Note: CO₂e is the overall global warming potential of GHG emissions (carbon dioxide equivalents), using global warming potential multipliers of 1 to CO₂, 21 to CH₄, and 310 to N₂O.

Source: Aspen 2012.

Emissions related to the Proposed Action would represent 10 to 15 percent of the baseline inventory for Pershing County and a much lower fraction of emissions within the four counties of the air quality assessment area. The mobile source emissions would be distributed along roadway segments and highways throughout the assessment area. Emissions from portable sources, open burning, and increased fugitive dust would be from sources dispersed within an active use area of 3,200 acres. Sources inside the active use event area would be separated from public access because the active use area would have a buffer to the boundary of the larger Public Closure Area (14,153 acres for 2011). Localized and short-term increases in pollutant concentrations would occur and contribute to air quality impacts near the sources. The impacts would last as long as the permit period and would cease upon completion of event clean-up. All emissions related to the Proposed Action would be limited to the period of the event.

The impacts of emissions from mobile sources (on-road and aircraft) would be distributed throughout the assessment area and would not be localized. The incremental contributions of mobile source emissions would be small relative to the baseline emission inventory and not likely to cause or substantially contribute to any violation of an ambient air quality standard.

Sources within the Public Closure Area would result in elevated localized concentrations of combustion-related pollutants (including inhalable non-dust-related PM₁₀ and PM_{2.5}, NO_x, SO₂, and CO) and increased fugitive dust (PM₁₀ and PM_{2.5}). Combustion-related sources would occur sporadically during the days of the event and be dispersed within 3,200 acres of active use inside the larger Public Closure Area. Localized concentrations of combustion-related pollutants within the Public Closure Area would be higher for participants in close proximity to individual sources. These effects would be the result of participants' portable engines and generators and artists' open burning. The burning of objects or structures that contain plastics, synthetics, or materials that release toxic fumes would be discouraged by the BLM and BRC under the Proposed Action procedures in the 2012 Operating Plan (see Appendix 2), compliance inspections, and participant education.

The playa surface would be disturbed by the various activities of the event, which would physically transform the crust to increase the portion of loose, dry particles exposed to wind erosion. Travel across the playa surface and daily disturbance of surface would create emissions

of fugitive dust. These emissions are considered to occur as a result of two basic mechanisms: travel on unpaved surfaces, and open area wind erosion.

Prevailing winds at Bluewind Mountain, located about 16 miles south-southeast of the playa are from the northwest and southeast but significant winds would be expected to come from all directions at certain times of the year (Adams and Sada 2010). Prevailing winds at Lovelock, located south-southeast of the playa, are from the south in August and from the northeast in September (WRCC 2012).

Travel on the unpaved playa surface would cause the majority of fugitive dust (PM10 and PM2.5) related to the event. Travel along the entry roads would be the primary source of dust. Projected emissions of approximately 237 tons of fugitive PM10 would be released from inside the Closure Area (14,153 acres for 2011) with a population of 70,000 people, resulting in a calculated PM10 emission rate of approximately 3.6 lb/day per acre (Aspen 2012). Dust caused by Proposed Action use of the playa surface would occur at an emission rate per acre comparable to that caused by natural high wind events on “barren” or “shrub-lands” in the assessment area (2.7 to 4.0 lb/day per acre), as found in a study for the Western Regional Air Partnership (ENVIRON 2006). Increased activity on the playa surface would increase the PM10 and PM2.5 emissions, which would lead to locally-increased concentrations of these pollutants, especially during high winds that may coincide with the event. The smaller particles (PM2.5) could be aloft for a very long time and distance, but the largest and most visible particles (over PM10) are likely to settle in and near the assessment area.

Potential effects would be minimized by aggressive dust abatement practices, including watering that would be implemented by the applicant as specified by the Proposed Action. The first wetting rains of the season, which generally occur in September or early October would stabilize the surface of the playa. With the exception of those roads authorized in advance by BLM, dust palliatives would not be used to control fugitive dust, and water without additives would be used for fugitive dust control within the City (see Appendix 2, Burning Man 2012 Operating Plan). In the event application of dust palliatives is deemed necessary, magnesium chloride dust palliative would be used only on roads approved in advance by the BLM (see discussion in Section 4.19.1).

Climate Change

Global climate change is influenced by anthropogenic GHG emissions such as those that would occur with the Proposed Action. Draft guidance from the CEQ (February 2010) provides practical tools for agency reporting of GHG, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent (MTCO_{2e}) annual emissions for a proposed action to trigger a quantitative analysis. Potential direct GHG emissions from fuel use during the event itself and by transportation to and from the event each year would be approximately 12,700 tons of CO_{2e} or less than half of the 25,000 MTCO_{2e} (27,558 tons) threshold to trigger a quantitative analysis.

Climate change effects are long-term, global, and cumulative in nature. The scale of emissions associated with the Proposed Action would be below the presumptive threshold for quantitative analysis, and effects on climate change are not further analyzed.

4.2.2 Alternative 2: 50,000-Person Maximum

The operations of this alternative would be identical to the Proposed Action except that under this alternative, there would be 13 to 29 percent fewer participants annually than under the Proposed Action. The emissions results for the 50,000-Person Maximum Alternative are shown in Table 4.2-5 for criteria air pollutants and Table 4.2-6 for GHG.

Table 4.2-5. Emissions for 50,000-Person Maximum Alternative, Criteria Air Pollutants (tons)

Emission Source	NOx	VOC	PM10	PM2.5	CO	SOx
On-Road Mobile – CA Vehicles	4.96	1.89	0.29	0.17	24.14	0.02
On-Road Mobile – Non-CA Vehicles	12.47	3.45	0.39	0.28	37.00	0.04
General Aviation	0.04	0.10	0.15	0.02	7.96	0.01
Non-Road and Portable Generators	19.30	2.79	0.83	0.80	130.02	0.30
Open Burning – Wood	2.00	4.39	9.04	7.75	93.03	0.54
Open Burning – Petroleum Products	0.04	0.08	0.00	0.00	0.20	0.00
Dust – Unpaved Roads	—	—	158.19	15.82	—	—
Dust – Open Area Wind Erosion	—	—	15.09	2.26	—	—
50,000-Person Alternative – Total	38.82	12.69	183.99	27.10	292.35	0.91

Source: Aspen 2012.

Table 4.2-6. Emissions for 50,000-Person Maximum Alternative, GHG (tons)

Emission Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
On-Road Mobile – CA Vehicles	2,026.4	0.108	0.078	2,052.9
On-Road Mobile – Non-CA Vehicles	3,946.4	0.097	0.067	3,969.2
General Aviation	42.1	0.036	0.001	43.0
Non-Road and Portable Generators	1,809.9	0.270	0.018	1,821.2
Open Burning – Wood	982.6	4.393	—	1,074.9
Open Burning – Petroleum Products	83.3	0.013	—	83.6
50,000-Person Alternative – Total	8,890.7	4.917	0.164	9,044.7

Note: CO₂e is the overall global warming potential of GHG emissions (carbon dioxide equivalents), using global warming potential multipliers of 1 to CO₂, 21 to CH₄, and 310 to N₂O.

Source: Aspen 2012.

Similar to the Proposed Action, the 50,000-Person Maximum Alternative would not be a major stationary source. All emissions related to the event would be limited to the permit period. Localized concentrations of combustion-related pollutants within the alternative event area would be higher for participants in close proximity to individual sources. These effects would be the result of participants’ portable engines and generators and artists’ open burning.

As with the Proposed Action, use of the playa surface would lead to locally-increased concentrations of PM₁₀ and PM_{2.5} within the alternative event area and surrounding activity on the entry roads due to activity on the playa surface creating fugitive dust emissions. Dust abatement practices would be implemented as are described under the Proposed Action.

4.2.3 Alternative 3: No Action Alternative

If a large, informal gathering occurred at the playa or a series of small unauthorized events occurred under the No Action Alternative, the events could contribute to ambient air quality impacts. Although the unauthorized events would occur without Operating Plan procedures for dust control or stipulations to control certain types of art burns, they would still be subject to BLM regulations regarding use of federally-administered lands. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, Operating Plan procedures would likely be required due to the size of the event.

4.3 Areas of Critical Environmental Concern (ACECs)

The assessment area for the analysis of ACECs is the Public Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with a 0.5-mile radius buffer), High Rock Canyon and Soldier Meadows ACECs and event travel routes (with a 0.5-mile buffer), as shown in Figure 3-2.

4.3.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

High Rock Canyon ACEC and Soldier Meadow ACEC are within the impact assessment area for the Proposed Action. The High Rock Canyon ACEC is 33.8 miles from the Public Closure Area, and the Soldier Meadow ACEC is 35.4 miles away. Because of the distance between the ACECs and the Public Closure Area and because the vast majority of traffic for the Proposed Action would come from the south and would not travel near the ACECs, the Proposed Action would not directly affect the biological and cultural resources in the High Rock Canyon or Soldier Meadow ACEC.

There could be some indirect impacts on the ACECs due to increased use by visitors introduced to the area by the Burning Man event. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,480 to 4,200 visitors per year. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man (McRae 2011). With event populations of 58,000 to 70,000 people, this would result in an estimated 11,600 to 14,000 visitors to parks and recreational areas when travelling to and from the event.

Although not all of these people would visit ACECs, a small increase in visitors would represent a large relative change. Potential effects on biological resources in the wilderness included in the impact assessment area on Figure 3-2 are addressed in more detail in Sections 4.6 (Invasive, Nonnative Species), 4.9 (Threatened and Endangered Species), 4.12 (Wetlands and Riparian Zones), 4.20 (Special-status Species), 4.22 (Vegetation), and 4.26 (Wildlife). Potential effects on cultural resources are addressed in more detail in Section 4.4 (Cultural Resources).

Recreational use of the ACECs could be affected by the Burning Man event. Public access to the ACECs would be retained during the event; however, event-related traffic congestion could

inconvenience visitors. Effects would be greatest from the start of setup to the end of clean-up, but increased traffic volume would also be expected before, after and throughout the eight-day event period and would affect a small number of potential visitors. In addition, as discussed in Section 2.1.4 (Event Security and Public Safety), Soldier Meadows would be patrolled on at least a daily basis during the Burning Man eight-day event and immediately before and afterwards. Patrols would minimize potential indirect impacts to sensitive species from increased recreational use of Soldier Meadows by Burning Man participants.

4.3.2 Alternative 2: 50,000-Person Maximum

The event under this alternative would occur in the same location as with the Proposed Action, but the Special Use Permit issued to the event would allow fewer participants.

Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,000 visitors over the course of the year. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man, which would result in an estimated 10,000 visitors to parks and recreational areas nearby to the event routes under this alternative (McRae 2011). The types of impacts would be the same as those described for the Proposed Action.

4.3.3 Alternative 3: No Action Alternative

If a large, informal gathering on the playa or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to ACECs would depend on whether the substitute event was located near any ACECs.

4.4 Cultural Resources

The assessment area for the analysis of cultural resources is the Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA and travel routes (with 0.5-mile buffer), as shown in Figure 3-2.

4.4.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Under the Proposed Action direct impacts to cultural resources within the Public Closure Area are not anticipated. All prehistoric sites located within the area of assessment, which are eligible for the National Register of Historic Places (NRHP) or unevaluated, and therefore assumed eligible, would be avoided. One segment of the California National Historic Trail, Nobles Route, and a portion of Fremont's Exploration Route pass very near or within the Public Closure Area. No extant vestiges of these trails remain within the Public Closure Area. The earth moving associated with previous events has not exposed buried historic trail artifacts. Therefore there is a low probability that future events ranging from 58,000 to 70,000 participants would result in impacts to any as-yet-unidentified historic resources.

The Public Closure Area is entirely surrounded by segments of the California National Historic Trail (Applegate-Lassen and Nobles) and a segment of Fremont's Exploration Route. One purpose of the creation of the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area (NCA) was the protection of the viewshed of the Applegate-Lassen Trail. The presence of 58,000 to 70,000 people, vehicles, and encampments within the Closure Area would be viewable from 37.4 miles of Nobles Route (17.70 miles of the 1852 route and 16.26 miles of the 1856 route). Visual analysis indicates that the Applegate-Lassen Trail and Fremont's Exploration Route would not be impacted. Impacts to setting and feeling are expected for approximately eight weeks in August to October increasing during the eight days of Burning Man event. During this time visitors interested in traveling along the emigrant trails would be unable to experience the historic setting along certain portions of the trails. Visitors would be able to access other portions of the trails where the setting and feeling would be unaffected. The Proposed Action would affect to the integrity of the setting and feeling of one NRHP eligible segment of a National Historic Trail during the permit period and would cease after event clean-up. Since these effects are temporary they do not need to be mitigated.

The Proposed Action has the potential to indirectly impact the many eligible and unevaluated cultural resources present at Black Rock Hot Spring, Double Hot Spring, Great Boiling Hot Spring (Gerlach, NV), Soldier (Mud) Meadows, and Trego Hot Spring. The potential exists for Burning Man participants and volunteers to visit these springs before, during, or after the event. Increased visitation of these springs may result in indirect impacts such as visitors collecting artifacts or inadvertently disturbing cultural sites. The Proposed Action Operating Plan would encourage participants to stay at the event by charging a re-entry fee, station a hot spring "steward" at each of the nearby BLM-managed hot springs to discourage participant use, and detail public education efforts during the event.

4.4.2 Alternative 2: 50,000-Person Maximum

Under the 50,000-Person Maximum Alternative, direct impacts to cultural resources within the Public Closure Area are not anticipated. Similar to the Proposed Action, this alternative would affect the integrity of the setting and feeling of an NRHP eligible segment of a National Historic Trail (Nobles Route) during the permit period, and primarily during the eight-day event itself. Under this alternative, there would be a chance of visitation to the hot springs, as described above. Regardless, effects to cultural resources would be reduced by procedures described for the Proposed Action.

4.4.3 Alternative 3: No Action Alternative

If a permit was not issued, it is anticipated that a large, informal gathering or several smaller unpermitted events could occur. This could lead to impacts to cultural resources within the proposed Public Closure Area, Black Rock Hot Springs, Double Hot Springs, Great Boiling Hot Springs (Gerlach, NV), Soldier (Mud) Meadows, and Trego Hot Springs. Cultural resources at the five springs would be particularly vulnerable without the operating procedures under the Proposed Action, such as stationing a spring "steward" at each location. BLM regulations would remain in effect even if the event was not officially permitted and stipulated, including regulations at the five springs. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of

BLM Winnemucca District managed lands, impacts to cultural resources would be location specific. Operating Plan procedures would likely be required to protect any potential sensitive resources due to the size of the event.

4.5 Environmental Justice

Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein. The assessment area for the analysis of environmental justice is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties.

4.5.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

As shown in Section 3.5 (Environmental Justice), Table 4.5-1, both the 2000 and 2010 Census show the Pyramid Lake Paiute reservation, including Nixon, Sutcliffe, and Wadsworth, have minority populations of well over 50 percent, which is the threshold for identification of minority populations under the CEQ's Environmental Justice Guidance Under the National Environmental Policy Act. None of the jurisdictions in the assessment area had low-income populations greater than 50 percent or more than the general population in 2000 or 2010.

Due to the high minority percentage in the Pyramid Lake Paiute reservation, Nixon, Sutcliffe, and Wadsworth, and the proximity of populated areas to travel routes for the Burning Man event, these jurisdictions can be identified as high-minority populations without further examination of the Census tracts or block groups along the travel routes.

Identification of high-minority or low-income populations alone does not constitute an environmental justice impact. The population of the Proposed Action may result in effects to the high-minority populations in Nixon, Sutcliffe, Wadsworth, and the Pyramid Lake Paiute reservation associated with increased traffic and trash. These impacts are discussed in Section 4.8 (Native American Religious Concerns), Section 4.10 (Wastes, Hazardous or Solid), and Section 4.21 (Transportation and Traffic). If unmitigated these impacts could be considered as adverse and disproportional impacts to environmental justice communities.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Traffic Signage and Control in Response to Native American Concerns recommended mitigation in Section 4.8 (Native American Religious Concerns) should be implemented to reduce environmental justice impacts associated with traffic. Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) and Debris Removal in Response to Native American Concerns recommended mitigation in Section 4.8 (Native American Religious Concerns) should be implemented to reduce environmental justice impacts caused by trash.

4.5.2 Alternative 2: 50,000-Person Maximum

If the maximum population were limited to 50,000 people per year during the five-year period, effects would be similar to the 2011 Burning Man event and no effects would occur in the

assessment area. Limiting participation at the Black Rock Desert location may increase already-growing participation at regional events. Due to the distributed nature of the regional events, it is unlikely that increasing participation at any one event by a few hundred people would result in effects on high-minority or low-income populations. While Nixon, Sutcliffe, Wadsworth, and the Pyramid Lake Paiute Tribe reservation would remain identified as high-minority populations, no disproportionate unavoidable effects would occur that would result in environmental justice impacts.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Traffic Signage and Control in Response to Native American Concerns recommended mitigation in Section 4.8 (Native American Religious Concerns) should be implemented to reduce environmental justice impacts associated with traffic. Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) and Debris Removal in Response to Native American Concerns recommended mitigation in Section 4.8 (Native American Religious Concerns) should be implemented to reduce environmental justice impacts caused by trash.

4.5.3 Alternative 3: No Action Alternative

If a large, informal event or multiple smaller events were to occur in the Black Rock Desert, this would lessen the event's current effects on minority populations due to fewer participants since participants would still be subject to BLM regulations. If a substitute event were held at a different location off of BLM Winnemucca District managed lands, the effects to minority and low income populations in the assessment area would be reduced. As described above, all effects would occur instead to any minority and low income populations at the new location.

4.6 Invasive, Nonnative Species

The assessment area for the invasive, nonnative species analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.6.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The highly alkaline playa is composed of silt and clay textured sediments, and does not support vegetation, including the establishment of weeds. Salt-desert shrub, salt-grass, and sagebrush scrub, as well as springs and wet meadow areas, occur within the assessment area outside of the playa. The BLM has identified several regional noxious weeds with the most potential to be associated with these communities and disturbed areas/roads (BLM 2011); several of these weed species have been recorded adjacent to the southern part of the playa (USFS 2011; BLM 2009). Vehicle traffic and other modes of transportation could import or further spread invasive and non-native weeds to surrounding vegetation communities. Vehicles would be required to use the designated access road and would be contained within the Closure Area.

Enhanced growth of invasive weeds in areas proximate to playas has been correlated with the deposition of fugitive dust emanating from playas (Eckert et al. 1986). This is likely attributable to changes in the chemical composition and soil surface structure of depositional areas (Blank et al. 1999). As noted in Section 4.2.1 (Air Quality), offsite exposure to dust from use of the playa for the Proposed Action would occur at an emission rate comparable to dust caused by natural high wind events. Effects of dust would be minimized by dust abatement practices implemented by the applicant (see the 2012 Operating Plan).

4.6.2 Alternative 2: 50,000-Person Maximum

Under this alternative, there would be 64,000 one-way vehicle trips onto the playa to transport non-native plants into the Closure Area (Fehr & Peers 2012). Wind-blown fugitive dust from playa disturbance could enhance growth conditions for invasive weeds in offsite areas. Given the aggressive growth characteristics of invasive species, the potential to introduce or spread species would be similar to the types of impacts described for the Proposed Action.

4.6.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action although there would be fewer participant vehicles and other methods to transport and disperse non-native plants. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to vegetation would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.7 Migratory Birds

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the migratory birds analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.7.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The playa occasionally floods between March and June. When flooded the playa supports phytoplankton, bacteria, other microbes, and crustaceans that are a rich food resource for migrating birds. The Burning Man event would take place at the end of August, during the typically dry portion of the year. The Proposed Action would therefore not impact the use of the playa as a food source by migrating birds. The noise, dust, and the human presence in the City and increased activities, such as hiking, camping and illegal off-road vehicle use, could disrupt breeding behaviors and have effects on brooding and fledging success. Migratory birds and raptors within adjacent habitats in the assessment area may be indirectly impacted by temporarily elevated noise and light as well as potential for collision with vehicles. Bright lighting at night and excessive noise would temporarily disturb the resting, foraging, or mating activities of migratory birds and raptors. Also, night lighting could be disorienting to migratory birds and make birds and raptors more visible to predators. These effects would begin during event setup and would cease immediately upon completion of event clean-up. Vehicle collisions with birds do not pose a threat due to the rarity at which birds fly at the height of cars and the reduced speed of cars on the playa. The potential for collisions along access roads and highways surrounding the playa and extending into the assessment area is relatively higher than within the Public Closure Area due to increased vehicle speeds, but still considered low.

If disposed of improperly, trash could entangle or choke birds or pollute habitat. In addition to the design features of the Proposed Action that address post-event clean-up of litter along roads and debris inspections in the fall and spring after the event (see Appendix 1), implementation of recommended mitigation (below) would minimize impacts to migratory birds and their habitat from trash by reducing the potential for litter to entangle or choke migratory birds. The event has the potential to have residual impacts on branchiopod egg abundance (a food source for migrating birds) through oil drips from vehicles and ground disturbance. In a 2002 survey, one in six vehicles was observed to drip oil; most of those vehicles were in poor condition (Farschon 2003). Estimated oil drip projections for population scenarios under the Proposed Action are listed in Table 4.11-2 in Section 4.11 (Water Quality). Ground disturbance from the event to the playa surface is described in Section 4.19 (Soils and Playa Sediments). As a result of oil drips from vehicles and ground disturbance, the event has the potential to have residual impacts on branchiopod egg abundance (a food source for migrating birds). If selected for implementation, the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results. Procedures that are part of the Proposed Action would reduce potential impacts related to disturbance and erosion of the playa soils (see Appendix 2, Burning Man 2012 Operating Plan).

Recommended Mitigation to Reduce Effects: Debris Removal and Oil Drip Survey recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to reduce trash impacts and to ensure oil drips are not increasing on the playa.

Vehicle use and camping during the event could destabilize playa soils and disturb branchiopod eggs. Adams and Sada (2010) of the Desert Research Institute found a statistically significant difference of 50 percent fewer fairy shrimp eggs in camping areas following the event. They also found approximately 30 percent fewer fairy shrimp eggs along access roads; this indicates

that although access road use is indeed detrimental to fairy shrimp eggs, dust abatement on roads could have contributed to the lesser level of disturbance relative to camping areas. As discussed under Section 2.2.7 of this EA (Dust Abatement), the applicant would provide up to 14 water trucks per day for dust suppression, from one week prior to the commencement of the event through clean-up. During the final sweep phase of clean-up, the playa surface would be soaked by water trucks, which would increase the likelihood of creating a crust. Although the event (particularly the residential area) would still generate dust, the dust abatement measures would slightly reduce disturbance to branchiopod eggs and impacts up the food chain to migrating birds.

4.7.2 Alternative 2: 50,000-Person Maximum

Under this alternative, there would be fewer participants than under the Proposed Action, and as described for the Proposed Action, direct impacts to migrating birds from use of the playa lake would not occur. Indirect impacts during the permit period from elevated noise and light could displace and disrupt the nesting, roosting, or foraging activities of migratory birds and raptors proximate to the project area. Vehicles traveling to and from the site also would have the potential for collision with birds. If disposed of improperly, trash could entangle or choke birds or pollute habitat. In addition to the design features of the Proposed Action that address post-event clean-up of litter along roads and debris inspections in the fall and spring after the event (see Appendix 1), implementation of recommended mitigation (below) would minimize impacts to migratory birds and their habitat from trash by reducing the potential for litter to entangle or choke migratory birds.

Similar to the 2011 event, the applicant would provide up to 14 water trucks per day for dust suppression, from one week prior to the commencement of the event through clean-up, which would also help stabilize the playa surface. With approximately 64,000 total vehicle trips under the 50,000-Person Maximum Alternative, ground disturbance could result in residual impacts to branchiopod eggs. Additionally, estimated oil drip projections for this alternative are listed in Table 4.11-3 in Section 4.11 (Water Quality). If selected for implementation, the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects: Debris Removal and Oil Drip Survey recommended mitigation in Section 4.10 (Wastes, Hazardous or Solid) should be implemented to reduce trash impacts and to ensure oil drips are not increasing on the playa.

4.7.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same types of direct and indirect impacts described for the Proposed Action from use of the playa lake by migratory birds. There would be fewer participant vehicles but the vehicles would not be confined to a single access road and participants could spread beyond the 14,153-acre Public Closure Area, for less localized residual impacts to branchiopod eggs from oil drips and ground disturbance. There would be no formal oil drip or dust abatement measures, but BLM regulations would remain in effect. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event

occurred off of BLM Winnemucca District managed lands, impacts to migratory birds would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.8 Native American Religious Concerns

The assessment area for the analysis of Native American Religious Concerns is the Black Rock Desert Playa, Pyramid Lake reservation, Summit Lake reservation, Fort McDermitt Indian reservation, Fallon & Reno-Sparks reservation, and travel routes to the event (see Figure 3-5).

Northern Paiute religious beliefs have been preserved primarily as oral traditions from one generation to the next. As such, it has been poorly documented by anthropologists (Fowler 2002:169). Between bands, common themes ran through the religious traditions, but there were variations on beliefs. As noted by Hultkrantz (1986:631): “[...] there was no unitary religious system and no world view that provided a dogma of supernatural sanctions. Religious ideas and practices were diffused through the culture but did not constitute a set of defined beliefs, values, and rites.”

Common to all Northern Paiute bands is the idea of *puha* (Fowler 2002; Miller 1983). *Puha*, is roughly translated as power, and is a life force that is believed to be in all animate and inanimate objects. With this in mind, the Northern Paiutes consider the Earth, Moon, Sun, Stars, Fire, Wind, and Water animate, living beings. In Northern Paiute theology, the Earth and humans are considered to be the most powerful beings (Fowler 2002: 170).

The landscape, being part of the Earth, is a critical element in Northern Paiute theology. Sacred places are where power congregates and resides on the land. This power can emanate to humans. Specific features on the landscape can serve as links to the time in the past “When Animals Were People”; these features while not necessarily sacred, can give power to visitors and evoke memories of the past.

The concept of *puha*/power as a life force that is in all things requires traditional Northern Paiutes to show respect to animals, the land and plants. This respect is manifested by prayers, ceremonies, and the way in which the resource is used.

Consultation and informational meetings to discuss the proposed action were held with the Pyramid Lake Paiute Tribe throughout 2011. The Pyramid Lake Paiute Tribe did not voice any concerns related to spiritual beliefs, but did voice a number of concerns over traffic through the reservation, costs for emergency services and garbage problems. These concerns were reiterated during phone conferences that were held with the Pyramid Lake Paiute Tribe representatives on April 12, April 20 and April 27, 2012. These issues are discussed in Section 4.21 (Transportation and Traffic), Section 4.14 (Economics), Section 4.19 (Social Values) and Section 4.10 (Wastes, Hazardous or Solid). The tribal government has been in direct negotiations with Black Rock City, LLC.

Consultation was held with the Summit Lake Paiute Tribe on the Proposed Action on May 12, 2011. Concerns that they voiced in the consultation meeting were:

- The BLM should count vehicles in addition to people out on the playa. They feel there is the potential for too many vehicles being out on the playa, and many of the vehicles do not meet highway safety standards.
- Vehicles en-route to Burning Man use reservation roads. It is estimated 1,000 cars cross the reservation on their way to Burning Man.
- The locations where Burning Man is held, blocks straight-line access across the playa to the reservation. After Burning Man leaves, the playa is heavily rutted and makes travel across it difficult.

The tribe believes the land needs to “heal” after the Burning Man festival. The tribe suggested that the event should alternate between the playa and a more distant location, such as just north of Empire or Cedarville, or closer to the Burning Man Ranch near Hualapai.

4.8.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Through the consultation process, no sacred sites have been identified in the project area. An annual increase in the population of Black Rock City would cause more traffic to go through the Pyramid Lake and Summit Lake reservations. An increase in the population would also result in a potential increase in litter along the access roads and placed in dumpsters along the access roads within the Pyramid Lake Paiute Tribe reservation.

The increase participants could cause more rutting of the playa. The Proposed Action would require the applicant to restore the area and minimize impacts to the land/playa, debris, and tribal access (see Appendices 1 and 2). Section 2.4 (Alternatives Considered but Eliminated from Detailed Study) discusses alternative event locations on BLM and private land, and explains why these alternative locations have been eliminated from detailed study in this EA.

Recommended Mitigation to Reduce Effects (Debris Removal in Response to Native American Concerns): To reduce impacts to the Pyramid Lake Paiute reservation located along the access routes, the applicant should coordinate with the Pyramid Lake Paiute Tribe. The applicant should work with the Environmental Coordinator of the Pyramid Lake Tribe in developing the applicant’s plan to increase public awareness and educational campaigns about Leave No Trace® on tribal land, including for example, signage on roads, Public Service Announcements on BMIR, blog-posts, etc. Also, the applicant should continue to support and promote tribal enterprises that are setup to collect participant trash and recycling for a fee, which also helps with economic benefits of the Region.

Recommended Mitigation to Reduce Effects (Traffic Signage and Control in Response to Native American Concerns): In addition to the Traffic Management Plan provided in the *2012 Operating Plan*, the following traffic signage and control items are recommended to address Native American concerns:

- No more than 1,000 vehicles per hour should be released from Black Rock City during the exodus period to avoid deterioration of the external roadway system to an unacceptable level of service (LOS E or F).

- The applicant's Traffic Management Plan should be expanded to include more detail on ingress and egress. This plan would be approved by the authorized officer or the authorized officer's agent.
- Prior to the event, the applicant should coordinate with NDOT regarding the type of traffic control devices to be used in accordance with NDOT requirements.
- A speed limit trailer should be installed in Nixon to encourage drivers to maintain the legal speed limit. Speed limit trailers act as a traffic calming device by displaying a driver's speed as they pass by the trailer.
- A copy of all necessary permits for encroachment within Tribal, NDOT, and county right-of-ways for temporary traffic control measures (i.e. speed limit trailers, etc.) should be provided to BLM by BRC 30 days prior to the start of the event.
- Flaggers should be used at the intersection of SR-447 and SR-446 to allow left-hand turns within the Pyramid Lake Paiute reservation.
- The applicant and the Pyramid Lake Paiute Tribe should agree to enter into a formal agreement that covers arrangements for traffic control devices. A draft agreement should be submitted to the BLM prior to a decision being made.
- Traffic flow monitoring should occur at the intersection of SR-427 and SR-447. (This topic has come up during the course of Native American consultation and NDOT discussions).

4.8.2 Alternative 2: 50,000-Person Maximum

Through the consultation process, no sacred sites have been identified in the project area. Travel through the reservations to get to and from Burning Man is expected to stay at the current level. Similar to under the Proposed Action, design features (see Appendix 1) and procedures in the 2012 Operating Plan (see Appendix 2) would restore the area and minimize impacts to the land/playa and tribal access. An increase in the population would also result in a potential increase in litter along the access roads and placed in dumpsters along the access roads within the Pyramid Lake Paiute Tribe reservation.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control in Response to Native American Concerns recommended mitigation in Section 4.8.1 (Native American Religious Concerns) should be implemented to reduce Native American concerns associated with traffic. Debris Removal in Response to Native American Concerns recommended mitigation in Section 4.8.1 (Native American Religious Concerns) should be implemented to reduce Native American Religious concerns regarding trash.

Section 2.4 (Alternatives Considered but Eliminated from Detailed Study) discusses alternative event locations on BLM and private land, and explains why these alternative locations have been eliminated from detailed study in this EA.

4.8.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, impacts to the surface of the playa and effects on sacred sites would be similar. By not having the event on the playa, straight-line access across the playa to the reservation would not be officially blocked. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District-managed lands, impacts to Native American religious concerns would depend on the location of the substitute event.

4.9 Threatened and Endangered Species

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the threatened and endangered species analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.9.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

No threatened or endangered species listed under the Endangered Species Act occur on the playa; therefore, direct impacts would not occur. The desert dace (*Eremichthys acros*; threatened) occurs within the assessment area in hot springs and associated outflows near Soldier Meadows Ranch. Lahontan cutthroat trout occurs in several streams in the northeastern portion of the assessment area. Increased use of these recreation areas could result in habitat degradation. As discussed in Section 2.2.4 (Event Security and Public Safety), Soldier Meadows would be patrolled on at least a daily basis during the eight-day event and immediately before and afterwards, reducing potential impacts to the desert dace. In addition, the use of a re-entry fee to the event would theoretically discourage participants from visiting off-site recreation areas. These provisions may reduce potential indirect impacts to threatened and endangered species from increased use of recreational areas attributable to Burning Man participants.

Impacts to species that are candidates for listing under the ESA are discussed under Section 4.21 (Special-Status Species).

4.9.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, the event under this alternative would be entirely located on the playa with no direct impacts to threatened or endangered species. Increased use of the Soldier Meadows hot springs and Lahontan cutthroat trout streams could result in habitat degradation and impacts to the threatened desert dace and Lahontan cutthroat trout.

4.9.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action. Although there would be fewer participants to impact the desert dace and Lahontan cutthroat trout from trampling and heavy use of hot springs and occupied or recovery streams, there would be no law enforcement patrols. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to threatened or endangered species would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.10 Wastes, Hazardous or Solid

The assessment area for the analysis of wastes is shown on Figure 3-10 and includes the Public Closure Area and travel routes with a 0.5-mile buffer.

4.10.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Solid Waste

The Proposed Action would require the applicant to remove solid waste from the site. The 2010 event generated 750 cubic yards of solid waste that was removed by the applicant. This was a 90 cubic yard increase in solid waste compared with the 2009 event. A larger number of participants would be expected to generate more solid waste, although the increase is not linear as the annual solid waste estimates varies and depends on unplanned events, such as rain, and planned events, such as recycling the Center Camp Café carpets in 2010.

Unknown amounts of solid waste are removed by individual participants. The majority of this waste ends up in landfills in northern Nevada, either through direct placement in the nearby public landfills or indirectly from clean-up efforts along the access routes for the event.

Under the Proposed Action, an inspection of the event site would be coordinated by BLM to collect and quantify debris at randomly selected transects to ensure that the amount of debris does not exceed 1.0 square foot per acre from any inspection area (2011 Stipulations #24 and #29; see Appendix 1). During the 2005 to 2011 period the standard was met. During this same time period, debris levels increased between 2006 to 2008, decreased between 2008 to 2010, and increased between 2010 and 2011.

Assuming that the 2012 through 2016 clean-up efforts are similar to the 2006 through 2011 clean-ups, debris left on the playa would be expected to remain stable. Periodic flooding events

as experienced in 2010 would partially offset increases in debris area and debris items due to accelerated decomposition, incorporation into wet sediments and water/wind transport from the sites. Over the period of the permit (2012-2016) the clean-up standard of 1.0 square foot per acre would not be exceeded. As the event increases in size, the randomly selected transects would be adjusted to continue to ensure that sufficient transects are sampled to ensure a statistically valid result.

Debris within the residential portions of the event showed a slight increase in 2011 compared with 2009 and 2010; however, it was still below the 1.0 square foot per acre. If the increase in debris continued, debris would be denser within the Closure Area than on adjacent parts of the playa and there would be more debris items per acre inside the City compared to outside the City. These increases in the number of debris items and area covered by debris would occur on less than one percent of the playa surface. Even within the residential portions of the event, the debris levels would be required to remain low (below the 1.0 square foot per acre threshold). The casual visitor would not perceive a major difference between average debris conditions inside the City compared to outside.

Hydrocarbon Wastes

The Proposed Action would result in liquid wastes being deposited on the playa as estimated in Table 4.11-2 in Section 4.11 (Water Quality). Oil deposition in 2002 (16 percent) resulted in an estimated 14.5 gallons of hydrocarbon waste. Using the same assumptions described in the 2003 report except for updated visitors-per-vehicle data, vehicles could deposit an estimated 72.5 gallons of hydrocarbon for a population of 58,000 persons and 87.5 gallons of hydrocarbon for a population of 70,000 on the playa. The 2012 Operating Plan noted that the applicant would 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. Black Rock LLC advised the use of materials, such as cardboard, hazmat pads, or drip pans to minimize impacts. As the event population increases to up to 70,000 participants, the oil deposition would increase even if the percent of cars dripping oil remains the same as estimated in 2003. Reports by Johnson (2000) and Tagget (2000) indicate that hydrocarbon 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 2006). Because of the increase in population, the Proposed Action would have the potential to increase the hydrocarbon waste and result in change of composition of the lake surface. To further understand potential impacts from hydrocarbon waste (specifically from oil drips), and to verify the conclusions herein, implementation of the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects (Oil Drip Surveys): In order to quantify and assess how much oil might be deposited on the playa during the event, the applicant should fund and conduct an oil drip survey during the first year of the permit and at least one additional year over the duration of the permit (2012-2016). The oil drip survey should include a scientifically valid methodology for sampling collection, verifiable results, discussion regarding the results, as well as actions to reduce the amount of hydrocarbon waste (i.e., oil) if it is shown to be increasing at the playa. The study design

(methodology) should be coordinated with the BLM Hazardous Materials Specialist and approved by the BLM Authorized Officer prior to implementation. Personnel conducting the study should be approved by the BLM Authorized Officer prior to study implementation. The applicant should be responsible for costs associated with the monitoring program and any potential operational changes that may be necessary (as determined by BLM) as indicated by the research results.

Offsite Waste

Under the Proposed Action, post-event roadside crews would clean up litter and debris along the roads and highways surrounding the event. The applicant requests that participants not place trash in rest areas or in the dumpsters of private businesses. Public comments have noted that trash is placed in dumpsters along the traffic route. There are also concerns about litter along County Road 34 and Jackson Lane from the event site to “Black Rock City Work Ranch” in Hualapai Valley, approximately 10 miles north of the site and about abandoned and unattended vehicles. The Nevada Department of Transportation (NDOT) has had challenges with event related trash at the Wadsworth rest area and removed the NDOT trash bins from the rest area during the 2011 event to mitigate this impact (NDOT 2011). Additionally, NDOT crews removed about 9 truckloads of trash from the roadway during the 2011 event (NDOT 2011). Two abandoned (unattended) vehicles were reported by NDOT and were removed by the appropriate jurisdictional agency (NDOT 2011). Trash that is deliberately or inadvertently left along the roadways and at private bins and dumpsters in nearby communities, including the Pyramid Lake Paiute Tribe reservation, results in an adverse effect to these communities. The applicant has cooperated successfully during previous events with both NDOT and the Pyramid Lake Paiute Tribe to reduce impacts to nearby communities by removing off-site trash and by supporting and promoting tribal enterprises that are set up to collect participant trash and recycling for a fee. To continue to reduce adverse impacts due to waste along the traffic routes from litter and from any potential increased use of dumpsters at private properties due to the increase in participants, the following mitigation is recommended.

Recommended Mitigation to Reduce Effects (Debris Removal): In addition to patrolling SR-446 and SR-447 for event-related trash, the applicant should coordinate with NDOT to compile a list of any other roadways or rest areas that should be cleared of event-related trash. Additionally, the applicant should coordinate with Washoe County to patrol County Road 34 and Jackson Lane from the event site to the “Black Rock City Work Ranch” in the Hualapai Valley, approximately 10 miles north of the event site.

The applicant should coordinate with NDOT and the Freeway Service Patrol to ensure that debris removal is conducted according to NDOT standards and protocols. Off-site clean up should occur after the event to gather trash discarded during the entire event period. The applicant should make a best-faith effort to collect all trash that can be safely collected and should notify and coordinate with the appropriate agencies for any remaining items in accordance with all NDOT encroachments permits. Clean-up staff should wear appropriate safety vests and hats and drive vehicles with flashing lights to ensure safety during trash collection.

Wastewater

A small percentage of the participants would dispose of gray water on the playa. This activity is prohibited by BLM and the applicant, but still infrequently occurs. The major component of gray water is likely to be soaps and detergents used in dish washing and bathing. These materials readily break down in the sunlight. The applicant would continue to disseminate information regarding the illegality of dumping wastewater on public lands (BRC 2011b).

Minor amounts of gray and black water may be deposited on the playa through leaks or spills from RVs. The applicant makes it readily known that there is no dumping station on-site and that the BLM issues citations for the dumping of gray or black water from RVs. RV servicing is available at the event and trucks that service RVs are available between 9:00 AM and 9:00 PM and are prominently displayed with an amber flashing light on the top and a "RV ONLY" sign. As with the dumping of any gray water, the applicant would continue to disseminate information regarding the illegality of dumping any wastewater on public lands (BRC 2011b).

Portable toilets would be placed within the City in large banks, ten or more toilets in a row, and anchored securely to the surface. Public hand sanitizer is located adjacent to each of the toilet banks. It is unlikely that human wastes would spill or leak from these locations. Human waste from the portable toilets is removed from the playa by the toilet vendor and taken to the Washoe County Waste Treatment Center, where it is 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 goers would be more likely to use areas that are not designated facilities. As the event population increases, the amount of human waste deposited in areas that are not designated facilities would increase. Implementation of recommended mitigation to reduce the effects of human waste disposal (below) would require the applicant to light the portable toilets such that event participants would be more likely to use the portable toilets and the amount of human waste deposited on the playa would not increase. In 2011, a container of human waste was deposited in Gerlach and was subsequently reported to the Nevada Public Health Department.

To induce participants to use the portable toilets after dark and reduce potential impacts to the playa and along the access roads due to human wastes, the following mitigation is recommended.

Recommended Mitigation to Reduce Effects (Human Waste Disposal): The applicant should ensure there are adequate numbers of toilets and that there is suitable placement of toilets as needed throughout Black Rock City according to the applicant's Operation Plan. Due to the increase in population anticipated in this Environmental Analysis, additional portable toilets should be supplied at areas likely to be used after dark and their lighting should be increased. The applicant should ensure the toilets are lit and visible from the Art area during nighttime activities. The applicant should continue to educate the event participants regarding the importance of appropriate disposal of human waste.

Prior to release of information regarding the 2012 Burning Man event, the applicant should include a page on the Burning Man website that specifies the appropriate disposal of human waste for participants using personal portable toilets and provides information regarding the risks to human health of improperly disposed of human wastes. The appli-

cant should inform the event participants on the legal ramifications to the individual and to the applicant of inappropriately disposed human waste including the possible revocation of permits, see NAC 444.5466 Disposal of sewage; plumbing (for Camping) and NAC 444.5492 (regarding provision of toilet facilities for mass gatherings).

Hazardous Materials

Hazardous and flammable liquids are also used at the event, including fuel and paints. As discussed in Sections 2.1.4.G and 3.10.5, in addition to State and federal regulations, the applicant's Emergency Services Department would be responsible for containing hazardous materials and mitigating exposure to risk. The applicant'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 clean-up if necessary. Additional hazard specific assistance would be provided by the applicant as needed.

Spills of volatile materials would be rapidly dispersed from the playa through evaporation. Other materials would vary in their breakdown pathway with active clean-up potentially required. The applicant actively manages these liquids, as part of the permitting process including providing structural/brush-type fire engines and staff that are strategically placed within the Closure Area as determined necessary by the applicant's fire contractor. The likelihood of spills of measurable quantities would be minimal and plans are in place to adequately respond in the event that such a spill occurs.

4.10.2 Alternative 2: 50,000-Person Maximum

The event under this alternative would generate solid waste, including roadside litter and debris and it would be subject to the same clean-up standard as under the Proposed Action. Liquid waste and human waste would potentially be deposited on the playa. Section 4.11 (Water Quality) includes a discussion of oil drip projections under the 50,000-Person Maximum Alternative. To further understand potential impacts from hydrocarbon waste (specifically from oil drips), and to verify the conclusions herein, implementation of the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Hazardous and flammable liquids would be used as well. A population of 50,000 people would generate about 660 to 750 cubic yards of solid waste. Solid waste left on the playa and liquid wastes would also be expected to be reduced with a smaller population although this decrease would not be linear as both solid wastes left on the playa and liquid waste have reduced in quantity between 2005 and 2010 despite the increase in population. To reduce adverse impacts due to waste along the traffic routes from litter and from use of dumpsters at private properties, the Debris Removal mitigation is recommended (see below).

Under the 50,000-Person Maximum Alternative, a small percentage of participants would continue to dispose gray water on the playa. Portable toilets would be placed in numbers appropriate for 50,000 participants. Regardless of the number of participants, if the portable toilets are not placed or lit such that access is readily available after dark, event goers would be more likely to use areas that are not designated facilities. Therefore, to induce participants to use the

portable toilets after dark and reduce potential impacts to the playa and along the access roads due to human wastes, the Human Waste Disposal mitigation is recommended.

This alternative would have the potential to create an impact from improperly disposed of waste.

Recommended Mitigation to Reduce Effects: Oil Drip Survey, Debris Removal, and Human Waste Disposal recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented.

4.10.3 Alternative 3: No Action Alternative

If a large informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action although it is anticipated that there would be fewer participants. No formal post-event cleanup or inspection would be required so debris levels, gray water dumping, and human waste levels on the playa or in shallow “cat-holes” would be expected to be over that observed during past Burning Man events. BLM regulations would remain in effect even if the event was not officially permitted and stipulated and would mitigate some of these impacts. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts as a result of waste would be location specific and Operating Plan procedures would likely be required due to the size of the event.

4.11 Water Quality

The assessment area for the analysis of water resources is the Black Rock Desert playa, Fly Ranch and springs of interest for surface water and the Black Rock Desert Hydrographic Subarea (Area #28) of the Black Rock Desert Hydrographic Region of Nevada (Region #2) for ground-water (see Figure 3-6, Water Quality Affected Environment).

4.11.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Surface Water

As described in Section 2.1.7 (Dust Abatement), the applicant would provide as many water trucks as necessary (up to 14) for dust suppression as warranted by weather and the condition of the playa surface. In 2011, 55 miles of street in the residential area were watered daily in addition to five miles of gate road. Eight water trucks were used due to the weather conditions. Each truck watered an estimated 7.5 miles on a daily basis. An event with 58,000 participants would continue to water 55 miles of streets. An event with 70,000 participants would require an additional five miles of streets for a total of 60 miles of streets watered daily. During the Burning Man event, water trucks would operate two to three trips per truck per day from Fly Ranch, with a total truck carrying capacity of approximately six million gallons per year. The total contract for water transfer between Black Rock City LLC and the Nevada water authority (Nevada Department of Water Resources) would be for six million gallons; the transfer contract would require revision and approval if more than six million gallons is required for the event.

Water required for dust abatement could be minimized through application of dust control palliatives, pending prior written approval by BLM. The Burning Man 2012 Operating Plan states that with the exception of those roads authorized in advance by BLM, dust palliatives shall not be used to control fugitive dust, and water without additives would be used for fugitive dust control within the City. If it turns out that application of dust palliatives is deemed necessary, magnesium chloride dust palliative may be used only on roads approved in advance by the BLM (see discussion in Section 4.19.1). Therefore, for the purposes of this analysis it is assumed that, as described above, BRC would secure a water transfer agreement for six millions gallons of water for dust control, subject to additional review and renegotiation for any additional water needs.

In addition, as described in Section 2.1.6 (Fire Suppression), a minimum of 12,000 gallons of water would be stored within Black Rock City for fire suppression associated with permitted burns or emergency response. Some art installations may also have identified water supply requirements, although this water would likely be transported to the site by Burning Man participants and would not be obtained from Fly Ranch. Table 4.11-1 summarizes all water requirements associated with dust abatement, fire suppression, and art installations at the Burning Man event.

Table 4.11-1. Burning Man Water Requirements

Water Use	Gallons	Acre-Feet
Dust Abatement	6,000,000	18.4
Fire Suppression	12,000	0.04
Art Installations	6,600	0.02
<i>Total</i>	<i>6,018,600</i>	<i>18.46</i>

Compliance with the terms and conditions of the water transfer contract required for the proposed use of Fly Ranch water would ensure that the water supply would not be affected by the proposed use. Water quality at the Fly Ranch water source was tested by the BLM in October of 2011. Water quality data measured at the Fly Ranch source is presented in Tables 3.11-1 through 3.11-3 in Section 3.11 of this EA, including EPA-designated Primary and Secondary Maximum Contaminant Levels (MCLs), where MCLs have been designated for constituents tested at Fly Ranch. As described in Section 3.11, the Fly Ranch water source is not a public water system and would not provide drinking water for the Burning Man 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 BRC. Below is a summary of constituents which were detected in the Fly Ranch water source as exceeding Primary or Secondary MCLs for drinking water.

- Total coliform and *E. coli* concentrations of 1,732.9 mg / 100 mL and 11.0 mg / 100 mL, respectively, are higher than the Maximum Contaminant Level Goal (MCLG) of 0.0 mg/L for drinking water. These constituents occur naturally in the environment, and in human and animal feces. The concentrations of coliform and *E. coli* in water may vary depending on activities surrounding the water source, and depending on the time of year, as photodegradation can reduce the presence of these constituents.

- Fluoride concentration of 8.4 mg/L is more than twice the Primary MCL of 4.0 mg/L for drinking water. Fluoride is used as a water additive to protect human health at low concentrations, and also occurs naturally through erosion of natural deposits and discharge from fertilizer and aluminum factories. Due to the location of the Fly Ranch water source, and consideration of surrounding land uses, it is reasonably assumed that the detected fluoride levels have resulted from erosion of natural deposits.
- Arsenic concentration of less than 0.025 mg/L is slightly greater than the Primary MCL of 0.010 mg/L for drinking water. The water quality testing results do not specify how much less than 0.025 mg/L arsenic concentrations at the Fly Ranch water source are; it is possible that Fly Ranch water is below the Primary MCL for arsenic in drinking water. Arsenic occurs from erosion of natural deposits, runoff from orchards, and runoff from glass and electronics production wastes. As with the fluoride concentration described above, due to the location of the Fly Ranch water source, and consideration of surrounding land uses, it is reasonably assumed that the detected arsenic levels have resulted from erosion of natural deposits.
- Chloride concentration of 260 mg/L is slightly greater than the Secondary MCL of 250 mg/L for drinking water. Natural water systems typically contain chloride at concentrations which vary depending on the mineral content of the earth in the area where the water occurs. The Secondary MCL for chloride is associated with a salty taste that chloride can cause in drinking water.
- Total Dissolved Solids (TDS) concentration of 1,100 mg/L is more than twice the Secondary MCL of 500 mg/L for drinking water. TDS includes any dissolved organic or inorganic constituents and minerals in water, including salt. The Secondary MCL for TDS is associated with a salty taste that TDS can cause in drinking water.

Per the testing results provided in Tables 3.11-1 through 3.11-3 (see Section 3.11) and summarized above, the Fly Ranch source is considered high quality water, and appropriate to use for dust abatement and fire suppression at the event. As noted above, the Fly Ranch source would be used for dust suppression not for drinking water; therefore, the public would not be exposed to health effects, such as those listed in Table 3.11-1. Water use associated with the Proposed Action would not result in long-term exposure of the public or the environment to water quality contaminants because such use would primarily occur during the Burning Man event.

Section 3.11 describes that surface flow in the assessment area is intermittent, and that during high precipitation years the playa is partially covered with standing water, typically from March into June. The Burning Man event would be held in late August and early September when the playa surface is generally dry. Water for dust suppression would not be applied to surface water features, or when surface water is present. In addition, due to the arid climate, water applied for dust suppression is expected to rapidly evaporate, and would not have the potential to flow or be transported to downstream water features. Water would be applied in quantities appropriate to achieve sufficient levels of dust suppression; water would not be applied in quantities that would result in surface water flows.

As mentioned above, the measured TDS concentration in the Fly Ranch water source exceeds primary MCLs for drinking water; however, it is important to note that the Fly Ranch water

source would not be used for drinking water, and for the purposes of this analysis, MCLs are purely used as a basis of comparison in the absence of existing water quality standards for the application of water to achieve dust abatement. Also as noted above, the playa surface is already composed of salts to a degree where the Fly Ranch water would not likely have a detectable impact once constituents disburse or break down (see Section 4.19). Combined with the fact that water would be applied in quantities appropriate for dust abatement, and there are no surface water bodies in the vicinity of 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.

Surface water and/or groundwater quality could be degraded if hazardous materials such as oil leak onto the playa surface during the event. An Oil Drip Survey of the event was conducted in 2003 to assess the potential for this issue to occur. This survey and report determined that approximately 16 percent of surveyed vehicles dripped oil during the 2002 Burning Man event, or about one in every six vehicles. No vehicles were observed dripping brake fluid, hydraulic fluid, or anti-freeze. (BLM 2003)

The 2003 Oil Drip Survey provided estimates of the total amount of oil dripped onto the playa during the 2002 event, determining that the event resulted in the deposition of approximately 14.5 gallons of vehicle-related oil (hydrocarbons) onto the playa surface (BLM 2003). Using the same assumptions described in the 2003 report except for updated visitors-per-vehicle data, Table 4.11-2 provides estimates of the quantity of vehicle-related hydrocarbons on the playa under future population scenarios with event populations of 58,000 to 70,000 people.

Table 4.11-2. Oil Drip Projections for the 58,000 to 70,000-Person Maximum Alternative*

Population	# Vehicles	# Dripping Vehicles	Ounces / Day	Total Ounces	Total Gallons
58,000	37,120	6,187	1,856	9,280	72.5
62,000	39,680	6,613	1,984	9,920	77.5
66,000	42,240	7,040	2,112	10,560	82.5
70,000	44,800	7,467	2,240	11,200	87.5

* – # Vehicles: Assume 1.6 participants per vehicle based on half of the total estimated “in” and “out” vehicle trips (Fehr & Peers 2012). This would be a conservative scenario due to reentry of a limited number of vehicles. The 2003 Oil Drip Survey used an assumption of four participants per vehicle.

– # Dripping Vehicles: Assume one in six vehicles is dripping oil.

– Ounces / Day: Assume 0.3 ounces of oil leaks from each dripping vehicle each day.

– Total Ounces: Estimate that the median number of days each vehicle would be parked on-site is five.

The estimated quantity of oil dripped onto the playa is directly proportional to the population size of the event. The dramatic increase in oil drip compared to the 2003 Oil Drip Survey is due in part to the updated assumption of a greater number of vehicles per participant. The 2003 Oil Drip Study provided management recommendations to minimize oil drips on the playa, such as training event greeters and staff to identify potential dripping vehicles, and equip staff with disposable pans or oil absorbent materials for distribution to leaking or potentially leaking vehicles. The estimates provided in Table 4.11-2 project increasing oil drip volumes based on population growth, but do not account for the implementation of management efforts to reduce oil leaks on the playa.

Oil dripping onto the playa would be adsorbed onto the clay and silt particles and remain on or near the surface of the playa. The water table associated with the playa moves up and down on a seasonal basis related to the amount of surface runoff and precipitation, as described in Section 3.11. When the water table reaches the surface of the playa, up to half of the oil, which has a specific gravity less than water, would be carried to the surface and dispersed as a thin film that would either directly volatilize into the atmosphere or be photo-degraded into smaller molecules and then volatilized. (BLM 2003)

Hydrocarbons would be removed from the site through environmental factors including the following: wind dispersion that spreads the lake over a much larger area of the playa than the original site of BRC; wind dispersion of surface particles with attached films of hydrocarbons; and breakdown of hydrocarbons due to exposure to intense sunlight, leading to increased levels of volatilization (BLM 2003). As such, hydrocarbons deposited on the playa would be subject to biological, physical, and chemical breakdown and dispersion, and would therefore be eliminated from the system over time (BLM 2003). It is important to note that vehicle-related oil leaks associated with the event would be limited to within the Public Closure Area, and transportation routes to and from the Public Closure Area, which encompass a very small portion of the playa. However, because of the increase in population, the Proposed Action would have the potential to increase the hydrocarbon waste and result in change of composition of the lake surface. To further understand potential impacts to water quality and to the composition of the lake surface from hydrocarbon waste (specifically from oil drips), and to verify the conclusions herein, implementation of the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

As described in Section 2.1, the total area encompassed by the event within the perimeter fence would be about 3,200 acres, or approximately three percent of the total area within the Black Rock Desert playa, and approximately 0.2 percent of the nearly 1.2-million-acre Black Rock Desert–High Rock Canyon Emigrant Trails NCA planning area.

Recommended Mitigation to Reduce Effects: Oil Drip Survey recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to ensure oil drips are not increasing on the playa.

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 identified in Section 3.11 would be affected by the event. As described in Section 3.11.2, 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 be eliminated from the system over time (BLM 2003). Therefore, groundwater quality is not anticipated to be 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 would not affect groundwater quality. The deposition of hydrocarbons on the playa

associated with oil leaking from vehicles during the Burning Man event would not result in substantial groundwater quality degradation.

Springs

Potential increased human visitation to hot springs by Burning Man participants before or after the eight-day event may cause impacts from human use, as discussed below. Monitoring indicates that minimal use occurs at hot springs near the Burning Man event, primarily Trego and Garrett Ranch (BLM 2006). Springs are of suitable quality to allow human bathing once water temperature permits, and increased recreational use of the springs could increase turbidity and introduce foreign compounds such as oils, soaps, and nutrients. Increased recreational uses of the springs and surrounding areas could also result in wastewater discharge in the vicinity (also discussed under “wastewater.”) BRC LLC and BLM actively discourage event participants from using the hot springs during the Burning Man event through the use of a re-entry fee for participants that leave the event and wish to return. In addition, BLM and BRC LLC provide at least once daily hot spring patrols and monitors before, during, and immediately after the eight-day event to minimize potential impacts to hot springs and the surrounding environment (BLM 2006).

Wastewater

As described in Section 2.1.5 (Resource Management), the 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 (RV) 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. Disposal of wastewater on the playa is prohibited and monitored by BLM and the applicant, but still infrequently occurs. 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)

Portable toilets are placed within the Closure Area in large banks and anchored securely to the surface of the playa; it is highly unlikely that human wastes would spill or leak from these locations. Human wastes from the portable toilets is 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 goers would be more likely to use areas that are not designated facilities, thereby resulting in an increase in wastewater. As the event populations increases, the amount of human waste deposited in areas that are not designated facilities would increase. Implementation of the Human Waste Disposal recommended mitigation (below) would reduce the effects of human waste disposal by requiring the applicant to light the portable toilets such that event participants would be more likely to use the portable toilets and the amount of human waste deposited on the playa would not increase.

Recommended Mitigation to Reduce Effects: Human Waste Disposal recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to ensure wastewater is minimized on the playa.

4.11.2 Alternative 2: 50,000-Person Maximum

The operations of this alternative would be identical to the Proposed Action except with a smaller population. The same water source at Fly Ranch would be used to meet water requirements associated with dust abatement and fire suppression and the applicant would contract for the same amount of water, six million gallons (see Table 4.11-1). As described above, use of Fly Ranch water at the event would not result in degradation of water quality in surface water or groundwater resources. The potential for deposition of hydrocarbons on the playa associated with oil leaking from vehicles would remain relatively constant over the five-year period, because the number of vehicles on the playa would not increase in future years. Table 4.11-3 provides an annual estimate of the quantity (62.5 gallons) of vehicle-related hydrocarbons on the playa under the 50,000-Person Maximum Alternative.

Table 4.11-3. Oil Drip Projections for the 50,000-Person Maximum Alternative*

Population	# Vehicles	# Dripping Vehicles	Ounces / Day	Total Ounces	Total Gallons
50,000	32,000	5,333	1,600	8,000	62.5

* - # Vehicles: Assume 1.6 participants per vehicle based on half of the total estimated "in" and "out" vehicle trips (Fehr & Peers 2012). This would be a conservative scenario due to reentry of a limited number of vehicles.
 - # Dripping Vehicles: Assume one in six vehicles is dripping oil.
 - Ounces / Day: Assume 0.3 ounces of oil leaks from each dripping vehicle each day.
 - Total Ounces: Estimate that the median number of days each vehicle would be parked on-site is five.

To further our understanding of potential impacts to water quality and to the composition of the lake surface from hydrocarbon waste (specifically from oil drips), and to verify the conclusions herein, implementation of the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Even though the event population would remain at 50,000 for each year under this alternative, the potential for human waste to be deposited in areas that are not designated facilities (e.g., the open playa) would exist. Implementation of the Human Waste Disposal recommended mitigation (below) would reduce the effects of human waste and wastewater by requiring the applicant to light the portable toilets such that event participants would be more likely to use the portable toilets.

Recommended Mitigation to Reduce Effects: Oil Drip Survey and Human Waste Disposal recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to ensure oil drips are not increasing and wastewater is minimized on the playa.

Additionally, hot springs in the area would have the potential to be degraded due to visitation by Burning Man participants. As with the Proposed Action, under this alternative a small percentage of participants would dispose of gray water on the playa.

4.11.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same types of impacts described for the Proposed Action. It is anticipated that there would be fewer participants and use of Fly Ranch water would not be expected. No post-event clean-up activities would occur, so debris levels, on-site gray water disposal, and human waste levels on the playa would likely increase. The potential for water quality impacts to occur from the deposition of oil from leaking vehicles on the playa would be less because the population associated with a non-permitted event is anticipated to be fewer than with a permitted event. If a non-permitted event occurs the participants would be unconstrained and many would be expected to visit hot springs. BLM regulations would remain in effect even if the event was not officially permitted, which would reduce some of these impacts. Additionally, a SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to water quality would be location specific and Operating Plan procedures would likely be required due to the size of the event.

4.12 Wetlands and Riparian Zones

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the wetlands and riparian zones analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.12.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Direct impacts to the ephemeral playa lake would not occur. Residual effects to the playa could result from vehicles dripping oil and from ground disturbance, and are discussed above under Section 4.7.1 (Migratory Birds). Sections 4.10 (Wastes, Hazardous or Solid) and 4.11 (Water Quality) address oil pollution in further detail. As discussed in the referenced sections, hydrocarbon waste would have the potential to affect water quality and change of composition of the playa lake surface, which is classified as a lake by the National Wetlands Inventory (NWI 2011). If selected for implementation, the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects: Oil Drip Survey recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to ensure oil drips are not increasing on the playa.

Other than the playa, there are no other wetland features within the Public Closure Area or traversed by the event access road. In the surrounding region, the Proposed Action has the potential to increase visitation to hot springs and result in increased sedimentation of hot spring pools, alteration of channel and flow characteristics, and addition of foreign substances to water sources, which may degrade these wetlands and associated riparian vegetation. As discussed under Section 2.1.4 (Event Security and Public Safety) off-site law enforcement officers would patrol Trego Hot Springs, Black Rock Hot Springs, Soldier Meadows, and Double Hot Springs on a daily basis during and immediately after the eight-day event. The use of a re-entry fee to the event would further discourage participants from visiting the hot springs and minimize indirect impacts.

4.12.2 Alternative 2: 50,000-Person Maximum

The operations of this alternative would be the same as the Proposed Action except under this alternative, there would be 13 to 29 percent fewer participants annually than under the Proposed Action. As described under the Proposed Action, direct impacts to the playa lake would not occur, but vehicle oil pollution and disturbance of branchiopod eggs would potentially cause residual impacts to the playa, which is classified as a lake by the National Wetlands Inventory (NWI 2011). If selected for implementation, the Oil Drip Survey recommended mitigation (below) would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects: Oil Drip Survey recommended mitigation in Section 4.10.1 (Wastes, Hazardous or Solid) should be implemented to ensure oil drips are not increasing on the playa.

A maximum population of 50,000 people would likely increase visitation to hot springs and result in increased sedimentation of hot spring pools, alteration of channel and flow characteristics, and addition of foreign substances to water sources, which may degrade these wetlands and associated riparian vegetation.

4.12.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same types of impacts described for the Proposed Action. If a non-permitted event occurs the participants would be unconstrained and many would be expected to visit hot springs. There would be fewer participant vehicles but the vehicles would not be confined to a single access road and participants could spread beyond the fenced perimeter area described under the Proposed Action, for less localized residual impacts from oil drips and ground disturbance. There would be no formal oil drip or dust abatement measures; however, BLM regulations would remain in effect. Additionally, a SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to wetlands would depend on the loca-

tion of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.13 Wilderness

The assessment area for the analysis of Wilderness is Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), and travel routes (with 0.5-mile buffer), as shown in Figure 3-2.

4.13.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The wilderness areas in the NCA are located north of the Public Closure Area. The impact assessment area for wilderness includes some or all of eight wilderness areas, as described in Section 3.13 (Wilderness). The boundary of the Calico Mountains Wilderness, which is the closest wilderness area, is 5.7 miles from the Public Closure Area. The southwestern portion of the Black Rock Desert Wilderness is 17.4 miles away and High Rock Lake Wilderness is 18.5 miles from the Public Closure Area.

The environment of the nearest wilderness areas could also be affected. Burning Man increases fugitive dust, vehicle exhaust emissions, and particulates in the vicinity of the event as a result of increased traffic, ground disturbance, and fires. Under the Proposed Action, Section II.C.7 (Resource Protection, Action Items, Dust Control) of the 2012 Operating Plan (see Appendix 2) outlines procedures that would be used for watering for dust suppression. Section III of the Operating Plan outlines procedures for controlling on-site and off-site traffic, including promotion of bicycles for on-site transportation, controlling exit traffic by releasing vehicles at timed intervals, and having flaggers trained by the Nevada Department of Transportation provide off-site traffic control based on communication between BLM Rangers and Black Rock City staff. Section V (Emergency Procedures) outlines comprehensive emergency procedures and contingency plans under the Proposed Action that would minimize environmental damage due to fire. The Proposed Action would include the use of BLM-certified fire contractors, provision of additional fire engines within Black Rock City, and requirement for pre-fire plans for any areas that would store or use flammable or pyrotechnic materials. Potential effects related to fugitive dust, vehicle emissions, and fires would be localized, would occur during the eight-day event, and would be minimized by these design measures.

There could be some indirect impacts on wilderness due to increased use by visitors introduced to the area by the Burning Man event. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,480 to 4,200 visitors with event populations of 58,000 to 70,000 people. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man (McRae 2011). With event populations of 58,000 to 70,000 people, this would result in an estimated 11,600 to 14,000 visitors to parks and recreational areas nearby to the event routes.

Although not all of these people would visit wilderness areas, a small increase in visitors would represent a large relative change. Potential effects on biological resources in the wilderness

included in the impact assessment area on Figure 3-2 are addressed in Sections 4.6 (Invasive, Nonnative Species), 4.9 (Threatened and Endangered Species), 4.12 (Wetlands and Riparian Zones), 4.20 (Special-status Species), 4.22 (Vegetation), and 4.26 (Wildlife).

Visitors to the wilderness areas in the NCA could be affected by the Burning Man event. Public access to these 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. Traffic congestion would occur during the eight-day event and would affect a small number of potential wilderness visitors. Under the Proposed Action, traffic congestion would also be minimized by traffic management design features (see the 2012 Operating Plan in Appendix 2).

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) should be implemented to reduce potential traffic impacts to wilderness areas.

In addition, the Burning Man event has been visible from portions of the Calico Mountains Wilderness in recent years (see Figure 3-8). The Burning Man event would also be audible from portions of the wilderness. Noise and visual impacts (including dark sky impacts) as well as increased visitation may affect the ability of wilderness visitors to enjoy predominantly natural, solitary, and quiet recreation.

4.13.2 Alternative 2: 50,000-Person Maximum

The event under this alternative would occur in the same location as with the Proposed Action, but the Special Use Permit issued to the event would allow fewer participants. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,000 visitors over the course of the year. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man, which would result in an estimated 10,000 visitors to parks and recreational areas when travelling to and from the event under this alternative (McRae 2011). The types of impacts would be the same as those described for the Proposed Action.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) should be implemented to reduce potential traffic impacts to wilderness areas.

4.13.3 Alternative 3: No Action Alternative

If an unpermitted event occurred, it could cause some of the same impacts described for the Proposed Action. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to wilderness would depend on whether the substitute event was located near any wilderness.

Additional Affected Resources

4.14 Economics

Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein. The assessment area for the economics analysis is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties.

4.14.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Burning Man participants spend money in the assessment area in preparation of the event and after the event ends. These visitor expenditures may include spending on supplies (such as groceries, water, ice, etc.), gasoline, restaurants, and lodging.

Several economic analyses of the northern Nevada region have estimated the local expenditures per visitor and the economic multiplier influences for other tourism activities. Multipliers translate initial changes in an industry’s output or final demand for its products into values reflecting the recirculation of income and spending through the economy.

The U.S. Fish and Wildlife Service (USFWS) conducted studies on the economic effects of expenditures by visitors of Stillwater and Modoc National Wildlife Refuges on local regions. These studies show the spending per visitor to these recreational activities in an outdoor setting similar to BLM-managed lands and may be appropriate proxies for the levels of expenditures by Burning Man participants. Using the average expenditure of \$21.61 per visit per day for the two refuges after adjusting for inflation, and applying this to the average daily attendance over eight days at Burning Man (assuming the same ratio to official peak attendance), Table 4.14-1 shows the projected economic impacts in the assessment area derived from USFWS studies. The average attendance days for the current permit level of 50,000 is 28,200. The estimated additional direct economic impacts reach \$1.74 million with 70,000 participants and the total direct, indirect and induced impacts are \$2.93 million. The baseline impacts are about \$7.3 million using the USFWS methodology.

Table 4.14-1. Economic Impacts for 58,000 to 70,000-Person Maximum Alternative Assessment Area Derived from USFWS Studies (in 2010 dollars)

Event Size	Average Attendance/ Day	Added Attendance/ Day	Increased Expenditures	Increased Direct Impacts	Total Impacts
58,000	32,714	4,512	\$780,000	\$695,000	\$1,170,000
70,000	39,482	11,281	\$1,951,000	\$1,738,700	\$2,926,500

A proportion of these expenditures impact businesses in the smaller counties in the assessment area. Businesses often require a certain size or “scale” to be sufficiently profitable to operate. Burning Man appears to provide that amount for those smaller communities based on anecdotal evidence. For example, one commentator noted that a local tribal member’s business received 33 percent of his gross income during Burning Man; a second commentator noted that he was

able to start his business immediately after Burning Man was moved to Black Rock Playa and it is Burning Man that enabled him to start the business.

Using lodging data for the Reno-Sparks area from the Reno-Sparks Convention and Visitors Authority, a statistical relationship was found between lodging in the Reno-Sparks area to Burning Man attendance. Given the limited timeframe of the data, potential distortions from the effects of the recent recession, and difficulty in controlling for influences of other events (most notably the Best in the West Nugget Rib Cookoff over the Labor Day weekend holiday in Sparks), no analysis is included that quantitatively estimates potential lodging impacts. However, an increase in Burning Man attendance would be expected to increase overnight lodging demand in the assessment area, primarily in the Reno-Sparks area.

Burning Man participants come from around the nation and the world. The majority of participants (52 percent) came from California. Many of these participants spend resources to prepare for the event, both setting up travel and living plans and creating art and performance pieces. The infrastructure is generally created out of state and shipped in each year, so that activity likely generates economic benefits in the locales where it is created. BRC's home office is in San Francisco and operates year-round. This generates additional economic activity there, particularly during the build-up and wind down periods around the event (Aspen 2011).

Changes in Government Revenues

Government revenues arise from both from direct fees and indirect changes associated with activities such as sales and gaming tax revenues. The most direct government revenue increases would be from direct fees through the commercial use fee and cost recovery from BRC. In 2010, the BLM's cost recovery and commercial use fees totaled nearly \$1.3 million. Both the Nevada State Health Department and BLM have proposed changes in fees charged to BRC for the event, but the specifics in these proposals are currently insufficient to quantify the amounts of expected revenues (Aspen 2011). Increased participation would likely increased economic activity on the Pyramid Lake Paiute Tribe reservation, both in retail sales at businesses and in increased recreational demand at Pyramid Lake. In all cases, revenues would be at least as high as current amounts at the currently permitted level.

Data was gathered on taxable sales and gaming revenues. The analysis did not find a statistically discernible change in gaming revenues and taxable sales for the last six years from the event. The reason that a statistical relationship was not revealed for taxable sales and gaming revenues may be the result of the factors cited above with respect to the statistical analysis on lodging. This result does not show that there are no revenue impacts from the events; it only shows that with the data and methods used and the given economic conditions, that no impacts could be detected in taxable sales and gaming revenues. Therefore, this analysis did not estimate government revenues attributable to the event or project changes in revenues from changes in attendance levels. Regardless, one would expect to see such an increase in taxable revenues and potentially gaming revenues commensurate with the increased economic activity discussed above.

Changes in Government Expenditures

Federal, state and local agencies would be required to expend funds to support activities at the festival. Several public safety agencies provided estimates for the number of additional temporary staff necessary to accommodate increased participation at Burning Man. Table 4.14-2, Public Safety Staffing Costs for 58,000 to 70,000-Person Maximum Alternative Assessment Area, lists the additional personnel estimated necessary by agency, the additional cost for each agency, and the total cost for all agencies for event populations from 58,000 to 70,000 people. Agency reimbursement for additional personnel would be provided by the applicant on an annual basis.

Table 4.14-2. Public Safety Staffing Costs for 58,000 to 70,000-Person Maximum Alternative Assessment Area (in 2010 dollars)

Event Size (People)	Gerlach Volunteer Fire Department Additional Personnel (Cost)	Pershing County Sheriff's Office Additional Personnel (Cost)	Washoe County Sheriff's Office Additional Personnel (Cost)	Total Cost to Agencies
58,000	10 (\$108,724)	11 (\$40,348)	1 (\$5,746)	\$154,818
70,000	10 (\$108,724)	11 (\$40,348)	3 (\$17,236)	\$166,309

4.14.2 Alternative 2: 50,000-Person Maximum

If a population of 50,000 people maximum were to occur for each year over the five-year period, economic benefits would be capped at this level and revenues and economics effects would be similar to the 2011 event. Effects outside of the assessment areas would also continue, but would be expected to be capped due to the limited number of participants. In 2010, the BLM's cost recovery and commercial use fees totaled nearly \$1.3 million. Similar to the Proposed Action, government expenditures would be reimbursed by the applicant.

4.14.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events were to occur, with fewer attendees passing through the region, public safety and road maintenance costs would continue, although whether the public safety costs would be smaller or larger would be a function of the size of the new gathering. If participation is reduced, regional economic activity and benefits also would decline. For example, room rentals in Reno-Sparks could decline substantially and direct and indirect revenues for the region could decline by one to several million dollars. BLM and other agencies would lose direct contributions because of the lack of a sponsoring organization to charge. If the event would have the potential to result in impacts on public lands, a SRP would be required, which would result in fees paid to BLM.

If Burning Man was held at a different location off of BLM Winnemucca District managed lands, the economic impacts for the assessment area would be essentially the same as Burning Man ending entirely. The new location would incur related expenses but also would realize the economic benefits that now accrue to the assessment area, including the government revenues.

4.15 Noise (Quiet)

Noise and quiet were assessed over a geographic extent that includes any area with a direct line of sight to the Public Closure Area or traffic routes with a 0.5-mile buffer, see Figure 3-7. Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Noise*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein.

4.15.1 **Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)**

The Burning Man event would result in perceptible and substantial noise increases due to the activities occurring at the Public Closure Area and along roadways used by traffic accessing the event.

Calculations to quantify the direct impacts on noise and quiet for locations outside the Public Closure Area are based on conservatively high estimates of maximum noise levels caused by activities inside the Closure Area added to peak-day roadway traffic noise levels. The calculated noise levels do not take into account any shielding by terrain or the absorbing or redirecting effects of atmospheric conditions that occur over vast distances. Also, using noise levels from the peak traffic volume day is conservative because peak traffic would not occur at the same time as the highest levels of noise from the event. Although levels vary widely above the natural quiet during the event and with fluctuating traffic volumes, this approach results in a conservatively high estimate of the noise from the event and peak-day traffic.

The results of noise level calculations for the nearest campsites and Gerlach, for the effects of the Proposed Action with 58,000 participants and with 70,000 participants at the event and associated traffic, are shown in Table 4.15-1.

Table 4.15-1. Noise Levels at Sensitive Receptors for the 58,000 to 70,000-Person Maximum Alternative

Noise-Sensitive Area	Distance from Perimeter of Event to Receptor	No Action Alternative (without Event)	Proposed Action with 58,000 Participants	Proposed Action with 70,000 Participants
Campsites EWH32 and EWH33	2,000 feet	32.8 dBA	70.7 dBA	71.5 dBA
Designated BLM Wilderness Area Boundary	6 miles	30.5 dBA	51.9 dBA	52.7 dBA
Gerlach, along County Road 34	9 miles	45.1 dBA	66.4 dBA	67.2 dBA

Note: Ambient noise levels of the natural environment are below 35 decibels (dBA), based on low population density of the area.
 Source: Aspen 2011.

During the event, noise levels would increase with the dramatic increase in human activity. The event would introduce a wide range of sources including amplified music, sound systems, and fireworks, along with motor vehicles and aircraft traffic associated with the event. Participants usually report being able to have a normal volume conversation near the perimeter of the event at any given time, and noise levels would be much lower near the edge of the Closure Area than at the perimeter of activity because the Closure Area boundary would be typically 1,000 feet or more from the main activity of the event. Based on these conditions, the maximum noise level at the edge of the Closure Area is likely to be less than that of a typical “downtown city” at 80 dBA day-night noise level (Ldn).

Sensitive receptors that may have a direct line-of-sight to the event or traffic along roadways accessing the event would be most impacted. Sleep disturbance can occur at levels above 35 dBA, and interference with human speech begins at about 60 dBA. During days of maximum noise from the event or peak-day traffic, the most impacted locations would experience an increase greater than 10 dBA, which would be a substantial increase over the noise levels that occur without the Proposed Action and over the natural quiet of the playa. Increased noise from the Proposed Action would represent a perceptible change that would temporarily disrupt or detract from serenity and quiet at the campsites and wilderness area and temporarily disrupt residential uses nearest the traffic. The approximately 0.8 dBA change in noise levels that would occur with a population of 58,000 people compared to a population of 70,000 people would not be a perceptible difference in an environmental setting. The noise effects would last as long as the event is occurring and would cease immediately upon completion of event clean-up.

4.15.2 Alternative 2: 50,000-Person Maximum

The event under this alternative would occur in the same location as with the Proposed Action, but the Special Use Permit would allow fewer participants. The results for the 50,000-Person Maximum Alternative are shown in Table 4.15-2. The types of impacts would be the same as those described for the Proposed Action. Lower event-related noise levels and lower traffic noise levels would occur with the reduced population, thus, resulting in levels about 1.5 dBA lower than with the Proposed Action, which is not a perceptible difference in an environmental setting.

Table 4.15-2. Noise Levels at Sensitive Receptors for the 50,000-Person Maximum Alternative

Noise-Sensitive Area	Distance from Perimeter of Event to Receptor	No Action Alternative (without Event)	Alternative 2: 50,000-Person Maximum
Campsites EWH32 and EWH33	2,000 feet	32.8 dBA	70.0 dBA
Designated BLM Wilderness Area Boundary	6 miles	30.5 dBA	51.3 dBA
Gerlach, along County Road 34	9 miles	45.1 dBA	65.8 dBA

Note: Ambient noise levels of the natural environment are below 35 decibels (dBA), based on low population density of the area.
 Source: Aspen 2011.

4.15.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action although there would be fewer participants and less resulting noise. There could be no advance consideration of noise levels for uses near the unpermitted gathering or its traffic; however, BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts resulting from noise would depend on the location, duration, and frequency of recurrence of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.16 Public Health and Safety

The assessment area for the analysis of public health and safety is the Public Closure Area, traffic routes (with a 0.5-mile buffer), and the air basin (Black Rock Desert Hydrographic Region of Nevada), as shown on Figure 3-1.

4.16.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Emergency Response and Evacuation

Due to the size of the Proposed Action, accidents are likely to occur during the event. Additionally, as the event continues, there is a likelihood that at some time during the life of the event a natural or man-made emergency would require evacuation of the event. Weather related emergencies are the most likely event. While the average rainfall in August and September, 0.25 inches, is unlikely to result in standing water, it would impede event participants from leaving the playa. Higher precipitation amounts could occur on a limited basis and could result in standing rainfall leaving the event goers stranded for longer periods of time. As noted in Section 3.2.1, Climate and Meteorology, on any typical 10-day period in August or September, there is an average of 0.57 days of precipitation greater than 0.01 inch (WRCC 2011).

The applicant prepares contingency plans for any emergency event. Health and Safety guides are published for the event and the applicant provides 24-hour emergency medical services. Evacuation routes are planned and emergency information and preparedness is broadcast on the Burning Man Information Radio 24 hours daily. The BLM and the applicant would actively monitor for potential emergencies, and as part of the permitting process, the applicant must coordinate with emergency services providers and law enforcement agencies. The applicant must develop contingency plans for operations of critical health and safety services under adverse conditions including weather, natural or human caused disaster, or social unrest.

The applicant has a separate weather contingency plan that includes assessing weather before and during the event and securing the camp during an extreme weather event. The applicant designates a Weather Marshall who is responsible for advising when the weather contingency plan takes effect and has two levels of alerts, one for less than 12 hours of sheltering in place and one for more than 12 hours. The contingency plans include consideration of toilet facilities, food, water, and power. Mass communication would be used. The contingency plans apply to participants within the event area and en route to and from the event. The design features of the Proposed Action (see 2012 Operating Plan and 2011 Permit Stipulation #19) require emergency preparedness and response plans to ensure that emergency response and evacuation is appropriate and would be revised as appropriate yearly as the population increases. Sections V.C.1, Emergency Procedures, and V.C.3, Contingency Plans in the Operating Plan (Appendix 2) include a full description of procedures for emergencies, as well as Permit Stipulations included in Appendix 1 of this EA.

Fire Safety

Fire suppression equipment and personnel would be available 24 hours a day to respond to camp, vehicular or structural incidents. The applicant would contract fire services, which would operate under the Incident Command System for fire-related events within the Closure Area. Fire

equipment would be stationed at each end of the City during the event. Water would be stored within the City for fire suppression associated with permitted burns or emergency response. Open fires would only be permitted in burn platforms or barrels raised above the playa surface and are subject to fire safety guidelines and require approval and a license prior to burn. Campfires directly on the playa surface are not permitted. The Proposed Action would potentially increase the demand on volunteer fire department resources off of the playa if additional safety crew is needed along the access routes or in Gerlach. Impacts to Washoe County Fire Protection and other Emergency Services are addressed in Section 4.19, Social Values.

Hygiene and Food Safety

With the increased event population, large-scale food operations are likely to increase in frequency and increase the potential for food-related illness. Any camp cooking or giving away food to more than 125 people is considered a restaurant by the Nevada State Health Division and must apply for a permit with the Nevada Department of Health and Human Services and abide by the permit requirements. The Nevada Department of Health and Human Services submitted a scoping letter (dated 12/06/10) that highlighted a concern regarding the increase in the potential for food-related illness and suggesting logistical measures to reduce this risk, such as increasing the visibility of the food-related permit requirements on the Burning Man website. Additionally, the Department requested additional logistical support from the applicant to ensure the Department is able to monitor the food permits and large-scale food providers during the event. The Proposed Action would require that the applicant complete “formal agreements” with all affected parties including the Nevada Department of Health and Human Safety for the purposes of addressing concerns and impacts prior to the start of the event (see Permit Stipulation #16 in Appendix 1). As such, the Nevada Department of Health and Human Safety would have the opportunity to work with the applicant to ensure that the appropriate logistical support is provided to its monitors.

Disease Vectors

Section 3.11.1 describes the Fly Ranch water source; Table 3.11-1 describes the contaminant levels of the water including potential health effects. Participants to the event are not allowed to run after the water trucks which are clearly marked non-potable. Participants are given notice that the water in the trucks is non-potable and could result in an illness (BRC 2011b). Participants do frequently run after vehicles and are sprayed by the water trucks. Contaminants found in the Fly Ranch water source above the maximum contaminant level for drinking water include E. coli, fluoride, antimony, and arsenic all of which can result in potential health effects from long-term exposure. Any exposure to water from the Fly Ranch source would be of short duration as the water trucks are continuously moving and would occur during the eight-day event.

Respiratory Concerns

The playa dust includes both gypsum, an alkaline dust, and silica, a known carcinogen. The event activities would disturb the playa surface and mobilize the dust causing the dust particles to become airborne and potentially putting event participants and others at risk. Event participants are made aware of the potential dust and dust storms at the event and the Burning Man website suggests methods to reduce exposure to dust. Offsite exposure to dust would occur at an emission rate comparable to that caused by existing uncontrollable high wind events. The

increased air quality impacts of the Proposed Action would be small relative to the effects of existing wind-blown dust emissions in the air basin (Black Rock Desert Hydrographic Region of Nevada). As noted in Section 4.2.1 (Air Quality), effects of dust would be minimized by dust abatement practices implemented by the applicant (see the 2012 Operating Plan).

Human Health Concerns

Multiple human health concerns may occur at the playa. Between 2005 and 2010, the Emergency Services Department and Regional Emergency Medical Service Authority logged between 3,260 and 4,700 patients annually, representing between nine to 11 percent of the event participants. This would translate into an estimated 5,220 to 6,380 patients for a 58,000-person event and an estimated 6,300 to 8,580 patients for a 70,000-person event. The 2011 event received a total of 5,748 patients. The most common types of health concerns are minor injuries (blisters or cuts) which represented 38 percent of the logged patient contacts in 2011, 31 percent of the logged patient contacts in 2010, and 58 percent of the logged patient contacts in 2009. Additional concerns include dehydration, sunburns, and “playa foot”. Less than 0.1 percent of the patient contacts in 2010 and 2009 were transported to Reno hospitals for additional care. During the 2011 event, 33 patients required transport off of the playa (a decrease of 27 percent from 2010). EMS personnel transported 28 patients by ground, a decrease of six from the previous year, and five patients were flown to Reno via Care Flight (BLM 2011a). The 2010 event saw an increase of 29 percent of patients transported to Reno hospitals, and the 2009 event saw a decrease of 12 percent of patients transported to Reno hospitals. As such, the number of people transported to Reno hospitals is not necessarily correlated with an increased participation. However, the decreased need to transport patients off the playa in 2011 can be attributed in part to the diagnostic equipment that was provided on the playa in 2011, including a laboratory and an x-ray and ultrasound. The applicant provides information regarding common health concerns and the Environmental Services Department which has three stations at the event is available before the event begins and is on duty until all participants leave.

Vehicle Collisions with Rangeland Animals

During increased event traffic for the Proposed Action, there would be increased risk of serious vehicle collisions involving rangeland animals, including cattle and wild horses and burros, in the vicinity of the travel routes.

4.16.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, this alternative would generate public health and safety hazards, including accidents, potential natural or human caused disasters, fire safety concerns, and food safety issues. The event would have fewer participants than the event under the Proposed Action and there here would be fewer residential acres to manage (820 residential acres total). This would result in less patient injuries, corresponding to an estimated nine to 11 percent of the participants. For a 50,000 person population Emergency Services Department and Medical Services Authority would log approximately 4,400 to 4,700 patient contacts. As noted in Section 4.16.1, 2010 saw an increase of 29 percent of patients transported to Reno hospitals, but 2009 saw a decrease of 12 percent of patients transported to Reno hospitals compared with 2008. A

50,000-person maximum event would generate the potential for accidents, fire safety concerns, food safety issues and natural or human caused disasters.

4.16.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action although it is anticipated that there would be fewer participants. No emergency preparedness measures, fire safety, food permits, or dust suppression would be prepared so risk to public health and safety would be expected to increase over that observed during past events. BLM regulations would remain in effect even if the event was not officially permitted and stipulated and would reduce some of these impacts. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to public health and safety would be location specific and Operating Plan procedures would likely be required due to the size of the event.

4.17 Recreation

The assessment area for the analysis of recreation is the Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), Selenite Mountains WSA and Poodle Mountains WSA, High Rock Canyon and Soldier Meadows ACECs and travel routes (with 0.5-mile buffer), as shown in Figure 3-2.

4.17.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Recreation in the NCA is governed by the Resource Management Plan for the Black Rock Desert–High Rock Canyon Emigrant Trails NCA. Burning Man requires a Special Use Permit under the Commercial Uses category, which is defined as “recreational use of public lands and related waters for business or financial gain...” The Burning Man event is required to comply with the recreation decisions REC-21 through REC-27 of the Resource Management Plan, detailed in Section 1.3 (Introduction) of this EA. Under the Proposed Action, the applicant would reduce impacts to the playa, frequently used for recreational purposes (see Section II.C.3, Pits and holes, included as Appendix 2 of this EA). Under the Proposed Action participants would camp within the designated areas, and camping would be limited at the event site before and after the event period. Event participants would comply with the Tread Lightly!® and Leave No Trace® backcountry use ethics (see Section II.C.5, Camping and Recreational Uses).

The recreation environment and opportunities in the NCA and surrounding area are affected before, after and throughout the event period. There is potential for impacts to public access, transportation to and through the event area, competition with other permitted uses of the playa, and conflict between various user groups. Many of the potential impacts are mitigated through the Proposed Action and cooperation with outside agencies and interests. Impacts to the playa that may result from the large-scale increase in population include increased waste, impacts to wilderness or wilderness study areas, and impact to playa sediments. These impacts are discussed in Section 4.10 (Waste, Hazardous or Solid), Section 4.13 (Wilderness), Section 4.25 (Wilderness Study Areas), and Section 4.20 (Soils and Playa Sediments).

Public access to the playa, historic emigrant trails in the area, and the NCA would be retained during the event periods, with the exception of the 8-mile playa access road entrance and areas immediately within and adjacent to the Public Closure Area, which would be used exclusively for the Burning Man event during and prior to the event, and to ensure event security. All other access points to the playa and the playa roads that do not cross through the event area would remain open to public use. North-south access across the playa on the west side of the event would be restricted and limited to County Road 34 between the 8-mile entrance and the 12-mile access road entrance. Impacts to public access at the other entrance points would be minimal, since participants would be required to use the 8-mile access road entrance, and there would be limited use of the other playa entrances by BLM, law enforcement, and other cooperators.

Traffic congestion along the two main highways leading to and passing through the area is expected to be the greatest impact to public access. Visitors and local residences using SR-447 and County Road 34 to access the playa and other parts of the Black Rock region, and those who are traveling through the area on these highways would be inconvenienced by traffic congestion. These impacts 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. These users may be displaced to alternative routes, which would have the downstream effect of increasing traffic volumes on those roads.

The Proposed Action would also effect dispersed recreation. The Black Rock Desert playa is a remote area that attracts many users who are seeking solitude. During the permit period, those visitors who are searching for solitude on the playa would have to travel further north to areas away from the event. Visitor freedom of choice would also be impacted by closures to camping, and restrictions relating to the discharge of firearms and landing of aircraft in areas immediately adjacent to the permit area. Monitoring and patrol of popular recreation sites, including the hot springs at Soldier Meadows, Double Hot Springs, Trego Hot Springs, and Black Rock Hot Springs shows that there is very little use of these areas by event participants during the event (BLM 2006). Popular off-site areas would be patrolled by BLM and Burning Man staff on at least a daily basis during the Burning Man eight-day event and immediately before and afterwards to discourage use by event participants. Some participant use would be expected to occur in these areas before and after the event, which could result in competition for campsites adjacent to hot springs and conflict with other area users. An unknown number of users are displaced to other recreation sites or areas during the event. Displacement increases use in other areas and increases the potential for use related impacts in those areas.

The event has introduced thousands of people from throughout the world to the Black Rock Desert area either through participation in the event and/or increased media coverage associated with the event, which may have long-term impacts to the recreational environment in the area. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert for personal recreation outside of the event period, which would result in an estimated 3,480 to 4,200 visitors with event populations of 58,000 to 70,000 people. Casual, dispersed recreation does not require a permit. Preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man (McRae 2011). With event populations of 58,000 to 70,000 people, this would result in an estimated 11,600 to 14,000 visitors to parks and recreational areas nearby to the event routes. Resource impacts related to return visitation

by event participants or use of other recreational facilities on the way to or from Burning Man is thought to be minimal because of the educational, safety, and low-impacts messages that are given to event participants. Future users that come as a result of their Burning Man experiences would be better educated about the values of the area than many other visitors to the area.

Physical disturbances, such as pitting or rutting of the area surface, or debris left from the event could leave the playa in a less than ideal condition for other uses. Having a flat playa surface is critical to land sailors and land speed record attempts. Even with clean-up after the event, small portions of the playa could be less usable for these activities until wetting rains provide moisture to stabilize and redistribute playa sediments.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential recreation impacts from traffic and trash.

The potential for conflict between other permitted uses also exists due to temporal or spatial conflicts with the Burning Man event. The RMP for the NCA identified a standard for permitted uses on the playa that would limit the number and size of permitted activities to provide opportunities for dispersed recreation and solitude during at least one-half of the primary visitor use season. Therefore, requests for other permitted events could be denied or moved to other times of the year creating potential hardship for those involved in the other events. If a concurrent event were authorized, the need for additional constraints or alternative transportation plans could be necessary. There are no known conflicts between the Burning Man event and other permitted events; except the clean-up of Burning Man would potentially overlap with the traditional dates requested by the Association of Experimental Rocketry of the Pacific (AeroPac) for its A Rocket Launch for International Student Satellites (ARLISS) event to launch, test and recover prototype satellites. The preferred dates for the ARLISS event are during the month of September due to meteorological conditions and economic considerations (ARLISS 2012). The BLM has recommended dates for the ARLISS event that would be during mid-September, after September 20th.

In addition to temporal or spatial conflicts, increased surface disturbance and potential for wind erosion due to the event (see Section 4.19, Soils and Playa Sediments) would potentially lead to increased susceptibility of dust in the rocket launch area to the north following the event. As discussed in Section 4.2 (Air Quality), potential effects of dust would be minimized by dust abatement practices, including watering, that would be implemented by the applicant as specified by the Proposed Action (see Section 2).

4.17.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, the event under this alternative would be entirely located on the playa and would require a Special Use Permit. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,000 visitors over the course of the year. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning

Man, which would result in an estimated 10,000 visitors to parks and recreational areas travelling to and from the event under this alternative (McRae 2011). This alternative would have 13 to 29 percent fewer event participants than under the Proposed Action; but the participants would cause the same types of impacts as the Proposed Action, including additional trash along the access roads and nearby recreational areas and potential for increased surface disturbance and wind erosion. Dust abatement practices, as specified in Section 2.1.7, would minimize dust. Impacts to recreation access as a result of traffic congestion under this alternative would occur, as is described in Section 4.21.2 (Transportation and Traffic).

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential recreation impacts from traffic and trash.

4.17.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, there would be no formal control measures limiting the use of the playa and limiting the interruption to solitude throughout the playa. BLM campsites (EWH31 and Coyote Dunes) would not be closed to the public; however, BLM regulations would remain in effect. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to recreation would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.18 Social Values

Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Socio-Economics*, December 2011, prepared by Aspen Environmental Group, incorporated by reference herein. The assessment area for the social values analysis is shown on Figure 3-4 and includes Pershing, Washoe, Lyon, Churchill, and Humboldt Counties.

4.18.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The Social Values section evaluates of the Proposed Action with regard to population and demographics; housing; law enforcement, fire protection, and emergency medical services; waste and utilities; and attitudes toward Burning Man.

Population and Demographics

The Proposed Action would have a maximum population from 58,000 to 70,000 people. The authorized officer would determine the maximum population within this range for each year of the five-year permit. The temporary population of the Burning Man event under the Proposed Action would be greater than the 2010 populations of all the jurisdictions in the assessment area except Washoe County, Reno, and Sparks and a 1,000 percent increase in population of the nearest population in Gerlach. The 58,000 to 70,000 population increase from the Burning Man event would be greater than the projected growth rates of communities in the assessment area,

but as peak participation occurs for 8 days out of the year, would not constitute a permanent population increase.

According to the 2011 census of Burning Man participants, nine percent considered themselves to be a person of color and 11 percent sometimes considered themselves to be a person of color (BRC 2011b). According to the census of Burning Man participants from 2007, the average participant income is approximately \$72,000. Approximately 15 percent of Burning Man participants have incomes below the poverty level (BRC 2007). If Burning Man 2012-2016 continues to attract participants of the same general demographics, then approximately 20 percent of the population would be considered minority and 15 percent would be considered low-income, including the increase in population from 2011. This would be generally consistent with the minority and low-income population percentage of jurisdictions within the assessment area. As the population increases proposed under the Proposed Action would occur during the eight-day event, participants' demographic characteristics would have no substantial effects on the metrics for environmental justice demographics within the assessment area (see Section 4.5).

Housing

While preparations for Burning Man activities may begin months prior to Labor Day weekend in September, site preparations on the playa begin 28 days before the beginning of the event and clean-up follows the event for up to 30 days after the event with crews of 260 to 300 people. As described in BRC's 2011 census of attendees, the majority of these crews are drawn from populations in California and Nevada, within one day's drive to the site. During site preparation and clean-up, these crews camp at the event location on the playa. As the majority of the crews do not need accommodation between their origin and the event site, site preparation and clean-up would not affect temporary or permanent housing, would not displace any housing, or require the relocation of any residents.

Travel times between locations in the assessment area and the event site are generally less than one day's drive to the site. Compared to the Hot August Nights or Street Vibrations events, RV parks and campgrounds are fuller, but have substantially less effect on hotels and motels. In general, lodging demand peaks in the months of July and August prior to the festival itself, so sufficient physical capacity should be in place. (Aspen 2011)

With consideration of other events, such as Hot August Nights, which attracts close to one million participants in western Nevada, increasing the number of Burning Man attendees to 70,000 would unlikely affect temporary or permanent housing. In Fernley and Gerlach, increasing attendance would increase business and revenue at local hotels, motels, and RV parks (Aspen 2011).

As participants at Burning Man are expected to provide their own accommodations for their stay at the event and no housing would be displaced or persons relocated by the event, any increases in attendance would have no effect on temporary or permanent housing at the event site.

Law Enforcement, Fire Protection and Emergency Medical Services

According to law enforcement agencies, fire departments, and medical services on the periphery of the assessment area, the effects of participants travelling to and from Burning Man in their jurisdictions are comparable to other events such as Hot August Nights or the Street Vibrations

Fall Rally (Aspen 2011). A number of agency representatives, including those from Nevada Highway Patrol, Nevada Department of Transportation (Nevada DOT), North Lyon County Fire Department, Pyramid Lake Paiute Tribal Police Department, and Pyramid Lake Paiute Tribe Volunteer Fire Department, stated that Burning Man has a major effect on their departments, but with current staffing levels can accommodate the increase in activity associated with Burning Man with overtime. These agency representatives added that increasing participation over 60,000 would require temporarily hiring on a marginal number of additional staff.

For law enforcement, fire, and emergency medical services in the near vicinity of the event, the influx of 50,000 or more Burning Man participants temporarily increases the population of bottleneck locations along the travel route like Empire, Gerlach, Nixon, and Wadsworth by substantial amounts.

The Washoe County and Pershing County Sheriff's Offices are currently part of working groups with the BLM developing plans for staffing needs for future Burning Man events. According to the Pershing County Sheriff's Office, 32 to 34 temporary personnel would be brought on for 2012 Burning Man along with an additional three jeeps and three OHVs (Aspen 2011). According to the Washoe County Sheriff's Office, increasing event attendance to 58,000 would require one additional deputy in Gerlach through the event, with another additional deputy for every 10,000 additional attendees. Details for reimbursement for this staffing are being developed in the Sheriff's Office working group with the BLM. While increasing the number of Burning Man participants would require more law enforcement resources and increase costs, law enforcement at the event would be maintained at manageable levels. According to the Nevada Highway Patrol, the Fernley Substation would need to hire temporary personnel to accommodate additional increases in event population (Aspen 2011).

According to the Sierra Fire Protection District, the program to hire temporary personnel to staff the Gerlach Volunteer Fire Department during Burning Man needs to be expanded to accommodate current impacts and increases in event attendance. According to Gerlach Volunteer Fire Department, increasing the number of Burning Man to a maximum of 70,000 participants would require Gerlach Volunteer Fire Department to temporarily hire 10 personnel in addition to their existing 9 to 10 staff for the months leading up to and following the Burning Man event. Under the Proposed Action, the BLM Permit Stipulation #16 would require the applicant to complete a formal agreement with all affected parties such as the Gerlach Volunteer Fire Department at least 60 days prior to the event (see Appendix 1).

Even with additional staffing, with the distance to sizable medical facilities, the Gerlach Fire Department is concerned about how a mass casualty incident would be handled. Under the Proposed Action, the applicant would have emergency procedures, including for fire suppression (2012 Operating Plan Section V.1.A), fireworks (Section V.2), and contingency plans (Section V.3). The contingency plans would include how to operate in the event of critical health and safety concerns or conditions that would cause cancellation or temporary suspension of events (see Appendix 2).

During the Burning Man event, temporary medical facilities on-site have largely been able to accommodate most medical emergencies, reducing the need for transporting patients off-site, where they would be taken to a facility such as St. Mary's Regional Health Center or Renown

Health Emergency/Trauma Center. Given the coordination of medical services on-site and the level of medical infrastructure in the Reno-Sparks area where more serious medical emergencies would be transported, increases in Burning Man attendance would not result in substantial effects on emergency medical providers.

Waste and Utilities

With the applicant's coordination with waste disposal service providers in adjacent communities, the increase in the number of participants from 58,000 to 70,000 between 2012 and 2016 is anticipated to be accommodated by these service providers, as these increases represent manageable increases in business activities over the period. Increasing the number of participants would similarly increase complaints about litter and about trash that is dumped on the properties of local residents and business owners. It would also increase the potential for broken-down and abandoned vehicles. The applicant would request that participants not place trash in rest areas or in dumpsters and would provide roadside crews to clean up litter and debris along roads and meet and confer with local entities that have concerns regarding trash.

Recommended Mitigation to Reduce Effects: Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce social value impacts caused by trash.

Increases in Burning Man participation would not affect water supplies in neighboring communities during the 2012 to 2016 period.

Attitudes Toward Burning Man

According to public agency representatives, community groups, and community leaders, it is unlikely that increasing the number of Burning Man participants between 2012 and 2016 would substantially change attitudes toward the event other than polarizing views even more sharply (Aspen 2011). Based on scoping comments, which are summarized in Section 1.5, the public was most concerned about the 58,000 to 70,000 participant size of the event related to increased impacts to traffic on local roadways, waste management, and degradation of the playa surface (dunes, road scars, oil drip, etc.). These potential impacts are addressed in Sections 4.21 (Transportation and Traffic), 4.10 (Wastes, Hazardous or Solid) and Section 4.19 (Soils and Playa Sediments).

For those who support Burning Man as an opportunity to create a temporary community outside of conventional society, an increase in participation would largely be viewed as giving others the opportunity to participate in this experience (Aspen 2011). Non-participants opposed to Burning Man and its associated activities for moral and ethical reasons would likely become more resolved in their opposition to the event. Participants and former participants critical of Burning Man would be likely to see growth of the event as increasingly reflecting mainstream society and dilution of its countercultural aspects. Other participants or former participants could view this in a positive light, seeing the growth as the popularization of Burning Man's principles among the public: instead of Burning Man increasingly reflecting conventional society, conventional society's increasing reflection of Burning Man's principles. Because attitudes toward the event are divided, the Proposed Action would not result in a substantial effect.

As stated in the Nevada Rural Development Council's July 2011 Gerlach, Nevada Community Assessment:

While not universally popular, the Burning Man festival brings thousands through Gerlach each year and is a major source of revenue and development assistance to Gerlach. Better communication with the Burning Man organizers (through an action group as mentioned above), and a variety of sponsored activities could help bring people together and get residents motivated to serve in their community.

4.18.2 Alternative 2: 50,000-Person Maximum

Under the 50,000-Person Maximum Alternative, the maximum population would be limited to 50,000 people for each year of the five-year period. As described above for the Proposed Action, demographics for Burning Man 2012-2016 would likely be similar to the 2011 event, with approximately 20 percent of the participants considered minority and 15 percent considered low-income. Housing would also be the same as described above for the Proposed Action.

As described for law enforcement, fire protection, and emergency medical service agencies under the discussion of the Proposed Action, most agencies would be able to accommodate the increase in activity associated with a 50,000-person event using existing staff working overtime. For the 2011 event, the Washoe County Sheriff's Office increased their staffing of the Gerlach Substation from two resident deputies to nine deputies and a one sergeant. The Pershing County Sheriff's Office brought on an additional 22 temporary staff for the 2011 event. Similarly, the Gerlach Volunteer Fire Department has hired an additional 10 personnel for the months leading up to and following the Burning Man event. Keeping the permitted participation capped at 50,000 per day, these agencies would be expected to maintain these staffing levels for the 50,000-Person Maximum Alternative (Aspen 2011).

In response to complaints about litter and trash that is dumped on the properties of local residents and business owners, the applicant would request that participants not place trash in rest areas or in dumpsters and would provide roadside crews to clean up litter and debris along roads and meet and confer with local entities that have concerns regarding trash.

Recommended Mitigation to Reduce Effects: Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce social value impacts caused by trash.

Attitudes toward Burning Man could be expected also to remain as described above for the Proposed Action, except that limiting the participation to 50,000 people should alleviate some concerns raised in scoping comments about future growth.

It is anticipated that just as Burning Man participation has grown since its inception, demand for Burning Man, or Burning Man-like events would continue to grow, regardless of capping the population at 50,000 people. Consequently, it is expected that participation in regional events would increase. Over 40 regional Burning Man-related or Burning Man-like events are held by other groups and organizations worldwide (BRC 2011). While the effects in the assessment area would remain the same, all of the effects described above would increase at the location of regional events. It is not expected that this increase would result in sudden demands on the pub-

lic services and utilities providers in the new location that would exceed service capacities. Nor is it expected that these increases would substantially change the views and opinions of Burning Man for populations in the vicinity of the regional events.

4.18.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, with fewer attendees, the event's current effects on population, demographics, or housing would be lessened. A decrease in attendance would reduce business for hotels, motels, RV parks, and campgrounds in the assessment area. Such a gathering would substantially increase effects on law enforcement agencies, fire departments, and emergency medical services, as an unpermitted event could lack coordination with these agencies. Effects on waste and utilities would also increase without an organized infrastructure to accommodate the event. BLM regulations would remain in effect reducing some of the impacts. Additionally, a SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. Critics of Burning Man could become even more staunchly opposed to an unpermitted event because of its lack of applicant operating procedures and BLM stipulations (if no SPR were required).

If Burning Man were held at a different location, off of BLM Winnemucca District managed lands, the effects of the event in the assessment area would be transferred to a new location. Public services in the assessment area have developed methods to accommodate Burning Man's growth over time. Hosting Burning Man at a new location would result in sudden demands on the public services and utilities providers in the new location. The service providers may or may not have the capacity to accommodate such an event. Local opponents of Burning Man would be relieved to have the event moved from its current location, although new critics of the event would likely be created around the new location. Burning Man supporters might be angered or disappointed by the move, but would still be able to attend the event or know that the event continues even if they are unable to participate.

4.19 Soils and Playa Sediments

The assessment area for the analysis of soils and playa sediments is the soil units that intersect the Public Closure Area, as shown on Figure 3-9.

4.19.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Eleven soil units/associations are located along the access road, and within and adjacent to the Public Closure Area, as illustrated in Figure 3-9 and discussed in Section 3.19. The aerial extent of each of these soils units, which is the overall assessment area, is generally much larger than the actual area of each soil unit that could potentially be affected by the Burning Man event, with the exception of a few smaller soil units located near the western edges of the Public Closure Area. Impacts related to ground disturbance, such as erosion would occur in the Public Closure Area. The full aerial extent and amount of each assessment area soil unit within the Public Closure Area are summarized Table 4.20-1.

Table 4.20-1. Soil Units within Public Closure Area

Soil Unit Name	Soil Unit Area within Closure Area (acres)	Total Soil Unit Area (acres)	Percentage of Soil Unit within Closure Area
Playas	12,633.6	302,150.9	4.2
Coldent-Isolde-Swinger association	307.1	335.5	91.5
Mazuma silt loam, moderately saline-sodic, 0 to 2 percent slopes	105.4	189.1	55.7
Theon-Grumbler-Rubble land association	299.9	975.3	30.7
Mazuma-Trocken association	115.6	428.0	27.0
Mazuma-Ragtown association	27.1	289.8	9.3
Toulon-Appian-Bluewing association	194.6	4,469.7	4.4
Isolde-Ragtown association	440.7	41,388.4	1.1
Slocave-Arclay-Rock outcrop association	18.2	2632.5	0.7
Shawave-Slipback-Granshaw association	0.3	275.2	0.1
Badland	10.8	14.4	75.4
Total	14,153.3	353,148.7	4.0

Source: USDA NRCS 1998.

The following design measures would be implemented under the Proposed Action (see Appendix 2, 2012 Operating Plan):

- Excavation of pits and holes would be limited to those absolutely necessary for administration of the event, including holes and pits excavated by participants. All pits and holes would be backfilled, wetted and compacted by physical tamping to minimize post-event pit depressions.
- At least two water trucks would be utilized to provide dust suppression and would be operated on an as-needed basis beginning twenty-one days before the event starts through seven days after the event ends.
- As part of the final clean-up of the site, the playa surface would be soaked by water trucks to increase the likelihood of creating a crust, thereby limiting subsequent wind erosion.
- Watering of the roads with the Black Rock City would be performed at least once daily during event operation, as well as after event closure, to keep fugitive road dust at a minimum and to reduce the potential for erosion. With the exception of those roads authorized in advance by BLM, BRC/LLC would not use dust palliatives to control fugitive dust. Water without additives would be used for fugitive dust control within BRC.
- Before the final inspection, all disturbed areas within the event site would be watered, including the airstrip, and within the trash/security fence to affix fugitive dust to the playa surface.
- The surface of the runway and the taxiway to the tie-down area would not be disturbed other than necessary removal transient dunes to ensure safety.

The Burning Man event would increase the amount of sediment available for movement by wind during mid-August through September over an approximate area of 3,200 acres (approximately 3

percent of the total area within the Black Rock Desert playa). Most of the increased area of disturbed and loosened sediment would be generated within the 820-acre residential portion of Black Rock City. The intensity and volume of use would disturb and loosen sediments, where the surface crust is disturbed, due to walking, biking, art cars travelling between art pieces, and other movement of the participants inside the closure boundary fence. As populations increase the percentage of crust broken would also increase. The Public Closure Area is primarily underlain by the mapped Playa soil (12,672 acres out of 14,153 total acres). This represents 4.2 percent of the 302,150.9 acres of adjacent, contiguous playa area. Potential soil disturbing activities during the Burning Man event would occur primarily within this unit. Playa soil is classified by the NRCS as having moderate potential for wind and sheet and rill erosion. Loosened Playa soil sediments would be available for erosion and movement by the wind.

The anticipated Burning Man population between 58,000 to 70,000 people under the Proposed Action would potentially 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. This would likely lead to an increase in the amount of playa surface disturbance within the residential area and to a lesser degree the open playa area with the Public Closure Area as population of the event increases.

The amount of wind erosion and subsequent intermittent dune deposition associated with the playa varies depending upon surface moisture and the amount of strong winds that occur during the three to four months each year (the dry periods of the year) 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 area of the playa disturbed by the Burning Man 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. Observations following the 2002 Burning Man event of coins left on the playa surface within Black Rock City indicated wind erosion of up to 0.2-inch (five millimeters) during that event; GPS surveys conducted on roadways within Burning 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 or one centimeter) (Adams and Sada 2010).

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 dune features. These windblown loosened sediments would be subject to transport by rain/water back to the low lying playa surface during the wet season. 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 dune features. In previous years intermittent dunes have been noted along the perimeter fence after the event. The potential for formation of dunes during the Burning Man event would depend partly on the number of strong wind events or the amount and duration of continuous winds. Section 2.1.10 states that dunes formed as a result of dust blowing into the perimeter fence would be dragged or graded. Additionally, 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.

The applicant currently uses approximately four inches of decomposed granite under its authorized art burns to prevent burning and scarring of the playa surface (BRC 2012). While use of decomposed granite prevents actual burning of the playa surface, a concern regarding remnant decomposed granite oxidizing to an orange coloration at burn sites arose during public review of the preliminary EA. The concern raised suggests that orange marks, from remnant oxidized decomposed granite, has the potential to create orange discoloration on the playa surface at the applicant’s “authorized burn” sites.

Recommended Mitigation to Reduce Effects (Burn Pad Debris Removal Arising from Public Comments): In order to decrease or eliminate foreign material that remains at the applicant’s “authorized burns,” including materials used for protection of the playa surface, the BLM should adopt a monitoring protocol to determine the amount of unburned material at these sites. This protocol should be employed by the BLM during the 2012 post-event monitoring to provide a quantification of materials left specifically at “authorized burn” sites and provide a baseline against which future events could be compared. This baseline should also be utilized to create a standard and consequence that will be applied to subsequent events (beginning with the 2013 event) similar to the standard and consequence described in Stipulation #29 in the Burning Man 2011 Special Recreation Permit Stipulations (Appendix 1). Additionally, “unburned material”, as discussed in Chapter II, Section C, sub-part 2 of the applicant’s Annual Operating Plan (Appendix 2), should be understood by the BLM to include materials used in creation of a burn pad.

The water that would be used for dust suppression and final watering of disturbed areas would be obtained from the Fly Ranch water source, which is a thermal, continually flowing artesian source (spring) with water is taken from a down-gradient collection. The water is considered high quality, as discussed in Water Quality, Sections 3.11 and 4.11, and would not have any detrimental effects on the alkaline playa surface, such as increased salt or mineral deposition. The NRCS classifies the playa soils and groundwater as moderately to highly saline and the underlying shallow groundwater is known to be saline.

While the Fly Ranch water has slightly elevated levels of chloride and total dissolved solids (TDS) compared to drinking water standards, levels of other constituents that could result in mineral deposition such as iron, sulfate and bicarbonate are lower than standards. Table 4.20-2 lists the amounts of salt or mineral deposition that would be expected to remain on the playa if the entire six million gallons of water were sprayed and the mass of dissolved solids expected after the maximum lake dispersion. All concentrations would be dispersed by the fall and winter rains and formation of any subsequent lake formation to below one gram per square meter (0.03 ounces per square yard). Sprayed application of this water over saline soils where the water would readily evaporate is not likely to cause substantial salt or mineral deposition.

Table 4.20-2. Estimated Salt or Mineral Deposition on Playa from Fly Ranch Water Source

Constituent	Concentration (mg/L)	Mass per Area Applied (mg/meter ²)	Mass per Area After Maximum Lake Dispersion (mg/meter ²)
Bicarbonate	420	18287	32
Chloride	260	11321	20
Fluoride	8.4	366	1

Table 4.20-2. Estimated Salt or Mineral Deposition on Playa from Fly Ranch Water Source

Constituent	Concentration (mg/L)	Mass per Area Applied (mg/meter ²)	Mass per Area After Maximum Lake Dispersion (mg/meter ²)
Sulfate	200	8708	15
Nitrogen	0.9	39	0
TDS	1100	47896	83
Barium	0.11	5	0
Calcium	29	1263	2
Iron	0.086	4	0
Magnesium	4.2	183	0
Potassium	19	827	1
Sodium	410	17852	31
Mercury	0.00029	0	0
Antimony	0.19	8	0

Note: Assumes six million gallons of water is applied.
 Source: BLM 2012.

In the event that application of dust palliatives is deemed necessary, magnesium chloride dust palliative would be the likely choice to be used only on roads approved in advance by the BLM. Magnesium chloride is a naturally biodegradable salt compound that is used for controlling dust on a variety of road types. Magnesium chloride is hygroscopic, thus having the ability to attract atmospheric moisture from the surrounding air and holding this moisture in the top two inches of the road surface, which helps bind dust particle to the road surface. Magnesium chloride is biodegradable and would break down over time into its chemical constituents of magnesium and chloride and wash away from the road surfaces during the fall and winter rains. Due to the saline nature of the playa soils and groundwater, the addition of the small amounts of magnesium and chloride that would likely be applied to select roads for the Burning Man event would not have an effect on soils.

4.19.2 Alternative 2: 50,000-Person Maximum

Impacts under this alternative would be similar to those described for the Proposed Action, although the density and size of the City residential area would not grow in future years. The amount of disturbed and loosened sediment from the event would generally remain constant during the events in future years under this alternative. Disturbance of the playa surface and the subsequent wind driven erosion and dispersal of the playa sediments could result in the formation of intermittent dunes and dune features along the perimeter fences and along and behind other structures associated with the Proposed Action.

As with the Proposed Action, anticipated impacts related to disturbance and discoloration of the playa surface and increased erosion would be reduced by implementation of design measures (see Appendix 2) and recommended mitigation (below).

Recommended Mitigation to Reduce Effects: Burn Pad Debris Removal Arising from Public Comments recommended mitigation in Section 4.19.1 (Soils and Playa Sediments)

should be implemented to reduce playa surface impacts caused by foreign material that remains at the applicant's "authorized burn" sites.

4.19.3 Alternative 3: No Action Alternative

Under the No Action Alternative, wind erosion and dune formation from other unrelated recreational activities and from natural conditions would continue to occur. The approximately 8,400 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. Intermittent dunes and dune/ripple features would continue to form both in areas near to those disturbed by human activities and in undisturbed areas.

If a permit is not issued by the BLM for the Burning Man event, it is likely that a large, informal gathering or smaller unpermitted events could occur. These event(s) 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 or longer lasting events. An unauthorized event or events would not necessarily follow the guidelines stipulated in the 2012 Operating Plan and impacts would not be confined to an enclosed area; however, the event would be subject to BLM regulations for use of the playa. Additionally, a SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands.

If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to soils and erosion would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.20 Special-Status Species

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the special-status species analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert-High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.20.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

Elevated levels of noise, light, and human presence in the City and increased activities such as hiking, camping and illegal off-road vehicle use would increase with populations from 58,000 to

70,000 people and could displace and disrupt the nesting, roosting, or foraging activities of special-status wildlife proximate to the project area (see Noise and Dark Skies discussions in Sections 4.15 and 4.23, respectively, for impacts associated with event populations of 58,000 to 70,000 people). As these impacts would primarily occur during the eight-day event, lasting effects to the continued viability of local populations would not occur.

Indirect impacts to special-status species would include habitat degradation or mortality attributable to increased recreational use of the hot springs and other areas. As discussed in Section 2.2.4 (Event Security and Public Safety), off-site law enforcement would patrol hot springs, including Soldier Meadows and other recreational areas on at least a daily basis during the event and immediately afterwards, thereby reducing potential impacts to special-status species from trampling and increased use. In addition, the use of a re-entry fee to the event would further discourage participants from visiting Soldier Meadows. These provisions would minimize potential indirect impacts to special-status species from increased recreational use of sensitive areas attributable to Burning Man participants.

Impacts to special-status species in the assessment area could include direct mortality or habitat degradation from off-road vehicle use. Additionally, collisions with special-status wildlife listed in Table 3.21-1 may occur along the roads within the assessment area. Given the proximity of suitable habitat, it is more likely collisions could occur along the remote roads leading to points of interest in the NCA rather than primary event access roads.

If disposed of improperly, trash could entangle or choke special-status species or pollute habitat. In addition to the design features of the Proposed Action that address post-event clean-up of litter along roads, and debris inspections in the fall and spring after the event (see Appendix 1), recommended mitigation (below) would minimize impacts to special-status species habitat from trash.

Recommended Mitigation to Reduce Effects: Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce special-status species impacts caused by trash.

To minimize impacts from off-road vehicle access, access routes to the playa would be clearly marked and controlled by enforcement officials. Unauthorized off-road vehicle use is prohibited and enforced by Nevada Highway Patrol and the applicant within their respective jurisdictions.

4.20.2 Alternative 2: 50,000-Person Maximum

With the 50,000-Person Maximum Alternative, there would be the potential for unauthorized off-road vehicle use and debris in the surrounding lake plain-terrace and mountains, and resulting impacts to wildlife in these areas. Participant vehicles traveling to and from the site would also result in the potential for collision with wildlife on highways and the playa itself. Indirect impacts during the eight-day event, elevated noise and light, could displace and disrupt the nesting, roosting, or foraging activities of special-status wildlife proximate to the project area. If disposed of improperly, trash could entangle or choke special-status species or pollute habitat.

Event security, law enforcement, and permit stipulations would be similar to the Proposed Action, and would therefore, minimize impacts to special-status species and their habitat namely from trash dumping, hot springs use, and unauthorized off-road vehicle use. Implementation of

recommended mitigation (below) would minimize impacts to special-status species habitat from trash.

Recommended Mitigation to Reduce Effects: Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce special-status species impacts caused by trash.

4.20.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action. Although there would likely be fewer participants to impact special-status species, there would be a higher likelihood of off-road vehicle use, no formal trash clean-up measures, and a greater potential for visitation to Soldier Meadows hot springs. BLM regulations would remain in effect even if the event was not officially permitted and stipulated which would mitigate some of the impacts. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to special status species would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event and it would likely result in similar impacts to the Proposed Action.

4.21 Transportation and Traffic

Information contained within this section was provided primarily by the *Burning Man Environmental Assessment Traffic Analysis*, March 5, 2012, prepared by Fehr & Peers, incorporated by reference herein. The assessment area for analysis of transportation and traffic is the travel routes to the event and landing strip, as shown on Figure 3-10.

4.21.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The Nevada Department of Transportation's (NDOT) 2011 Burning Man After Action Report provides 2011 traffic volume data on SR-447 near County Road 34. The data includes normal trips (existing traffic on SR-447), Burning Man specific trips, and total trips. The data is provided for approximately 15 days and includes the eight days of the Burning Man event, the day before the event starts, and the day after the event ends. Similar data is provided for 2004, 2009, and 2010.

Burning Man trip generation estimates were calculated for a 10-day analysis period including the day before the event starts, the eight days the event operates, and the day after the event ends. The traffic volume data from 2004, 2009, 2010, and 2011 was used to determine an average vehicle trip generation rate for the event by comparing the total number of Burning Man trips generated over the 10-day analysis period to the population of Burning Man for that year. As shown in Table 4.21-1, the number of one-way vehicle trips per guest has increased each year. The number of vehicle trips generated by the event varies depending on vehicle-passenger occupancy rates and the level of "in-out", non-participant, and support traffic; however, to simplify the analysis, the average trip generation rate per guest was assumed to grow linearly and unconstrained over time with the total number of guests to a level of 1.28 trips per person attending the event in 2016.

Table 4.21-1. Population/Trip Comparison

Year	Burning Man Population	Total 10-Day Trip Generation	Trips/Guest
2004	35,664	33,082	0.93
2009	43,558	41,169	0.95
2010	51,515	56,182	1.09
2011	53,735	64,467	1.20

Source: Fehr & Peers 2012.

The existing Burning Man traffic volume data was also used to determine the number of trips entering and exiting the event for each of the 10 analysis days. Trips generated during the 10-day analysis period are not distributed 50 percent in / 50 percent out because some people arrive and leave outside of the 10-day analysis period; these trips are relatively low and are not considered in the trip generation analysis.

Daily vehicle trip rates were predicted for the Proposed Action assuming linear growth of the average trip generation rate to 1.28 trips per guest and event attendance of 58,000 people, 65,400 people, and 70,000 people. The trip generation estimates for each scenario are shown in Table 4.21-2.

Table 4.21-2. Burning Man Trip Generation, Daily Vehicle Trips

	Population = 58,000			Population = 65,400			Population = 70,000		
	Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips
Day Before Event	4,690	402	5,092	5,288	453	5,741	5,660	485	6,145
1	9,171	338	9,510	10,341	382	10,723	11,069	408	11,477
2	5,382	352	5,734	6,069	397	6,466	6,496	425	6,921
3	6,039	417	6,457	6,810	470	7,280	7,289	504	7,793
4	4,256	629	4,885	4,799	709	5,508	5,137	759	5,896
5	1,860	1,066	2,926	2,097	1,202	3,299	2,245	1,286	3,531
6	466	3,291	3,757	525	3,711	4,236	562	3,972	4,534
7	213	14,094	14,307	240	15,892	16,132	257	17,010	17,267
8	316	16,967	17,284	357	19,132	19,489	382	20,478	20,859
Day After Event	285	4,004	4,290	322	4,515	4,837	344	4,833	5,177
Total	32,680	41,560	74,240	36,849	46,863	83,712	39,441	50,159	89,600

Source: Fehr & Peers 2012.

Project generated traffic volumes were distributed to the study roadway segments based on survey data collected by the applicant. The survey data provides information on where people come from to attend the event. It was assumed that the majority of people from Nevada, California, Oregon, and Utah would travel to the event via ground transportation, while half of the people from Washington, Colorado, and Arizona would travel by ground and half would travel by air. It was assumed that people from places further away would travel by air. It was also assumed that the majority of air travelers would fly into Reno-Tahoe International Airport in Reno. Based on

the survey data, the following trip distribution percentages were used to analyze project generated trips:

- 85 percent to/from west on I-80
 - 50 percent to/from west of U.S. 395 on I-80
 - 35 percent to/from south of I-80 on U.S. 395
 - 25 percent take Pyramid Highway and SR-446 to/from I-80 west
 - 60 percent take SR-427 and SR-447 to/from I-80 west
- 10 percent to/from east on I-80
- 5 percent to/from north on SR-447

Table 4.21-3. Existing Plus Project Daily Traffic Volumes and Levels of Service

Roadway Segment	Location	Roadway Type	Existing Plus Project Conditions							
			Existing Conditions		58,000 Population		65,400 Population		70,000 Population	
			Daily Volume*	LOS	Daily Volume*	LOS	Daily Volume*	LOS	Daily Volume*	LOS
1) SR-447	South of County Rd 34 in Gerlach	Minor 2-Lane Highway	190	A	16,310	D	18,370	D	19,640	D
2) SR-447	North of County Rd 34	Minor 2-Lane Highway	110	A	960	A	1,070	A	1,130	A
3) County Rd 34	East of SR-447	Minor 2-Lane Highway	75	A	17,040	D	19,210	D	20,550	E
4) SR-447	North of Nixon	Minor 2-Lane Highway	210	A	16,330	D	18,380	D	19,660	D
5) SR-447	North of SR-446 in Nixon	Minor 2-Lane Highway	740	A	16,860	D	18,910	D	20,190	E
6) SR-447	North of SR-427 in Wadsworth	Minor 2-Lane Highway	890	A	12,770	C	14,290	C	15,230	D
7) SR-446	Between Pyramid Highway & SR-447	Minor 2-Lane Highway	280	A	4,530	A	5,070	B	5,400	B
8) Pyramid Highway	South of SR-446	Minor 2-Lane Highway	350	A	4,590	A	5,130	B	5,470	B
9) Pyramid Highway	North of Calle de la Plata	Minor 2-Lane Highway	2,110	A	6,350	B	6,890	B	7,230	B
10) Pyramid Highway	South of La Posada Drive	4-Lane, Multilane Highway	13,110	B	17,360	B	17,900	C	18,230	C
11) SR-427	East of SR-447	Minor 2-Lane Highway	1,180	A	2,880	A	3,100	A	3,230	A
12) SR-427	West of SR-447	Minor 2-Lane Highway	530	A	10,710	C	12,010	C	12,820	C
13) Interstate 80	West of Wadsworth	4-Lane Freeway	12,590	A	22,770	A	24,070	B	24,870	B
14) Interstate 80	East of Rock Boulevard	4-Lane Freeway	51,940	C	66,360	D	68,200	D	69,350	D
15) Interstate 80	East of Keystone Avenue	4-Lane Freeway	46,970	C	55,460	C	56,540	C	57,210	C
16) U.S. 395	North of Glendale Avenue	10-Lane Freeway	76,420	D	82,360	D	83,120	D	83,590	D

*One-directional volumes.
Traffic volumes are rounded to the nearest 10.
Bold indicates unacceptable LOS.
Source: Fehr & Peers 2012.

Existing Plus Project Conditions

Project generated traffic volumes were added to existing traffic volumes based on the trip distribution percentages shown above. Table 4.21-3 shows the existing plus project conditions traffic volumes for the peak direction on the study roadway segments, and corresponding levels of service based on the highest trip generating day of the event.

As shown in Table 4.21-3, County Road 34 and SR-447 in Nixon are expected to operate at LOS E when 70,000 people attend the Burning Man event. LOS E is considered unacceptable by NDOT.

Fehr & Peers also calculated 2016 Background Conditions using historical traffic volume data from NDOT's *Annual Traffic Report*. An annual growth rate was developed for each study location based on the historical data. The annual growth rate was applied to the 2011 traffic volumes to determine 2016 traffic volumes. Project generated traffic volumes were then added to 2016 background traffic volumes. As with the existing plus project conditions, County Road 34 and SR-447 in Nixon are expected to operate at LOS E when 70,000 people attend the Burning Man event using 2016 traffic volume data (Fehr & Peers 2012). All other roadways would remain LOS D or better.

Maintaining Acceptable LOS D

The daily roadway segment level of service thresholds in Table 3.21-1 (Daily Roadway Segment Level of Service Thresholds [One-Direction]) in Section 3.21 were used to determine the maximum Burning Man populations that would still maintain LOS D on the external roadway network.

The final day of the Burning Man festival generates the most traffic (23 percent of the total trips generated and 41 percent of all outbound trips). The LOS thresholds shown in Table 3.21-1 are for one direction of travel. Therefore, to determine capacity thresholds, the maximum daily traffic volume that allows a specific level of service was assumed to be the outbound volume on the final day of the event. Table 3.21-1 shows that over the peak traffic day, each minor two-lane highway was found to have the capacity to carry 20,070 vehicles without reaching LOS E.

The population that causes the roads to deteriorate from LOS D to E (65,400 people) was calculated assuming a maximum exodus of approximately 1,000 vehicles per hour, and an average of approximately 830 vehicles per hour on the last day of the event. The analysis also assumes that a varying number of people would leave the event during each hour of the day to reflect the existing pattern over the course of the day (i.e., 1,000 vehicles leave each hour from 4:00 PM to 9:00 PM, but only 650 vehicles leave each hour from 12:00 AM to 3:00 AM).

Acceptable levels of service would be maintained with a population that does not exceed 65,400 and no additional traffic controls other than those included with the Proposed Action. This is based on the conservative estimate of growth in traffic to a rate of 1.28 trips per guest by 2016, and County Road 34 carrying 20,070 outbound trips on the peak day. Improvements that would continue to maintain acceptable levels of service with greater populations include: extending the exodus period, implementing a system that requires participants to sign up for an exit time, or

incentivizing carpooling so there are more participants per vehicle (e.g., by charging a fee to bring a car or rewarding high vehicle occupancy rates). (Fehr & Peers 2012)

To reduce potential impacts due to transportation and traffic, implementation of Traffic Signage and Control recommended mitigation (below) would require coordination between the applicant and the BLM regarding traffic signs and would require a more detailed traffic control plan, including metering, to avoid deterioration of the level of service. By metering vehicles such that no more than 1,000 vehicles per hour are released from the event during the exodus period, populations above 65,400 could be allowed without a likelihood of causing any unacceptable LOS. Although the applicant already provides temporary traffic control on County Road 34, temporary speed limit reductions through Empire, speed limit trailers in Gerlach, Empire, and Nixon, and a copy of the necessary permit(s), these requirements are not a part of the Proposed Action. As such, they are recommended in the mitigation bullets below. Traffic control in Nixon and Wadsworth would reduce traffic congestion along local roadways in these towns, which were identified in Table 4.21-3 as going from LOS A to LOS E and from LOS A to LOS D at a population of 70,000, respectively. The Traffic Signage and Control recommended mitigation bullet regarding left-hand turns on SR-447 within the Pyramid Lake Paiute Tribe reservation would reduce traffic effects and tribal concerns by easing congestion (see Section 4.8).

Recommended Mitigation to Reduce Effects (Traffic Signage and Control): In addition to the Traffic Management Plan provided in the Proposed Action *2012 Operating Plan*, the following traffic signage and control items are recommended:

- No more than 1,000 vehicles per hour should be released from Black Rock City during the exodus period to avoid deterioration of the external roadway system to an unacceptable level of service (LOS E or F).
- The applicants Traffic Management Plan should be expanded to include more detail on ingress and egress. This plan would be approved by the authorized officer or the authorized officer's agent.
- Prior to the event, the applicant should coordinate with NDOT regarding the type of traffic control devices to be used in accordance with NDOT requirements.
- The applicant should cooperate with Washoe County Sheriff's Office and NDOT to install temporary speed limit reductions through the town of Empire. A maximum speed limit of 25 mph is recommended. A reduced speed limit would improve the safety of parking along SR-447 through Empire and pedestrians crossing the roadway.
- Speed limit trailers should be installed in Gerlach Empire, and Nixon to encourage drivers to maintain the legal speed limit. Speed limit trailers act as a traffic calming device by displaying a driver's speed as they pass by the trailer.
- A copy of all necessary permits for encroachment within Tribal, NDOT, and county right-of-way for temporary traffic control measures (i.e. speed limit trailers, etc.) should be provided to the appropriate agencies/jurisdictions 30 days prior to the start of the event.

- BRC should provide traffic control, using traffic control devices as determined by NDOT, at County Road 34 entrances/exits to the Burning Man event, the "Y" intersection of SR-447/County Road 34, and in the towns of Gerlach and Empire during heavy traffic periods.
- Flaggers should be used at the intersection of SR-447 and SR-446 to allow left-hand turns within the Pyramid Lake Paiute reservation.

4.21.2 Alternative 2: 50,000-Person Maximum

With fewer participants, there would be a reduction in existing plus project daily traffic volumes and a corresponding change in level of service than with the event under the Proposed Action. Daily trip generation for the 50,000-Person Maximum Alternative is shown in Table 4.21-4.

Table 4.21-4. Burning Man Trip Generation for 50,000-Person Maximum Alternative

Event Day	Daily Vehicle Trips		
	Trips In	Trips Out	Total Trips
Day Before Event	4,043	347	4,389
1	7,906	292	8,198
2	4,640	304	4,943
3	5,206	360	5,566
4	3,669	542	4,211
5	1,604	919	2,522
6	402	2,837	3,239
7	184	12,150	12,333
8	273	14,627	14,900
Day After Event	246	3,452	3,698
Total	28,172	35,828	64,000

With fewer participant vehicles traveling to and from the site, all roadways affected by this alternative traffic would operate at LOS D or better, as shown in Table 4.21-5. When using 2016 Background Conditions, all roadways would operate at LOS D or better as well (Fehr & Peers 2012). To reduce potential impacts due to transportation and traffic, Traffic Signage and Control recommended mitigation (below) would require coordination between the applicant and the BLM regarding traffic signs and would require a more detailed traffic control plan, including metering, to avoid deterioration of the level of service. Although the applicant already provides temporary traffic control on County Road 34, temporary speed limit reductions through Empire, speed limit trailers in Gerlach, Empire, and Nixon, and a copy of the necessary permit(s), these requirements are not a part of the alternative description in Section 2.2. As such, they are recommended as part of the Traffic Signage and Control mitigation measure (below). Traffic control in Nixon and Wadsworth would reduce traffic congestion along local roadways in these towns, which were identified in Table 4.21-5 as going from LOS A to LOS D and from LOS A to LOS C, respectively. The mitigation recommendation (below) regarding left-hand turns on SR-447 within the Pyramid Lake Paiute Tribe reservation would reduce traffic effects and tribal concerns by easing congestion (see Section 4.8).

Table 4.21-5. Existing Plus Project Daily Traffic Volumes and Levels of Service for 50,000-Person Maximum Alternative

Roadway Segment	Location	Roadway Type	Existing Conditions		Existing Plus 50,000 Population	
			Daily Volume*	LOS	Daily Volume*	LOS
1) SR-447	South of County Rd 34 in Gerlach	Minor 2-Lane Highway	190	A	15,090	D
2) SR-447	North of County Rd 34	Minor 2-Lane Highway	110	A	840	A
3) County Rd 34	East of SR-447	Minor 2-Lane Highway	75	A	14,700	D
4) SR-447	North of Nixon	Minor 2-Lane Highway	210	A	14,100	D
5) SR-447	North of SR-446 in Nixon	Minor 2-Lane Highway	740	A	14,630	D
6) SR-447	North of SR-427 in Wadsworth	Minor 2-Lane Highway	890	A	11,130	C
7) SR-446	Between Pyramid Highway & SR-447	Minor 2-Lane Highway	280	A	3,940	A
8) Pyramid Highway	South of SR-446	Minor 2-Lane Highway	350	A	4,000	A
9) Pyramid Highway	North of Calle de la Plata	Minor 2-Lane Highway	2,110	A	5,770	B
10) Pyramid Highway	South of La Posada Drive	4-Lane, Multilane Highway	13,110	B	16,770	B
11) SR-427	East of SR-447	Minor 2-Lane Highway	1,180	A	2,650	A
12) SR-427	West of SR-447	Minor 2-Lane Highway	530	A	9,310	C
13) Interstate 80	West of Wadsworth	4-Lane Freeway	12,590	A	21,360	A
14) Interstate 80	East of Rock Boulevard	4-Lane Freeway	51,940	C	64,370	D
15) Interstate 80	East of Keystone Avenue	4-Lane Freeway	46,970	C	54,290	C
16) U.S. 395	North of Glendale Avenue	10-Lane Freeway	76,420	D	81,540	D

*One-directional volumes.

Traffic volumes are rounded to the nearest 10.

Bold indicates unacceptable LOS.

Source: Fehr & Peers 2012.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21.1 (Transportation and Traffic) should be implemented to reduce potential impacts due to transportation and traffic.

4.21.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, some of the same impacts described for the Proposed Action would occur. Although there would be fewer participants and fewer vehicles, there would be no formal Traffic Management Plan or measures to reduce impacts to traffic. BLM regulations would remain in effect even if the event was not officially permitted and stipulated and would reduce some of the impacts. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to transportation and traffic would depend on the location of the substitute event and the transport routes used to access the event. Operating Plan procedures would likely be required due to the size of the event.

4.22 Vegetation

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the vegetation analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.22.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The highly alkaline playa (including the entire Public Closure Area and access road) is composed of silt and clay textured sediments, and does not support vegetation. Therefore, there would be no direct impacts to vegetation. Nearby lake-plain terraces, beyond the Closure Area, support salt-desert scrub and sagebrush communities. Trash and off-road vehicle use, including from those that drive off-site to photograph or videotape the event, in unauthorized areas could have an impact on vegetation through entanglement, pollution, and ground compaction. These impacts would be minimized under the Proposed Action with post-event clean-up of litter along roads and debris inspections in the fall and spring after the event, as necessary (see Appendix 1). Additionally, access routes to the playa would be clearly marked and controlled. Unauthorized off-road vehicle use is prohibited and enforced by Nevada Highway Patrol and the applicant within their respective jurisdictions.

4.22.2 Alternative 2: 50,000-Person Maximum

Under this alternative, there would be the potential for trash and other improperly disposed of waste and unauthorized off-road use, thereby impacting vegetation through entanglement, pollution, and ground compaction. Law enforcement, event cleanup, and permit stipulations would be similar to the Proposed Action, and would therefore, minimize impacts to vegetation namely from trash dumping and unauthorized off-road vehicle use.

4.22.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, some of the same impacts described for the Proposed Action would occur although there would be fewer participant vehicles. Vehicles would not be confined to a single access road and designated parking in the residential areas, there would be no speed restrictions, and there would be a much higher likeli-

hood for off-road vehicle use in unauthorized areas, with greater consequent damage to vegetation. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to vegetation would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.23 Visual Resources (including Dark Skies)

The assessment area for the analysis of visual resources is the viewshed and key observation points, as shown on Figure 3-8.

4.23.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The portion of the Burning Man viewshed within the NCA boundaries is managed as either VRM Class I (within Calico Mountain Wilderness) or Class II (all other portions of NCA). Areas outside the NCA boundaries range from Class II west of the boundary, to Class III and IV to the south along Highway 49 (Jungo Road).

The Proposed Action would be consistent with Class III and IV contrast criteria applicable to the Highway 49 (Jungo Road) corridor and adjoining non-NCA areas to the south of the Public Closure Area. Similarly, at distances of 7 miles or more, the Proposed Action would not be evident to casual day time observers in the Calico Wilderness and would be largely consistent with the area's Class I rating. The Proposed Action would exceed Class II contrast criteria applicable to areas within and west of the NCA. That is, the Proposed Action would attract attention and begin to dominate the characteristic landscape within a middle-ground viewing radius of roughly two to three miles in the day time, and greater distances (eight miles or more) at night. Historic resources within this radius include portions of the Nobles Routes and a short segment of the National Desert Trail south of Trego Hot Springs. These visual changes would be limited to the period between initial set-up and final clean-up of BRC, approximately eight weeks. After the completion of clean-up (see Appendix 2, 2012 Operating Plan), the Proposed Action would not be detectable at the event site to the casual observer at close distance (BRC 2011). Following seasonal rains, visual evidence of the event would be obliterated or could be detected only by trained observers. Similarly, off-site roadside trash would be collected after the event. No long-term visual impacts are thus anticipated.

In addition to the design features of the Proposed Action that address post-event clean-up of the site and debris inspections in the fall and spring after the event (see Appendix 1), recommended mitigation (below) would minimize potential impacts to visual resources from unburned materials, including burn pads and remnant decomposed gravel (see also Section 4.19, Soils and Playa Sediments).

Recommended Mitigation to Reduce Effects: Burn Pad Debris Removal Arising from Public Comments recommended mitigation in Section 4.19 (Soils and Playa Sediments) should be implemented to reduce potential visual resources impacts caused by foreign material that remains at the applicant's "authorized burns."

Dark Skies

Information contained within this section was provided primarily by the *Burning Man 2012-2016 Environmental Assessment Technical Report: Natural Lightscape Impact*, November 2011, prepared by Chad Moore (National Park Service, Natural Sounds and Night Skies Division), incorporated by reference herein.

Sources of night illumination at the event include night lighting for navigation and safety, bonfires, fireworks, colored lights for artistic expression, and burning of the Burning Man sculpture and other artwork. The types and number of light sources vary with the number of participants and size of the residential portion of Black Rock City, and major light sources (e.g., major art installations, theme camps, BLM and applicant operations, and “The Man”) would be comparable to past events. Many of the lights are directed sideways or upward, with a large fraction of their output being directed into the environment (above the horizontal). In addition, the event covers a large geographic area and in the context of the unusually dark night skies of the Black Rock playa and NCA, light from the event would be visible at night at a considerable distance and would result in some level of light pollution or visible ‘sky glow’ within that radius.

Both qualitative observations and quantitative SQM-L¹ night illumination measurements were taken in the field during the 2011 Burning Man event at distances of four, six, and eight miles from the event, see *Burning Man 2012-2016 Environmental Assessment Technical Report: Natural Lightscape Impact* (Moore 2011). These measurements were taken in an unusually dark period near the time of the new moon. Qualitative data was collected to determine the impression of natural celestial objects (such as the Milky Way) at each of the sample locations, and the data indicate the following observations (Moore 2011):

- The visual impact of the vertical illuminance (glare) on human night vision performance is evident at six miles (10 km), perhaps further.
- At four miles (six km), scattered light (skyglow) from the event is obviously seen in the night sky. Such skyglow is evident at the horizon at distances greater than eight miles.
- At four miles (six km), the playa was illuminated enough to change human perception of ground. This is evidence of horizontal illumination, which is primarily from skyglow as vertical illumination would not be expected to light the flat ground.
- At four to six miles (six to 10 kilometers) there is a strong limitation upon the ability to dark-adapt.

Based on the quantitative data, the total luminous flux of the event is estimated to be 150,000 candela² and the distance at which the vertical illuminance exceeds 0.1 millilux threshold³ for natural darkness is approximately 24 miles (39 kilometers) (Moore 2011). Therefore, light from

¹ Sky Quality Meters (version L) (SQM-L) made by Unihedron are typically used to measure sky zenith brightness, a measure of sky luminance. However, with a simple transformation, the data can be expressed as vertical illuminance.

² Estimated Event Candela (or event light output) is a measure that estimates the total luminous intensity of the Burning Man event. It is the equivalent brightness of one candle.

³ 0.1 mLux Threshold Distance (or radius of impact) is a calculation of the expected distance at which vertical illumination would fall below the arbitrary threshold of 0.1 millilux. This assumes clear air and a line of sight to the event. 0.1 millilux is also the peak brightness of the planet Venus after twilight, thus it is the brightest natural object in a moonless night sky. Dark adaptation begins to be noticeably compromised at illumination levels as low as 0.1 millilux (Moore 2011).

the 2011 event resulted in a measurable decline in night sky darkness and the visibility of the dimmest stars. With event populations of 58,000 to 70,000 people, basic infrastructure, large art installations/burns and theme camps on the esplanade along the open playa, which are the largest light sources, would likely occur at a largely similar level with a small incremental increase as the populations expands. An increase in illumination would be expected by the increase in numbers of event participants, a larger residential area, and additional art installations on the open playa. These effects would occur during the permit period in the southern portion of the Black Rock playa. Visitors to the NCA seeking dark skies free of light pollution during the Burning Man event could experience them in more northerly portions of the NCA.

4.23.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, the event under this alternative would be entirely located on the playa, but the Special Use Permit issued to the event would allow fewer participants. The types of impacts would be the same as those described in Section 4.23.1 for the Proposed Action. Visual impacts experienced at locations with a direct line-of-sight to the event or at night would occur at proportionately reduced levels with fewer participants in comparison to the Proposed Action. Recommended mitigation (below) would minimize impacts to visual resources from foreign material, including decomposed granite, remaining at authorized burn sites following the event.

Recommended Mitigation to Reduce Effects: Burn Pad Debris Removal Arising from Public Comments recommended mitigation in Section 4.19 (Soils and Playa Sediments) should be implemented to reduce visual resources impacts caused by foreign material that remains at the applicant's "authorized burns."

Dark Skies

Although the number of participants and the residential portion of Black Rock City would be limited to a population of 50,000 people, the major light sources (e.g., major art installations, theme camps, BLM and applicant operations, and "The Man") would still be present, likely on a similar scale to the Proposed Action. As this alternative would have the same maximum number of participants as the authorized 2011 event, both the qualitative observations and the quantitative SQM-L night illumination measurements recorded during the 2011 event and discussed under the Proposed Action would be similar for the 50,000-Person Maximum Alternative. Therefore, light from the event under this alternative would result in a measurable decline in night sky darkness and the visibility of the dimmest stars. These effects would be limited to the eight-day event and to the southern portion of the Black Rock playa.

4.23.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action although there would be fewer participants and a resulting decrease in visual (including dark skies) impacts. Although there would be no advance consideration of visual (including dark skies) impacts, BLM regulations would remain in effect. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM

Winnemucca District managed lands, impacts to visual resources would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

4.24 Wild Horse and Burros

The assessment area for the analysis of wild horse and burros includes the Closure Area, travel routes, and the air basin (see Figure 3-1).

4.24.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

There are 28 herd management areas (HMAs) for wild horses and burros that intersect with the assessment area. None of the playa area where the Burning Man event would take place is suitable for wild horses and burros. There is no vegetation on the playa within Public Closure Area or its access roads. Wild horses sometimes graze between Gerlach and the playa entrance (Struck 2012). These horses could be displaced from this area during the event. Wild horses and burros could also be at increased risk of vehicle collisions from increased traffic on travel routes.

The Burning Man event increases fugitive dust, vehicle exhaust emissions, and particulates in the vicinity of the event as a result of increased traffic, ground disturbance, and fires in the vicinity of the event. Concerns related to wild horses or burros regarding fugitive dust include plant health and vigor and a reduction in palatability. Depending upon the degree to which plants are coated with dust the impacts could range from reduced health/vigor evidenced by reduced growth and/or plant death. Additionally when dust settles on forage species selected for by wild horses or burros it reduces palatability and consumption. There could also be impacts such as impaired horse health due to ingestion and inhalation of large amounts of fugitive dust. Conditions such as dust pneumonia can have impacts to individual horse health and potentially herd health. Under the Proposed Action, Section II.C.7 (Resource Protection, Action Items, Dust Control) of the 2012 Black Rock City Operating Plan (see Appendix 2) outlines procedures for watering for dust suppression.

Project design features (see Section III of the Operating Plan) would include procedures for controlling on-site and off-site traffic, including promotion of bicycles for on-site transportation, controlling exit traffic by releasing vehicles at timed intervals, and having flaggers trained by the Nevada Department of Transportation provide off-site traffic control based on communication between BLM Rangers and Black Rock City staff.

Section V (Emergency Procedures) in the Operating Plan outlines comprehensive emergency procedures and contingency plans that would be implemented under the Proposed Action to minimize environmental damage due to fire. These procedures would include the use of BLM-certified fire contractors, provision of additional fire engines within Black Rock City, and pre-fire plans for any areas that would store or use flammable or pyrotechnic materials.

Some waste from the event could be blown onto neighboring HMAs and affect wild horses or burros. Clean-up procedures under the Proposed Action, including the installation of a 360 degree event perimeter/boundary trash fence, would minimize potential effects related to wastes

and reduce the litter that is blown onto neighboring HMAs. Potential effects on vegetation in the HMAs in the impact assessment area are addressed in Section 4.22 (Vegetation).

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential vehicle collision and trash impacts to wild horses and burros.

4.24.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, the event under this alternative would be entirely located on the playa, but the Special Use Permit issued to the event would allow fewer participants. The types of wild horse and burro impacts would be the same as those described in Section 4.24.1 for the Proposed Action. If selected for implementation, Traffic Signage and Control recommended mitigation (below) would reduce traffic congestion and associated impacts to wild horses and burros from vehicle collisions. Additionally, should the Debris Removal recommended mitigation (below) be selected for implementation, it would reduce litter along the access roads, thereby reducing the litter that is blown onto neighboring HMAs.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential vehicle collision and trash impacts to wild horses and burros.

4.24.3 Alternative 3: No Action Alternative

If an unpermitted event occurred, it could cause some of the same impacts described for the Proposed Action. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to wild horses and burros would depend on whether the substitute event was located near any herd management areas.

4.25 Wilderness Study Areas

The assessment area for the analysis of wilderness study areas (WSA) is the Public Closure Area, playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), Selenite Mountains WSA and Poodle Mountains WSA, and travel routes (with 0.5-mile buffer), as shown in Figure 3-2.

4.25.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The impact assessment area for WSAs includes the Selenite Mountains WSA, which is located 1.5 miles directly south of the Public Closure Area, and the Poodle Mountains WSA, which is 11 miles to the west.

Visitors to these WSAs could be affected by the Burning Man event. Public access to WSA would be retained during the Burning Man event; however, event-related traffic congestion could

inconvenience WSA 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. Traffic congestion would be limited to the eight-day event and would affect a small number of potential WSA visitors. In addition, the event has been visible from portions of the Selenite Mountains WSA in recent years (see Figure 3-8). This may affect the ability of Selenite Mountains WSA visitors to enjoy predominantly natural and solitary recreation and dark night skies. The Selenite Mountains WSA may also have an increased number of visitors during the event that come to the WSA specifically to overlook Black Rock City.

The environment of the WSAs could also be affected. Burning Man increases fugitive dust, vehicle exhaust emissions, and particulates in the vicinity of the event as a result of increased traffic, ground disturbance, and fires. Under the Proposed Action, Section II.C.7 (Resource Protection, Action Items, Dust Control) of the 2012 Black Rock City Operating Plan (see Appendix 2) outlines the procedures that would be implemented for watering for dust suppression. Design features (see Section III of the Operating Plan) would control on-site and off-site traffic, including promotion of bicycles for on-site transportation, controlling exit traffic by releasing vehicles at timed intervals, and having flaggers trained by the Nevada Department of Transportation provide off-site traffic control based on communication between BLM Rangers and Black Rock City staff.

Section V (Emergency Procedures) outlines comprehensive emergency procedures and contingency plans that would be implemented as part of the Proposed Action to minimize environmental damage due to fire. These design features include the use of BLM-certified fire contractors, provision of additional fire engines within Black Rock City, and pre-fire plans for any areas that would store or use flammable or pyrotechnic materials. Potential effects on the WSAs related to fugitive dust, vehicle emissions, and fires would be localized and would occur during the permit period.

Because of the close proximity of the Selenite Mountains WSA, it is possible that some waste from the event could be blown onto the WSA. Clean-up procedures (see 2012 Operating Plan procedures and permit requirements), including the installation of a 360-degree event perimeter/boundary trash fence, would minimize potential effects related to wastes and the potential for litter to be blown onto the WSA.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential traffic and trash impacts to WSAs.

There could be some indirect impacts on wilderness due to increased use by visitors introduced to the area by the Burning Man event. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,480 to 4,200 visitors with event populations of 58,000 to 70,000 people. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man (McRae 2011). With event populations of 58,000 to 70,000 people, this would result in an estimated 11,600 to 14,000 visitors to parks and recreational areas

to and from the event. Although not all of these people would visit wilderness study areas, a small increase in visitors would represent a large relative change. Potential effects on biological resources in the Selenite Mountains WSA are addressed in Sections 4.6 (Invasive Species), 4.9 (Listed Species), 4.12 (Wetlands), 4.20 (Special Status Species), 4.22 (Vegetation), and 4.26 (Wildlife).

4.25.2 Alternative 2: 50,000-Person Maximum

As with the Proposed Action, the event under this alternative would be entirely located on the playa, but the Special Use Permit issued to the event would allow fewer participants. Approximately six percent of Burning Man participants are thought to return to the Black Rock Desert outside of the event period, which would result in an estimated 3,000 visitors over the course of the year. Additionally, preliminary results of the 2011 Burning Man Census indicate that approximately 20 percent of the event participants were planning on visiting other parks or recreational areas either on the way to or from Burning Man, which would result in an estimated 10,000 visitors to parks and recreational areas to and from the event under this alternative (McRae 2011). The types of impacts would be the same as those described in Section 4.25.1 for the Proposed Action.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic) and Debris Removal recommended mitigation in Section 4.10 (Waste, Hazardous or Solid) should be implemented to reduce potential traffic and trash impacts to WSAs.

4.25.3 Alternative 3: No Action Alternative

If an unpermitted event occurred, it could cause some of the same impacts described for the Proposed Action. Increased visitation to overlook the event would not occur. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to wilderness study areas would depend on whether the substitute event was located near any wilderness study areas.

4.26 Wildlife

In general, biological resources nearest to the Burning Man event would likely be impacted the most by the noise and activity. During the event, impacts would dissipate as distance increases between the Proposed Action and sensitive biological resources.

Participation in the event draws people to an area (i.e., the NCA) where there is normally relatively little human visitation. An appreciation of the area gained from attendance of the event may result in more frequent visitation to the NCA throughout the year by some of the event attendees, which could result in additional indirect impacts to resources. The intensity and location of these impacts is not determinable but are anticipated to occur at recreation areas, including hot springs and campgrounds.

The assessment area for the wildlife analysis is shown on Figure 3-3 and includes the Closure Area, playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels from the event and travel routes, whichever is greater.

4.26.1 Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action)

The Proposed Action would be entirely located on the Black Rock Desert playa, which does not support terrestrial wildlife species. Unauthorized off-road vehicle use could crush wildlife; damage eggs, nests, and burrows; and degrade amphibian, reptile, bird, and mammal habitat in the nearby lake-plain terraces and adjacent mountains. Impacts to wildlife in these areas would be minimized by the use of a designated access road, containment of event activity within the Public Closure Area, and onsite and offsite security.

Elevated levels of noise, light, dust, and human presence in the City and increased activities such as hiking, camping and illegal off-road vehicle use could displace and disrupt the nesting, roosting, or foraging activities of sensitive wildlife proximate to the event area. These effects would begin during event setup and would cease immediately upon completion of event clean-up.

Participant vehicles could collide with wildlife on highways when arriving and leaving the event. Although the potential for collision always remains, coordination with traffic and transportation agencies would help to reduce the likelihood for wildlife collisions by addressing traffic speeds and congestion along the event travel routes and on the playa (see Section 4.21, Transportation and Traffic). The Proposed Action would require the applicant to meet or complete formal agreements with the NDOT, Nevada Highway Patrol, and local/regional law enforcement agencies (see Appendix 1). In addition, coyote, mule deer, pronghorn antelope, and bighorn sheep occasionally cross the playa when traveling between adjacent habitats. Use of a single access road and requirements to park onsite vehicles would reduce the small likelihood of wildlife collision on the playa. Even with implementation of design measures of the Proposed Action, the potential for wildlife collision remains due to traffic speeds and congestion along the event travel routes and the playa.

If disposed of improperly, trash could entangle or choke wildlife or pollute habitat. In addition to the design features of the Proposed Action that address post-event clean-up of litter along roads and debris inspections in the fall and spring after the event (see Appendix 1), implementation of the Debris Removal recommended mitigation (below) would minimize impacts to wildlife and its habitat from trash, by reducing the potential for litter to entangle or choke wildlife. As discussed in Section 4.7 (Migratory Birds), the Proposed Action would take place at the end of summer when the playa is generally dry and would not coincide with the time that migratory birds use the playa lake for feeding on branchiopods.

Vehicle use and camping during the event could destabilize playa soils and disturb branchiopod eggs. Adams and Sada (2010) of the Desert Research Institute found a statistically significant difference of 50 percent fewer fairy shrimp eggs in camping areas following the event. They also found approximately 30 percent fewer fairy shrimp eggs along access roads; this indicates that although access road use is indeed detrimental to fairy shrimp eggs, dust abatement on roads

could have contributed to the lesser level of disturbance relative to camping areas. As discussed under Section 2.2.7 of this EA (Dust Abatement), the applicant would provide up to 14 water trucks per day for dust suppression, from one week prior to the commencement of the event through clean-up. During the final sweep phase of clean-up, the playa surface would be soaked by water trucks, which would increase the likelihood of creating a crust. Although the event (particularly the residential area) would still generate dust, dust abatement design features would reduce impacts to branchiopod eggs and residual impacts to wildlife from potential degradation of this food source up the food chain. Should the Oil Drip Survey recommended mitigation be implemented, it would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic), as well as Debris Removal and Oil Drip Survey recommended mitigation in Section 4.10 (Waste, Hazardous or Solid), should be implemented to reduce potential vehicle collision, trash impacts and oil drips to wildlife.

4.26.2 Alternative 2: 50,000-Person Maximum

With 50,000-Person Maximum Alternative, there would be the potential for unauthorized off-road vehicle use and debris in the surrounding lake plain-terrace and mountains. Even with the implementation of design measures, vehicles traveling to and from the site would also have the potential for collision with wildlife on highways and the playa itself due to traffic speeds and congestion.

If disposed of improperly, trash could entangle or choke wildlife or pollute habitat. In addition to the design features of the Proposed Action that address post-event clean-up of litter along roads and debris inspections in the fall and spring after the event (see Appendix 1), implementation of the Debris Removal recommended mitigation (below) would minimize impacts to wildlife and its habitat from trash, by reducing the potential for litter to entangle or choke wildlife.

Indirect impacts during the eight-day event, elevated noise, dust, and light, could displace and disrupt the nesting, roosting, or foraging activities of sensitive wildlife proximate to the project area. As with the Proposed Action, there would be no direct impacts to migratory bird use of the playa lake for feeding (see Section 4.7), but vehicle use and camping during the event could destabilize playa soils and disturb branchiopod eggs. Although the event (particularly the residential area) would still generate dust, dust abatement design features would reduce impacts to branchiopod eggs and residual impacts to wildlife from potential degradation of this food source up the food chain. Also, with approximately 64,000 total vehicle trips under the 50,000-Person Maximum Alternative, there would be the potential for vehicle oil pollution and disturbance of branchiopod eggs and resultant impacts to the food source for wildlife. Should the Oil Drip Survey recommended mitigation (below) be implemented, it would aid in quantifying the amount of oil drips on the playa and would require operational changes to reduce oil drips as indicated by research results.

Recommended Mitigation to Reduce Effects: Traffic Signage and Control recommended mitigation in Section 4.21 (Transportation and Traffic), as well as Debris Removal and Oil Drip Survey recommended mitigation in Section 4.10 (Waste, Hazardous or Solid), should be implemented to reduce potential vehicle collision, trash impacts and oil drips to wildlife.

4.26.3 Alternative 3: No Action Alternative

If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action. Although there would be fewer participants at the event, there would be no traffic controls or coordination with traffic-related agencies, which would result in a greater chance of vehicle collisions with wildlife. An unpermitted event would not be contained to a single access road and Public Closure Area, and would likely result in greater unauthorized vehicle use of off-road areas and damage to wildlife in adjacent habitat. If a substitute event was located elsewhere on the playa, similar impacts to branchiopods and migratory birds could occur, but may be greater since oil drip and dust abatement measures would not be enforced. In addition, there would be no trash control measures, and debris could entangle or choke wildlife or pollute their habitat. BLM regulations would remain in effect even if the event was not officially permitted and stipulated and would reduce some of the impacts. A SRP would be required, which could include stipulations, if the event would have the potential to result in impacts on public lands. If a substitute event occurred off of BLM Winnemucca District managed lands, impacts to wildlife would depend on the location of the substitute event. Operating Plan procedures would likely be required due to the size of the event.

5 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations for implementing National Environmental Policy Act (40 CFR 1508.7) define cumulative impacts as:

“ . . . the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time ”

5.1 Assumptions for Analysis

The cumulative effects study areas for this environmental assessment are identified in Table 5-1 and shown in Figures 5-1 through 5-10.

Table 5-1. Summary of Cumulative Impacts Assessment Areas

Element	Cumulative Affected Area	Figure
Air Quality	Air basin (Black Rock Desert Hydrographic Region of Nevada) and travel routes (with 0.5-mile buffer)	5-1
ACECs, Recreation, Wilderness, Wilderness Study Areas	Playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA (with 0.5-mile radius buffer), access roads, Selenite Mountains WSA, and Poodle Mountain WSA, High Rock Canyon and Soldier Meadows ACECs and travel routes (with 0.5-mile buffer)	5-2
Biological Resources <ul style="list-style-type: none"> • invasive, nonnative species • migratory birds • threatened & endangered species • wetlands and riparian zones • special-status species • vegetation • wildlife 	Playa, adjacent dunes, points of interest (including springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels, whichever is greater)	5-3
Cultural Resources	Playa, adjacent dunes, points of interest (hot springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with 0.5-mile buffer)	5-3
Environmental Justice	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	5-4
Native American Religious Concerns	Black Rock Desert playa, Pyramid Lake Reservation, Summit Lake Reservation, Fort McDermitt Indian Reservation, Fallon & Reno-Sparks Reservations, travel routes to event via Summit Lake Reservation and via Pyramid Lake	5-5
Wastes, Hazardous or Solid	Closure Area (14,153 acres) and travel routes (with 0.5-mile buffer)	5-10
Water Quality (Surface and Ground)	Surface water: Black Rock Desert playa, Fly Ranch, springs of interest; Ground water: Black Rock Desert Hydrographic Basin	5-6
Economics	Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties	5-4
Noise (quiet)	Direct line of sight to Closure Area and travel routes (with 0.5-mile buffer)	5-1, 5-8
Public Health and Safety	Closure Area, travel routes (with 0.5-mile buffer) and air basin	5-1
Social Values	Pershing, Washoe, Lyon, Churchill, and Humboldt Counties	5-4
Soils (Playa Sediments)	Soil units that intersect Closure Area (14,153 acres), including event access road	5-9

Table 5-1. Summary of Cumulative Impacts Assessment Areas

Element	Cumulative Affected Area	Figure
Visual Resources (VRM & Night Skies)	Viewshed and Key Observation Points	5-2, 5-8
Wild Horses and Burros	Travel routes (with 0.5-mile buffer) and air basin	5-1
Transportation	Travel routes and event landing strip (including takeoff/landing)	5-10

5.2 Past and Present Actions

Table 5-2 is a list of past and present actions in the Burning Man assessment areas. Only actions or activities that would have the potential to result in cumulative effects were included in Tables 5-2 and 5-3. For each of the past and present actions, the Resource Impacted column identifies where it has the potential to contribute to cumulative impacts.

5.3 Reasonably Foreseeable Future Actions

Table 5-3 is a list of reasonably foreseeable future action in the Burning Man assessment areas. For each of the reasonably foreseeable future actions, the Resource Impacted column identifies where it has the potential to contribute to cumulative impacts.

Table 5-2. Past and Present Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres/Length	Project Description	Resource Impacted
Burning Man Event	Black Rock Desert Playa, 4 to 8.5 miles north of Gerlach	Black Rock, LLC	Completed	820 acres (the City); 8,000-acre Closure Area in 2011	Most recent EA published in 2006 and SRPs have been issued each year. Event participation increased from about 250 people in 1990 to over 50,000 people in 2011. The permit period extended from approximately the 1st week of August through the 2nd week of September each of the years with the actual Burning Man event occurring from the weekend before Labor Day through Labor Day each year.	ACECs Cultural Resources Environmental Justice Invasive, Nonnative Species Native American Religious Concerns Migratory Birds Waste
Dispersed Recreation	NCA	Various	Completed	Various	Activities within the National Conservation Area (NCA) that have required a Special Recreation Permit include: <ul style="list-style-type: none"> • Hunting outfitters and guides; • Jeep tours (4-wheel drive) that charge participants; • Equestrian tours and wagon train rides; • Cattle drives that charge individuals to ride along; • Filming or photography for profit even if associated with recreational use; • Unique activities, such as rocket launching and land sailing; • World land speed record; • Amateur altitude record rocket launches; • Large scout camp-out; • Fraternity activity; • Large family reunion; • OHV races; • Horse endurance rides; • Mountain bike races. 	Air Quality ACECs Cultural Resources Environmental Justice Invasive, Nonnative Species Native American Religious Concerns Migratory Birds Threatened & Endangered Species Wilderness Waste Water Quality Public Health and Safety Wilderness Study Areas

Table 5-2. Past and Present Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres/Length	Project Description	Resource Impacted
Yerington Off-site Wells	Near Weed Heights, Lyon County	EPA	Completed	<5 acres	Drilling and monitor well installation was requested by EPA at three (3) locations. Each location includes one or more wells installed at closely spaced clusters. Three foot tall monument and 2 feet by 2 feet concrete pad would be permanent installation.	Environmental Justice Economics Social Values
Mountain Bike Nevada	Lake Washoe, northeast to Virginia City	Todd Whear, World of Wonder Adventures	Decision Record 09/08/2011	23 miles	Five-year permit requested from the Ely District Office for an annual mountain bike event. The ride is proposed as an 11-day event, would occur on existing paved, dirt and gravel roads. The annual event would travel on approximately 23 miles of public land from southeast of Lake Washoe, northeast to Virginia City, down Six Mile Canyon crossing Highway 50, following the backcountry by-way to Fort Churchill. The event would include support vehicles with trailers and a mix of 4x4 trucks and SUVs.	Environmental Justice Economics
Ann Mason Project, Plan of Operations Amendment	Sections 10, 11, 13, 14, 15, 23, and 24, Township 13 North, Range 24 East, (T13N, R24E), Mount Diablo Base and Meridian (MDB&M)	Entrée Gold Corp	Decision Record 06/14/2011	2,380 acres	Entrée Gold Corp (EG) is submitting a Revision to Ann Mason Exploration Project Plan of Operations N-84570. The existing Environmental Assessment (EA), serialized DOI-BLM-NV-C020-2010-0002, was completed and the Decision Record and Finding of No Significant Impacts was signed on January 19, 2010. EG has redefined their exploration drilling targets. With the subject Plan of Operations Amendment EG has expanded the project area from 2,220 acres to 2,380 acres adding a 160-acre portion adjacent to the original project area evaluated in the EA.	Environmental Justice Economics Social Values

Table 5-2. Past and Present Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres/Length	Project Description	Resource Impacted
Tri-State-Calico Complex Wild Horse and Burro Gather Plan	1,041,000 acres north and east of Gerlach within Humboldt and Washoe Counties	BLM	Decision Record 9/19/11	0	BLM gathered and removed remaining excess wild horses from the Black Rock Range East, Black Rock Range West, Calico Mountains, Granite Range, and Warm Springs Canyon Herd Management Areas (HMAs).	Wild Horse and Burros
Schoolhouse Butte Land Sale	Schoolhouse Butte area of the BLM Winnemucca District	BLM	Decision Record 07/20/2010	440 acres	The Winnemucca District (WD), BLM, Black Rock Field Office (BRFO), in response to a nomination from the public to dispose of certain lands determined to be available for disposal, proposes to conduct a modified competitive sale of federal lands located within Humboldt County, Nevada. The purpose of the sale would be to dispose of nominated lands, consisting of 11 parcels, totaling 440 acres.	Environmental Justice Economics Social Values
San Emidio Geothermal Exploration Project	San Emidio Desert	U.S. Geothermal Nevada	Decision Record 11/02/10	21.5 acres	The BLM Black Rock Field Office has issued a decision to allow a proposal by U.S. Geothermal Nevada for the San Emidio Geothermal Exploration project.	Air Quality Environmental Justice Economics Social Values
New York Canyon Geothermal Exploration Project	25 miles east southeast of Lovelock	Terra-Gen Power Dixie Development LLC	Decision Record 10/14/10	81.8 acres	Project includes the drilling of up to 15 exploration wells, 1 temporary water well, the construction of on-lease access roads and well pads, surface pipelines and associated ancillary facilities (including a man-camp ¹⁴) for the purpose of geothermal exploration. Also authorized under the DR is FLPMA Right-of-Way (ROW) NVN-88195 to provide lease-to-lease roadway and pipeline access	Environmental Justice Economics Social Values

¹⁴A man-camp is a temporary housing compound that supports an overwhelmingly male workforce.

Table 5-2. Past and Present Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres/Length	Project Description	Resource Impacted
Blue Mountain Geothermal Development Project	Blue Mountain, 25 miles west of Winnemucca	Nevada Geothermal Power Company	Decision Record 12/18/07	35 acres	Project included development of a geothermal power plant, a geothermal well field and a 20-mile 120 kV transmission line in Humboldt and Pershing Counties.	Air Quality Environmental Justice Economics Social Values
Sandman Exploration Project	N of Interstate 80 (I-80), 7.5 miles west of Winnemucca	Newmont Mining Corporation	Decision Record 04/30/10	441 acres	The DR added 441 acres of exploration activities to NMC's existing 58.8 acres of notice-level disturbance.	Air Quality Environmental Justice Economics Social Values
Pyramid Lake Energy Project Geothermal Assessment	Pyramid Lake Paiute Reservation, 40 miles north of Reno	Pyramid Paiute Tribe	Drilling of gradient holes started in November 2005 and 3 had been completed by March 2006	125,000 surface acres (Pyramid Lake)	The Pyramid Lake Energy Project received a \$8.5 million grant from the U.S. Dept. of Energy for geothermal exploration to perform regional stress analysis, geophysical survey, and shallow temperature surveys in the Pyramid Lake Reservation.	Air Quality Environmental Justice Native American Religious Concerns Economics Social Values
ROW – Telephone and Telegraph	33N, 24E, parts of Sec. 5 and 8	Nevada Bell	Authorized	126.15 acres	Fiber Optic Facilities	All
Road ROW	33N, 24E, portions of Section 5	Washoe County	Authorized	163.640 acres	Roads	All
Wilderness Designation	33N, 24E, portions of Sections 8-11	BLM	Authorized	797,100 acres	Wilderness Designation	Wilderness
Permit Section 302	Black Rock Desert playa	Beyond Productions	Authorized	3,273 acres	Filming	Waste
Free Use Permit	0340N 0240E 033	DOI-BLM	Authorized	4.999 acres	Sand and Gravel, S&G LSC	Public Health and Safety Recreation Transportation

Table 5-2. Past and Present Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres/Length	Project Description	Resource Impacted
Dartmouth and Elmhurst Avenues	Lovelock	Nevada Department of Transportation (NDOT)	Completed	<1 acre	Construct sidewalk and curb ramps	Air Quality Environmental Justice Waste Economics Transportation
U.S. 395 Northbound	Moana Lane to I-80	NDOT	Construction began March 2010, to be completed 4th quarter 2011	2.87 miles	<ul style="list-style-type: none"> • Widen northbound U.S. 395 to improve traffic operations from the Moana Lane interchange to the I-80 interchange. • Widen northbound bridges at Vassar, Mill, Glendale, Truckee River, Kietzke, Union Pacific Railroad, & 4th Street. • Replace overhead sign structures. • Perpetuate drainage features. • Reconstruct northbound ramps at Mill, Glendale, Villanova & I-80. • Project length: 2.87 miles 	Air Quality Environmental Justice Economics Social Values
Grazing	NCA	Allotment title holders	Ongoing	3,131 acres	<ul style="list-style-type: none"> • Three grazing allotments are within the assessment area for cultural resources. The Buffalo Hills allotment overlaps with the Public Closure Area (3,131 acres) 	Cultural Resources

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
Flanigan, Dogskin Mountain, and Granite Peak Wild Horse Gather	West of Pyramid Lake in Washoe County	BLM	Draft EA published 8/26/11	0	Proposed gather, treatment, and removal of wild horses within and adjacent to the Flanigan, Dogskin Mountain and Granite Peak Herd Management Areas (HMAs), located west of Pyramid Lake, in Washoe County, Nevada. Approximately 283 animals would be permanently removed from the range. During the gather, treatment and removal of animals, the BLM would remove all animals from outside the HMAs. Excess animals would be moved to short-term holding facilities, then prepared for adoption or placed on long-term pastures in the Midwest.	Wild Horse and Burros
Shamrock Communications Facility	22 miles northeast of Fernley, NV, north of I-80	Shamrock Communications, Inc.	EA Process started 11/10/10	93.18 acres	Installation of a communications facility including a transmitter building, tower and beacon, an electrical distribution line, and to obtain access to the site along a pre-existing road.	Air Quality Noise Transportation Environmental Justice Economics Social Values
San Emidio Geothermal Exploration Project	San Emidio Desert	U.S. Geothermal Nevada	Decision Record 11/02/10	21.5 acres	The BLM Black Rock Field Office has issued a decision to allow a proposal by U.S. Geothermal Nevada for the San Emidio Geothermal Exploration project.	Air Quality Environmental Justice Economics Social Values
Expand Hycroft Mine	55 miles west of Winnemucca; on western flank of the Kamma Mountains	Hycroft Resources Development, Inc.	EA Scoping period began 04/01/11	1,371 acres	The proposed amendment would expand the existing Brimstone, Bay Area, Boneyard and Center pits at the Hycroft Mine located on public and private land in Humboldt and Pershing Counties, Nevada.	Air Quality Transportation Visual Resources Cultural Resources Environmental Justice Economics Social Values Water Quality Soils

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
Mineral Materials Free Use Permit Renewals, Community Pit Designations and Expansions project	Throughout Pershing County	Pershing County Roads Department	EA Scoping period began 04/27/10	490 acres	Proposal to renew 29 Free Use Permits (FUP) to Pershing County Road Department (PCRD) and designate 10 of these sites as community pits.	Air Quality Environmental Justice Economics Social Values
Vegetation Management Plan	Winnemucca District	BLM	EA Scoping period began 03/28/11	0	BLM is proposing a district wide programmatic plan that would include integrated pest management, Ecologically Based Invasive Plant Management and adaptive management actions.	ACECs Invasive, Nonnative Species Migratory Birds Threatened & Endangered Species Vegetation Wilderness Wilderness Study Areas Wild Horse and Burros
Wilderness Management Plan	Black Rock Desert	BLM	Preliminary EA and Draft Wilderness Management Plan has been developed	0	Draft Wilderness Management Plan has been developed for 10 wilderness areas associated with the Black Rock Desert–High Rock Canyon Emigrant Trails NCA.	Invasive, Nonnative Species Migratory Birds Threatened & Endangered Species Vegetation Wilderness Recreation Visual Resources Wilderness Study Areas Wild Horse and Burros
Winnemucca District Office Draft Resource Management Plan and EIS	Winnemucca District	BLM	Draft Resource Management Plan and EIS published May 2010	0	The Winnemucca District is evaluating various management alternatives for the 8,448,130 acres of federally owned lands that lie within the jurisdiction. The selected management alternatives will form the Winnemucca District Office Resource Management Plan (RMP).	All
I-80 from W. Lovelock Viaduct to 1.61 miles west of Torey Pines	I-80 PE 16.96 to 26.18	Nevada Department of Transportation (NDOT)	Under construction	9 miles	Pavement Rehabilitation: 1.5-inch cold mill, 2-inch plant mix bituminous surface with open grade	All

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
I-80 from the Humboldt Interchange to the Dun Glenn Interchange	MP PE 51.38 TO PE 62.49	NDOT	Planning Complete, Construction estimated for 2nd Q 2013	11.11 miles	Pavement Rehabilitation: 1-inch cold mill, 2-inch plant mix bituminous surface with open grade	Environmental Justice Economics Social Values
I-580 Freeway Extension	I-580 between U.S.395 and SR-431	NDOT	Under construction	8.5 miles	<ul style="list-style-type: none"> • 8.5 miles of new 6-lane controlled access freeway. • Complete Mt. Rose Interchange (SR-431) and construct a new interchange at Bowers Mansion Road (SR-429). • Construct two grade separations and five bridges. • Construct Kelly Canyon Road (frontage road) and Parker Ranch Road to maintain local access at south end of project. • Ten water quality basins for treating storm water runoff. 	Environmental Justice Economics Social Values Transportation Public Health and Safety
I-580 at Meadowood Mall Way	I-580 at Meadowood Mall Way	NDOT	Under construction	<1 mile	<ul style="list-style-type: none"> • Construct grade separation at I-580 and Meadowood Mall Way. • Extend Meadowood Mall Way from S. Virginia Street to Kietzke Lane. • Add I-580 southbound off- and northbound on- ramps at Meadowood Mall Way. • Add frontage roads between Neil Road and Meadowood Mall Way. 	Environmental Justice Economics Social Values Transportation Public Health and Safety

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
I-80 Robb Drive to Vista Boulevard - Design Build	I-80 from Robb Drive to Vista Blvd.	NDOT	Under construction	10.4 miles	<ul style="list-style-type: none"> • Pavement reconstruction from Keytone Avenue to 4th Street. • ITS infrastructure from Robb to Vista. • Signing and Striping improvements from Robb to Vista. • Auxiliary lanes from E. McCarran to Vista. • Sparks loop ramp (westbound on ramp); triple lefts (eastbound off ramp) • Landscape and Aesthetics from Robb to Vista. 	Environmental Justice Economics Social Values Transportation Public Health and Safety
I-80 Robb to Vista	I-80 Robb to Vista	NDOT	In planning stages – Phase 1 undergoing construction	10.4 miles	Make operational and capacity improvements to I-80 from Robb Drive to Vista Blvd	Environmental Justice Economics Social Values Transportation Public Health and Safety
I-80 at the Patrick Interchange	Lockwood	NDOT	Final Design completed 2011	<1 mile	Construct a new interchange on I-80 at Patrick Interchange to increase capacity and improve safety in response to recent and planned development.	All
SR-445 Pyramid Highway Improvements	Sparks	NDOT	Environmental Clearance 2010-2013	Estimated 9.6 miles	<ul style="list-style-type: none"> • Calle de la Plato to La Posada – transition from 4-lane arterial to 6-lane freeway • La Posada to Sparks Blvd – Develop Pyramid alignment into 6-lane freeway with frontage roads. • Continue 6-lane freeway from Sparks Blvd. to Disc Drive either on the Pyramid alignment with frontage roads or on a separate alignment to the west. • Extend 6-lane freeway through Sun Valley to U.S. 395 • Widen and improve Pyramid highway from Disc Drive to Queen Way • Widen and extend Disc Drive to Vista Blvd. 	Air Quality Noise Environmental Justice Economics Social Values Transportation Public Health and Safety

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
SR-446, Sutcliffe/ Nixon Road	Pyramid Lake Road near Sutcliffe to Nixon	NDOT	Construction anticipated for Winter 2011/Spring 2012	2.86 miles	Construction of energy dissipation structure at outlet of existing culvert to mitigate erosion. Reconstructing and stabilizing embankment damaged by the outfall condition.	Air Quality Noise Environmental Justice Economics Social Values Transportation Public Health and Safety
Granite Creek Ranch – Recreational Cabins	16 miles north of Gerlach on County Road 34	Granite Creek Partners LLC	Hearing Date 12/2011	1.5 acres	Construction of 5 permanent cabins under the classification of a destination resort.	Air Quality Environmental Justice Economics Social Values Recreation Public Health and Safety
Open Market Aggregate Facility	North of I-80 along SR-427 in Wadsworth	Wade/Logan LLC	Approved Hearing Date 10/6/11	129 acres	Aggregate facility (sand removal and screening operation). Outside sales to commercial trucks only.	Air Quality Noise Environmental Justice Economics Social Values Transportation
Black Rock Station Specific Plan	88 Jackson Lane	Black Rock City LLC	Application submitted, no hearing data assigned	200 acres	A Specific Plan for the Burning Man work ranch located within the Hualapai Valley	Air Quality Noise Environmental Justice Economics Social Values Transportation Public Health and Safety
New York Canyon Geothermal Exploration Project	25 miles east southeast of Lovelock	Terra-Gen Power Dixie Development LLC	Construction anticipated beginning in 2012	81.8 acres	The applicant's development plan for this field had its kick-off meeting in December 2011.	Environmental Justice Economics Social Values

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
Pyramid Minerals Exploration	Near Wadsworth; Section 35, T. 21 N., R. 24 E.	Pyramid Minerals Inc.	Categorical Exclusion/Cultural Resources Inventory Needs Assessment issued by BLM Winnemucca FO in February 2011	9.212 acres	Exploration drilling of sand and gravel in an area where the BLM owns the surface and Pyramid Minerals has the mineral rights. Pyramid Mineral is proposing to drill 14 bore sampling drill holes, approximately 100'-120' below the ground surface. Access to site would be by using an existing road and overland travel.	Air Quality Environmental Justice Native American Religious Concerns Economics Social Values
Buena Vista Iron Ore Project and associated infrastructure	Pershing and Churchill Counties	Richmond Mining Limited (Nevada Iron LLC)	Special Use Permit approved in August 2011 by Pershing County; Construction to begin in late 2011, with concentrate production planned for late 2012	25 miles of pipeline and transmission infrastructure; dewatering plant; and railroad loading facility	Infrastructure to support proposed iron ore mining operations at the Buena Vista Mine located in northern Churchill County, Nevada, includes: 25 miles of electrical transmission lines; 25 miles of slurry pipeline; a dewatering plant and railroad loading facility at Colado Junction, which is located near the Coal Canyon Road overcrossing of I-80 approximately 6 miles northeast of Lovelock. The concentrate will then transported by rail from Colado Junction to a port in the San Francisco Bay/Delta region of California.	Air Quality Native American Religious Concerns Economics Social Values

Table 5-3. Reasonably Foreseeable Future Actions in the Burning Man Assessment Areas

Project Name; Agency ID	Location	Ownership/ Applicant	Status	Acres	Project Description	Resource Impacted
Dispersed Recreation	Black Rock Desert playa	Various	Various	Various	Activities within the NCA that have required a Special Recreation Permit include: <ul style="list-style-type: none"> • Hunting outfitters and guides; • Jeep tours (4-wheel drive) that charge participants; • Equestrian tours and wagon train rides; • Cattle drives that charge individuals to ride along; • Filming or photography for profit even if associated with recreational use; • Unique activities, such as rocket launching and land sailing; • World land speed record; • Amateur altitude record rocket launches; • Large scout camp-out; • Fraternity activity; • Large family reunion; • OHV races; • Horse endurance rides; • Mountain bike races. 	All
Grazing	NCA	Allotment title holders	Ongoing	3,131	Three grazing allotments are within the assessment area for cultural resources. The Buffalo Hills allotment overlaps with the Public Closer Area (3,131 acres)	Cultural Resources

5.4 Cumulative Impacts

5.4.1 Air Quality

The cumulative effects study area for analysis of air quality includes the air basin (Black Rock Desert Hydrographic Basin) and travel routes (with 0.5-mile buffer), as shown on Figure 5-1.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present Actions, and Reasonably Foreseeable Future Actions. The past, present, and reasonably foreseeable future actions that impact air quality include dispersed recreation, drilling or operations for geothermal and other resources, geothermal development, road construction, and natural events such as high winds and wildfires. These activities cause emissions of fugitive dust and emissions of criteria air pollutants that are products of combustion.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to cumulative effects to air quality. Stationary sources would be regulated by the Nevada Division of Environmental Protection to ensure that impacts would be reduced to levels that are consistent with the ambient air quality standards, and development or road construction would cause localized and temporary impacts unlikely to overlap with impacts from the event. Dispersed recreation combustion-related emissions and fugitive dust would occur at relatively small levels over a vast area. Emissions related to the Proposed Action would occur during the permit period of the event, and dust control practices would be implemented by the applicant including watering.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum Alternative would be similar to the Proposed Action. The incremental cumulative impacts to air quality would occur at proportionately reduced levels in comparison to the Proposed Action.

Alternative 3: No Action Alternative. An incremental impact would occur if an unknown number of individuals would conduct large, informal unauthorized events or a series of small unauthorized events. Unauthorized events under the No Action Alternative could contribute to cumulative ambient air quality impacts. Unauthorized events would occur without procedures in the Operating Plan for dust control or stipulations to control certain types of art burns, but they would still be subject to BLM regulations regarding use of federally-administered lands. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative effects would depend on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.2 Areas of Critical Environmental Concern (ACECs)

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert-High Rock Canyon Emigrant Trails NCA, High Rock Canyon ACEC, Soldier Meadows ACEC and travel routes, shown on Figure 5-2.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present actions that have impacted ACECs include the previous Burning Man events, dispersed recreation activities within the NCA, and the introduction and spread of non-native species. Impacts resulting from the existing activities restrict access to or degrade the environment of nearby ACECs.

Reasonably Foreseeable Future Actions. Foreseeable actions expected to impact the ACECs include dispersed recreation activities within the NCA and BLM's Winnemucca District Vegetation Management Plan. Impacts expected from these reasonably foreseeable future actions include restriction to access to or degradation of the environment of nearby ACECs.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to cumulative effects on ACECs related to increased numbers of visitors outside of the event who are introduced to the area by the Burning Man event. The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Some vegetation management activities, such as creation of fuel breaks, could cause some disturbance in ACECs; overall, vegetation management activities would serve to protect and restore habitat. Although dispersed recreation activities in the NCA are limited by the RMP for the NCA, some recreational activities, such as recreational use of the hot springs at Soldier Meadows, do have some negative effects on biological resources in the ACECs.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of a smaller event to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If unpermitted events occurred they would contribute some of the same incremental impacts as the Proposed Action. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. If a substitute event occurred off of BLM Winnemucca District managed lands, any contributions to cumulative impacts to ACECs would depend on whether the substitute event was located near any ACECs.

5.4.3 Cultural Resources

The cumulative effects study area includes the playa, adjacent dunes, points of interest (hot springs) within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, access roads, and travel routes (with 0.5-mile buffer), as shown on Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present Actions and Reasonably Foreseeable Future Actions. Past, present, and reasonably foreseeable actions, including dispersed recreation, grazing, and the Hycroft Mine, will affect cultural resources at both the local and regional levels due to ground disturbance. Avoidance or reduction of substantial changes to National Register of Historic Places (NRHP)-eligible cultural resources can be accomplished through deliberate project planning and by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated to be NRHP-eligible.

Cumulative Impacts from the Proposed Action. The Proposed Action is not anticipated to contribute to cumulative direct impacts to cultural resources within the Public Closure Area, as the few resources that have been identified can be avoided. The Proposed Action would contribute to impacts to the three segments of the California National Historic Trail within the study area (Applegate-Lassen and Nobles) and one segment of the Fremont Exploration Route for the duration of the 8-day event and set-up and clean-up of the event. Resources eligible for the National Register of Historic Places at the five springs [Black Rock Hot Springs, Double Hot Springs, Great Boiling Hot Springs (Gerlach, NV), Soldier (Mud) Meadows, and Trego Hot Springs] have been impacted by vandalism. The Proposed Action could contribute to further cumulative impacts to these resources, particularly the unauthorized collection of artifacts, as the result of increased visitation and vandalism.

The Proposed Action impacts, when combined with impacts from past, present, and reasonably foreseeable future actions, would result in a contribution to the cumulatively considerable impacts for cultural resources at both the local and regional levels.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the alternative would be similar to those described for the Proposed Action. The incremental contribution of a smaller event to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If a permit was not issued, it is anticipated an unknown number of individuals could conduct unauthorized gatherings. This could lead to cumulative impacts to cultural resources within the proposed Public Closure Area, Black Rock Hot Springs, Double Hot Springs, Great Boiling Hot Springs (Gerlach, NV), Soldier (Mud) Meadows, and Trego Hot Springs. Cultural resources at the five springs would be particularly vulnerable without the spring “stewards” during an unauthorized event. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to cultural resources would be location specific. Operating Plan procedures would likely be required to protect any potential sensitive resources due to the size of the event.

5.4.4 Environmental Justice

As described in Section 4.5, Environmental Justice, the only jurisdictions identified as having minority populations that would be affected by the 2012-2016 Burning Man events included the Pyramid Lake Paiute reservation and the communities of Nixon, Sutcliffe, and Wadsworth. No jurisdictions were identified as having substantial low-income populations. Consequently, the cumulative effects study area includes the Pyramid Lake Paiute reservation and the communities of Nixon and Wadsworth, see Figure 5-4.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present actions that have affected the Pyramid Lake Paiute reservation, Nixon, Sutcliffe, and Wadsworth include past Burning Man events and dispersed recreation. It is unlikely that dispersed recreation would result in effects that would disproportionately affect minority populations in Nixon, Sutcliffe, Wadsworth, and on the Pyramid Lake Paiute reservation.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions that affect the Pyramid Lake Paiute reservation, Nixon, Sutcliffe, and Wadsworth would be dispersed recreation, NDOT construction on SR-446 near Sutcliffe to Nixon, and the Open Market Aggregate Facility. It is unlikely that recreation would result in effects. The NDOT construction and Open Market Aggregate Facility could result in impacts to traffic and additional traffic delays.

Cumulative Impacts from the Proposed Action. The effects of the 2012-2016 Burning Man events would contribute to cumulative effects to minority populations due to an increase in trash and traffic. It is anticipated that the NDOT construction on SR-446 and the Open Market Aggregate Facility would include mitigation to ensure that the effects of these actions would be minimized. It is unlikely that these actions would combine with the 2012-2016 Burning Man events to result in cumulative disproportionate effects on minority populations and cause environmental justice impacts.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of a smaller event to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If a large, informal gathering or a series of small unauthorized events occurred at the playa, then cumulative environmental justice effects could occur. The lack of formal oversight and coordination would lead to contributions to cumulative effects but the events would be subject to BLM regulations regarding use of federally-administered land. As with a permitted event, is anticipated that the cumulative actions would include mitigation to minimize the effects. It is unlikely the cumulative actions would combine with the No Action Alternative to result in cumulative disproportionate effects on minority populations and cause environmental justice impacts. If a substitute event were held at a different location off of BLM Winnemucca District managed lands, cumulative effects would occur to any minority and low income populations at the new location and would depend on the past, present, and reasonably foreseeable future actions in that location.

5.4.5 Invasive, Nonnative Species

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present Actions and Reasonably Foreseeable Future Actions. Increased use of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large campouts, mountain bike races, and other activities that require a special recreation permit, would increase opportunities to transport and spread non-native plants. These plants could become windblown and establish in surrounding vegetation communities.

Cumulative Impacts from the Proposed Action. The Proposed Action would use a designated access road and would contain activities within the Public Closure Area, and this would reduce the movement of non-native plants by event participants and the resultant potential for cumulative impacts. Although increased use of the playa would increase the opportunities to transport

and spread non-native plants, the incremental effect of the Proposed Action would represent a minor portion of the opportunities because of the use of a designated access road and containment of the event activities in the Public Closure Area. As such, cumulative impacts would not be substantial.

Alternative 2: 50,000-Person Maximum. Although there would be fewer participant vehicles to transport non-native plants and animals, the potential to introduce or spread species would likely remain similar to the Proposed Action. The incremental contribution of a smaller event to cumulative effects for invasive, nonnative species would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If an unpermitted gathering occurred in place of an official event, it could cause similar impacts as those described for the Proposed Action although there would be fewer participant vehicles and other methods to transport and disperse non-native plants. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. Cumulative effects would be similar to those of other dispersed recreational actions including increased opportunities to transport and spread non-native plants. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to invasive species would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.6 Migratory Birds

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Future Foreseeable Actions. Most of the recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, would not take place when the playa is muddy or flooded. As these uses and the Proposed Action do not coincide with the time that migratory birds use the playa lake for feeding, there would be no direct cumulative impacts.

Previous and future recreational use of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, could increase noise and light at the playa and result in indirect impacts to migratory birds.

Cumulative Impacts from the Proposed Action. Elevated noise and light from the Proposed Action could combine with that of other recreational uses, particularly if these other recreational activities are concurrent with the Proposed Action. Only one additional Class III Special Recreation Permit could be authorized concurrent with the Proposed Action (Special Recreation Permit Management REC-26). The Proposed Action's contribution to potential displacement or disruption

tion of migratory birds would occur during the permit period and would cease immediately upon completion of event clean-up.

The Proposed Action could contribute to cumulative residual impacts to branchiopods, which some migratory birds feed upon when the playa is inundated, through oil drips and ground disturbance.

Alternative 2: 50,000-Person Maximum. As with the Proposed Action, there would be no direct cumulative impacts to migratory bird use of the playa lake. With fewer vehicles and participants, there could be a slight reduction in residual cumulative impacts to branchiopods eggs, as well as noise and light levels that could disorient or otherwise disrupt migratory birds.

Alternative 3: No Action Alternative. If an unpermitted event were to take place, there could be residual effects to adjacent habitat used by migratory birds (from unauthorized off-road vehicle use and elevated light and noise levels) and to branchiopod eggs (from a wider extent of ground disturbance). There would be no formal oil drip or dust abatement measures BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to migratory birds would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.7 Native American Religious Concerns

The cumulative effects study area includes the Black Rock Desert playa, Pyramid Lake reservation, Summit Lake reservation, Fort McDermitt Indian reservation, Fallon & Reno-Sparks reservations, and travel routes to event via Summit Lake reservation and via Pyramid Lake, see Figure 5-5.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Foreseeable Actions. Through the consultation process, no sacred sites have been identified in the project area. While sacred sites may exist in the assessment area, until the Northern Paiutes are forthcoming on where these are, determining past, present, and foreseeable actions that may contribute to cumulative effects is difficult.

Cumulative Impacts from the Proposed Action. An annual increase in the population of Black Rock City would cause more traffic to go through the Pyramid Lake and Summit Lake reservations; other foreseeable projects in the assessment area would produce a minimal increase in traffic compared to Burning Man. The increase of participants could cause more rutting of the playa.

Alternative 2: 50,000-Person Maximum. Through the consultation process, no sacred sites have been identified in the project area. While sacred sites may exist in the assessment area, until the Northern Paiutes are forthcoming on where these are, determining cumulative effects is difficult. Impacts to areas of concern to the Pyramid Lake Paiute Tribe and the Summit Lake Paiute Tribe would stay at their current levels.

Alternative 3: No Action Alternative. By not having the event on the playa, impacts to the surface of the playa would be minimized and straight-line access across the playa to the reservation would not be blocked. If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same impacts described for the Proposed Action. BLM regulations would remain in effect and impacts from current and foreseeable projects are not seen as having a lesser potential for impacts to the playa.

5.4.8 Threatened and Endangered Species

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Foreseeable Actions. As the playa does not support any threatened or endangered species, past, present, and foreseeable recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities, would not result in a direct impact. Increased use of the playa could result in potential indirect impacts to desert dace and Lahontan cutthroat trout resulting from increased use of hot springs in Soldier Meadows or streams due to recreational uses of the playa.

Cumulative Impacts from the Proposed Action. The Proposed Action would not combine with other recreational uses for a direct cumulative impact. Increased use of the playa could result in potential cumulative indirect impacts to desert dace and Lahontan cutthroat trout resulting from increased use of hot springs in Soldier Meadows or streams due to the Proposed Action and other recreational uses of the playa. The incremental effect of the Proposed Action would represent a portion of the use of these areas and indirect impact to desert dace and Lahontan cutthroat trout.

Alternative 2: 50,000-Person Maximum. As with the Proposed Action, there would be no direct cumulative impacts to threatened and endangered species. With fewer participants, there could be comparatively fewer visits to Soldier Meadows and Lahontan cutthroat trout streams, for a smaller incremental contribution to cumulative impacts to desert dace and Lahontan cutthroat trout habitat.

Alternative 3: No Action Alternative. If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same cumulative impacts described for the Proposed Action. While there would be no formal law enforcement patrols, BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to threatened and endangered species would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.9 Wastes, Hazardous or Solid

The cumulative effects study area for wastes includes the Closure Area and travel routes with a 0.5-mile buffer, see Figure 5-10.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action). The Public Closure Area would contain more debris than surrounding areas on the playa for the duration of the event. The Proposed Action would require that solid waste be removed from the site and that post-event roadside crews clean up litter and debris along the roads and highways surrounding the event (see Appendix 1 and 2). BLM also performs a post-event site inspection upon completion of cleanup activities.

Past and Present Actions. Past and present actions and activities that generate waste are previous Burning Man events, dispersed recreation, and Permit Section 302. These actions have increased the potential for waste being deposited in the Public Closure Area and along the travel routes including litter and hazardous wastes. Dispersed recreation has potentially resulted in an increase in grey and black water spills in the Closure Area.

Reasonably Foreseeable Future Actions. Foreseeable activities that would introduce waste include other foreseeable dispersed recreation on the playa, and construction along the travel routes. Other foreseeable events at the Burning Man location, such as the Vegetation Management Plan, Wilderness Management Plan, and Winnemucca District Office Draft Resource Management Plan and EIS would not introduce waste or contribute to a cumulative effect. The transportation, use, storage and disposal of hazardous materials and wastes such as could occur during construction along the travel routes are subject to numerous federal, state and local laws and regulations. These requirements are intended to protect the public and the environment and are applicable to the reasonably foreseeable future actions. Hazardous materials associated with geothermal exploration include petroleum hydrocarbon fuels (principally diesel fuel), hydraulic fluid, lubricants and drilling chemicals and materials and are regulated.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to cumulative effects caused by waste. The amount of debris left on the playa from the Proposed Action is not permitted to exceed one square foot per acre from any inspection area and cumulative waste from all the recreational events would be expected to be minimal because they would all be required to abide by the BLM Tread Lightly!® and Leave-No-Trace® principles.

The Proposed Action could contribute to cumulative residual impacts to the playa through liquid wastes caused by oil drips. Other permitted use of the playa would potentially involve vehicles and result in oil drips.

Impacts related to human wastes would not be expected to be additive with other past, ongoing, and future foreseeable events because the events in the Closure Area and along the travel routes would not result in large amounts of camping or lengthy stays at the playa. Any recreational camping on the playa would be subject to existing BLM regulations including the Tread Lightly!® and Leave-No-Trace® principles.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of a smaller event to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If a large, informal gathering or smaller unpermitted events occurred, it could cause some of the same cumulative impacts described for the Proposed

Action. There would be no formal oil drip or waste control measures but BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts as a result of waste would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.10 Water Quality

The cumulative effects study area for surface water quality includes the Black Rock Desert playa springs of interest and Fly Ranch and includes the Black Rock Desert Hydrographic Basin for groundwater (see Figure 5-6).

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Past, present, and reasonably foreseeable future actions that have or would impact water quality include permitted recreation activities (associated fuel spills, grey water, waste, etc.), mining, agriculture, and geothermal explorations in the assessment area. Recreation would impact surface water, which would be same effects as for groundwater, but would also include impacts at hot springs, impacts to the quality of water entering the playa from the Quinn River, and impacts to the protection of springs in the ACEC.

Cumulative Impacts from the Proposed Action. As described in Section 4.11, the Proposed Action would contribute to cumulative effects to hot springs in the vicinity of the event as a result of increased visitation by Burning Man participants; such effects could combine with similar effects of other dispersed recreational activities. The Proposed Action would contribute to impacts to surface water and groundwater from spills or releases of wastes such as hydrocarbons. The NCA Resource Management Plan (RMP) includes decisions to manage public use near hot springs, which would minimize long term impacts to water quality in those areas.

Alternative 2: 50,000-Person Maximum. The potential cumulative impacts to water quality would be similar as described above for the Proposed Action, except that visitation to local hot springs would likely be less than under the Proposed Action. The incremental contribution of a smaller event to cumulative impacts would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same impacts described for the Proposed Action although there would be fewer participants. Because the Special Recreation Permit would not be issued, sanitary facilities may not be provided and management efforts of the BLM and the applicant would not occur. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to water quality would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.11 Wetlands and Riparian Zones

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Most of the recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, would not take place when the playa is muddy or flooded. Recreational uses of the playa could result in indirect impacts related to use of hot springs in the area.

Cumulative Impacts from the Proposed Action. As the Proposed Action area does not coincide with any wetlands or riparian zones, there would be no cumulative direct impacts. There could be potential indirect cumulative impacts related to increased use of hot springs in the area due to trampling of vegetation and pollution. .

Alternative 2: 50,000-Person Maximum. As with the Proposed Action, there would be no direct cumulative impacts to wetlands and riparian zones. With fewer participants, there could be comparatively fewer hot spring visits, and the incremental contribution of a smaller event to cumulative effects would be reduced.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted event could be less localized than the Proposed Action and have indirect cumulative impacts to the playa from oil spills and ground disturbance. There could also be use of area hot springs, as well as trampling and pollution in wetlands adjacent to the playa. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to wetlands would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.12 Wilderness

The cumulative effects study area for wilderness includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-2.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present actions that could impact Wilderness are dispersed recreation activities within the NCA.

Reasonably Foreseeable Future Actions. Foreseeable actions that would impact Wilderness would be dispersed recreation activities within the NCA; BLM’s Winnemucca District Vegetation Management Plan; and BLM’s Black Rock Desert Wilderness Management Plan.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to cumulative effects on wilderness areas related to increased numbers of visitors outside of the event who are introduced to the area by the Burning Man event. The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Vegetation management activities would serve to protect and restore habitat. Although dispersed recreation activities in the NCA are limited by the RMP for the NCA, some recreational activities, do have

some negative effects on wilderness characteristics. The intent of the Wilderness Management Plan is to preserve the areas' wilderness characteristics.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum Alternative would be similar to the Proposed Action. The incremental contribution of a smaller event to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If an unpermitted event occurred it would contribute some of the same minimal incremental impacts as the Proposed Action. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. If a substitute event occurred off of BLM Winnemucca District managed lands, any contributions to cumulative impacts to wilderness would depend on whether the substitute event was located near any wilderness.

5.4.13 Economics

The cumulative effects study area for economics includes the Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties, see Figure 5-4.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Past, present, and reasonably foreseeable future actions that affect similar sectors of the economy as the Proposed Action include outdoor recreation, roadway infrastructure projects, and geothermal activities listed in Table 5-2 and 5-3 and regional tourism events, such as Hot August Nights in Reno. These activities have direct impacts on local economies and have indirect impacts to the sustainability of economic activity in the region so that other activities continue to function and be served.

Cumulative Impacts from the Proposed Action. The cumulative economic impacts for Burning Man can be considered in two ways. The first is how the festival interacts with other activities that affect similar sectors of the economy, such as outdoor recreation, such as that listed in Table 5-2 and 5-3, and regional tourism events, such as Hot August Nights in Reno. The second is how the festival affects the sustainability of economic activity in the region so that other activities continue to function and be served.

Under the first consideration, Burning Man appears to be scheduled at a time of year when the regional recreation and tourism industry has sufficient capacity to serve the festival participants. Peak visitation typically is in July and August prior to the festival, which is scheduled at the end of the "summer" season. Because Burning Man does not cause the tourism facilities to exceed summertime peak capacities, the event is able to use existing resources employed for other reasons. Increased event attendance allows local businesses to spread costs over a larger customer base, likely leading to lower prices and increased affordability for other tourists. Because Burning Man does not appear to be competing with other events or activities for resources, it is not squeezing out other important economic activity.

The second cumulative consideration is related to the effect on costs for other tourists. Burning Man brings in a sufficiently large amount of revenues to businesses in the smaller counties in the

Assessment Area to sustain those businesses for the year. Businesses often require a certain size or “scale” to be sufficiently profitable to operate. Burning Man provides that amount for those smaller communities. For example, one commentator during scoping noted that a local tribal member’s business received 33 percent of his gross income during Burning Man; a second commentator noted that he was able to start his business immediately after Burning Man was moved to Black Rock Playa and it is Burning Man that enabled him to start the business. Sustaining these businesses allow other activities to use those businesses during the rest of the year.

Based on this analysis, the Proposed Action would provide positive net cumulative economic benefits.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum Alternative would be similar to the Proposed Action. A smaller event would continue to provide net cumulative economic benefits, but the incremental contribution would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. If an unpermitted event occurred it would contribute some of the same economic benefits as the Proposed Action. Because the event would be expected to have fewer participants than the Proposed Action the incremental contribution would be reduced compared with the Proposed Action. If a substitute event occurred off of BLM Winnemucca District managed lands, economic cumulative impacts would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.14 Noise (Quiet)

The cumulative effects study area for noise and quiet encompasses areas that may have a direct line of sight to the Public Closure Area and travel routes (with 0.5-mile buffer), as shown in Figure 5-7.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Past, present, and reasonably foreseeable future actions that would result in an increase in noise are sand and gravel projects, and infrastructure work on transportation routes.

Cumulative Impacts from the Proposed Action. The impacts caused by event noise and noise from increased traffic on road segments would only combine with impacts from other projects if they were to occur at sensitive receptors during the same time frame as the Proposed Action. The Proposed Action would not contribute to cumulative effects with completed past actions because noise emissions from past actions terminated at the completion of a project or activity. Noise from present actions is reflected in the noise levels occurring without the Proposed Action, which are based on traffic observations from November 2011, when no event-related source of noise occurred. Noise from future actions would not be expected to cause cumulative effects during periods of noise from the Proposed Action. Noise impacts are localized to the area of the

activity or traffic, and no future actions would be near enough to the event with sufficiently strong noise sources to create cumulative noise effects.

Alternative 2: 50,000-Person Maximum. Cumulative noise impacts would be similar to those described for the Proposed Action. There would be fewer event participants, which would reduce the contribution to the noise levels attributable to the event at proportionately reduced levels in comparison to the Proposed Action.

Alternative 3: No Action Alternative. If a large, informal gathering or smaller unpermitted events occurred, it would be unlikely to result in cumulative impacts because no future actions would be near enough to the event with sufficiently strong noise sources to create cumulative noise effects. BLM regulations would remain in effect even if the event was not officially permitted and stipulated. If a substitute event occurred off of BLM Winnemucca District managed lands, noise cumulative impacts would be location specific and would depend on present and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.15 Public Health and Safety

The cumulative effects study area for public health and safety includes the Public Closure Area and travel routes to and from the event (with a 0.5-mile buffer), see Figure 5-1. No hygiene and food safety cumulative effects would be expected to occur as a result of the event because these impacts would be restricted to event participants during the time of the event.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. The public health and safety impacts from the event would combine with impacts from other actions if they were to occur during the same time frame as the Proposed Action. For this reason, actions that are located within the cumulative effects study area but that have already been completed, such as previous Burning Man events, would not combine with the impacts of the Proposed Action. Existing projects that would potentially impact public health and safety impact include dispersed recreation, the telephone ROW, and the Free Use Permit for sand and gravel mining because they would result in traffic and dust.

Reasonably Foreseeable Future Actions Foreseeable future actions that would potentially combine with the Proposed Action to result in a cumulative impact include construction along the I-10, Granite Creek Ranch recreational cabins, and the Black Rock Station Specific Plan.

Cumulative Impacts from the Proposed Action. The Proposed Action would result in traffic and would contribute to impacts to emergency response and evacuation as a result of natural or man-made disasters and would require use of the same evacuation routes as the present and foreseeable future actions. As with the Proposed Action, the larger existing and foreseeable projects would have an emergency preparedness and response plan. Smaller projects such as the Granite Creek Ranch recreational cabins would result in a minor increase in traffic that would add to the congestion during an emergency response. The Proposed Action would contribute to impacts associated with fire safety if the fire traveled offsite and resulted in an emergency response. As such the impacts would be the same as with any man-made or natural disaster.

The Proposed Action would contribute to cumulative impacts associated with playa dust during the 8-day event and immediately before and after. During the event, the site would be closed to other large scale events so would not combine with other large-scale events to result in a cumulative effect as a result of an increase in playa dust on sensitive receptors.

Alternative 2: 50,000-Person Maximum. Cumulative impacts for public health and safety would be similar to the description for the Proposed Action. There would be fewer event participants, the incremental contribution of a smaller event would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause similar impacts as those described for the Proposed Action although there would be fewer participants. There would be no emergency preparedness measures or fire safety measures. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to public health and safety would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.16 Recreation

The cumulative effects study area for recreation includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-2.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present actions that occur in the vicinity of the Public Closure Area and could result in impacts to recreation through use of the playa or surrounding areas include previous Burning Man events, dispersed recreation, telephone and road ROW, wilderness designation, and the Permit Section 202 and Free Use Permit.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions in the cumulative recreation study area include recreation, the Wilderness Management Plan, the Winnemucca District Office Draft Resource Management Plan, and the Black Rock Station Specific Plan. Potential cumulative recreation impacts may result from existing or new activities that could restrict access to recreational resources and/or physically degrade existing recreational facilities and resources. Potential cumulative recreation impacts may result from high use of the playa diminishing some elements of the recreational value.

Cumulative Impacts from the Proposed Action. Regionally, there have been both positive and negative impacts to recreational resources as a result of recreational use of the playa. The Burning Man event, in combination with other recreational events, has introduced thousands of people to the Black Rock Desert area, thereby contributing to the increased use of the resource for recreation. Increased use of the playa may diminish its recreational use for those who are seeking solitude. Increasing numbers of participants in permitted events and dispersed recreation users would be expected to increase the potential for conflict between such users groups (i.e., between land speed record attempts and dispersed camping on the playa, rocket launches and

golf tournaments on the playa, etc.). The Proposed Action uses a small portion of the playa and the playa has multiple other opportunities for solitude. The RMP for the NCA limits the number and size of permitted activities at the playa, opportunities for dispersed recreation and solitude are provided for at least one-half of the primary visitor use season.

The Proposed Action would contribute to cumulative impacts to access by recreational users within the Public Closure Area prior to and during the 8-day event. Geothermal exploration and roadway and telephone ROW would occur on few acres and would not prevent continued access by recreational users to the majority of public lands within the cumulative recreation impact assessment area. With the exception of the small areas adjacent to the exploration sites that may need to be closed for safety purposes, public access to the playa and other areas in the assessment area would not be impacted.

Fugitive dust from vehicle traffic on unpaved roads, as well as noise and traffic from cumulative activities, could cause some recreational users to avoid those portions of the assessment area during geothermal exploration activities and during the Burning Man event. These indirect effects would occur over the permit period, and principally during the Burning Man 8-day event and immediately before and afterwards.

Alternative 2: 50,000-Person Maximum. Cumulative impacts relating to recreation would be similar to the description for the Proposed Action. There would be fewer participants, and the incremental contribution to impacts to recreation would be reduced for fugitive dust. The contribution to cumulative effects caused by an increased use of the playa diminishing its recreational use for those who are seeking solitude and access would remain similar as the Public Closure Area would remain the same as with the Proposed Action. The alternative would require a Special Use Permit and be subject to the permit stipulations.

Alternative 3: No Action Alternative. If an unpermitted event were to take place, there could be residual effects to recreation because of use of the playa and interruptions to solitude throughout the playa. BLM regulations would remain in effect even if the event was not officially permitted. If a substitute event occurred off of BLM Winnemucca District managed lands, any contributions to cumulative impacts to recreation would depend on whether the substitute event was located near any recreational areas.

5.4.17 Social Values

The cumulative effects study area for economics includes the Pershing, Washoe, Lyon, Churchill, Storey, and Humboldt Counties, see Figure 5-4.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Past, present, and foreseeable actions including previous Burning Man events, unpermitted recreation, and other foreseeable events could require an increase in services, specifically law enforcement, fire protection, emergency medical services, and waste and utilities. This includes construction along the I-80 that could occur between 2012 and 2016 during the events.

Cumulative Impacts from the Proposed Action. The Proposed Action has the potential to contribute to impacts to services. Construction along the I-80 and other unpermitted recreational use of the playa could require use of the study area services. Because the RMP for the NCA limited the number and size of permitted activities at the playa, the number of recreational users of the playa during the Burning Man event would be minimal and would not be expected to increase the need for public services. Construction along the I-80 may require additional service providers and are or would undergo an environmental analysis to assess any impacts to services and would require mitigation where necessary.

Attitudes toward the event could combine with prior Burning Man events as attitudes may be influenced by prior events. As noted in Section 4.19, attitudes toward the event are divided and would not result in a substantial effect.

Alternative 2: 50,000-Person Maximum. Cumulative impacts for this alternative would be the same as for the Proposed Action. This alternative would have fewer event participants and an incrementally smaller contribution to the same types of impacts as the Proposed Action to population and demographics, housing, law enforcement, fire protection, and emergency medical services, and waste and utilities. Attitudes toward the event are unlikely to substantially change regardless of whether the event remains at a 50,000-person maximum or increases to 70,000 participants.

Alternative 3: No Action Alternative. If a large, informal gathering or smaller unpermitted events were to take place, there could be residual cumulative effects to public services such as an increased demand on law enforcement agencies, fire departments, and emergency medical services. There would be no oversight by the BLM and no additional funding and coordination for services by the applicant but BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, social values cumulative impacts would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.18 Soils and Playa Sediments

The geographical area considered for the analysis of cumulative effects to soils and playa sediments is soil units that intersect Closure Area (14,153 acres), see Figure 5-9.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Past, present, and foreseeable actions located on the playa such as dispersed recreation and geothermal exploration would result in wind erosion of disturbed and loosened sediment.

Cumulative Impacts from the Proposed Action. An annual Burning Man event would result in a contribution to continuing wind erosion of disturbed and loosened sediment on the surface of the playa at the location of the event over an approximate area of 3,200 acres. This would be added to the estimated 18,000 acres already believed to be disturbed on an annual basis and would increase the total area of disturbed and loosened surface sediments that are likely to contribute to erosion, dune formation, and dust storms on the playa from all human uses to about 7 percent of the entire playa surface, about a 19 percent increase in loose, erodible sediments on the entire

playa surface (BLM 2006). This would lead to an increased potential for erosion and dust storms associated with the Burning Man event. The actual amount of wind erosion in these areas would vary based on climate, but the increase in soil eroded would be expected to be proportionate to the increase in area disturbed. This increased potential would be short term as rains that generally occur in September or October would promote the formation of a surface crust on the playa, which would decrease the ability of winds to move dust.

Previous observations and studies indicate that within the Black Rock City area, winds are removing between 5 mm to less than one 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). It is unknown to what extent, if any, the surface sediments are replaced over time by wind driven sediment from other areas of the playa or by water borne sediments carried by runoff into the site from other parts of the playa and nearby hills and terraces.

The BLM has estimated that during the dry summer months, generally June through September, three percent (about 8,400 acres) of the playa surface (about 300,000 acres) would be subject to surface disturbances from various activities that allow winds to easily carry the loosened surface sediments (BLM 2006). An additional 300 acres is also disturbed by continued vehicles use on or adjacent to 115 miles of playa "road".

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 surface disturbance over approximately five percent of the playa. This would lead to the potential for additional formation of transient dunes. The degree to which dune formation would actually occur is unknown.

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

Alternative 2: 50,000-Person Maximum. Cumulative impacts for this alternative would be similar as with the Proposed Action. The surface of the Black Rock playa would continue to be disturbed by the annual Burning Man event at an incrementally smaller area and other varied recreational and other activities would continue to disturb approximately five percent of the playa during the dry summer months. The presence and operation of new and existing geothermal and mining activities on and adjacent to the Black Rock Desert would continue unchanged.

Alternative 3: No Action Alternative. If a large, informal gathering or smaller unpermitted events occurred, cumulative impacts on soils of the playa would be similar to those described for the Proposed Action. Recreational and permitted activities within and adjacent to the Black Rock Desert would result in the disturbance to the playa surface and displacement of soils and thus could result in increased erosion by wind and water. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to soils would be location specific and would depend on past, present, and reason-

ably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.19 Special Status Species

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, could create impacts to special-status plants and wildlife from vehicles and debris.

Cumulative Impacts from the Proposed Action. The Proposed Action has the potential to contribute to cumulative impacts to special-status plants and wildlife from vehicles and debris along with other recreational uses of the playa. Use of a designated access road, containment of activity within the Public Closure Area, onsite parking requirements, and onsite and offsite security would reduce damage to wildlife from on- and off-road vehicles.

Elevated noise and light from the Proposed Action could combine with that of other recreational uses, particularly if these other recreational activities are concurrent with the Proposed Action. The Proposed Action's contribution to potential displacement or disruption of special-status wildlife would last as long as the permit period and would cease immediately upon completion of event clean-up.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. With fewer participants, there would be a reduced potential for highway and road collisions with special-status wildlife, and for off-road vehicle use in areas supporting special-status species, and for elevated noise and light levels to displace and disrupt special-status wildlife. The potential for debris, collision, and ground disturbance would all be less in comparison to the Proposed Action, for an overall incremental reduction in cumulative impacts to special-status species.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same cumulative impacts described for the Proposed Action. There would be no traffic controls or coordination, no onsite and offsite security to patrol hot springs, no containment to a designated access road and Public Closure Area, and no trash clean-up stipulations. BLM regulations would remain in effect. It is expected that noise and light levels and resultant displacement and disruption of special-status wildlife would be slightly less what an unpermitted event due to fewer participants. Overall, when combined with other recreational uses of the playa and surrounding area, the No Action Alternative could contribute to cumulative impact to special-status species. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to special-status species would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.20 Transportation and Traffic

The cumulative effects study area includes the travel routes to the playa and the event landing strip, see Figure 5-10.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Present and Reasonably Foreseeable Future Actions. Present (ongoing) and foreseeable actions involving transportation and traffic would be Free Use Permit, expansion of Hycroft Mine, I-80 Robb Drive to Vista Boulevard - Design Build, SR-445 Pyramid Highway Improvements, SR-446, Sutcliffe/ Nixon Road, and Dispersed Recreation in the NCA. The actions could result in additional traffic and increased delays on the travel routes.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to traffic during the 10-day travel period. Traffic resulting from the event is highest during Labor Day weekend when event participants are exiting the playa. Traffic is heaviest during a holiday weekend, so many of the past, present, and foreseeable actions would not contribute traffic as the holiday would reduce work-related traffic. On the other hand, northern Nevada has a number of tourist destinations for dispersed recreation and other activities, and holidays themselves are events that generate increased traffic. In the event some of the activities overlapped and used the same access routes, this level of traffic could have the potential to exceed the capacity of County Road 34 and SR-447 in Nixon.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of this alternative to cumulative effects would be reduced compared with the Proposed Action.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same cumulative impacts described for the Proposed Action. Transportation and traffic may or may not be confined to a designated access road, and no traffic controls or coordination would be implemented. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts on transportation and traffic would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.21 Vegetation

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes, see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. Most of the recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, could result in trash and off-road vehicle use in unauthorized areas including the hot springs.

Cumulative Impacts from the Proposed Action. The Proposed Action would not result in direct impacts to vegetation and would not contribute to cumulative impacts from other uses of the playa. The Proposed Action would contribute to indirect impacts to adjacent vegetation communities through trash and off-road vehicle use in unauthorized areas.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum Alternative would be similar to the Proposed Action. As with the Proposed Action, there would be no direct impacts to vegetation. With fewer participants, there could be a slightly reduced potential for cumulative impacts resulting from trash and unauthorized off-road use.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same impacts described for the Proposed Action and could have a much higher likelihood for off-road vehicle use in unauthorized areas, with consequent damage to vegetation. There would be no formal trash clean-up procedures or ground inspections. BLM regulations would remain in effect even if the event was not officially permitted. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to vegetation would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.4.22 Visual Resources (including Dark Skies Analysis)

The cumulative effects study area encompasses the viewshed of the Public Closure Area, including Key Observation Points, see Figure 5-8.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present development within the viewshed include the town of Gerlach, portions of SR-447, County Road 34, and Highway 49 (Jungo Road), power lines and a railroad line. Some of these developments such as the Town of Gerlach introduce a source of light to the naturally dark nights.

Reasonably Foreseeable Future Actions. Foreseeable future cumulative actions within the visual resources study area include a 126-acre Nevada Bell fiber optic right-of-way; a five-acre sand and gravel operation; various permitted dispersed recreation uses on the Black Rock Desert playa such as cattle drives, equestrian tours, amateur rocket launching, land sailing, and OHV use and OHV races. Permitted dispersed recreation activities, like the Proposed Action, could exceed applicable VRM Class II criteria. With appropriate post-event clean-up would last the duration of the event and immediately before and afterwards and would not result in permanent or long-term cumulative impacts. The other actions could result in individually substantial impacts.

Dark Skies. The reasonably foreseeable cumulative actions would not be expected to contribute increased light to dark skies.

Cumulative Impacts from the Proposed Action. The incremental effect of the Proposed Action to cumulatively substantial visual effects would be minimal with appropriate post-event clean-up.

The cumulative effect of the Proposed Action would not result in permanent or long-term cumulative impacts.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. There would be fewer event participants, which would result in a smaller overall event. Thus, potential visual cumulative impacts from the event (including dark skies impacts) would occur at proportionately reduced levels in comparison to the Proposed Action.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same impacts described for the Proposed Action. Unauthorized events could occur closer to sensitive receptors and/or the town of Gerlach. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative visual impacts would be location specific and would depend on past, present, and reasonably foreseeable future actions at that location. Operating Plan procedures would likely be required due to the size of the event.

5.4.23 Wild Horse and Burros

The cumulative effects study area for wild horse and burros includes the travel routes to and from the event and the air basin (see Figure 5-1).

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past and Present Actions. Past and present actions that would affect wild horses and burros would be the Tri-State-Calico Complex Wild Horse and Burro Gather Plan.

Reasonably Foreseeable Future Actions. Foreseeable future actions that would affect wild horses and burros would be BLM's Winnemucca District Vegetation Management Plan; and the Flanigan, Dogskin Mountain, and Granite Peak Wild Horse Gather Plan. The Vegetation Management Plan would not conflict with appropriate management of wild horses and burros. The wild horse gather plans would help BLM manage herds that currently have populations in excess of the Appropriate Management Level (AML). While gathering horses and burros is stressful for the captured animals, managing herds at the AML is necessary to comply with the Wild Free-Roaming Horses and Burros Act and protect rangeland resources.

Cumulative Impacts from the Proposed Action. The incremental contribution of the Proposed Action to cumulative effects on wild horses and burros would be largely limited to the duration of the Burning Man 8-day event and immediately before and afterwards. As such, the Proposed Action would not combine with other activities to result in cumulative impacts to wild horses and burros.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of this alternative to cumulative effects would be reduced compared with the Proposed Action. This incremental contribution would be minimal and would not combine with dispersed recreation activities to create substantial cumulative impacts.

Alternative 3: No Action Alternative. If an unpermitted event occurred it would contribute some of the same minimal incremental impacts as the Proposed Action. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, any contributions to cumulative impacts to wild horses and burros would depend on whether any wild horses or burros grazed near the substitute event site.

5.4.24 Wilderness Study Areas

The cumulative effects study area for wilderness study areas includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, Selenite Mountains WSA and Poodle Mountains WSA, and travel routes (see Figure 5-2).

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Reasonably Foreseeable Future Actions. In addition to the Proposed Action, the other past, present, and foreseeable actions related to WSAs would be dispersed recreation activities within the NCA and BLM’s Winnemucca District Vegetation Management Plan. Potential cumulative impacts may result from existing or new activities that could restrict access to or degrade the environment of nearby WSAs.

Cumulative Impacts from the Proposed Action. The Proposed Action would contribute to cumulative effects on WSAs related to increased numbers of visitors outside of the event who are introduced to the area by the Burning Man event. The Winnemucca District Vegetation Management Plan is intended to address wildfire and invasive plant management. Vegetation management activities would serve to protect and restore habitat. Although dispersed recreation activities in the NCA are limited by the RMP for the NCA, some recreational activities do have some negative effects on wilderness characteristics.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. The incremental contribution of this alternative to cumulative effects would be reduced compared with the Proposed Action. This incremental contribution would be minimal and would not combine with dispersed recreation activities to create cumulative impacts.

Alternative 3: No Action Alternative. If an unpermitted event occurred it would contribute some of the same minimal incremental impacts as the Proposed Action. BLM regulations would remain in effect. If a substitute event occurred off of BLM Winnemucca District managed lands, any contributions to cumulative impacts to WSAs would depend on whether the substitute event was located near any WSAs.

5.4.25 Wildlife

The cumulative effects study area includes the playa, adjacent dunes, points of interest within Black Rock Desert–High Rock Canyon Emigrant Trails NCA, and travel routes (with 0.5-mile buffer or distance needed to drop to 10 dB over ambient noise levels, whichever is greater), see Figure 5-3.

Alternative 1: 58,000 to 70,000-Person Maximum (Proposed Action).

Past, Present, and Foreseeable Actions. Past, present, and foreseeable recreational uses of the playa, including jeep tours, equestrian tours, cattle drives, world land speed record, filming, large camp-outs, mountain bike races, and other activities that require a special recreation permit, could create impacts to wildlife from vehicles and debris.

Cumulative Impacts from the Proposed Action. The Proposed Action has the potential to contribute to cumulative impacts to wildlife from vehicles and debris in combination with other recreational uses of the playa, and other activities that require a special recreation permit. Use of a designated access road, containment of event activity within the Public Closure Area, onsite parking requirements, and onsite and offsite security would reduce damage to wildlife from on- and off-road vehicles, including collision.

Elevated noise and light from the Proposed Action could contribute to indirect impacts to wildlife in combination with that of other recreational uses, particularly if these other recreational activities are concurrent with the Proposed Action. The Proposed Action's contribution to potential displacement or disruption of wildlife would last as long as the permit period and would cease immediately upon completion of event clean-up.

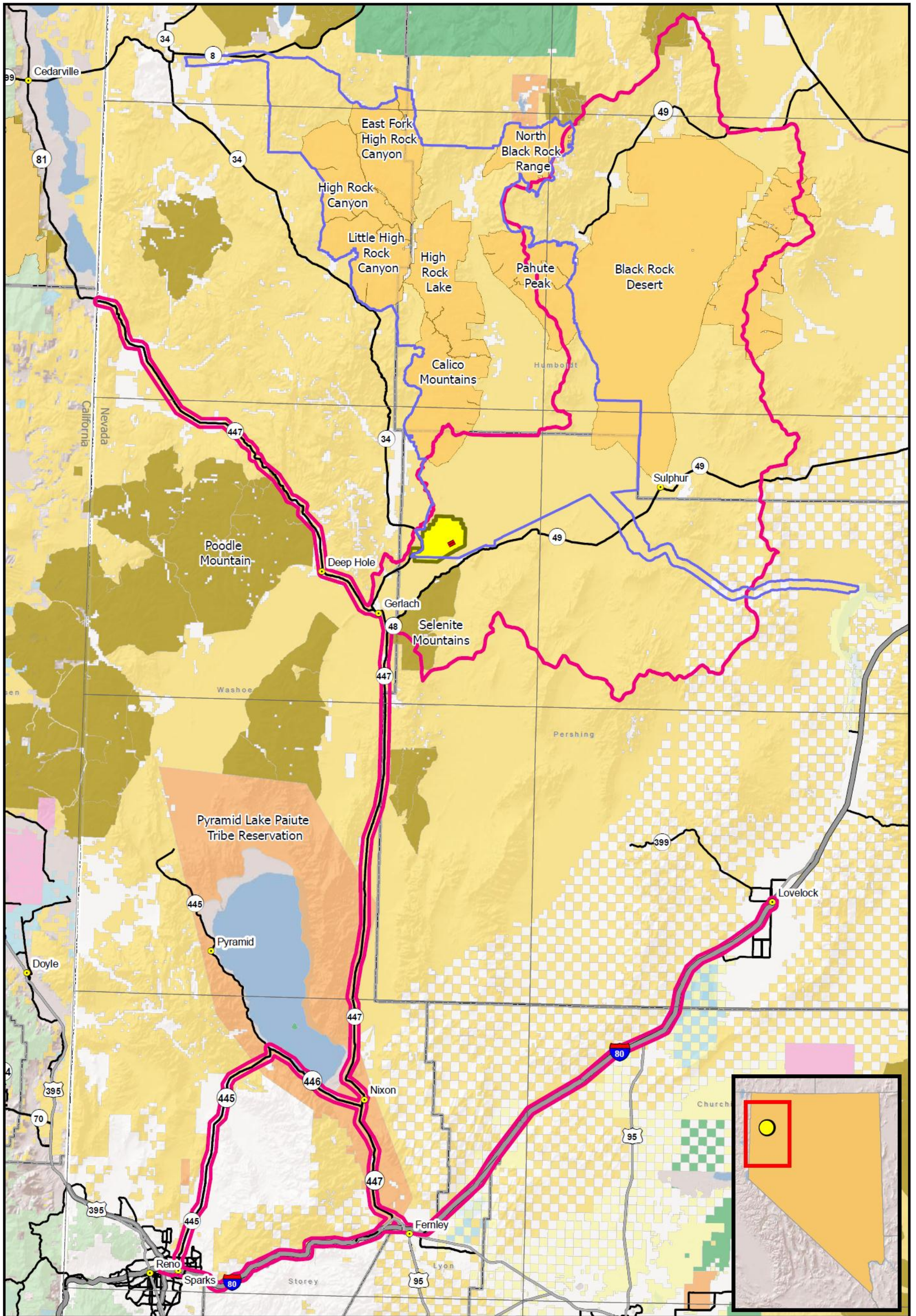
The Proposed Action could contribute to cumulative residual impacts to branchiopods, which some migratory birds feed upon when the playa is inundated, through oil drips and ground disturbance. Other permitted uses of the playa that involve vehicles may also result in oil drips. Other permitted use of the playa would potentially involve vehicles and result in oil drips and the incremental effect of the Proposed Action would represent a portion of the oil drips.

Alternative 2: 50,000-Person Maximum. The cumulative effects of the 50,000-Person Maximum would be similar to the Proposed Action. With fewer participant vehicles, there would be reduced potential for vehicle collisions with wildlife, for off-road vehicle use in areas supporting wildlife, and for elevated noise and light levels to displace and disrupt wildlife. The potential for debris, oil drips, and ground disturbance would all be less in comparison to the Proposed Action, for an overall reduction in cumulative impacts to wildlife.

Alternative 3: No Action Alternative. A large, informal gathering or smaller unpermitted events could cause some of the same cumulative impacts described for the Proposed Action. There would be no traffic controls or coordination, no onsite and offsite security, no containment of activity to a designated access road and Public Closure Area, and no trash clean-up stipulations. There would be a likelihood of vehicle collisions with wildlife, damage to wildlife in adjacent habitats, and unauthorized trash dumping. BLM regulations would remain in effect. It is expected that noise and light levels and resultant displacement and disruption of wildlife would be slightly less than an unpermitted event due to fewer participants. There would also be no oil drip or dust control measures, resulting in greater impacts to branchiopod eggs and migratory birds from degradation of this food source. If a substitute event occurred off of BLM Winnemucca District managed lands, cumulative impacts to wildlife would depend on the location of the substitute event and on the past, present, and reasonably foreseeable future projects in the area. Operating Plan procedures would likely be required due to the size of the event.

5.5 **Irreversible and Irretrievable Commitment of Resources**

No irreversible and irretrievable commitment of resources is expected.

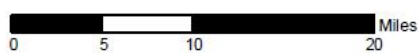


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|--|-----------------------------|---|----------------|
| ● Towns/Cities | ■ BLM Wilderness Study Area | ■ US Fish and Wildlife Service Wilderness | ■ State |
| ■ Landing Strip | ■ BLM Wilderness Area | ■ Forest Service | ■ Private |
| ■ Assessment Area | ■ Bureau of Land Management | ■ National Park Service | ■ Unclassified |
| ■ Project Boundary - Public Closure Area | ■ Tribal Land | ■ Department of Defense | ■ County lines |
| ■ National Conservation Area | ■ Bureau of Reclamation | ■ Department of Energy | |

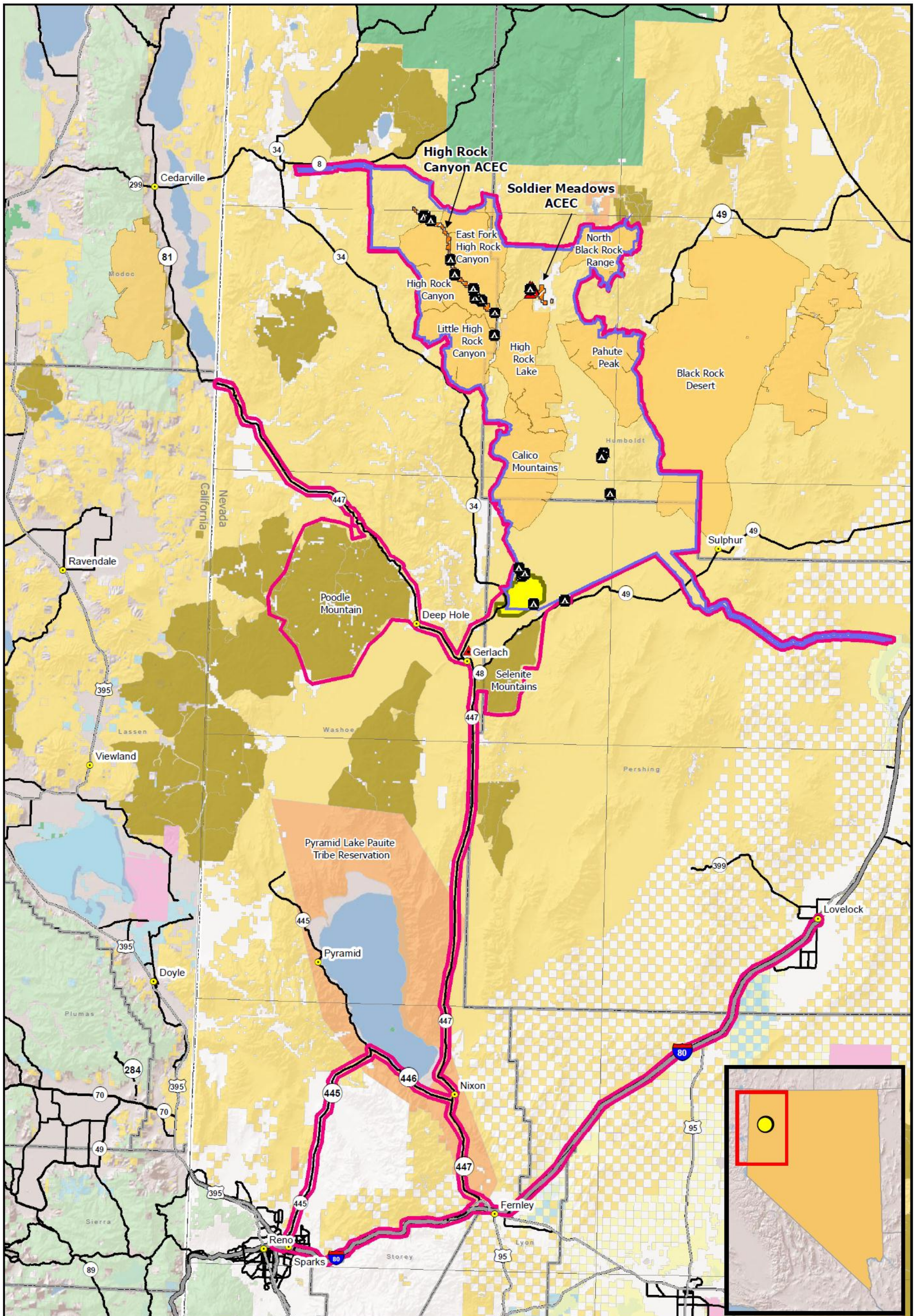
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Figure 5-1
Air Quality, Public Health & Safety, and Wild Horses & Burros Cumulative Assessment Area



USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

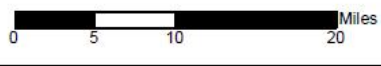
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|--|----------------------------|---------------------------|---|
| Towns/Cities | ACECs | Bureau of Land Management | US Fish and Wildlife Service Wilderness |
| Camp Sites | BLM Wilderness Study Area | Tribal Land | National Park Service |
| Hot Springs | BLM Wilderness Area | Bureau of Reclamation | State |
| Project Boundary - Public Closure Area | National Conservation Area | Department of Defense | Private |
| Assessment Area | County lines | Forest Service | Unclassified |

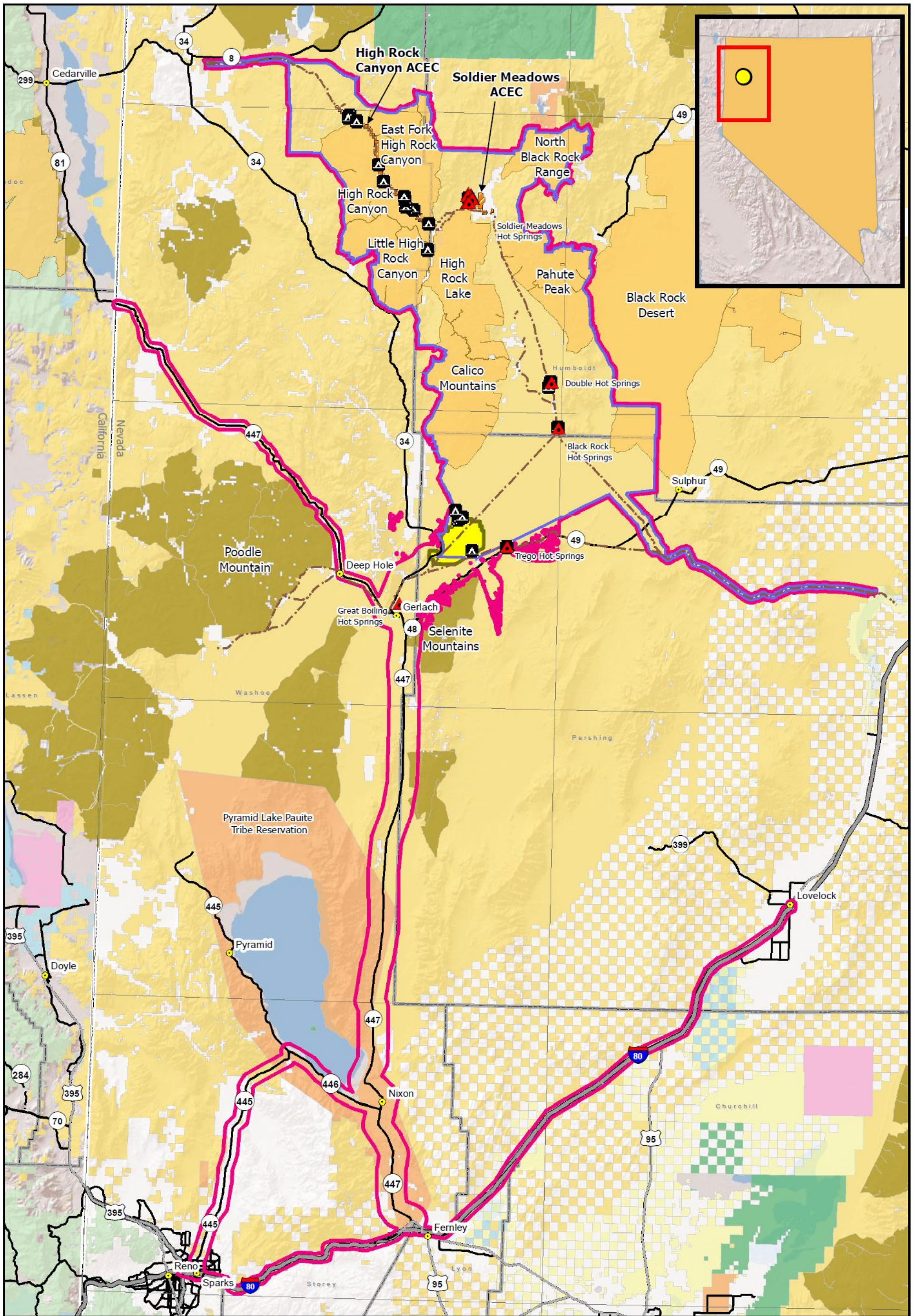
Figure 5-2
ACEC, Recreation, Wilderness, and Wilderness Study Area Cumulative Assessment Area



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USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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|--|----------------------------|---------------------------|---|
| Towns/Cities | Assessment Area | Land Ownership | US Fish and Wildlife Service Wilderness |
| Camp Sites | ACECs | Bureau of Land Management | National Park Service |
| Hot Springs | National Conservation Area | Tribal Land | State |
| Historic Trails | BLM Wilderness Study Area | Bureau of Reclamation | Private |
| Project Boundary - Public Closure Area | BLM Wilderness Area | Department of Defense | Unclassified |
| | | Forest Service | |

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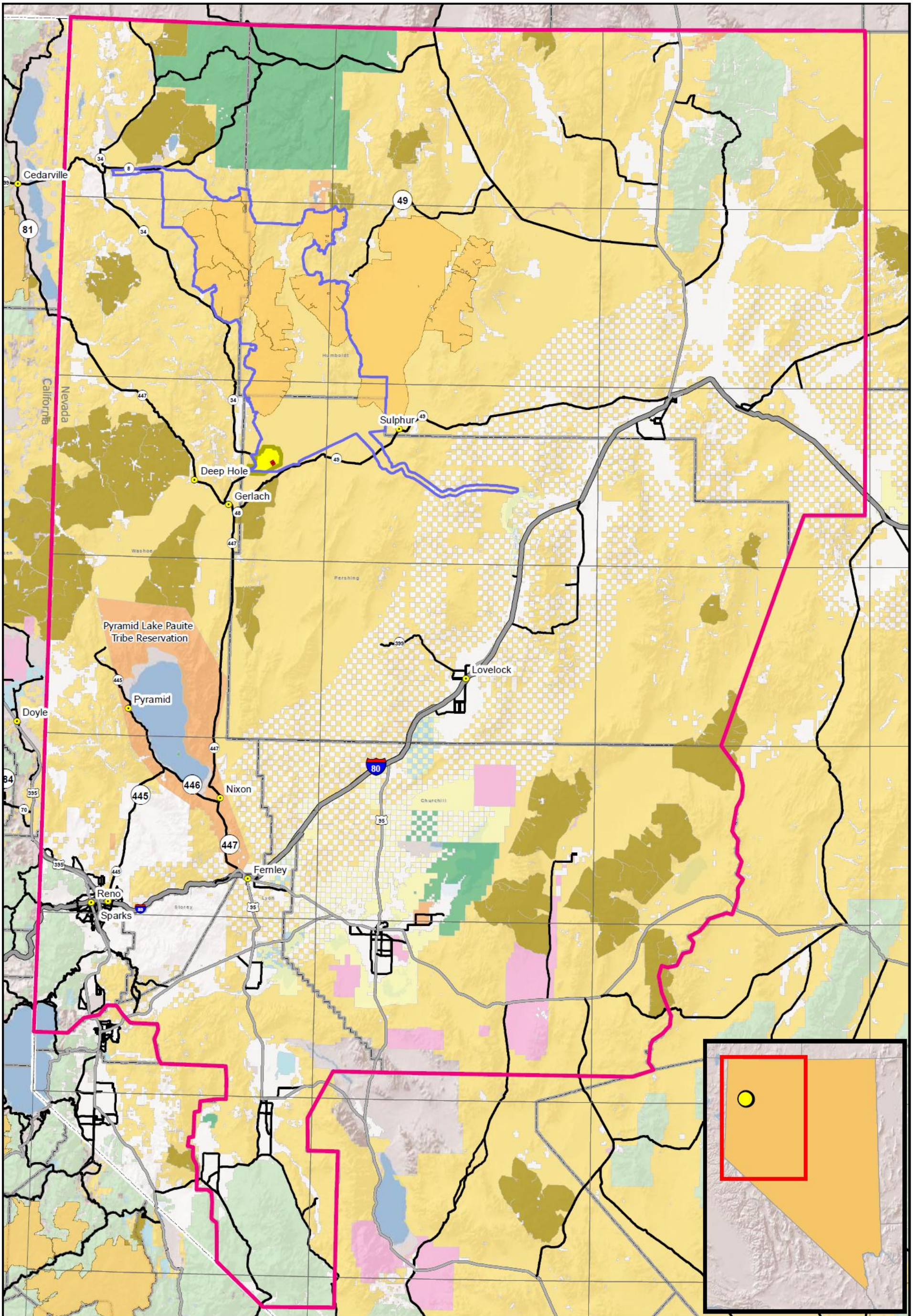
Figure 5-3
Cultural and Biological Resources Cumulative Assessment Area

0 5 10 20 Miles



USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiwa Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

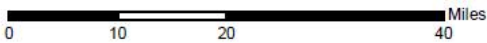
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- Towns/Cities
- Landing Strip
- Assessment Area
- Project Boundary - Public Closure Area
- National Conservation Area
- BLM Wilderness Study Area
- BLM Wilderness Area
- Bureau of Land Management
- Tribal Land
- Bureau of Reclamation
- US Fish and Wildlife Service Wilderness
- Forest Service
- National Park Service
- Department of Defense
- Department of Energy

- State
- Private
- Unclassified
- County lines



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, Quinn River Valley, Bull Run Mountains, High Rock Canyon, Jackson Mountains, Osgood Mountains, Tuscarora, Gerlach, Eugene Mountains, Winnemucca, Battle Mountain, Kumiva Peak, Lovelock, Reno, Fish Creek Mountain, Crescent Valley, Reno, Carson Sink, Edwards Creek Valley, Simpson Park Mountain, Carson City, Fallon, Smith Creek Valley, Summit Mountain, Smith Valley, Walker Lake, Lone Valley, Mount Jefferson, Bridgeport, Excelsior Mountain, Tonopah, Warm Springs

Figure 5-4
Economics, Social Values and Environmental Justice Cumulative Assessment Area

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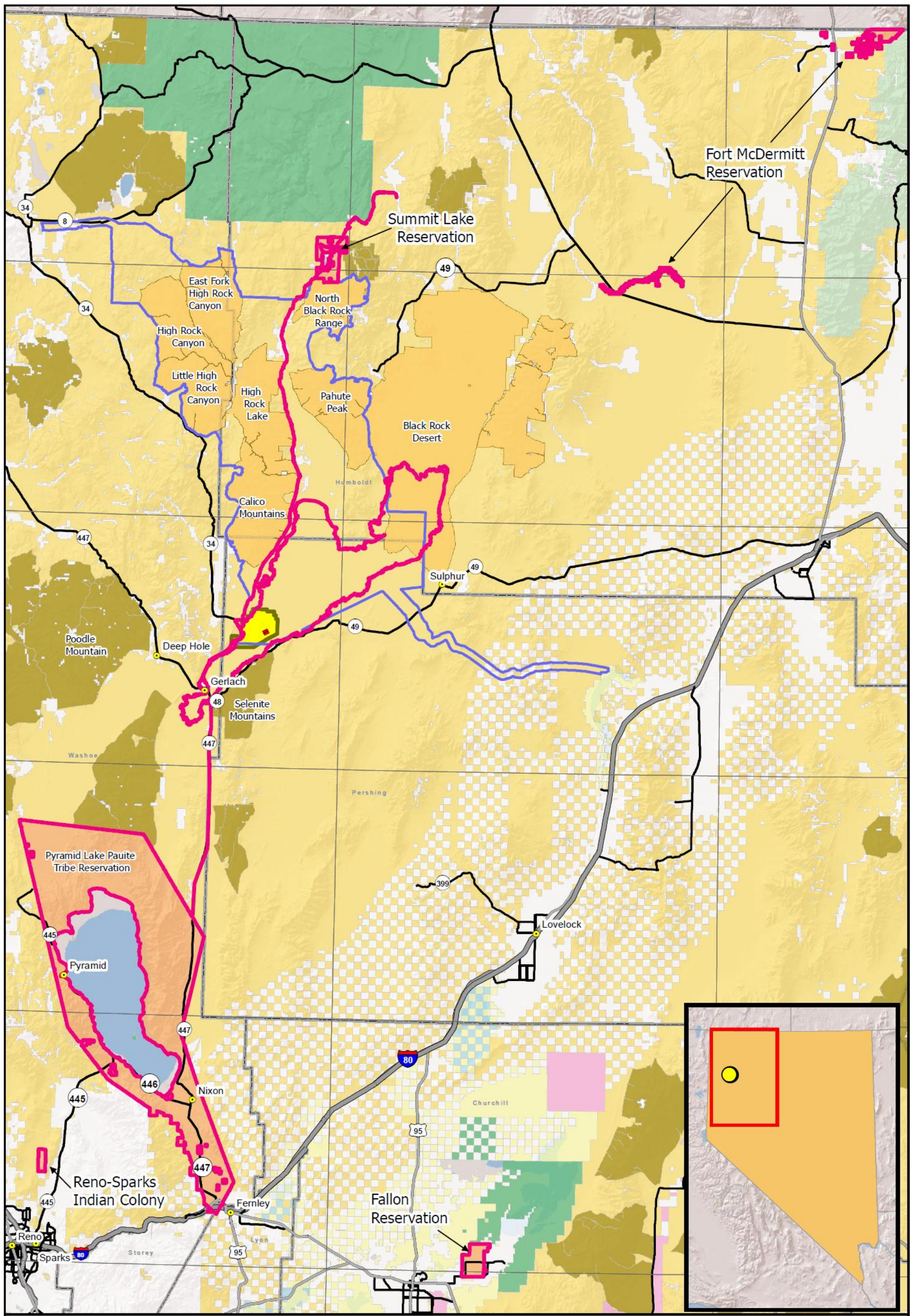
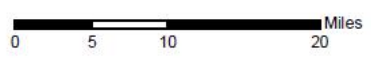


Figure 5-5
Native American
Religious Concerns
Cumulative Assessment Area



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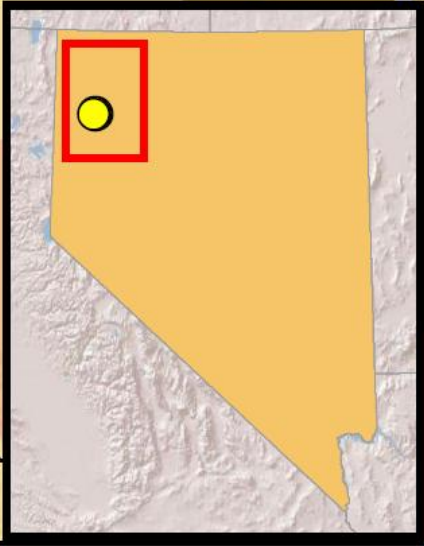
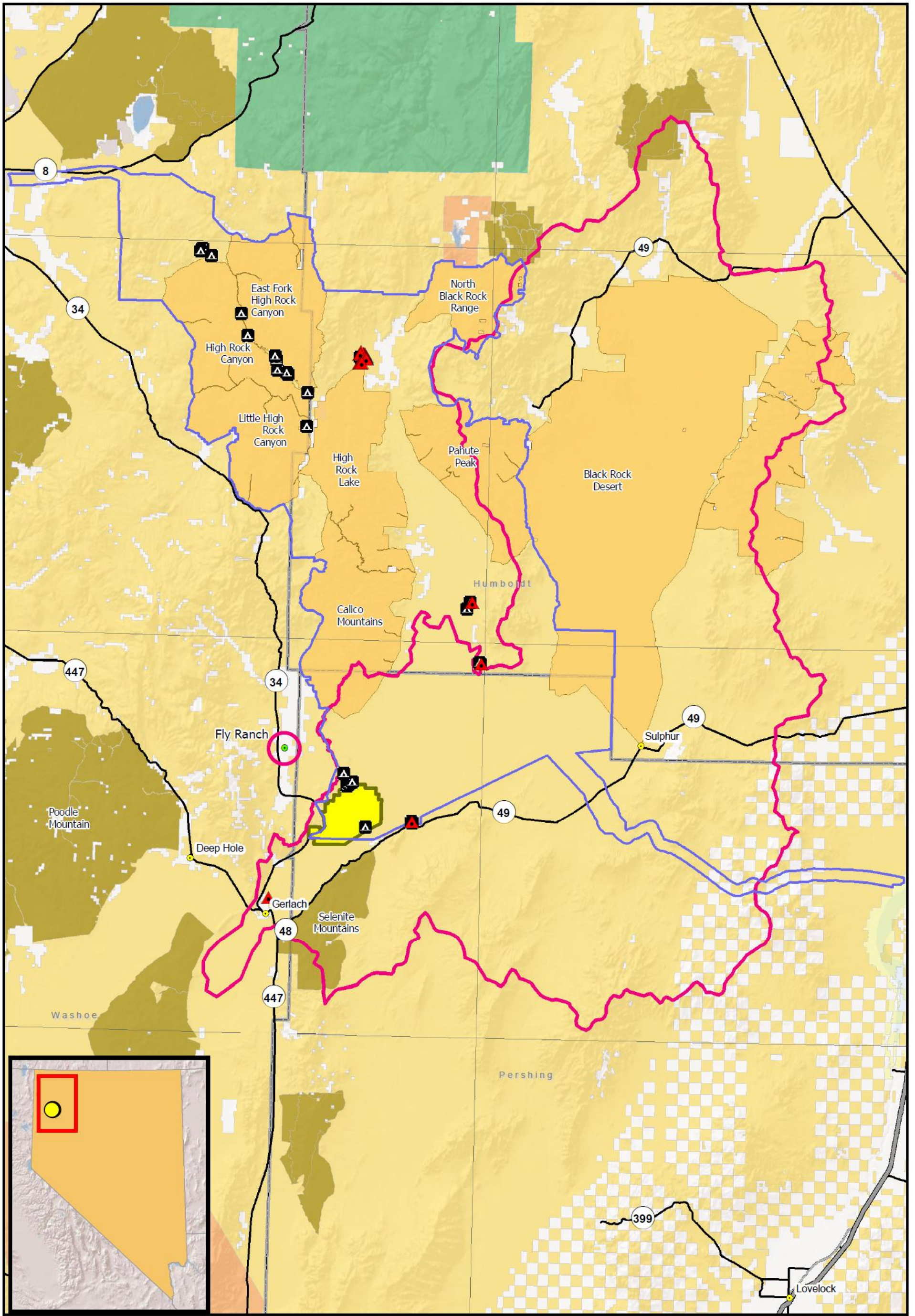
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| ● Towns/Cities | ■ BLM Wilderness Study Area | ■ US Fish and Wildlife Service Wilderness | ■ State |
| ■ Landing Strip | ■ BLM Wilderness Area | ■ Forest Service | ■ Private |
| ■ Assessment Area | ■ Bureau of Land Management | ■ National Park Service | ■ Unclassified |
| ■ Project Boundary - Public Closure Area | ■ Tribal Land | ■ Department of Defense | ■ County lines |
| ■ National Conservation Area | ■ Bureau of Reclamation | ■ Department of Energy | |



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

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- Towns/Cities
- Camp Sites
- Hot Springs
- Project Boundary - Public Closure Area
- Assessment Area

- National Conservation Area
- BLM Wilderness Study Area
- BLM Wilderness Area
- County lines

- Land Ownership**
- Bureau of Land Management
 - Bureau of Reclamation
 - Private

- Tribal Land
- US Fish and Wildlife Service Wilderness

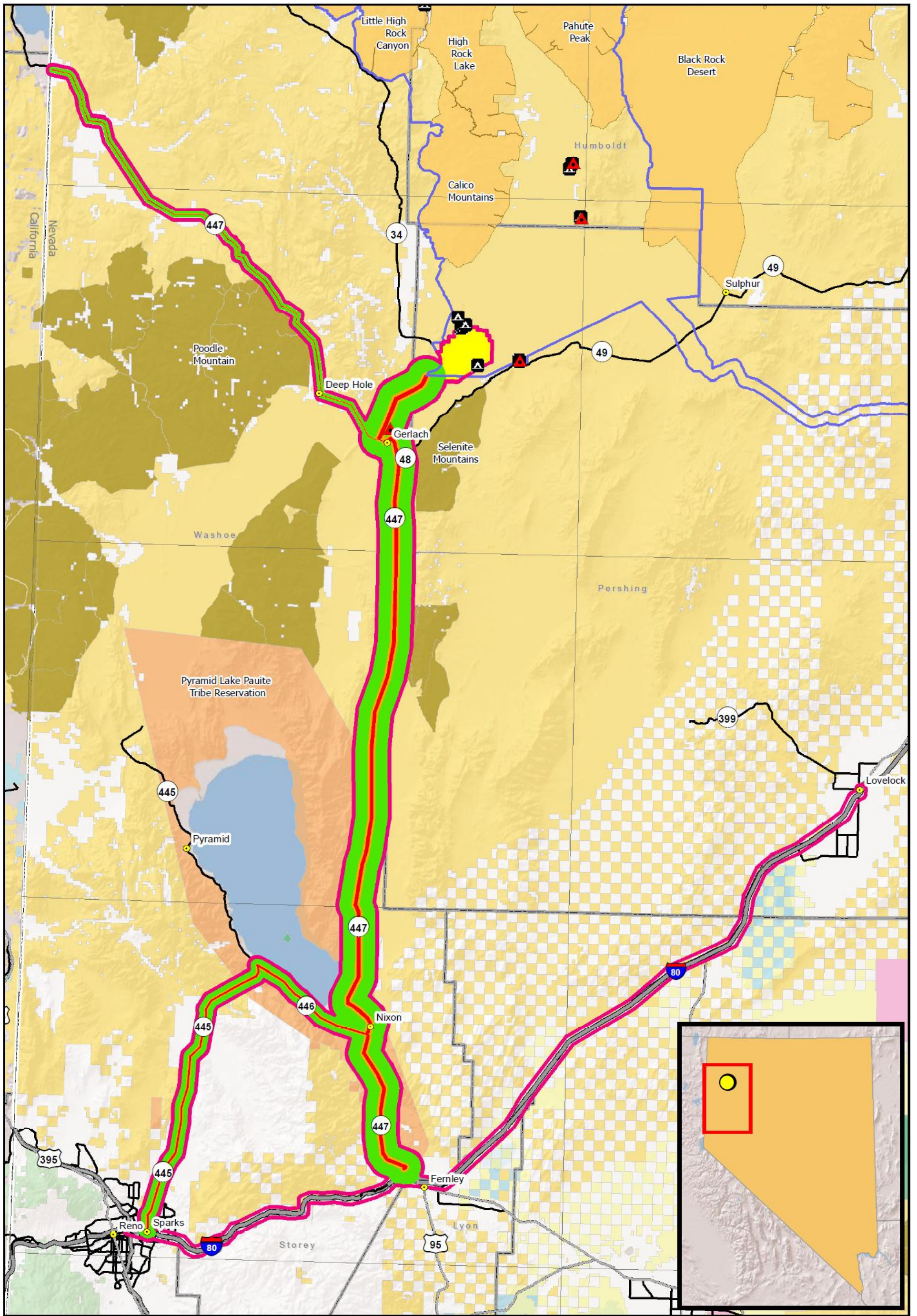


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USGS Quad Names: VYA, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock

Figure 5-6
Water Quality Cumulative Assessment Area

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 June 2012

Noise Levels

- >60 Decibels
- 55 - 60 Decibels
- 45 - 55 Decibels

● Towns/Cities
 ⛑ Camp Sites
 ▲ Hot Springs
 ■ Project Boundary - Public Closure Area
 ■ Assessment Area

■ BLM Wilderness Study Area
 ■ BLM Wilderness Area
 ■ National Conservation Area
 ■ County lines

Land Ownership

- Bureau of Land Management
- Tribal Land
- Bureau of Reclamation
- Department of Defense
- Forest Service

■ US Fish and Wildlife Service Wilderness
 ■ National Park Service
 ■ State
 ■ Private
 ■ Unclassified



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

Figure 5-7
Noise Cumulative Assessment Area

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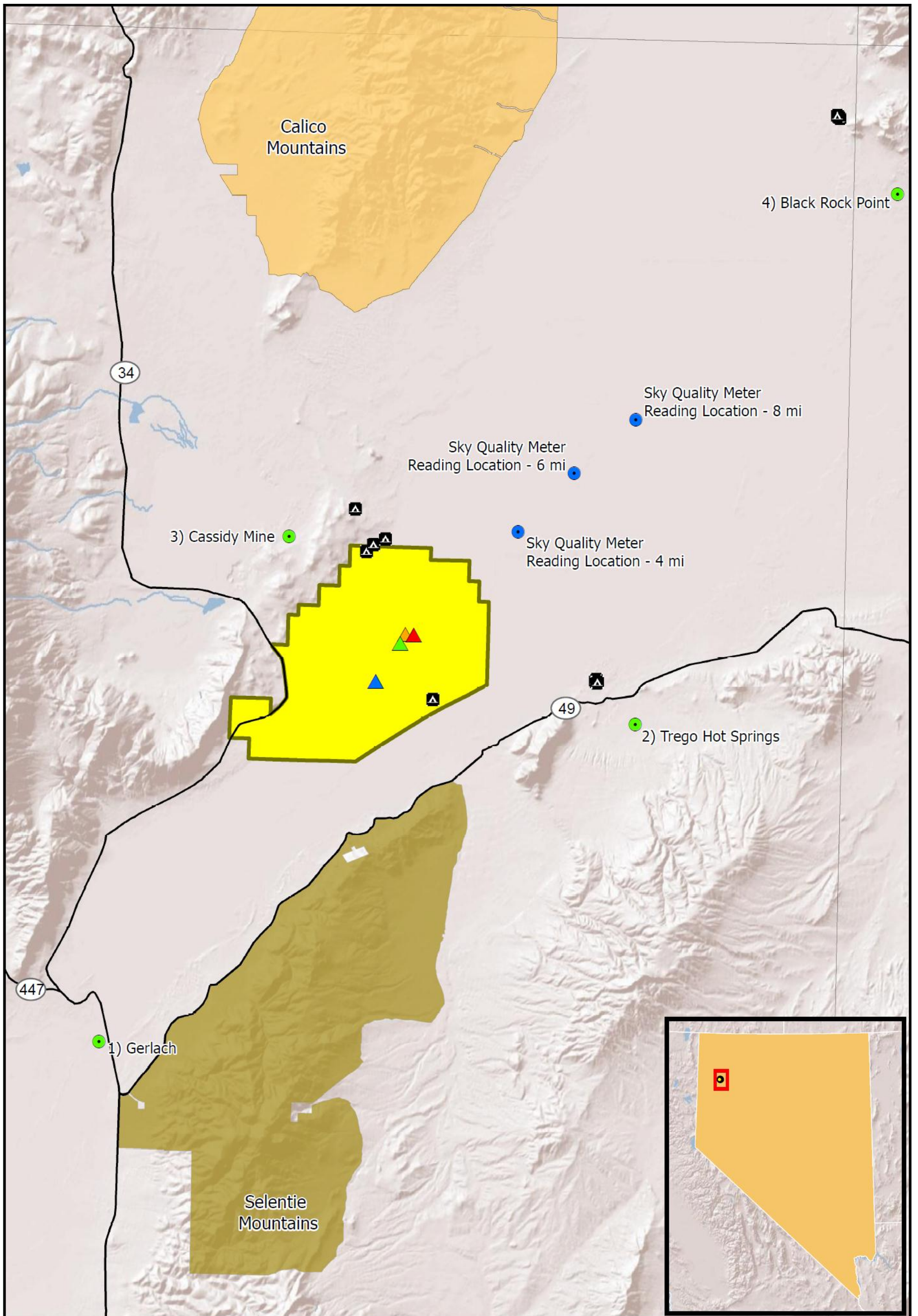


Figure 5-8
Visual Resources
Cumulative Assessment Area



Winnemucca District Office
 Black Rock Field Office
 5100 E. Winnemucca Blvd.
 Winnemucca, NV 89445
 June 2012

- KOP
- Sky Quality Meter Reading Locations
- Project Boundary - Public Closure Area
- Main Location Viewshed - 12 Mile Buffer
- ▲ 2011 Main Location
- ▲ 2010 Main Location
- ▲ 2008 Main Location
- ▲ 2006 Main Location
- BLM Wilderness Study Area
- BLM Wilderness Area
- Camp Sites



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains.

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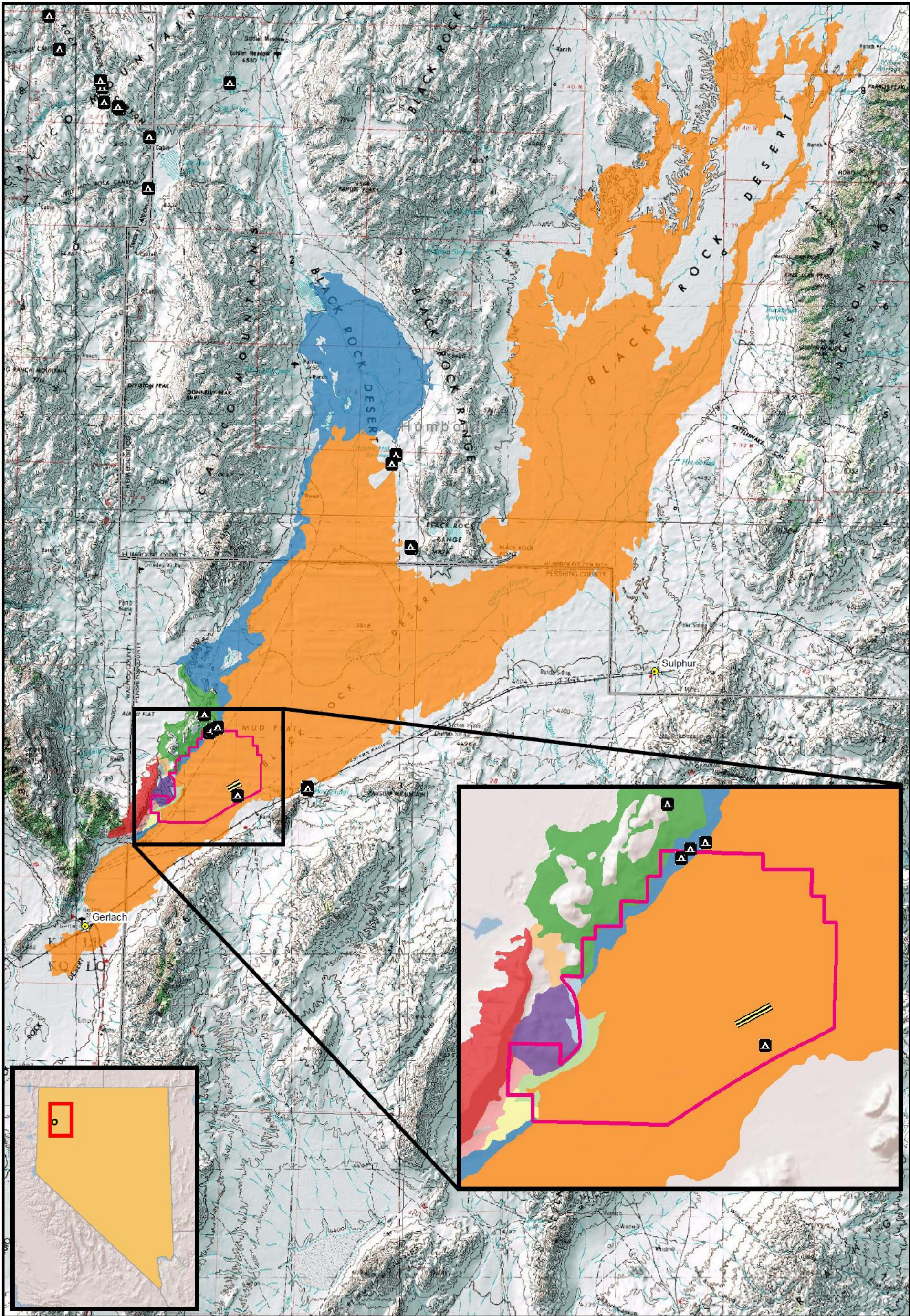


Figure 5-9
Soils Cumulative Assessment Area

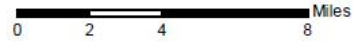


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Winnemucca, NV 89445
June 2012

- Project Boundary and Assessment Area
- Landing Strip
- Camp Sites

Soil Types

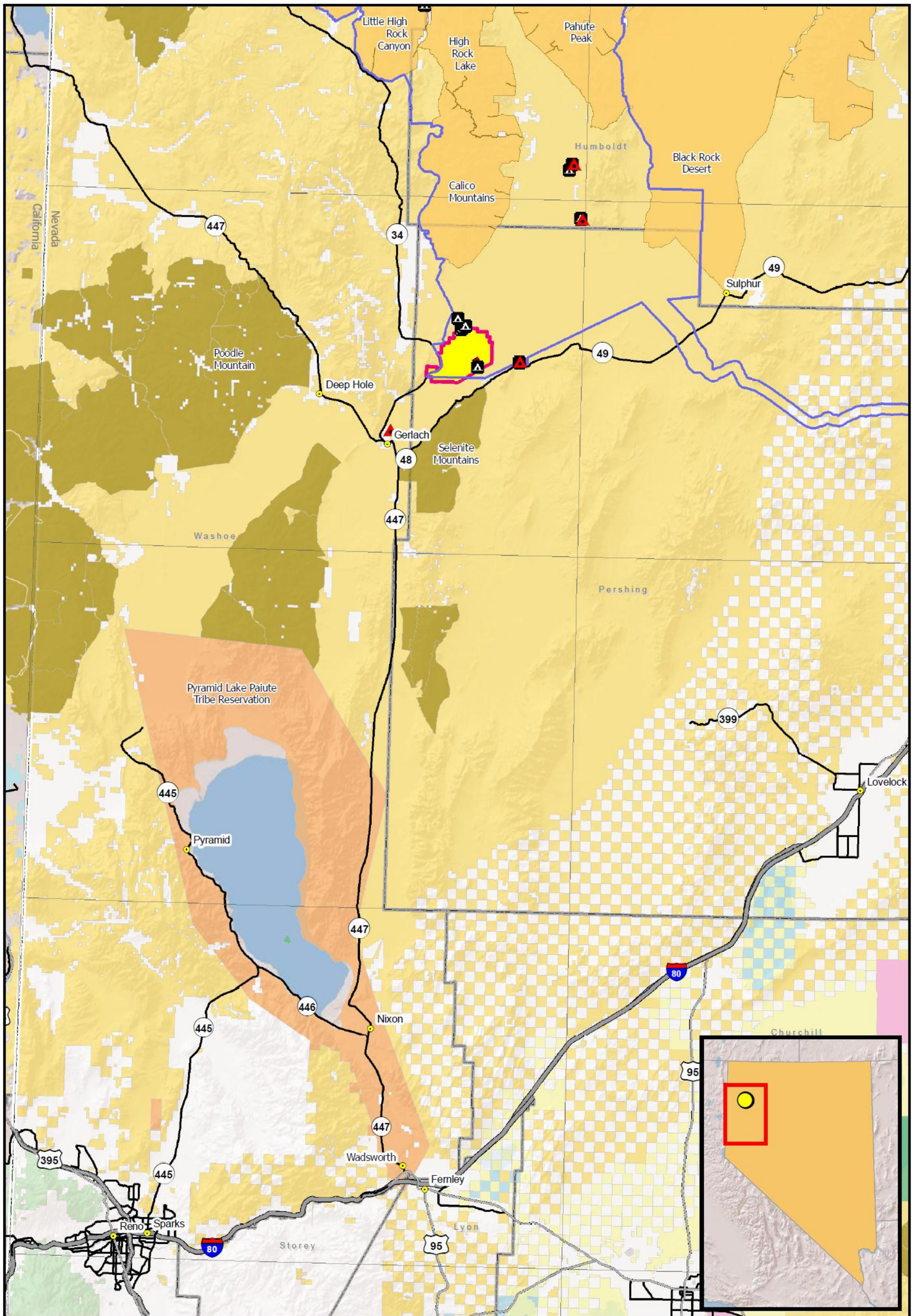
- Playas
- Isolve-Ragtown Association
- Slocave-Arcly-Rock Outcrop Association
- Toulon-Appian-Bluwing Association
- Theon-Grumben-Rubble Land Association
- Mazuma-Trocken Association
- Coldent-Isolve-Swinger Association
- Mazuma-Ragtown Association
- Shawave-Slipback-Granshaw Association
- Mazuma Silt Loam, Moderately Saline-Sodic, 0 to 2 Percent Slopes
- Badland



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: Vya, Denio, High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock

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Winnemucca District Office
 Black Rock Field Office
 5100 E. Winnemucca Blvd.
 Winnemucca, NV 89445
 June 2012

- | | | | |
|--|------------------------------|-----------------------------|---|
| ● Towns/Cities | ■ BLM Wilderness Study Area | ■ Land Ownership | ■ US Fish and Wildlife Service Wilderness |
| ⛺ Camp Sites | ■ BLM Wilderness Area | ■ Bureau of Land Management | ■ National Park Service |
| ▲ Hot Springs | ■ National Conservation Area | ■ Tribal Land | ■ State |
| ■ Project Boundary - Public Closure Area | ■ County lines | ■ Bureau of Reclamation | ■ Private |
| ■ Assessment Area | | ■ Department of Defense | ■ Unclassified |
| | | ■ Forest Service | |



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

USGS Quad Names: High Rock Canyon, Jackson Mountains, Gerlach, Eugene Mountains, Kumiva Peak, Lovelock, Reno, Carson Sink, Carson City, Fallon

Figure 5-10
Transportation and Waste Cumulative Assessment Area

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6 MITIGATION AND MONITORING

The following recommended mitigation and monitoring measures are based on the environmental analysis and are presented here by alternative.

6.1 **58,000 to 70,000-Person Maximum Alternative (Proposed Action)**

Oil Drip Surveys: In order to quantify and assess how much oil might be deposited on the playa during the event, the applicant should fund and conduct an oil drip survey during the first year of the permit and at least one additional year over the duration of the permit (2012-2016). The oil drip survey should include a scientifically valid methodology for sampling collection, verifiable results, discussion regarding the results, as well as actions to reduce the amount of hydrocarbon waste (i.e., oil) if it is shown to be increasing at the playa. The study design (methodology) should be coordinated with the BLM Hazardous Materials Specialist and approved by the BLM Authorized Officer prior to implementation. Personnel conducting the study should be approved by the BLM Authorized Officer prior to study implementation. The applicant should be responsible for costs associated with the monitoring program and any potential operational changes that may be necessary (as determined by BLM) as indicated by the research results.

The above measure would apply to the following resources: Waste, Hazardous or Solid; Migratory Birds; Water Quality; Wetlands and Riparian Zones; and Wildlife.

Human Waste Disposal: The applicant should ensure there are adequate numbers of toilets and that there is suitable placement of toilets as needed throughout Black Rock City according to the applicant's Operation Plan. Due to the increase in population anticipated in this Environmental Analysis, additional portable toilets should be supplied at areas likely to be used after dark and their lighting should be increased. The applicant should ensure the toilets are lit and visible from the Art area during nighttime activities. The applicant should continue to educate the event participants regarding the importance of appropriate disposal of human waste.

Prior to release of information regarding the 2012 Burning Man event, the applicant should include a page on the Burning Man website that specifies the appropriate disposal of human waste for participants using personal portable toilets and provides information regarding the risks to human health of improperly disposed of human wastes. The applicant should inform the event participants on the legal ramifications to the individual and to the applicant of inappropriately disposed human waste including the possible revocation of permits, see NAC 444.5466 Disposal of sewage; plumbing (for Camping) and NAC 444.5492 (regarding provision of toilet facilities for mass gatherings).

The above measure would apply to the following resources: Waste, Hazardous or Solid; and Water Quality.

Debris Removal: In addition to patrolling SR-446 and SR-447 for event-related trash, the applicant should coordinate with NDOT to compile a list of any other roadways or rest areas that should be cleared of event-related trash. Additionally, the applicant should

coordinate with Washoe County to patrol County Road 34 and Jackson Lane from the event site to the "Black Rock City Work Ranch" in the Hualapai Valley, approximately 10 miles north of the event site.

The applicant should coordinate with NDOT and the Freeway Service Patrol to ensure that debris removal is conducted according to NDOT standards and protocols. Off-site clean up should occur after the event to gather trash discarded during the entire event period. The applicant should make a best-faith effort to collect all trash that can be safely collected and should notify and coordinate with the appropriate agencies for any remaining items in accordance with all NDOT encroachments permits. Clean-up staff should wear appropriate safety vests and hats and drive vehicles with flashing lights to ensure safety during trash collection.

The above measure would apply to the following resources: Waste, Hazardous or Solid; Environmental Justice; Migratory Birds; Recreation; Social Values; Special-Status Species; Wild Horses and Burros; Wilderness Study Areas; and Wildlife.

Traffic Signage and Control: In addition to the Traffic Management Plan provided in the *2012 Operating Plan*, the following traffic signage and control items are recommended:

- No more than 1,000 vehicles per hour should be released from Black Rock City during the exodus period to avoid deterioration of the external roadway system to an unacceptable level of service (LOS E or F).
- The applicants Traffic Management Plan should be expanded to include more detail on ingress and egress. This plan would be approved by the authorized officer or the authorized officer's agent.
- Prior to the event, the applicant should coordinate with NDOT regarding the type of traffic control devices to be used in accordance with NDOT requirements.
- The applicant should cooperate with Washoe County Sheriff's Office and NDOT to install temporary speed limit reductions through the town of Empire. A maximum speed limit of 25 mph is recommended. A reduced speed limit would improve the safety of parking along SR-447 through Empire and pedestrians crossing the roadway.
- Speed limit trailers should be installed in Gerlach Empire, and Nixon to encourage drivers to maintain the legal speed limit. Speed limit trailers act as a traffic calming device by displaying a driver's speed as they pass by the trailer.
- A copy of all necessary permits for encroachment within Tribal, NDOT, and county right-of-way for temporary traffic control measures (i.e. speed limit trailers, etc.) should be provided to the appropriate agencies/jurisdictions 30 days prior to the start of the event.
- BRC should provide traffic control, using traffic control devices as determined by NDOT, at County Road 34 entrances/exits to the Burning Man event, the "Y" inter-

section of SR-447/County Road 34, and in the towns of Gerlach and Empire during heavy traffic periods.

- Flaggers should be used at the intersection of SR-447 and SR-446 to allow left-hand turns within the Pyramid Lake Paiute reservation.

The above measure would apply to the following resources: Transportation and Traffic; Environmental Justice; Recreation; Wild Horses and Burros; Wilderness; Wilderness Study Areas; and Wildlife.

Recommended Mitigation Arising From Native American Concerns:

Debris Removal in Response to Native American Concerns: To reduce impacts to the Pyramid Lake Paiute reservation located along the access routes, the applicant should coordinate with the Pyramid Lake Paiute Tribe. The applicant should work with the Environmental Coordinator of the Pyramid Lake Tribe in developing the applicant's plan to increase public awareness and educational campaigns about Leave No Trace® on tribal land, including for example, signage on roads, Public Service Announcements on BMIR, blog-posts, etc. Also, the applicant should continue to support and promote tribal enterprises that are setup to collect participant trash and recycling for a fee, which also helps with economic benefits of the Region.

The above measure would apply to the following resources: Environmental Justice and Native American Religious Concerns.

Traffic Signage and Control in Response to Native American Concerns: In addition to the Traffic Management Plan provided in the *2012 Operating Plan*, the following traffic signage and control items are recommended to address Native American concerns:

- No more than 1,000 vehicles per hour should be released from Black Rock City during the exodus period to avoid deterioration of the external roadway system to an unacceptable level of service (LOS E or F).
- The applicant's Traffic Management Plan should be expanded to include more detail on ingress and egress. This plan would be approved by the authorized officer or the authorized officer's agent.
- Prior to the event, the applicant should coordinate with NDOT regarding the type of traffic control devices to be used in accordance with NDOT requirements.
- A speed limit trailer should be installed in Nixon to encourage drivers to maintain the legal speed limit. Speed limit trailers act as a traffic calming device by displaying a driver's speed as they pass by the trailer.
- A copy of all necessary permits for encroachment within Tribal, NDOT, and county right-of-ways for temporary traffic control measures (i.e. speed limit trailers, etc.) should be provided to BLM by BRC 30 days prior to the start of the event.
- Flaggers should be used at the intersection of SR-447 and SR-446 to allow left-hand turns within the Pyramid Lake Paiute reservation.

- The applicant and the Pyramid Lake Paiute Tribe should agree to enter into a formal agreement that covers arrangements for traffic control devices. A draft agreement should be submitted to the BLM prior to a decision being made.
- Traffic flow monitoring should occur at the intersection of SR-427 and SR-447. (This topic has come up during the course of Native American consultation and NDOT discussions).

The above measure would apply to the following resources: Environmental Justice and Native American Religious Concerns.

Recommended Monitoring Arising From Public Comments:

Burn Pad Debris Removal Arising from Public Comments: In order to decrease or eliminate foreign material that remains at the applicant's "authorized burns," including materials used for protection of the playa surface, the BLM should adopt a monitoring protocol to determine the amount of unburned *material* at these sites. This protocol should be employed by the BLM during the 2012 post-event monitoring to provide a quantification of materials left specifically at "authorized burn" sites and provide a baseline against which future events could be compared. This baseline should also be utilized to create a standard and consequence that will be applied to subsequent events (beginning with the 2013 event) similar to the standard and consequence described in Stipulation #29 in the Burning Man 2011 Special Recreation Permit Stipulations (Appendix 1). Additionally, "unburned material", as discussed in Chapter II, Section C, sub-part 2 of the applicant's Annual Operating Plan (Appendix 2), should be understood by the BLM to include materials used in creation of a burn pad.

The above measure would apply to the following resources: Soils and Playa Sediments and Visual Resources.

6.2 50,000-Person Maximum Alternative

The same mitigation measures (except for the additional toilets under human waste disposal) as for the Proposed Action are recommended for implementation as part of the 50,000-Person Maximum Alternative.

6.3 No Action Alternative

There are no mitigation measures or monitoring recommended as part of the No Action Alternative.

7 LIST OF PREPARERS

Table 7-1. Bureau of Land Management

BLM Interdisciplinary Team Member & Title	Degree and Years of Experience	EA Area(s) of Responsibility
BLM Winnemucca Field Office		
Cory Roegner Assistant Field Manager	M.A., Recreation Management 5 years of experience	Project Manager Noise (Quiet) Recreation Transportation and Traffic
Celeste Mimnaugh Wildlife Biologist	B.S., Range Ecology/Wildlife Habitat Management 7 years of experience	ACECs Migratory Birds Special-Status Species Threatened and Endangered Species Wildlife
Daniel Kozar Lead GIS Specialist	B.S., Geography/GIS 8 years of experience	GIS
Fred Holzel Geologist	M.S., Geology B.S., Geology 22 years of experience	Waste (Hazardous or Solid)
Greg Lynch Fisheries Biologist	B.S., Agriculture/Fishery Science 12 years of experience	ACECs Special-Status Species Threatened and Endangered Species
Joey Carmosino Outdoor Recreation Planner	M.A., Recreation Administration 10 years of experience	Visual Resources Night Skies
John McCann Hydrologist	B.A., Environmental Studies B.S., Geology 2 years of experience	Water Resources Water Quantity Wetland & Riparian Areas
Kathy Ataman Archaeologist	Ph.D., Archaeology 24 years of experience	Cultural and Paleontological Resources
Kristine Struck Wilderness Specialist	B.S., Recreation Management 10 years of experience	Wilderness and Wilderness Study Areas Lands with Wilderness Characteristics General
Lynn Ricci Planning and Environmental Coordinator	B.S. Biology 20 years of experience	NEPA Compliance
Mark Hall Archaeologist	Ph.D., Anthropology M.A., Anthropology M.S.E. Metallurgy and Mining B.S.E. Metallurgy and Mining Registered Professional Archaeologist 19 years of experience	Native American Religious Concerns Native American Coordinator
Melanie Mirati Wild Horse & Burro Specialist	B.S., Wildlife Ecology and Conservation 8 years of experience	Wild Horses and Burros
Rob Burton Natural Resource Specialist	B.S., Environmental Science 12 years of experience	Invasive and Non-native Species Vegetation Soils and Playa Sediments

Table 7-1. Bureau of Land Management

BLM Interdisciplinary Team Member & Title	Degree and Years of Experience	EA Area(s) of Responsibility
BLM National Operations Center		
Craig Nicholls Physical Scientist	M.S., Atmospheric Sciences B.S., Atmospheric Sciences 22 years of experience	Air Quality Climate Change
Josh Sidon Economist	Ph.D., Economics 6 years of experience	Economics Social Values Environmental Justice
BLM Persons Consulted		
Barb Keleher <i>BLM Nevada State Office</i>	B.S., Recreation & Leisure Services 29 years of experience	General
Roger Farschon <i>BLM Surprise Field Office</i>	M.S., Range Management B.S., Conservation of Natural Resources 32 years of experience	General

Table 7-2. Cooperating Agencies

Name	Title	EA Area(s) of Responsibility
Pyramid Lake Paiute Tribe		
John Mosley	Environmental Director	Native American Religious Concerns
Nevada Department of Transportation		
Anita Lyday	District II Urban Traffic Engineer	Transportation and Traffic
Mike Fuess	District Manager of Engineering Services	Transportation and Traffic
Pershing County		
Darin Bloyed	Chairman, Pershing County Commission	General
Washoe County		
Bill Whitney	Senior Planner	General

Table 7-3. Aspen Environmental Group Team

Interdisciplinary Team Member & Title	Degree and Years of Experience	EA Area(s) of Responsibility
Aspen Environmental Group		
Hedy Koczwar Associate	M.S., Earth Systems B.S., Earth Systems 10 years of experience	Project Manager; Introduction; Proposed Action and Alternatives
Alex McInturff Staff	M.S., Earth Systems B.S., Earth Systems 3 years of experience	Graphics and GIS

Table 7-3. Aspen Environmental Group Team

Interdisciplinary Team Member & Title	Degree and Years of Experience	EA Area(s) of Responsibility
Amy Morris Associate	Ph.D., Environmental Studies M.A., Environmental Studies B.A., Environmental Biology 10 years of experience	Wilderness and Wilderness Study Areas; ACECs; Wild Horses and Burros
Aubrey Mescher Associate	Master of Environmental Science & Management B.A., Environmental Studies and Film Theory 12 years of experience	Water Resources
Beth Bagwell Associate	Ph.D., Anthropology (Archaeology) M.A., Anthropology (Archaeology) Certificate in Archaeological Technology Registered Professional Archaeologist B.A., Anthropology and Creative Writing 17 years of experience	Cultural Resources
Brewster Birdsall Senior Associate	M.S., Civil Engineering B.S., Mechanical Engineering	Air Quality and Climate Change; Noise
Dan Whitehorn Associate	B.S., Geography 4 years of experience	Graphics and GIS
Emily Capello Associate	M.P.A., Environmental Science & Policy B.A., English Literature & History 10 years of experience	Public Health and Safety; Waste, Hazardous or Solid; Recreation
Emmeline Kiyari Staff	Masters of Environmental Science & Management B.A., Integrative Biology (with minor in Asian American Studies) 5 years of experience	Invasive and Non-native Species; Migratory Birds; Threatened and Endangered Species; Wetlands and Riparian Areas; Special Status Species; Vegetation; Wildlife
George Hampton Associate	B.A., Geography 42 years of experience	NEPA Compliance
Heather Blair Associate	M.S. Conservation Biology (in progress) B.S. Ecology 8 years of experience	Invasive and Non-native Species; Migratory Birds; Threatened and Endangered Species; Wetlands and Riparian Areas; Special Status Species; Vegetation; Wildlife
Jacob Hawkins Associate	Masters of Environmental Science & Management B.S., Biology 12 years of experience	Social Values; Environmental Justice
Mark Tangard	B.A., Geography 37 years of experience	Document Production
Richard McCann Senior Associate	Ph.D., Agricultural and Resource Economics M.S., Agricultural and Resource Economics M.P.P., Institute of Public Policy Studies B.S., Political Economy of Natural Resources 26 years of experience	Economics

Table 7-3. Aspen Environmental Group Team

Interdisciplinary Team Member & Title	Degree and Years of Experience	EA Area(s) of Responsibility
Far Western Anthropological Research Group		
D. Craig Young Director	Ph.D., Anthropology Registered Professional Archaeologist 22 years of experience	Cultural Resources
Sarah Rice Staff Archeologist	B.A., Anthropology 6 years of experience	Cultural Resources
Steven Neidig Senior Archeologist	B.S., Geology 13 years of experience	Cultural Resources
Fehr and Peers		
Katy Cole Associate	B.S., Civil Engineering Professional Engineer (PE) 9 years of experience	Transportation and Traffic
Marissa Harned Transportation Planner	B.S., Civil Engineering Engineer Intern (EI) 4 years of experience	Transportation and Traffic
Geotechnical Consultants, Inc.		
Aurie Patterson Senior Geologist	B.A., Geology Professional Geologist (PG) 17 years of experience	Soils and Playa Sediments
Jim Thurber Principal/Chief Geologist	M.S., Geology B.S., Geology Professional Geologist (PG) Certified Hydrogeologist (CHG) Certified Engineering Geologist (CEG) 26 years of experience	Soils and Playa Sediments
William Kanemoto & Associates		
William Kanemoto Principal/Visual Specialist	Master of Landscape Architecture (MLA) B.A., Liberal Arts 26 years of experience	Visual Resources

8 CONSULTATION AND COORDINATION

8.1 General Consultation and Coordination

The BLM seeks comments from and works closely with other regulatory agencies that administer laws, regulations, and standards that may be applicable to the Proposed Action. The following tribes, agencies, and organizations were consulted during preparation of this EA (see Section 8.2 for Native American Consultation):

- Black Rock City LLC
- Churchill County Sheriff's Office
- Fallon Convention and Tourism Authority
- Fallon/Churchill Volunteer Fire Department
- Fernley Community and Economic Development Department
- Gerlach Citizens Advisory Board
- Gerlach Volunteer Fire Department
- Humboldt County Administrator's Office
- Humboldt County Sheriff's Office
- Lovelock City Police Department
- Lovelock Fire Department
- Lyon County Sheriff's Office
- National Park Service
- Nevada Division of Environmental Protection, Bureau of Air Quality Planning
- Nevada Department of Public Safety Highway Patrol Fernley Substation
- Nevada Department of Transportation
- Nevada Natural Heritage Program
- North Lyon County Fire Department
- Pershing County Sheriff's Office
- Pyramid Lake Paiute Tribal Police Department
- Pyramid Lake Paiute Tribe
- Reno Fire Department
- Reno Police Department
- Reno-Sparks Convention and Visitor Authority
- Sierra Fire Protection District
- Sparks Fire Department
- Sparks Police Department
- Summit Lake Paiute Tribe
- Washoe County Health District, Air Quality Management Division
- Washoe County Sheriff's Office

- Winnemucca Fire Department
- Winnemucca Nevada Small Business Development Center

8.2 Native American Consultation

Letters were sent on November 1, 2010 requesting consultation on the Proposed Action to the following tribes: Fallon Paiute and Shoshone Tribe, Fort McDermitt Paiute and Shoshone Tribe, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Summit Lake Paiute Tribe, and Susanville Indian Rancheria. Consultation meetings concerning the Proposed Action were held with the Pyramid Lake Paiute Tribe on February 15, 2011 and June 3, 2011 and with the Summit Lake Paiute Tribe on December 11, 2010 and January 21, 2012. Phone conferences were held with the Pyramid Lake Paiute Tribe representatives on April 12, April 20 and April 27, 2012. The Pyramid Lake Paiute Tribe did not voice any concerns related to spiritual beliefs and sacred sites. The Summit Lake Paiute Tribe voiced no specific concerns on sacred sites.

9 PUBLIC INVOLVEMENT

A scoping letter was posted on the BLM's website and sent to potentially interested parties by the BLM on November 1, 2010, and nearly 120 responses were received. The reader should refer to Section 1.5 regarding internal and external scoping.

On March 16, 2012, the Preliminary EA was posted on the Winnemucca District Office NEPA webpage at http://www.blm.gov/nv/st/en/fo/wfo/blm_information/nepa0.html for a 30-day public review. In addition, BLM sent out a letter to interested parties requesting substantive comments on the Preliminary EA by April 16, 2012. In response, BLM received 42 comment letters from agencies, organizations, businesses, and individuals. BLM met with the applicant and Nevada Department of Transportation (NDOT) on April 20 and 27, 2012, in response to concerns raised during the comment period. Phone conferences were held with the Pyramid Lake Paiute Tribe representatives on April 12, April 20 and April 27, 2012 (see Section 8.2 for a discussion of Native American Consultation).

As a result of substantive comments from the applicant, NDOT, Pyramid Lake Paiute Tribe, and individuals, revisions have been made to the Human Waste Disposal, Debris Removal and Traffic Signage and Control recommended mitigation measures in Chapters 4 and 6. A separate Traffic Signage and Control in Response to Native American Concerns mitigation measure has been recommended to specifically address Native American concerns.

In response to public concerns, a discussion has been added to Section 4.19 (Soils and Playa Sediments), which discusses the use of decomposed granite as a burn pad material and the potential for impacts to the playa surface. Recommended mitigation (Burn Pad Debris Removal Arising from Public Comments) has been added to the EA in order to minimize impacts to soils and playa sediments and visual resources from unburned materials, including burn pads, which remain at the applicant's "authorized burn" sites after the event.

In addition to modifications to the recommended mitigation, the additional discussion of burn pad materials and minor clarifications throughout, notable modifications to the EA in response to substantive public concerns and agency and tribal consultation include:

- *Table 1-1 (Scoping Issues Identified)*. Additionally directs readers to Sections 4.2 (Air Quality) and 4.11 (Water Quality) for a discussion of the size of water trucks and amount of water use for dust control.
- *Section 2.1 (Alternative 1: 58,000 to 70,000-Person Maximum Alternative [Proposed Action])*. Change to the official opening and closing times of the event.
- *Section 2.1 (Alternative 1) and Section 2.2 (Alternative 2)*. Revisions to the definition of the event population to exclude contractors.
- *Section 2.1.4.C (Security – On-site)*. Revision to state that there are three Black Rock Ranger outposts instead of two.
- *Section 2.1.4.G (Hazardous Materials)*. Addition of a new section that addresses hazardous materials and existing regulations.

- *Section 2.1.10.A (On-Site Event Take Down and Clean-Up)*. Revisions to state that take down and clean-up would involve approximately 120 people at a population of 58,000 people and 150 people at a population of 70,000 people. The increased size of the clean-up crew has been considered in the EA analysis as well.
- *Section 2.4 (Alternatives Considered but Eliminated from Detailed Study)*. Additional discussion addressing attendance of minors at the event.
- *Section 2.4.4 (Revised Access Road and Multiple Access Road Alternative)*. Additional discussion addressing use of multiple access roads during event exodus.
- *Figure 2-2 (Black Rock City Plan)*. Removal of the 2011 event street names from the figure.
- *Section 3.10 (Wastes, Hazardous or Solid)*. Additional discussion of past effects of hydrocarbon wastes and hazardous material releases and a summary of the information the applicant has provided to participants for each.
- *Section 3.15 (Noise [Quiet]) and 4.17 (Recreation)*. Clarifications that Trego Hot Springs is not closed to the public during the event.
- *Section 3.18.7 (Social Values, Attitudes Toward Burning Man)*. Additional text regarding the social value of the event and the applicant's contribution to the community.
- *Table 3.21-2 (Existing Daily Traffic Volumes and Levels of Service)*. Addition of roadway capacity information.
- *Throughout Chapter 4 (Environmental Consequences)*. Additional text that explains the correlation between the environmental analysis and the recommended mitigation.
- *Section 4.6 (Invasive, Nonnative Species)*. Additional analysis that addresses the effects of invasive weed growth resulting from deposition of fugitive dust from the playa.
- *Section 4.7 (Migratory Birds)*. New recommendation for Debris Removal recommended mitigation to minimize the potential for litter to entangle or choke migratory birds.
- *Section 4.8 (Native American Religious Concerns)*. Revisions to Traffic Signage and Control in Response to Native American Concerns and Debris Removal in Response to Native American Concerns recommended mitigation measures.
- *Section 4.10 (Wastes, Hazardous or Solid)*. Revisions to the Human Waste Disposal and Debris Removal recommended mitigation measures.
- *Section 4.17 (Recreation)*. Additional information regarding the Association of Experimental Rocketry of the Pacific (Aero-Pac) and the A Rocket Launch for International Student Satellites (ARLISS) event, including overlap between the clean-up of Burning Man and the ARLISS event and the increased susceptibility of dust on the rocket launch areas to the north.
- *Section 4.19 (Soils and Playa Sediments)*. Additional analysis of the use of burn pad materials, namely decomposed granite and its potential for impacts to the playa surface. Addition of a new Burn Pad Debris Removal Arising from Public Comments

recommended mitigation measure to address soils and playa sediments impacts from unburned materials left on the playa at “authorized burn” sites.

- *Section 4.21 (Transportation and Traffic)*. Revisions to clarify the traffic analysis and results. Modifications to the Traffic Signage and Control recommended mitigation measure.
- *Section 4.23 (Visual Resources)*. Addition of a new Burn Pad Debris Removal Arising from Public Comments recommended mitigation measure to address visual impacts of unburned materials left on the playa at the applicant’s “authorized burn” sites.
- *Chapter 6 (Mitigation and Monitoring)*. Revisions to the Human Waste Disposal, Debris Removal and Traffic Signage and Control recommended mitigation measures. Addition of a new Burn Pad Debris Removal Arising from Public Comments recommended mitigation measure and a separate Traffic Signage and Control in Response to Native American Concerns and Debris Removal in Response to Native American Concerns recommended mitigation measures.
- *Appendix 2 (2012 Operating Plan)*. Revisions to the applicant’s Operating Plan. The modified 2012 Operating Plan reflects one year (2012) rather than the 2012-2016 permit period.

10 REFERENCES

1. Introduction

- BLM (Bureau of Land Management). 2012. Personal communication between Cory Roegner (Assistant Field Manager, BLM Winnemucca Field Office) and Hedy Koczwara (Aspen Environmental Group). March 7.
- _____. 2011. Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area: Do I Need a Permit? http://www.blm.gov/nv/st/en/fo/wfo/blm_programs/planning/Black_Rock_Desert-High_Rock_Canyon_Emigrant_Trails_National_Conservation_Area/BRHR_User_Permits.html. Accessed October 31.
- _____. 2004. Record of Decision and Resource Management Plan. Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness Areas and Other Contiguous Lands In Nevada. Winnemucca Field Office, Nevada. http://www.blm.gov/nv/st/en/fo/wfo/blm_programs/planning/Black_Rock_Desert-High_Rock_Canyon_Emigrant_Trails_National_Conservation_Area/black_rock-high_rock.html.

2. Proposed Action and Alternatives

- BLM (Bureau of Land Management). 2011. Personal communication between Cory Roegner (Assistant Field Manager, BLM Winnemucca Field Office) and Hedy Koczwara (Aspen Environmental Group). November 30.
- _____. 2006. Burning Man 2006-2010 Special Recreation Permit NV-020-06-EA-11: Environmental Assessment. Prepared by the Winnemucca Field Office. June 2006.
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**BLACK ROCK CITY LLC
BURNING MAN 2012-2016
ENVIRONMENTAL ASSESSMENT**

**Appendix 1:
Burning Man 2011
Special Recreation Permit Stipulations**

BURNING MAN 2011
SPECIAL RECREATION PERMIT STIPULATIONS



TABLE OF CONTENTS

PERMIT ADMINISTRATION 1
 GENERAL 1
 COORDINATION..... 3
FEE SCHEDULE..... 5
COMPLIANCE INSPECTIONS..... 5
PERMITTEE ACCEPTANCE..... 6

PERMIT ADMINISTRATION

In addition to the 16 conditions and stipulations listed on the back of the Special Recreation Permit Form 2930-1, the following Special Stipulations apply to the 2011 Burning Man Event.

GENERAL

1. Black Rock City, LLC (BRC) is required to manage its advance ticket sales and on-site ticket sales in such a manner that the safety infrastructural resources of the event, which are designed to handle an average of 50,000 participants per day for the eight-day event, are not overtaxed, and that NEPA concerns from the 2006 Environmental Assessment are not compromised. If during the event it appears that the peak population is likely to exceed BRC's ability to provide adequate infrastructural resources, then BRC will promptly notify BLM of the projected event population and provide detailed contingency plans for how to handle the additional participants. BRC shall provide the Bureau of Land Management (BLM) with the number of participants within the event site at noon each day according to an agreed upon reporting standard with BLM during the period of site occupancy (August 8th through September 19th). For historical purposes and press inquiries, BRC shall also provide BLM with the recorded peak population for the entire event. BLM can request population data any time during the event. BRC shall also provide BLM with detailed information of the number of staff and participants on the event site for the August 8th through September 19th period within 60 days after the event. This information shall include daily counts for the non-event period.
2. These stipulations incorporate, by reference, additional procedures, guidelines and actions identified in the Burning Man Annual Operating Plan (2011 Revision). If there is a conflict between the Operating Plan and the stipulations listed below and attached to the permit, the stipulations shall control. BRC shall provide a copy of their current Operations Plan to BLM before the permit for the 2011 event will be issued.
3. The location of the 2011 Burning Man Event is limited to the public closure area, as shown on the attached map, with ingress and egress from the 8-Mile or Event playa entrance. The specific location of the event site will be identified by BRC and approved by BLM prior to the commencement of event construction.
4. The event period is the eight-day period that begins on August 29th and ends on Labor Day, September 5th 2011. Pre-event surveys and site layout can begin on Monday, August 1st. Site occupancy including construction of facilities and structures may occur no earlier than 21 days prior to the event, August 8th. Takedown and removal of all above ground material (items that could pose a hazard to other playa users) will be completed no later than 14 days after the event, September 19th. The final phase of cleanup and restoration will be completed no later than one month after the event, October 5th. Minor adjustments to post event cleanup deadlines may be granted by the authorizing officer due to unforeseen weather conditions.
5. Upon advance notice to the permittee, the BLM reserves the right to alter the terms, conditions, and stipulations of the permit for significant changes in BLM policy or administrative procedure, to prevent use conflicts, prevent resource damage, or protect public safety as provided in 43 CFR 2932.56.

6. The permittee shall post a copy of the Special Recreation Permit (Form 2930-1); these permit stipulations and the Federal Register Closure and Restriction Orders in prominent view at Center Camp Playa Info where cooperators and participants have an opportunity to read them. Additionally the documents referenced above shall also be available for participants and staff on the Burning Man website within 15 days of the permit being issued.
7. Violation of the permit terms, conditions and stipulations may be subject to penalties prescribed in 43 CFR 2930. Additionally, such violations may result in permit revocation, suspension, or probation. Violations may also be cause for the BLM to deny approval of a subsequent Permit or Operating Authorization (43 CFR Part 2932).
8. BRC shall provide a member of its Board, or an authorized representative, around the clock during the event who is authorized to represent and act on its behalf to coordinate as needed with BLM, law enforcement and other event cooperators on issues requiring action.
9. BRC personnel shall meet with BLM staff and representatives from the various cooperators daily at 3:15 p.m. and at such other times and places as needed. At these meetings BRC shall provide daily attendance figures and exchange other information necessary to allow all parties to effectively administer and assess daily the event.
10. Commercial activities are prohibited within BRC, unless specifically authorized in advance by BLM and BRC. BRC will inform BLM representatives of unauthorized commercial operations discovered at the event and the corrective actions being implemented within a reasonable time of learning about the activities. This includes but is not limited to commercial film production, photography, food services or other independent commercial ventures not affiliated with BRC.
11. BRC shall cooperate with BLM or other law enforcement agencies in evaluating any request to remove individuals from the event as provided in 43 CFR 2932.57(a)7. At the request of a designated official of BLM, BRC shall conduct a prompt, independent evaluation of eviction requests.
12. BRC shall comply with all applicable supplemental regulations as promulgated in the Closure Orders published in the Federal Register prior to the 2011 event.
13. In addition to Stipulation # 15 on the back of Form 2930-1:
 - a. All participants and support staff will be informed that collection, excavation or vandalism of historical and archaeological artifacts or sites is illegal on public land. The BLM shall be notified immediately upon discovery of archaeological artifacts (objects greater than 50 years old) or human remains.
 - b. BRC shall comply with 43 CFR 7.18 and shall not make available to the public any information concerning the nature and location of any archaeological resource.
 - c. Should BRC discover an archaeological resource it must stop all activities in the discovery vicinity and protect the site until event completion or until notified otherwise by the authorized officer.
14. BRC will provide the appropriate identification to authorized personnel (i.e. staff ID, decals, designated camping areas, etc.) and will inform BLM of the nature and appearance of such identification prior to the event.

COORDINATION

15. Meetings required with affected parties:
 - a. The permittee shall confer with the following entities prior to the event to address local issues and concerns: Washoe County Sheriff's Office, Nevada Department of Transportation, Federal Aviation Administration, Washoe County Public Works, Humboldt County Roads Department and the Gerlach Volunteer Fire Department.
 - b. A representative from BRC will meet with representatives from BLM prior to the event to coordinate logistics for operation of the communication compound.
 - c. BRC shall meet with the Pyramid Lake Paiute Tribe to address concerns and impacts to Tribal reservation resources anticipated from the Burning Man event.
16. BRC shall complete formal agreements with all affected parties e.g. Pershing County Sheriff's Department, Washoe County Sheriff's Department, Nevada Department of Public Safety-Investigations Division, Nevada Highway Patrol, and Nevada Department of Health and Human Safety for the purpose of addressing concerns and impacts associated with social services e.g. law enforcement and emergency medical services and physical infrastructure e.g. transportation systems and human waste disposal. Written evidence of these agreements showing compliance with this stipulation must be provided to BLM by BRC 60 days prior to the start of the event.
17. BRC will develop and implement a plan to address exposing minors to adult activities at the event. The plan should include measures such as educating and requiring parents/guardians to supervise their children, zoning the city, and making every effort to educate adult related theme camps about the need for having a gatekeeper during hours when the camp might not be suitable for minors. BRC will make a diligent effort to enforce actions identified in the plan. A copy of the plan shall be provided to BLM and the Pershing County Sheriffs' Department within 10 days of the issuance of the permit.
18. BRC LLC shall allow any tow truck, licensed to operate in the State of Nevada, access to the event for the purpose of removing vehicles in need of repair, and/or to carry out minor repairs to allow inoperable vehicles to be driven away from the event. Such minor repairs include replacing hoses and drive belts, or the repair or replacement of tires. Within 10 days of the issuance of the permit, BRC LLC shall contact local tow companies known to respond to this event, including those in Gerlach, and Fernley, Nevada, and advise them of the process to enter the event without delay in order to respond to calls for service.
19. BRC shall develop and cooperate in the implementation of contingency plans for operations of critical health and safety services under adverse conditions, including those that could cause cancellation or temporary suspension of the event. Causes could include adverse weather, natural or human caused disaster, or social unrest. This effort shall apply to participants within the event area and en route to and leaving the event.
 - a. Prior to the event
 - i. Emergency information shall be disseminated to participants by the Burning Man Website, and the Burning Man Survival Guide, and, if appropriate, other media.
 - b. During the Event
 - i. Should event cancellation be necessary, critical health and safety systems must be as operational as reasonably possible during the duration of any temporary suspension or until participants are able to leave the event site and the Gerlach/Empire area.

- ii. BRC and BLM will monitor forecast weather conditions. If weather forecasts suggest a high probability of adverse weather conditions that may result in disruptions to the event, both parties in conjunction with other appropriate agencies and cooperators will develop appropriate strategies and actions to deal with potential impacts on participants. In the event of natural disaster or civil unrest appropriate strategies and actions will be initiated immediately after any disaster or unrest occurs.
 - iii. BRC shall cooperate with BLM and county law enforcement to warn participants headed into the event of event closure or other restrictions.
 - iv. BRC shall provide participants with current and projected conditions, allowed and prohibited actions deemed necessary for public health and safety as well as protection of the environment, and other appropriate public service announcements via BMIR, flyers, or loud speaker broadcasts as needed.
 - v. If event termination is required, appropriate time frame would be established by BLM Incident Command in consultation with BRC and other cooperators to facilitate safe removal of people and property.
20. In cooperation with emergency services providers and law enforcement agencies, appropriate parties or their designated representatives shall, within a reasonable time after learning of them, notify each other of all accidents related to the event that occur before, during, and after the event, that result in death or personal injury requiring hospitalization. Accident reports involving death or injury will be coordinated with the Pershing County Sheriff's Office and BLM.
21. The medical contractor shall report daily to BLM and Pershing County (during the cooperators meeting), providing a numerical breakdown of patient categories and transports, including a breakdown of reasons for transport; and no later than 60 days after the event shall provide a written final statistical report of such medical cases to BLM.
22. As soon as reasonably possible, upon learning of any incident that occurs before, during or after the event that could possibly result in a liability claim, BRC shall confer with BLM and as deemed necessary by either party, will submit a written incident report to BLM.
23. BRC shall provide a minimum of two structural/brush-type fire engines, National Wildfire Coordinating Group (NWCG) type 3-6. Engines and staff must meet NWCG or NWSA (National Wildfire Suppression Association) standards for personnel and equipment. These fire engines will be strategically placed within BRC as determined necessary by the BRC fire contractor.
24. Reflective of community concerns regarding litter disposal along roads after the event, BRC shall provide a minimum of two post-event roadside crews to clean up litter and debris along the roads and highways surrounding the event with a focus on County Road 34 from the "8-Mile" entrance to State Road (SR) 447, SR 447 from the intersection with County Road 34 to Wadsworth, from Gerlach to the California state line, and SR 446 from Nixon to SR 445 near Sutcliffe. Weather, traffic and other safety concerns permitting, BRC will make every effort to begin this cleanup effort on Wednesday post-event, and complete the effort as soon as feasibly possible. BRC representatives will also meet and confer with local entities that have reported concerns about event participants leaving trash, and BRC will work to mitigate these issues in order to prevent a reoccurrence of complaints, and to promote Leave No Trace ethics outside of the event.

FEE SCHEDULE

25. Commercial Use Fees

BLM shall collect a fee from BRC for the use of public lands for the event. The fee, as set by regulation 43 CFR 2930, will be equal to 3% of the adjusted gross income derived from the use authorized under the SRP. Payment equal to at least 25% of the estimated commercial use fees (3% of estimated gross receipts) must be received prior to the start of the event.

Determination of gross income will be based on the following:

- a. Ticket Sales
- b. Coffee and Ice Sales
- c. Other private donations received by BRC for management of the event on public lands.

The following schedule for payments will be used:

Payment	Due Date	Amount Due
#1	10 days after permit is issued by BLM	25% of estimated commercial use fees
#2	January 31 st , 2012	The remaining balance of commercial use fees

26. Cost Recovery Payment

Black Rock City LLC is responsible for payment of the actual costs of administering the Special Recreation Permit, including all direct and indirect costs, in addition to the commercial use fees. In order to initiate BLM planning for the event, a payment of \$10,000 was received in December 2010. A Cost Recovery Agreement must be in place within 10 days of the issuance of the permit. 100% of the cost recovery fee estimate shall be received prior to the start of the event as provided for in the Cost Recovery Agreement.

COMPLIANCE INSPECTIONS

27. BRC operation and compliance with the terms, conditions and stipulations of the permit will be evaluated through performance inspections before, during and following the event.

28. BRC shall make personnel available immediately after the end of the post-event cleanup period and, if deemed appropriate by BLM, during the spring following the event, to inspect the site with BLM to determine any latent adverse impacts, such as pit depressions, bumps, depressions from roadways, ruts from vehicular traffic, or surfacing buried materials, to ensure that the site is in pre-event condition.

29. Inspections of the event site in the fall after the event, will be coordinated by BLM using randomly placed transects on the site and a measurable cleaning standard. The inspecting party will intensively collect debris found on the ground within each transect. A follow-up spring inspection will be conducted only when deemed necessary by BLM. Post-Event Cleanup Standard: The average total surface area of debris collected from either the fall or spring transects will not exceed the equivalent of 1 square foot per acre from any inspection area.

30. An extension for the completion of the cleanup will be considered if weather or some other catastrophic event interferes with access to the site for cleanup purposes. The permittee shall make a written request to the authorized officer immediately upon such an occurrence.
31. If cleanup studies indicate the cleanup standard has been or is likely to be exceeded, the permit will be suspended until the site has been cleaned up to a level not to exceed 50% of the standard and the operations plan includes reasonable measures to assure that the cleanup standard will not be exceeded during the life of the permit.

PERMITTEE ACCEPTANCE

I have read the special stipulations and certify that all event related operations shall be conducted in accordance with the above listed stipulations as well as the 16 terms and conditions listed on the back of the permit form 2930-1 and applicable items in the Closure Orders published in the Federal Register. I understand that a violation of any term, condition, or stipulation may result in the cancellation of the Special Recreation Permit authorization. I acknowledge that this authorization may be amended only in writing by the authorized BLM officer.

Permittee Signature

Authorized Officer BRC

Date

**BLACK ROCK CITY LLC
BURNING MAN 2012-2016
ENVIRONMENTAL ASSESSMENT**

**Appendix 2:
Burning Man 2012 Operating Plan**

Burning Man 2012 Operating Plan



Black Rock City 2010 Copyright to GeoEye and Black Rock City LLC. Posted by the Daily Wh. At September 20, 2010.

TABLE OF CONTENTS:

- I. City Planning**
 - A. Purpose & Need**
 - B. Objectives**
 - C. Action Items**
 - 1. Event Site**
 - 2. Set Up**
 - a. Preliminary Survey**
 - b. Trash Fence**
 - c. Signage Installation**
 - d. Infrastructure Construction**
 - e. City Layout**
 - 3. Population Growth**
 - 4. Method for Counting Participants**
 - 5. Signage**
 - 6. Public Communications**
 - a. Pre-Event Communications**
 - b. Agency/Media Dissemination**
 - c. Onsite Information Dissemination Capability**
 - 7. Sheet 1 (Black Rock City Superimposed on Map)**
 - 8. Sheet 2 (2010 City Plan)**
 - 9. Sheet 3 (2012 Proposed City Plan)**
 - 10. Measurements**
 - D. Narrative**
 - 1. Event Site**
 - 2. Set Up**
 - 3. Method for Counting Participants**
-
- II. Resource Protection**
 - A. Objectives**
 - B. Action Items**
 - 1. Camp Fire Containment**
 - 2. Authorized Burns**
 - 3. Pits & Holes**
 - 4. Cultural Resources**
 - 5. Camping & Recreational Uses**
 - 6. Wastewater**
 - 7. Dust Control**
 - 8. Solid Waste Management**
 - 9. Human Waste Management**
 - 10. Leave No Trace**
 - 11. Event Take Down & Clean Up**
 - 12. Off-Site Clean Up**

III. Transportation Management

A. Purpose & Need

B. Objectives

C. Action Items

- 1. Traffic Signage**
- 2. On-Site Traffic Control**
 - a. Exit Traffic Control**
 - b. Motorized Vehicles**
 - c. Bicycles**
- 3. Off-Site Traffic Control**
- 4. Black Rock City Airport**
 - a. Airport Setup**
 - b. Airport Operating Plan**
 - c. Airport Facilities**
 - d. Aviation Operations**
 - e. Pilot Education**
 - f. Air Safety**
 - g. References**

IV. Health & Safety

A. Purpose & Need

B. Objectives

C. Action Items

- 1. Event Security & Medical**
 - a. Housing for Law Enforcement**
 - b. Emergency Medical Services**
 - c. Communications**
 - d. Outposts**
 - e. Chain of Command**
 - f. Perimeter/Speed Control**
- 2. Risk Management**
- 3. Off-Site Security**
- 4. Pre & Post-Event Security**
- 5. Government Coordination**
- 6. Protection of Minors**
- 7. Illegal Substance Policy**

V. Emergency Procedures

A. Purpose & Need

B. Objectives

C. Action Items

- 1. Fire Suppression**
- 2. Fireworks & Firearms**
- 3. Contingency Plans**
 - a. Pror to the Event**
 - b. During the Event**

- c. **Public Affairs Communications for Contingency Plans**
- d. **Eviction Contingency Plan**
- e. **Gate Crasher Contingency Plan**
- f. **Law Enforcement Incident Contingency Plan**
- g. **Fire Contingency Plan**
- h. **Medical Contingency Plan**
- i. **Structural Collapse (Without Fire or Rescue Needed) Contingency Plan**
- j. **Hazardous Materials Contingency Plan**
- k. **Pre-Storm/Weather Contingency Plan**
- l. **Post-Storm/Weather Contingency Plan**
 - i. **Level One: Shelter in Place — Less than 12 hours**
 - ii. **Level Two: Shelter in Place — More than 12 hours**
- m. **Increased Rainfall Information**
- n. **Population Contingency Plan**
 - i. **Ticket Sales**
 - ii. **Communications Pre-Event**
 - iii. **Communications During Event**
 - iv. **Communications Post-Event**
 - v. **Law Enforcement**
- o. **Ticket Sales**

- VI. **Appendix**
 - A. **Who to Contact**
 - B. **Contact Information**
 - C. **List of Prepares**
 - D. **LLC Incorporation Document**
 - E. **Calendar**

I. City Planning

A. Purpose and Need

The tasks and dates offered in this Operating Plan reflect the cumulative experience of BRC/LLC in organizing the event of Burning Man. BRC/LLC is firmly committed to creating an event that prioritizes the safety and well being of participants, the local community, and the natural environment. This operating plan reflects BRC/LLC's commitment to that goal.

The dates referenced in this document reflect the minimal amount of time required to accomplish a particular task. The dates referenced in the event set-up section should be considered start dates (unless otherwise specified). The dates referenced in the clean-up section should be considered end dates (unless otherwise specified).

The dates in this Operating Plan are best estimates and may be adjusted slightly on a year-by-year basis.

B. Objectives

BRC/LLC is planning to produce the Burning Man event annually for 2012. Each year the event will be from the Monday before Labor Day through Labor Day unless BRC/LLC requests different dates for a particular year and the Bureau of Land Management (BLM) agrees.

C. Action Items

1. Event Site

The general location of the event will be the southern portion of the Black Rock Desert - High Rock Canyon Emigrant Trails National Conservation Area, Nevada. The specific location will be within the pre-approved boundaries (See Sheet 1), and determined at the time of survey assessment, according to the conditions of the playa surface.

2. Set Up

a. Preliminary Survey

Each year BRC/LLC will commence event site preparation twenty-eight days before the start (the Monday before Labor Day) of the Burning Man event. Black Rock City Department of Public Works (BRC/DPW) will complete the preliminary surveying twenty-one days before the start of the event. During the site survey there is no action or assistance required from the BLM. BRC/DPW will place small surveyor flags to mark the planned location of the Black Rock City (BRC) trash fence, boundaries, and roads.

BRC/DPW will survey and flag the Gate Area, Entry road and the roads of BRC during the preliminary survey period.

b. Trash Fence

A trash fence will serve as the perimeter marking of BRC. It will also protect the Black Rock Desert from preventable wind-blown trash. Twenty-one days before the start of the event BRC/DPW will begin construction of the trash fence. The trash fence will be completed fourteen days before the start of the event. The trash fence will be built using T-stakes, strung with plastic material and fitted with light reflective tape that enhances night visibility.

c. Signage Installation

Signage for vehicular and pedestrian control, both on and off site, will be installed commencing fourteen days before the start of the event.

d. Infrastructure Construction

During completion of the trash fence, and no sooner than twenty-one days before the start of the event, DPW will commence on-site operations. At this time, light spires, street signs, road signs, central camp structures, the Communication System, large sculptures, portable toilets, the Gate Area, the main entry road, and other infrastructure items will be constructed or installed on site.

The construction of the camp infrastructure is scheduled to be completed by three days before the start of the event.

e. City Layout

The layout of BRC will be roughly based on the city plan for Burning Man 2011. However, BRC/LLC will re-evaluate the plan on a year-by-year basis in order to create a workable urban plan for each year. For example, BRC/LLC might create an extra road, remove a road, reconfigure the placement of portable toilets, etc. For more details see Sheets 1, 2 (page 10 and 11).

3. Method for Counting Participants

Purchased tickets collected at the Gate serve as the basis for counting the inbound population of BRC. An ongoing population count is conducted in order to gauge flow and anticipate density changes. A population count is also conducted in order to accurately report the number of participants every day of the event to the BLM. In addition to counting tickets, BRC/LLC will use the following guidelines to conduct population counts. For historical consistency the reporting time will be at noon each day of the event.

- The total will be balanced daily against participants who exit the event.
- During the event a fee will be assessed on exiting parties who plan to leave and re-enter. An assessment of whether or not participants are leaving our population pool will be made at this collection site.

Participants who leave and return at intervals of a day or days will not be counted for that period of time. If participants are not on site, they are not counted as part of the population.

4. Signage

BRC/LLC will provide and post signs to give necessary information to participants entering BRC. All signs manufactured by BRC/LLC for use on state or county roads will be made to standards comparable to Nevada Department of Transportation (NDOT) regulations.

BRC/LLC will place the following items no later than 5 days prior to the event:

- DOT regulated, reflective signs will be placed along County Rd 34 warning participants that the entrance is just ahead.
- A large lighted sign will be posted at the event entrance on County Rd 34 that clearly identifies the entrance.
- At the gate, signs will be prominently posted identifying the entrance containing the following: “Possession and use of personal fireworks or sale of fireworks is prohibited”, “Possession of firearms is prohibited”, “Possession of alcohol by minors is prohibited”, and “Possession of open containers of alcohol by drivers of motorized vehicles is prohibited.”
- The orange trash fence, construction cones, signs or other structures will be placed on the closed roads that lead into the city. Signs will say that the road is closed and provide alternate access information.
- Signs identifying the public closure area will be posted appropriately around the perimeter of the event to warn non-participants of how to legally travel around the event perimeter.
- Signs regarding road closures and available playa access points during the event will be located along County Road 34 to the north and south of the event.
- Maps depicting public closures will be located at all public playa entrances.
- Signs depicting the route to the event entrance turnoff will be placed on County Road 34.
- Caution signs will be placed along County Road 34 in both directions out from the event access and at other prominent or strategic locations around the event to forewarn travelers of traffic safety hazards and the event ahead.

5. Public Communications

a. Pre-Event Communications

BRC/LLC has extensive access to its event participant base, and it will disseminate event information and policies. The communication objectives are achieved through utilization of the following communication channels:

- Burning Man website: www.burningman.com
- Email newsletter (100,000 people)
- Event Survival Guide (sent to all ticket holders in the summer, and posted on the website)
- Social Networks: Facebook (243,000) and Twitter (20,000)

b. Agency/Media Dissemination

BRC/LLC offers a variety of avenues to disseminate information to the media and to agencies. Each day of the event, Burning Man hosts a daily briefing in order to improve information accuracy between agencies, media and the event. The purpose of this meeting is to give all onsite operations the same set of numbers to work with when approached by local and national media, and participants. BRC/LLC staff is committed to accurate representation of activities, medical emergencies, population numbers and arrests during the event and expects similar commitment from all agencies involved in the production of the event.

c. Onsite Information Dissemination Capability

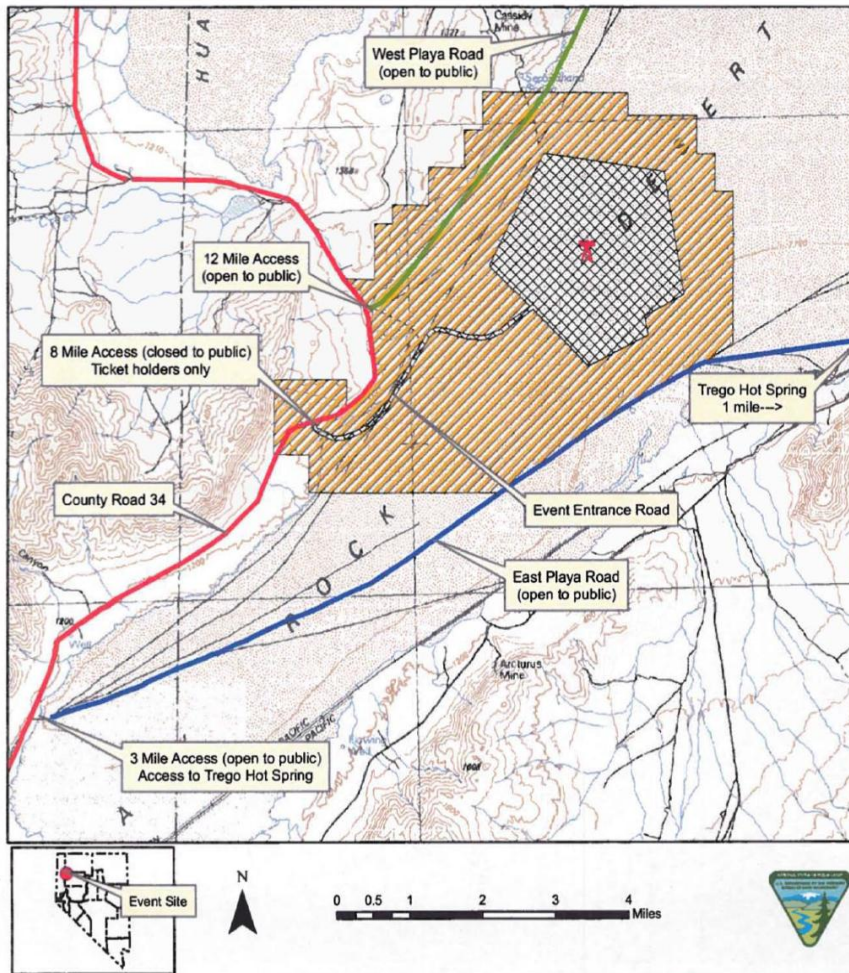
Onsite information dissemination mechanisms are both formal and informal; both approaches to information dissemination are utilized for ongoing communication with participants with regard to community rules. The entire camp could receive information within 1 hour, should the need arise.

Formal information mechanisms are *Burning Man Information Radio* (henceforth BMIR), the *Tip Sheet* (formerly the *Black Rock Gazette-ette*), along with participant driven newspapers, Black Rock Rangers (henceforth BRR), and the organization's two-way radio communications infrastructure. BMIR would be the Emergency Alert System for BRC, which would disseminate public service information, travel advisories and emergency information as necessary.

In periods of non-emergency, public service announcement are broadcast on BMIR. In the event of an emergency, participants would be notified by BRR and/or Theme Camp Placement staff to instruct participants to tune in to BMIR. BMIR would be the centralized source for up-to-the minute accurate emergency information.

Informal information mechanisms with direct and consistent participant interface include: Gate personnel, Greeters, Ranger foot patrol, Theme Camp Placement team, and Playa Information. Other teams such as Earth Guardians, Lamplighters, BRC/DPW, Media Mecca, External Relations Team (henceforth XRT), Black Rock Gazette-ette and Art Placement Team could be utilized as necessary. These teams all have the ability to move information via word of mouth quickly through the community.

6. Sheet 1 (Black Rock City Designated Area):



Burning Man 2011 Closures & Alternate Public Access

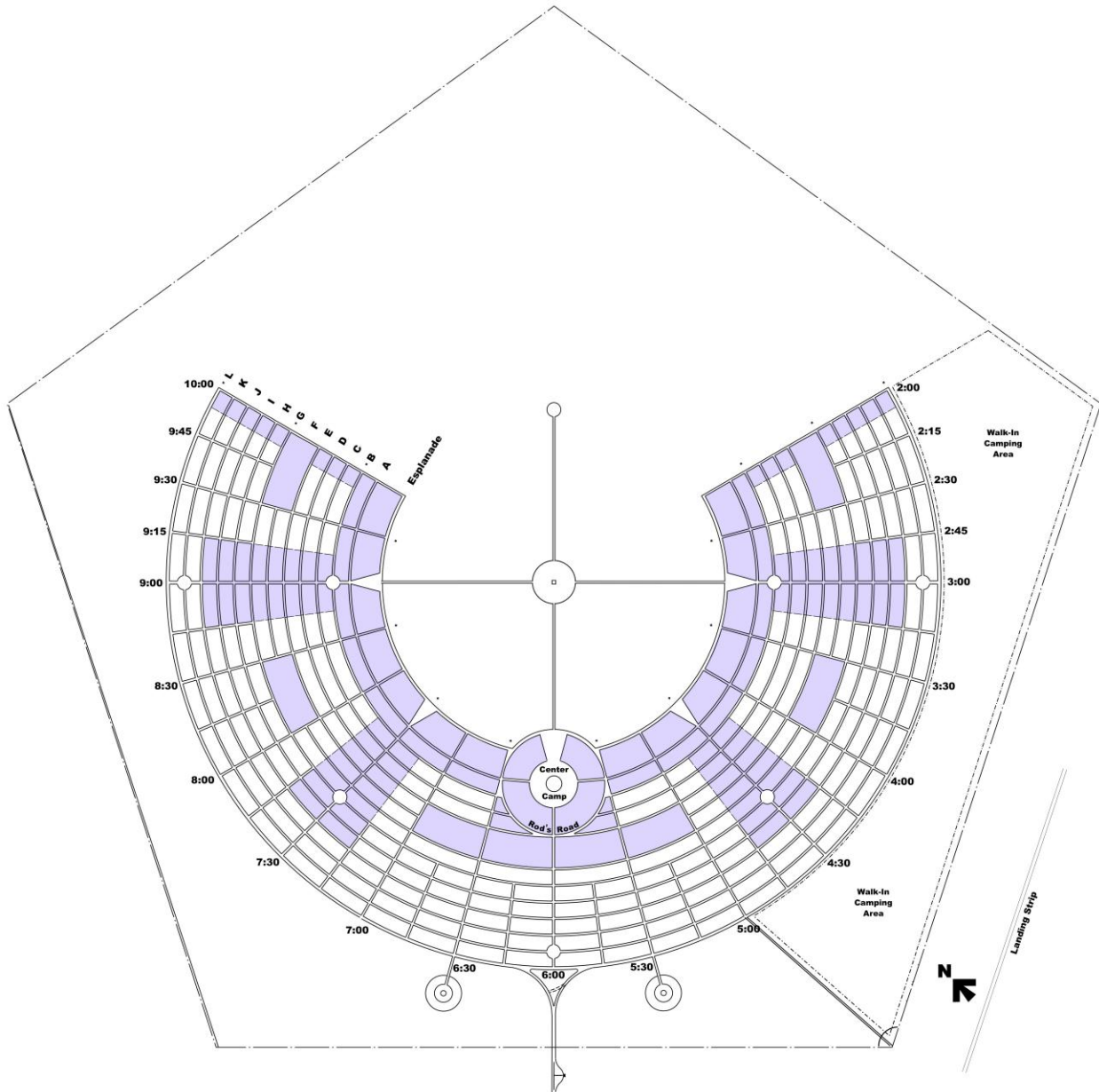
THE FOLLOWING ACTIVITIES ARE PROHIBITED

- Event Area (3,347 acres)**
8/1 - 9/19
- Aircraft Landing
 - Possession of alcohol by minors
 - Possession of an open alcohol container by motor vehicle drivers
 - Operation of a motor vehicle while under the influence
 - Possession of drug paraphernalia
 - Trespass of persons evicted from the area
 - Ignition of fires on playa surface
 - Possession or use of fireworks
 - Use of a motorized vehicle
 - Public camping (except for ticket holders)
 - Public use (except for ticket holders)
 - Possession of weapons
 - Disorderly conduct
- Public Closure Area (14,153 acres)**
8/1 - 9/19
- Closed to public camping
 - Discharge of weapons
- 8/29 - 9/5
- Aircraft landing
 - Trespass of persons evicted from the area
 - Possession or use of fireworks
 - Public use (except for passing through on designated routes)
 - Use of a motorized vehicle (except for passing through on designated routes)
 - Discharge of waste water
 - Possession of firearms prohibited (except within vehicles passing through on designated routes)

- Burning Man Location
- 2011 Public Closure Area
- 2011 Event Area
- County Road 34
- West Playa Road
- East Playa Road

No warranty is made by the BLM as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data.

City Plan 2012



BLACK ROCK CITY
2012



9. Measurements:

Burning Man location: See Sheet 1 (specific event site to be determined upon assessment of the surface conditions)

Elevation: 3904'

True North/South follows road 4:00 and 10:00

- Promenades are 40' wide on the 3:00/9:00 and 6:00/12:00 axis, with lampposts every 100'
- The center of the first road (Esplanade) is 2400' from the Man, the first block is 400' deep, then most succeeding blocks are 200' deep, with the exception of eight 430' deep double blocks between "E" and "G", and "D" and "F". The City is 10,800' ft in diameter.
- Man to the center of Center Camp: 2810'
- Camp Center diameter is 1420'. The 660' diameter central open zone around the Café leaves a depth of 380' for the four surrounding camping quadrants, including a 20' interior service road.
- Plazas: Two The main plazas are at 3:00 and 9:00 and the intersection of "B" street, centered 3075' from the Man, and are 500' in diameter. There are two smaller Plazas at 4:30 and 7:30 and the mid-city intersection of "G" Street, centered 4230' from the Man, and these are 225' in diameter. Three plazas at 3:00, 6:00, and 9:00 and the outer-most intersection of "K" street, centered 5155' from the Man, and are 200' in diameter.
- DPW and Fire/Services are 550' from outer road, center to center
- Outer road to Greeter area: 1228'
- Walk in Camping Area is within area beyond outer road to pentagon between lines extended from 2:00 and 5:00
- Man to outer fence pentagon points: approx. 8175'. 9610' between points (Pentagon contains over 159 million sq. ft., or 3650 acres – 5.70 sq. miles)

II. Resource Protection

A. Objectives

BRC/LLC is committed to protecting the NCA and intends to pass BLM's Leave No Trace standard each year that the Burning Man event is held under this Operating Plan. The following action items outline BRC/LLC's plan to Leave No Trace.

B. Action Items

1. Camp Fire Containment

BRC actively educates participants in the construction and supervision of burn barrels in order to protect the playa surface and to create safe camp fire containment. Additionally, BRC/DPW maintains a supply of approximately 20 large burn platforms, usually made from heavy metal. These are designed to prevent the playa from "firing" from the heat.

Once a burn platform has become an approved location and art has been burnt on it, other subsequent fire activities are allowed. For example, other participants can use the Man's burn platform after the Man is set aflame.

Other fire areas will be shoveled, raked, and dragged to remove all debris and break up any hardened surface due to heat "firing." Campfires will again be prohibited within BRC, with the exception of designated fireplaces. Designated fireplaces refer to burn barrels and other burn containers of a similar design: all are raised from the ground at least 6-10 inches with steel legs to provide distance and insulation from the heat so as to not bake the surface. The simplest of the design of this type is the 55gal drum with no lid raised with 10 inch steel legs.

2. Authorized Burns

Organizers of each "Art Burn" and BRC/LLC will be responsible for implementing procedures for the complete cleanup of each burn site, including, but not limited to:

- Arranging for the use of a surface-protecting device (decomposed granite or raised platform)
- Removal of ash
- Removal of unburned material such as nails, screws, and glass
- Removal of decomposed granite
- DPW will grade and rake the surface after each "Art Burn" to eliminate any scarring

3. Pits & Holes

BRC/LLC will limit excavation of pits and holes to those absolutely necessary for administration of the event. Approximately 1500 postholes will be dug for authorized facilities in accordance with permit stipulations. The postholes will have a nine-inch diameter and will be approximately 18 inches deep. This includes holes and pits excavated by participants. All pits and holes will be backfilled, wetted and compacted by physical tamping to minimize post-event pit depressions.

BRC/LLC will 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 will 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. Black Rock LLC will advise the use of materials, such as cardboard, hazmat pads, or drip pans to minimize impacts.

4. Cultural Resources

BRC/LLC will inform all participants and support staff that collection, excavation or vandalism of historical and archaeological artifacts or sites is illegal on public land. BRC/LLC will notify BLM immediately upon discovery of archaeological artifacts (objects more than 50 years old) or human remains.

BRC/LLC will not make available to the public any information concerning the nature and location of any archaeological resource. Should BRC/LLC discover an archaeological resource, it will stop all activities in the discovery vicinity and protect the discovery until event completion, or until notified otherwise by the authorized officer.

BRC/LLC personnel will discourage travel, including travel by aircraft, to other historical, cultural, recreational or geographical resources in the Black Rock Desert area during the event. BRC/LLC will discourage participant use of hot springs for the purpose of bathing, or extracting mud or water.

5. Camping & Recreational Uses

Burning Man participants will be required to camp within the fenced event boundary in areas designated for camping by BRC/LLC, except for participants camping with their aircraft at the airport. BRC/LLC shall provide a temporary camping area when necessary to minimize confusion and vehicle closure violations for late night arrivals.

BRC/LLC will not allow camping within the event site 17 days before and two weeks after the event period, with the exception of authorized BRC staff, contractors, volunteers and other authorized participants either constructing or taking down art works or theme camps. BRC will provide the appropriate identification to authorized personnel (i.e. staff ID, decals, designated camping areas, etc).

BRC/LLC will not allow fires except for authorized burn areas, authorized burn platforms, elevated fire receptacles, elevated barbecues and tiki torches.

BRC/LLC will inform staff and participants of the backcountry use ethics as reflected in the programs Tread Lightly and Leave No Trace tailoring the concepts to fit a large city and encourage individual responsibility and accountability. BRC/LLC shall assure Tread Lightly and Leave No Trace information is disseminated to personnel and participants in handouts, through Internet home page/website resources and other communication venues as available.

BRC/LLC will assist the BLM with researching and developing methods to mitigate the development of burn scars and continue developing methods and techniques for effectively treating other adverse human-induced playa impacts.

6. Wastewater

BRC/LLC recognizes that dumping wastewater (grey water or black water) on public lands directly from a vehicle, trailer, wash basin, shower stalls, bath tubs, barrels, pools, or a wastewater containment receptacle is prohibited by BLM regulations. BRC/LLC will disseminate this information to event participants through multiple communication channels. BRC/LLC's strategy for the preventing of dumping of wastewater is education: via blog, website, social network tools, radio station and peer-to-peer communication. The education strategy explains the effects of the dumping, the alternatives to dumping (playa innovations, tricks and tips) and the fines/fees and punishments for the illegal behavior. When Rangers, ESD and other staff find instances where participants are dumping wastewater, the participants are told to stop and the incident is reported to BLM.

7. Dust Control

BRC/LLC will utilize at least two water trucks to provide dust suppression. These trucks will be in operation on an as-needed basis beginning twenty-one days before the event starts through seven days after the event ends. During the final sweep phase of clean up, all disturbed areas within the event site will be soaked by water trucks to increase the likelihood of creating a crust, thereby limiting subsequent wind erosion.

BRC/LLC will adhere to the following procedures in order to maintain air quality and reduce surface erosion:

- With the exception of those roads authorized in advance by BLM, BRC/LLC will not use dust palliatives to control fugitive dust.
- Water without additives will be used for fugitive dust control within BRC.
- Fugitive dust suppression efforts on roads will be performed at least once daily by watering to keep fugitive road dust at a minimum during event operation, as well as after event closure.
- Before the final inspection, all disturbed areas within the event site will be watered, including the airstrip, and within the trash/security fence to affix fugitive dust to the playa surface. Water trucks used for dust control will carry prominent signs stating "Non-Potable Water - Avoid Contact" as required by state regulations. Signs must remain visible at all times.
- BRC/LLC will provide BLM with their plan to provide water for fugitive dust control at the pre-event cooperator's meeting.

8. Solid Waste Management

BRC/LLC will be responsible for all trash removal and cleanup. This includes encouraging all participants to pack out their own waste according to Leave No Trace principles. BRC/LLC will transport any other trash to an appropriate landfill and deposited accordingly. Specifically BRC/LLC will take the following steps:

- BRC/LLC will provide dumpsters of a size and number sufficient to accommodate event infrastructure during the event and handle clean up of the site post-event.
- Dumpsters will be hauled away when full to ensure proper disposal and timely rotation of full versus empty containers.
- BRC/LLC understands that burying of waste material, of any kind, is prohibited on public land.

BRC/LLC will install a 360° event perimeter/boundary trash fence. Any accumulation of trash that appears to be spilling over the fence or passing through a fence break will be collected. Fence breaks will be repaired immediately upon discovery. Permittee shall construct the southwest and southeast flanks of the perimeter fence prior to installation of other facilities to safely direct vehicular traffic around the site.

BRC/LLC staff will patrol and pick up trash from the following areas of special concern cleanup of event-related trash: County Road 34 from the “8-Mile” entrance to State Route (SR) 447; SR 447 from the intersection with County Road 34 to Wadsworth and from Gerlach to the California state line; and SR 446 from Nixon to SR 445 near Sutcliffe.

9. Human Waste Management

BRC/LLC will coordinate with NV State Health Division, and a reputable portable toilet vendor(s) to provide the proper number of toilets and hand sanitizers for the peak anticipated population, as well as adequate resources for toilet pumping and maintenance consistent with the requirements of the health department. Condition and usage of the facilities will be monitored onsite by state and county health departments, with adjustments made by BRC/LLC based upon the health department’s recommendations. Additionally, BRC/LLC will develop a contingency plan for placing additional toilets if the anticipated population exceeds estimates.

Banks of toilets will be placed at regular intervals along the exit road during the peak exodus periods. Banks of toilets will be placed in the Art area and will be lit at night. During the period leading up to the event through the period after the event, BRC/LLC will place fifteen toilets in the community of Gerlach to reduce impacts on local sewer systems by participants stopping in the

communities on their way to and from the event. Toilet locations will be coordinated with the communities involved.

For the 2012 Burning Man event, the number of toilets will be based on BRC/LLC's expected population for that year. There will be approximately 1250 toilets available for the population. A handful of these will be reserved for special use. The rest will be available for general use, and placed strategically around BRC. Adjustments will be made during Exodus by placing 50 toilets along Gate Road. BRC/LLC will also keep extra toilets as part of a contingency should the need arise for more units.

As in the past, BRC/LLC is committed to the cleanliness of the toilets. We will work closely with the vendor to constantly improve the following areas: toilet distribution and placement; proper use of the toilets by participants; and supervision of waste vendors. In addition to reviewing placement to improve ease of serviceability, we are exploring the use of mobile toilet facilities, so that additional toilets can be placed adjacent to events that are expected to draw large numbers of participants. We continue to educate the participants to ensure that only appropriate biological waste is placed into the toilet facilities. This education process will continue through the year prior to the event, and will be emphasized on-site with signage and media reinforcement. Finally, we will assign a full-time staff member to act as liaison with our portable sanitation vendor(s) and provide quality control monitoring of the toilets during the event.

10. Leave No Trace

As ever, BRC/LLC is working to apply the "Leave No Trace" principles to BRC in innovative ways. BRC/LLC has stepped up the message to the next level with the phrase "Don't let it hit the ground." BRC/LLC will continue this education campaign through the website and Survival Guide. BRC/LLC has added articles on air contaminants, what to burn and not to burn, and how and where to burn. In addition to the cleaning of individual camps, BRC/LLC will continue to demand two hours of work towards the clean up of the playa at large from every participant.

From 2000 through 2011, BRC/LLC created public burn platforms for the use of all participants. We will continue this effort in 2012 by constructing burn platforms out of solid and durable materials, and we will continue to educate people on how to use these platforms correctly. BRC/LLC will work with all large-scale art works to create protective barriers between their art and the playa surface, and will once again use our burn blanket made for the Burning Man art structure.

Recycling Camp will continue their efforts in crushing aluminum cans and educating people on the "pack it in, pack it out" ethic. The Earth Guardians will continue their daily missions into the community at large to educate all newcomers during the event as well as continuing their work as stewards of the

Black Rock Desert before and after the event. Additionally, there is a Burning Man-supported effort to utilize energy resources that are environmentally friendly and clean. As always there will be a massive cleanup crew working post event to leaving nothing behind.

11. Event Take Down & Clean Up

Site clean up will feature a proactive effort to encourage participants to clean up their site and take their garbage home or to the approved land fill sites listed on the web site, in the Survival Guide and in other forms of communication. All artists and theme camp organizers creating installations formally placed by BRC/LLC will be required to read cleanup guidelines and sign pledges. Artists receiving grants from BRC/LLC will be required to pay a clean up deposit. In addition, all placed installations will be located by means of GPS (Global Positioning System) and the artists will be held personally and publicly accountable for the condition of their site.

Structure disassembly and general on-site garbage removal begins on the last day of the event and will continue for two weeks. Leased 30-yard dumpsters will be placed on site and filled until no surface items remain. Burn site removal will be done simultaneously with this first phase. A final inspection sweep will commence when all debris, buildings and campsites are removed, and will continue for two weeks. Clean up completion is scheduled for thirty days after the event officially ends.

Leave No Trace efforts by our Playa Restoration crew will employ methods developed on the Black Rock Desert since 1998, utilizing line sweeps, heavy machinery and a target-specific assessment team. The intention is to accomplish “Leave No Trace” goals on a massive scale. Achievement of this goal is dependent upon clear communication from the BLM of inspection goals and strategy.

The line sweeps are directed by our Restoration Managers who oversee the Restoration Crew that patrols an extensive grid system of the entire event site at roughly six-foot intervals. The heavy machinery component works to ensure that the playa surface is returned to its original state and that all debris and decomposed granite, which is used to protect the playa from burn scars, is removed. Additionally a target-specific assessment team focuses their efforts on any area that the line-sweep teams have identified as problematic. Examples include burn scars, wood debris, broken glass, and graywater spills.

Using GPS technology Playa Restoration collects data that is ultimately published in a public “Matter Out of Place (MOOP Map),” that identifies how camps and art installations did with their playa restoration efforts. The MOOP

Map becomes part of a public relations campaign to better educate participants in future years on how to do an even better job.

12. Off-Site Clean Up

Off-site clean up includes Highway 34 from the 12-mile mark to the town of Gerlach; the town of Gerlach itself; Highway 447 from Gerlach to and including the town of Wadsworth; and Highway 447 from Gerlach to Cedarville. Trucks and crews of DPW workers will patrol and collect all roadside trash. This will begin the day after the event ends and will continue for approximately two weeks as needed. If necessary, other locations will also be cleaned, including Trego Hot Springs and Black Rock Hot Springs, by the same method. We propose that the area will be left in better condition than before this event.

III. Transportation Management

A. Purpose & Need

BRC/LLC is committed to managing the traffic flow of vehicles, bicycles and aircraft to, from, within and above Black Rock City.

B. Objectives

BRC/LLC has several departments that work together to ensure a safe flow of vehicles, bicycles and aircraft. Departments include Black Rock Rangers, Department of Mutant Vehicles, Emergency Services Department, Gate & Perimeter and the Black Rock City Airport. Additionally BRC cooperates with BLM, the Nevada Department of Transportation, Federal Aviation Administration, Nevada Highway Patrol, Washoe County Sheriff's Office, Pershing County Sheriff's Office and Pyramid Lake Tribal Reservation. The following action items outline BRC/LLC's plan for managing a safe traffic system in Black Rock City.

C. Action Items

1. Traffic Signage

Fundamental to the overall city design and usage plan for the Black Rock Desert is the abundant use of traffic signage in order to facilitate traffic flow. With safety and environmental security as our primary objective, we have designed a city and a traffic system that minimizes the use of cars and segregates pedestrians from vehicles. All safety signage intended to be viewed from a vehicle will be produced in dimensions standard for public highway use. Signage will be placed between Gerlach and the event entrance, as well as at the entrance to the event.

2. On-Site Traffic Control

The following guidelines are offered as an explanation of our on-site traffic control plan. BRR will seek to resolve any issues arising from the improper adherence to these guidelines.

Participants at Burning Man are required to park their vehicle for the duration of the event, as per the following:

- Bicycles are the preferred form of transportation in BRC.
- Motorcycles and ATV's are forbidden to move about the BRC site during the event.
- BRC's Department of Mutant Vehicles (DMV) will approve 575 Mutant Vehicles for movement within the city. The permitted vehicles will be able to move within the city at 5 mph or less.
- Staff vehicles will be properly designated with official decals.

Designated Burning Man staff and contractors will be allowed to use the perimeter fence gates. These vehicles will be identified with a special pass.

a. Exit Traffic Control

At the end of the event participant egress traffic will be controlled by several methods. We will be staging an "exodus area" for exiting traffic at the entrance point to BRC. This bordered compound will be allowed to fill with exiting vehicles. As this area is filled, vehicles will be released at timed intervals onto the two-lane temporary entry road connecting BRC to the public highway. The timing of traffic release will be regulated by reports from personnel stationed at key points, as referenced in the Off Site Traffic Control plan. When vehicles reach the paved road the two lanes will be alternately flagged onto the pavement. This will improve the continuity of vehicle egress onto the one-lane paved road.

The BRC radio station regularly announces the estimated time for departure. Participants can hear on the radio whether there are any traffic back ups, and therefore self-regulate their flow out of the city. In 2001, this system was tested during an emergency road closure. In 2010 and 2011 it was implemented and found to be effective.

b. Motorized Vehicles

BRC/LLC will prohibit participants from operating motorized vehicles within the event area. Exceptions to this prohibition are: Mutant Vehicles registered with BRC, BRC staff and support, medical, firefighting, motorized skateboards, electric assist bicycles, go-peds with or without handles, and disabled permitted vehicles. All vehicles will be operated in accordance with applicable laws, regulations, policies, and stipulations, and in accordance with supplementary rules developed by

BRC. In accordance with 43 CFR 8343 requirements, all motorized vehicles will be equipped with adequate front and rear lighting during night hours, and must be operating in a safe manner. Per agreement with BLM, highly illuminated Mutant Vehicles that have proper DMV night licenses are deemed to have adequate front and rear lighting. Such use shall be restricted to open streets within the City.

BRC/LLC will require that all Mutant Vehicles and staff vehicles registered with BRC shall display visible authorization on the rear of the vehicle while the vehicle is in motion. BRC support vehicles, and any other vehicles authorized to operate within the permit area, are required to display authorizing decals on both sides of the vehicle.

BRC/LLC will not allow any motor vehicles within the walk-in camping area during the event.

BRC/LLC will ask participants to use the designated entrance lane to access and exit the event. BRC shall provide adequate staff to ensure that participants comply with this requirement during event exodus as needed.

BRC/LLC will allow the following vehicles to drive on either side of the entranceway (within 100' of the fence line) or use the law enforcement entrance:

- BRC green transportation bus (Green Tortoise)
- Emergency services, law enforcement and authorized BLM support staff vehicles
- BRC staff and support personnel authorized by BRC
- Approved contractors and vendors
- Approved tow trucks

Vehicles shall be clearly marked to identify them as staff or contractors if appropriate. Permit needs to clearly state dates and times permit is valid.

c. Bicycles

BRC/LLC will encourage participants to light bicycles at night to improve visibility and personal safety.

3. Off-Site Traffic Control

Off-site traffic control and monitoring would be provided (as deemed necessary by NDOT) by flaggers trained by NDOT at the following key road intersections during peak traffic periods (Sunday before Labor Day and Labor

Day) in cooperation by the applicant, BLM and appropriate law enforcement agencies:

- the twelve-mile entrance to the Black Rock Desert and Route 34
- the three-mile entrance to the Black Rock Desert and Route 34
- the intersection of Route 34 and Route 447
- the town of Gerlach
- the town of Empire

Communication between BLM Rangers and Exodus Staff ensures appropriate traffic control is implemented.

Controlling traffic at these locations will ensure safe and timely traffic flow during peak periods of ingress and egress. Peak periods include the Sunday before Labor Day and Labor Day.

BRC/LLC will coordinate with NDOT for traffic control at County Road 34 entrances/exits to BRC, the “Y” intersection of State Road 447 and County Road 34, and the towns of Gerlach and Empire during heavy traffic periods (prior to, during exit and after the event) to keep traffic moving steadily.

BRC/LLC will coordinate efforts with Nevada Highway Patrol, Nevada Department of Transportation and private business owners in Gerlach and Empire to minimize traffic congestion and vehicle back-up on State Road 447 and 34. Their plan to address traffic congestion in these areas must be approved by NHP, NDOT, and BLM at least 30 days prior to the event.

BRC/LLC will monitor the number of vehicles arriving in the event area prior to the start of the event. This plan will minimize the number of vehicles in Gerlach and Empire and on the roadway or shoulders of State Road 447 and County Road 34. BRC/LLC will provide copies of the plan to the BLM and appropriate law enforcement agencies no later than 30 days prior to the event.

BRC/LLC will not construct access roads or trails on the playa.

During the event, Burning Man staff and support personnel will not use the 3-Mile playa access, except for emergency situations, and as designated by BRC/LLC. BRC/LLC will manage this use internally.

BRC/LLC understands that at least two of the three main playa access points from County Road 34 should remain open to the public to allow for other dispersed recreation use and general access. BRC/LLC will discourage event participants from using these access roads to access or exit from the Burning Man event.

BRC/LLC will coordinate as needed with appropriate law enforcement agencies to facilitate the exit process. A timed release of vehicles or other appropriate method shall be used to minimize traffic backup on State Road 447 and County Road 34. BRC/LLC will assist with removing broken-down vehicles from the exit lines to facilitate a smooth exit.

4. Black Rock City Airport

a. Airport Setup

A temporary airport will be overseen by an Airport Manager each year. It will be surveyed and delineated along with Black Rock City. The following is a timeline for airport startup operations:

- 20 days before event: Runway Survey complete and surface preparation begins.
- 13 days before event: Construction begins, erect windsocks, mark runway and helipad, install signs.
- 3 days before event: Runway open, Notices to Airmen (NOTAMS) filed effective dates of 3 days before the event through one day after the event officially ends.
- First day of event: Begin UNICOM radio service through the last day of the event. MULTICOM radio available before and after these dates.

b. Airport Operating Plan

The Black Rock City Airport is an FAA-recognized public airport, which exists for the sole purpose of accommodating aviation traffic during the Burning Man festival. It is therefore an annual temporary airport, probably the only one of its kind. During one week each year, it operates according to the same FAA rules and principles as hundreds of non-towered airports across the USA. The Airport is for General Aviation uses only – no scheduled air carriers and no air transport except for those operating under separate SRP's. In 2011, there were a total of 7 BLM permitted air carriers conducting commercial activities out of the BRC airport.

Aircraft aloft are governed by the Federal Aviation Regulations (FARs). The airspace over the Black Rock Desert is Class G uncontrolled airspace up to 14,500 feet MSL. The southwestern portion of the Black Rock Desert including Black BRC underlies the Reno MOA (Military Operations Area). BRC/LLC will coordinate any restrictions to airspace with the Air Route Traffic Control Center (ARTCC) having jurisdiction over the local area.

The Airport is “non-towered” which means there is no air traffic controller directing the flow of traffic. Pilots follow standard operating procedures for non-towered airports. Advisories are given via UNICOM radio. BRC/LLC will assure radio communications with aircraft using the event runway. A Common Traffic Advisory Frequency (122.9 MHz) will be used to inform pilots of landing pattern direction and safety information. This radio communication will be in effect 24 hours a day for the duration of the event.

The airport runway use will be limited to small general aviation only. No air transport or scheduled air carriers will be allowed except for those operating under separate SRP’s, see above. The Airport accommodates fixed-wing aircraft, rotorcraft, ultra-lights, hot air balloons, and skydiving. Facilities include a single landing strip, two helipads for medevac and private helicopters, a tie-down area, and camping. The runway and tie-down areas are outside the trash fence that surrounds BRC. A gate is staffed to provide entry to the event for ticketed participants arriving by air. The gate also allows access to and from the tie-down area, and access to the playa for Burning Man participants who are land-sailors, piloting wheeled wind-powered vehicles.

Aviation activity in 2011 included over 100 overnight aircraft, a few dozen “transient” aircraft dropping off passengers and departing, private helicopters, ultralight craft, and skydivers. Activity in future is expected to be similar. Approximately 100 participants camp in the tie-down area and just inside the perimeter trash fence.

c. Airport Facilities

Airport facilities include the runway, taxiway, windsocks, signs, participant helipad, medevac helipad, tie-down area, and UNICOM radio. Below is the general airport layout plan for Burning Man 2012. The final plan for each year will be an attachment to the Stipulations for that year. The airport location and layout may need to be adjusted each year based on the city location, population and terrain.

The runway will be placed outside the pentagonal trash fence and oriented southwest to northeast to take advantage of the prevailing winds. It will be approximately one mile long and about 60 feet wide. Other than removing transient dunes from the runway and taxiway to the tie-down area to ensure safety, BRC/LLC will not disturb the surface of the playa. The runway will be watered as needed during the event to fix fugitive dust. The runway boundaries will be marked to make it visible to pilots and to alert surface traffic to avoid it. The markings will include runway numbers at each end to indicate compass bearings. Runway markings will

be applied using a biodegradable agricultural colorant sprayed directly on the playa surface. A colorant that naturally degrades when exposed to sunlight will be used. The runway markings will be removed at event completion.

Aviation windsocks will be placed at each end of the runway to provide pilots with a visual reference of wind speed and direction, and to alert other recreational users on the playa of an operational runway. Reflective traffic barricades with flashing yellow lights will be placed around the guy lines supporting the windsock poles. Signs warning of aircraft activity will be placed along two desert trails, namely the trail parallel to the runway and the crossing trail. Traffic cones or equivalent indicators will be placed between the trail and the runway for the one-mile length of the landing strip. Additionally, signs with reflectors will be temporarily installed at prominent or strategic locations around the event airport to forewarn playa travelers of safety hazards. Windsocks and other markers will be removed at event completion.

BRC/LLC will develop and submit NOTAMS as appropriate and provide a copy to the BLM. BRC/LLC will report to FAA authorities and military bases any non-event aircraft operating in an unsafe manner, or any aircraft related incidents or accidents near the event. BRC/LLC will coordinate with the FAA concerning the runway operations and management of airspace above the city.

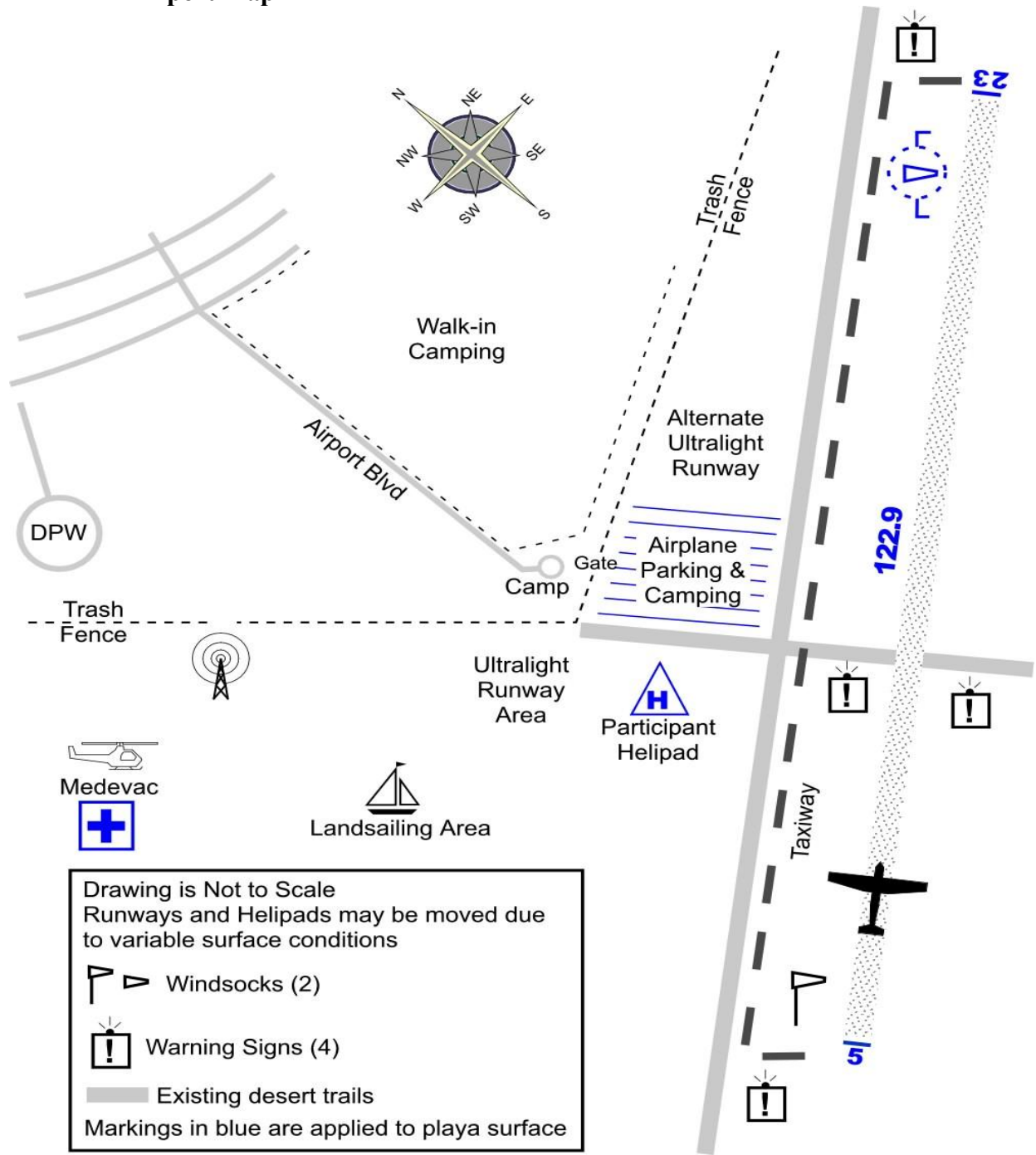
A helipad will be designated and marked for emergency use. An ultra-light aircraft take off and landing area will be designated in the area to the southeast of the airport camp.

There will be no provisions for night operations (no lights) with the exception of the lighted helipad reserved for medical evacuations. The medevac helipad will be outlined with reflective material and steady red lights in addition to the outline of a cross, created with colorant. The helipad is placed to allow flights in and out without interference with fixed-wing traffic using the runway.

A tie-down area will be designated adjacent to the trash fence and gate. Pilots and passengers may camp with their aircraft if they have tickets to the event. Non-participants will not be allowed to enter and will be required to depart by sundown.

The airport gate will provide access to the playa outside the trash fence for wind-powered vehicles. Land-sailors will receive a briefing that includes how to avoid the runway, taxiway, and helipads.

Airport Map



d. Aviation Operations

BRC will assign an Aircraft Runway Manager, who will strictly control arrival and departure protocols, parking and overflight rules. The Runway Manager is responsible for immediate decisions affecting aviation safety and for normal airport operations. The Runway Manager decides when to close the runway, when to recommend an alternate landing area, or when to recommend any non-standard maneuvers to pilots in the air. The Airport Manager typically serves as the Runway Manager but s/he will delegate this responsibility when s/he is absent from the airport vicinity during daylight hours. Requests for changes to existing procedures during the event should go to the Airport Manager, the Runway Manager, or the UNICOM operator in that order. These individuals have aviation knowledge and experience to make safe on-the-spot decisions.

Additionally, Runway Manager will discourage travel by aircraft to other historical, cultural, and geographical resources in the Black Rock Desert area during the event.

BRC/LLC recognizes all federal laws affecting aircraft including the Closure Order requirements that prohibit aircraft landing on the playa within the Public Closure Area, except for landings of “lighter-than-aircraft” previously approved by the authorized BLM officer. Burning Man participants, law enforcement, and emergency medical services will be required to use the airport facilities for routine or non-emergency operations. Alternate landing locations may be designated by the Runway Manager to civilian aircraft not directly involved in an emergency for safety purposes or as other conditions dictate. In the event of a disaster or significant emergency the Incident Commander or a member of the Unified Command Team shall communicate with the Runway Manager to shut the airport down for routine or non-emergency traffic and inform them of the pending emergency air operations.

Airport staff has a designated channel on the Burning Man staff radios. Airport personnel can be reached via staff radio or pager 24 hours a day through the event.

NOTAMs are filed with the local FSS (Flight Service Station) for the airport activity and for skydiving activity as required by FAR Part 105.

UNICOM radio advisories are provided 24 hours a day on 122.9 MHz. Standard advisories consist of altimeter setting, density altitude, wind direction and velocity, and known traffic in the vicinity. The radio station provides a minimum twenty-mile range. A UNICOM commander oversees the necessary equipment, training, and operation of UNICOM services.

Announcements of activities of an unusual nature, such as skydiving, arrival of a dirigible, or aerobatic performance, are prominently posted at the Airport Gate at least one hour before initiation of the activity. Additional advisories when the activity is initiated are given via UNICOM by the pilot involved or the UNICOM operator.

The runway placement allows for a traffic pattern away from the main encampment for noise abatement and safety. Designated flight paths are recommended to accommodate airplanes, helicopters, ultralights, and photography flights.

Ultralight aircraft have a very slow airspeed and therefore have a separate takeoff and landing area to avoid the runway and faster aircraft. In special circumstances (such as for photography) an ultralight pilot may be approved to takeoff and land within the perimeter fence or in an area away from the Airport. The BLM dispatch would be notified in advance of an special circumstances takeoff or landing. BRC Airport Personnel will also notify its Emergency Services Department dispatcher.

e. Pilot Education

Pilot education pre-event covers all aspects of aviation activities at Burning Man. Information on mountain flying, desert landings, weather hazards, and planned operating procedures for the event is provided.

A mandatory briefing prior to take-off is required of all aircraft pilots during the event. The briefings cover approach and departure procedures, areas that are off-limits (such as local hot springs), general airport operations, noise abatement, and high altitude safety procedures. Behaving responsibly and considerately is emphasized. Skydivers receive specialized briefings from their jumpmaster or the Airport Manager.

f. Air Safety

An Air Safety Officer oversees the safety aspects of aviation operations. The purpose is to correct inappropriate, illegal, or unsafe behavior. The Air Safety Officer supervises a team that provides the briefings and enforces the guidelines for aviation operation during the event. The team gives special guidance to anyone who appears to be a safety risk, or who is exhibiting inappropriate behavior. The team also identifies ways to improve safety during the event and for next year. Enforcement levels vary from a warning, to “impounding” the aircraft, to eviction from the event, to a report to the FAA.

Detailed emergency plans will be defined and documented with the help of other Burning Man departments. These plans will include procedures to follow:

- When a runway is unsafe such as after a rainstorm (covers when and how to close a runway).
- When an alternate emergency landing area is needed (identification of emergency sites in advance, when and how to implement them).
- Immediately after an accident (how to call for help, what to say to aircraft in the air).
- In the aftermath of an accident (runway status, decision process, crowd control and guarding wreckage, fuel leakage, notification of appropriate personnel)
- When an overdue aircraft is reported or other unusual event.

Non-event aircraft operating in an unsafe manner are reported to the FAA when sufficient evidence is available (witnesses and registration number).

g. References

- Federal Aviation Regulations (primarily parts 1, 91, 93, 103, 105)
- <http://www.faa.gov/>
- Aeronautical Information Manual
- <http://www.faa.gov/ATpubs/AIM/>
- Aircraft Owners and Pilots Association (AOPA)
- <http://www.aopa.org/>
- Flight Safety Foundation
- <http://www.flightsafety.org/home.html/>
- Black Rock City Airport
- http://www.burningman.com/on_the_playa/airport/

IV. Health & Safety

A. Purpose & Need

BRC/LLC is committed to producing a safe event. With a large population the need for a safe city infrastructure is evident.

B. Objectives

BRC/LLC will assume responsibility for public safety and health during all phases of the event. Event Security and Medical services will be provided through a combination of cooperation among BRC/LLC Playa Safety Council (Black Rock

Rangers, Law Enforcement Agency Liaison (LEAL), Emergency Services Department, Gate & Perimeter, and Department of Mutant Vehicles), along with BLM Rangers, Pershing County Sheriff's Department (PCSD), Washoe County Sheriff's Department (WCSD), and a third-party emergency medical contractor. These cooperators will build upon the work of prior years in order to execute the Burning Man event. The establishment of a Unified Command Post will aid this collaboration. The Unified Command Post will be a shared location wherein the cooperators will work hand in hand in order to ensure coordinated efforts and to enhance communications. BRC/LLC will cooperate with BLM's Incident Command (IC) system throughout the entire period that BLM is operating onsite. BRC/LLC and BLM will share its dispatch center with both BLM and Pershing County Sheriff's Office to facilitate better cooperation between the parties.

C. Action Items

1. Event Security

BRC/LLC has designated the Black Rock Rangers (BRR) and Gate/Perimeter as the organization's lead for event security. Under direction of BRC/LLC, BRR and Gate/Perimeter will collaborate with BLM Rangers, WCSD and PCSD to address event security. BRR serve as the first responder component of this coordinated security plan. BRR and Gate/Perimeter will enforce all event-specific guidelines (presented to the participants as "rules"). The BRR/LEAL Director will host an "Agency Coordination Meeting" at 3:15 PM each day of the event. The daily coordination meeting will ensure cooperation among all security groups, as well as provide a mechanism for change and adaptation during the event.

b. Emergency Medical Services

BRC will contract to provide state-certified emergency services at the event. At a minimum, Emergency Medical Services (EMS) will be available at the paramedic level consistent with current Nevada State practices. EMS medical facilities for event participants and staff will be located at Center Camp, as well as the 3:00 and 9:00 O'Clock plazas. BRC/LLC's Emergency Services Department will provide First Responder EMS in addition to the Advanced Life Support units provided by the contracted Nevada State licensed EMS provider.

Medical station staffing, which consists of 10-15 medical professionals (typically a mix of EMTs, Paramedics, RNs, and MDs), adjusts staffing as needed by the increase and decrease in population in Black Rock City as the event progresses. The equipment and supplies at the medical stations allow the medical branch volunteers to provide basic first aid and care. Simple bandaging and splinting supplies are available as well as essential diagnostic equipment such as thermometers and blood

pressure cuffs for patient evaluation. In the rare event of a life threatening emergency, the stations also carry non-invasive life-saving equipment including an AED, artificial ventilation equipment, and basic airway management supplies. For anything beyond basic first aid, BRC's vendor, Humbolt General Hospital, makes the decision on when to transport a patient elsewhere.

EMS will provide a daily report consisting of a numerical analysis of patient ailment categories and reason for transports to BLM and Pershing County at the 3:15 PM meeting each day during the event. Within sixty days after the event, BRC/LLC shall provide a final written statistical report of such medical cases to the BLM.

c. Communications

The Emergency Services Department (ESD) consists of over two hundred Emergency Service providers. The vast majority of them are professionals in the field of medicine. The ESD's communications system will serve as the eyes and ears of Black Rock City. It will also provide separate communication channels for the following functions:

- Security (BLM, PCSD, WCSD, BRR), Emergency Services and a third-party emergency medical contractor
- Camp Construction and City Maintenance (DPW)
- Artists & Performance
- Food & Commissary
- Gate & Perimeter
- Communications & Media
- Community Services

The ESD will maintain a central communication system, which will provide a 24-hour a day capacity to detect and respond to any emergent security or safety incident within BRC. The communications system incorporates an Incident Command System (ICS). BRR consists of over one hundred Rangers who carry radios and are trained on correct radio usage. Every member of BRR is trained to use the ICS to facilitate communication between BRR and outside agencies in the event of an emergency.

d. Ranger (BRR) Outposts & ESD Stations

In order to facilitate the goals of safety and security there will be three BRR outposts located at the 3:00 and 9:00 plaza, as well as in Center Camp(see sheet 2). Ranger outposts serve as information points, and as a patrol post. The ESD will also have stations located near the BRR outposts; they serve as a posting location as well as an EMS triage and

first aid station. A third-party emergency medical contractor, Humboldt General Hospital, coordinates the clinic in center camp.

e. Chain of Command

BRR will act as the first point of resolution for any matters of concern. The ESD radio system will facilitate inter-agency communication and cooperation by including the BLM, the WCSD, the PCSD, Fire, and Medical support. In the event of an emergency, the radio system will work to allow timely responses and to inform the relevant agencies of the location and details of the emergency.

f. Perimeter/Speed Patrol

The city plan for 2012, for reasons of security and safety, includes an extensive fenced area. BRC/LLC expects that the BLM will patrol the area and enforce the official speed limit (10 mph) within the closure area outside the event fence. The BLM should enforce the rule prohibiting camping within 5 miles of the fence (perimeter). BRR will monitor the perimeter and patrol inside the fenced area. At times, BRR may ask for the assistance of BLM law enforcement to handle perimeter violations and dangerous speeding near the perimeter when persons attempt to drive at high speeds into the event space to avoid the entrance fee. This is primarily to ensure the safety of participants camping near the fence who could be seriously injured or killed when someone breaks the perimeter with a vehicle.

g. Safety/Fugitive Dust/Speed

BRC is the responsible party for managing vehicle speeds within Black Rock City, including Gate Road. The goal is to foster safe vehicle operations and limit fugitive dust. Factors that BRC takes into consideration are visibility conditions, DMV licensing, population density, proximity to pedestrians and proximity to structures. BRC is always increasing its efforts to educate participants about safe driving and how to avoid fugitive dust.

2. Risk Management

BRC/LLC will inspect the permitted area for any existing or new hazardous conditions, such as changing weather conditions or other hazards that present risks to employees and/or participants. For example, BRC/LLC will inform the builders of any public structures of the applicable requirements for public safety. To the best of its ability BRC/LLC will inspect the structures for safety; any structure deemed unsafe for participants will be reconstructed to meet safety requirements, or it will be closed. Also, BRC will make an effort to ensure

that extension cords used in city infrastructure that cross main access roads or travel corridors are armored or buried to prevent damage and possible electrocution.

In cooperation with emergency service providers and law enforcement agencies, appropriate parties or their designated representatives shall notify each other of all accidents related to the event that occur before, during, and after the event, that result in death or personal injury requiring hospitalization. Accident reports involving death or injury will be coordinated with the Pershing County Sheriff's Office and/or BLM.

Within 24 hours upon learning of any incident that occurs before, during or after the event that could possibly result in a liability claim, BRC/LLC shall confer with the BLM and as deemed necessary will submit an written incident report to the BLM.

(For more information on risk management see the section on Emergency Procedures.)

3. Off Site Security

Off site security includes monitoring inappropriate traffic or illegal behavior in the following locations: the three mile entrance to the Black Rock Desert, Trego Hot Springs, Black Rock Hot Springs, the visible portions of the Applegate/Lassen and Nobles Trails and the town of Gerlach.

Off site security will be handled by a well-coordinated effort by the BLM, and BRR. The general scope of responsibility is as follows:

- Federal Aviation Regulations (primarily parts 1, 91, 93, 103, 105)
- The BLM Rangers will patrol and control the area outside the perimeter fence, enforcing the camping and public use closures and motorized vehicle closures.
- PCSD will patrol and control several key sections of perimeter fence.

BRR is a first response team for dealing with problems within Black Rock City. BRR will at times request aid from law enforcement agencies, especially in cases of illegal acts, life threatening conduct or evictions. The cooperating law enforcement agencies are the first response team for dealing with safety and security problems at and beyond the perimeter of Black Rock City. In particular, BRR are unable to engage in vehicle intercepts, but Gate/Perimeter can assist law enforcement in some vehicle intercepts immediately outside of Black Rock City. Because of our large perimeter, an increased law enforcement presence in this area is necessary.

4. Pre & Post Event Security

Setup and cleanup efforts can be compromised by the presence of unwanted parties being disruptive and refusing to leave the event site. These unwelcome parties risk breaches of safety, security, and environmental stewardship. To avoid such risks, BRC/LLC requests that BLM provide adequate event security personnel, on a case-by-case basis before and after the event as requested by BRC/LLC to assist BRC/LLC with evictions from the site. Participants (especially Theme Camps) that require a couple of extra days to clean up post-event are part of the take-down process, and should not be cited or evicted if they are not otherwise causing any problems.

5. Government Coordination

BRC/LLC will confer with the following entities prior to the event to address local issues and concerns:

- Pershing County Sheriff's Office
- Washoe County Sheriff's Office
- Nevada Highway Patrol
- Pyramid Lake Paiute Tribe

A BRC/LLC representative will meet with a BLM representative prior to the event to coordinate logistics for operations of the communications compound. Also, a BRC/LLC representative will meet with a BLM representative to coordinate the operation of the airport.

BRC/LLC shall provide for adequate enforcement of state and local laws. BRC/LLC will make arrangements with Pershing County to provide reasonable levels of patrol, investigation, and operational overhead capabilities. Nothing within this stipulation is intended to limit local law enforcement's authority or ability to provide additional levels of coverage as it may deem appropriate. Written evidence of the agreement showing compliance with this stipulation must be provided to the BLM by BRC/LLC 30 days prior to the start of the event.

6. Protection of Minors

BRC/LLC will develop and implement a plan to address exposing minors to adult activities at the event. The plan will include measures such as educating and requiring parents/guardians to supervise their children, zoning the city, and making every effort to educate adult related theme camps about the need for having a gatekeeper during hours when the camp might not be suitable for minors. BRC/LLC will make a diligent effort to enforce actions identified in the plan. A copy of the plan will be provided to the BLM and the Pershing County Sheriffs' Department within 10 days of issuance of the permit.

7. Illegal Alcohol & Substance Policy

BRC/LLC will implement a controlled substance and alcohol policy and disseminate it to event participants through several communications channels, including the Burning Man Survival Guide and public bulleting boards in BRC. The policy will state that all federal, state and county laws concerning the use and distribution of illegal substances remain applicable within BRC. The policy will summarize the legal penalties to which any participant convicted of illegal drug possession or use will be subject to. The policy will state that federal and state law enforcement officials will be present at the event, including undercover officers who will be policing all illegal activities, including the use and distribution of narcotics. Additionally, the policy will contain the message that BLC/ LLC discourages drug use at the Burning Man event and prohibits selling or distributing illegal substances. Furthermore, the Burning Man Survival Guide will warn participants of the health risks inherent in consuming alcohol or illegal drugs in the harsh desert environment, and that underage drinking is against the law.

Throughout the year BRC/LLC staff will meet with law enforcement representatives from the BLM and Pershing and Washoe counties in order to discuss law enforcement policies at the event, and these policies, whenever appropriate, will be communicated to participants. Immediately prior to the event, BRC/LLC staff will meet with law enforcement personnel in order to communicate information that will orient them within BRC and inform them of key components of the organizational infrastructure.

V. Emergency Procedures

A. Purpose & Need

The Burning Man event has a potential for risks and emergencies. The need for emergency procedures is crucial.

B. Objective

BRC/LLC has a comprehensive set of emergency procedures and contingency plans that will come into play should there be a triggering event. Every BRC/LLC department has a role depending on the type of emergency. Furthermore, BRC/LLC has procedures and plans for working with other cooperating agencies and outside organizations should the need arise.

C. Action Items

1. Emergency Procedures

A. Fire Suppression

BRC/LLC intends to exceed the BLM's basic fire protection requirements for the duration of the event to reduce the possibility of any environmental damage or loss of life or property due to fire.

Fire Services will be provided by a BLM certified fire contractor and the ESD Fire Branch (BRCVFD). ESD Officers will function as the Fire Branch Chief in the event of a full Incident Command System (ICS) activation, and ESD Officers will also be considered the Incident Commander (IC) on any fire-related incidents that do not have any law enforcement concerns. In the event of such a concern, the most appropriate law enforcement agency would be designated IC.

Operations will be based out of three 24-hour fire stations in Black Rock City. There will be a First Response engine based at each ESD station that will be pre-assigned as the first due resource for all Fire and EMS calls 24 hours a day. Specific events that are identified as being crowd intensive or involving licensed pyrotechnics will have, at a minimum, one engine staged near the event, and a BRCVFD Rapid Intervention Team (RIT) at the performance perimeter.

ESD shall provide a minimum of two structural/brush-type fire engines, National Wildfire Coordinating Group (NWCG) type 3-6. Engines and staff must meet NWCG or NWSA (National Wildfire Suppression Association) standards for personnel and equipment. These fire engines will be strategically placed within Black Rock City as determined necessary by the BRC fire contractor. ESD is also responsible for reserve water sources, and will provide minimum of 12,000 gallons of water storage.

The Fire Branch will generate pre-fire plans for any location or performance reporting within Black Rock City that will be storing or using any flammable or pyrotechnic materials. This information will be made available to any agency requesting copies. Additionally, BRCVFD, in conjunction with the Fire Art Safety Team (FAST), will check all reporting locations for compliance in safe storage of listed materials. BRCVFD will also perform defensible space inspections for any fire-related site, as well as inspect larger structures for potential fire hazards. BRCVFD will also provide all the RIT coverage required for any performance. The fire contractors and BRCVFD will both attend all on-site pyrotechnic meetings to insure up-to-date information on potential hazards. BRCVFD will work with inter-agency mutual aid and ICS to provide municipal grade service, utilizing multi-agency drills and training on-site for specific apparatus and tactics to improve teamwork during emergency responses.

BRC/LLC shall abide by fire restriction orders, except for the following as officially approved by BRC/LLC in coordination with the BLM:

official art burns, fireworks events, and open fires within the Burning Man event area that are to be contained on supplied fire pans and fire barrels. Fires not contained by authorized raised platforms, fire pans, barbeques, or barrels are prohibited. The fire pans and fire resistant platforms or other protective materials designed to protect the playa surface can be used by event participants for spontaneous burns in the same manner as the fire pans or fire barrels after the initial art project has been burned.

Burning of objects or structures that contain plastics and/or other synthetics or any materials that release toxic fumes will not be allowed unless specifically authorized by BRC/LLC as part of an art burn or pyrotechnic display. BRC/LLC shall provide public education through the Burning Man website, radio stations, brochures and other literature to encourage compliance of this rule.

2. Fireworks & Firearms

BRC/LLC recognizes that the use of personal fireworks or sale of fireworks is prohibited. A sign stating this will be prominently placed at the site entrance by BRC/LLC no later than 5 days prior to the start of the event. BRC/LLC shall communicate with participants via the web before the event, and post signs on gate road, explaining that fireworks are illegal. BRC/LLC shall take reasonable precautions to prevent the use, sale, and/or distribution of fireworks inside the event. At Gate entrance, vehicles will be searched for fireworks and participants will be informed that they are illegal. Nothing is allowed to be sold at the event, except ice and coffee. Should a Ranger find someone using fireworks, they will confiscate this contraband. Only fireworks and pyrotechnics planned, scheduled and approved by BRC/LLC in coordination with the PCSD will be permitted. Use of any unapproved explosive, fire or incendiary device, will not be allowed.

With the exception of county, state and federal certified law enforcement personnel under the color of law, possession of firearms is prohibited within the fenced event boundary during the event period. Discharge of firearms will be prohibited within the designated closure areas.

BRC/LLC and “art burn” organizers will coordinate with the Event Fire Contractor and law enforcement points-of-contact. BRC/LLC will prepare a detailed schedule of sanctioned fireworks and art burn events for review at the daily cooperators’ coordination meeting, prior to the event/burn. The schedule will include a detailed description of the event/burn, name of responsible person, map location, and approximate time of each event/burn.

3. Contingency Plans

BRC/LLC has developed numerous contingency plans for how to operate in the event of critical health and safety concerns, or adverse conditions, including

those that could cause cancellation or temporary suspension of the event. Causes could include adverse weather, natural or human caused disaster, or social unrest. Contingency plans cover occurrences within the event site, as well those affecting participants en route to and from the event site. BRC/LLC will cooperate with all entities, including government agencies and vendors in the implementation of contingency plans as necessary. In general the following procedures would be followed in the event of an emergency:

a. Prior to the Event

- Emergency information would be disseminated to participants by the Burning Man website, Jack Rabbit Speaks email newsletter, and if appropriate, other media.

b. During the Event

- BRC/LLC will provide critical health and safety systems for as long as operationally possible for the duration of any temporary suspension or until participants are able to leave the event site and the Gerlach/Empire area if the event is cancelled.
- BRC/LLC will monitor the forecasted weather conditions. If weather forecasts suggest a high probability of adverse weather conditions that may result in disruptions to the event, BRC/LLC will cooperate with BLM and other appropriate agencies and cooperators to develop appropriate strategies and actions to deal with potential impacts on participants.
- In the event of natural disaster or civil unrest appropriate strategies and actions will be initiated immediately after any disaster or unrest occurs.
- BRC/LLC will cooperate with appropriate agencies to warn participants headed into the event of event closure or other restrictions.
- BRC will provide participants with current and projected conditions, allowed and prohibited actions deemed necessary for public health and safety as well as protection of the environment, and other appropriate public service announcements via BMIR, flyers, or loud speaker broadcasts as needed.
- If event termination is required, appropriate time frame will be established by BLM Incident Command in consultation with BRC/LLC and other cooperators to facilitate safe removal of people and property.

c. Public Affairs Communications for Contingency Plans

Should the need arise, information will be disseminated through both formal and informal mechanisms, or a combination of the two. In the case of an emergency BRC/LLC will evaluate the situation, and develop a plan of action. Information will be disseminated quickly and efficiently via chain of command. The following individuals or their appointees shall:

- Harley K. Dubois would mobilize: Ranger foot patrol, Gate personnel, Greeters, Playa Information, Earth Guardians, Theme Camp Placement team, and any other auxiliary volunteer teams such as Lamplighters or Earth Guardians.
- Marian Goodell would mobilize the External Relations Team (XRT) in addition to auxiliary groups in her direct command.
- Marian Goodell would mobilize BRC/DPW personnel and any equipment as needed.
- The official radio station could receive orders from Dubois, Goodell or Harvey.
- Other LLC members would be responsible for delivering information and mobilizing as necessary in their respective groups.

d. Eviction Contingency Plan

If a Black Rock Ranger observes or learns of a serious infraction of BRC rules, the Ranger will investigate the situation. If all efforts are exhausted with no resolution or correction, then a team of Ranger 007s is called to make an independent evaluation. Ranger 007s have the authority to evict participants. If the behavior rises to the level of eviction then the Ranger 007s start the eviction process according to established protocols. The participant is given one half hour (or more) to pack and leave. Ranger 007s confiscate the ticket stub, stands guard and escort the participant out of the Gate. DPW will be called in to clean up any debris, hazards or equipment that the unruly participant may try to leave behind. Community Services Department (CSD) may assist in communicating what is happening and why to the participant's campmates and neighboring camps. If the participant has damaged any art then the Art Department will also be called in. Law enforcement will be called if the participant becomes unruly. Ranger 007s will report the incident up through the chain of command to the Ranger's Board Member. Law enforcement will arrest the person for trespassing if s/he returns. Staff members should notify the Rangers if they see the person again within the City.

e. Gate Crasher Contingency Plan

If a participant, group of participants or vehicle attempts to gain access to BRC without a ticket, or without going through the main Gate, the Gate and Perimeter crew will respond as follows. Perimeter staff will track the vehicle and respond as required. The primary goal is to ensure that the vehicle trying to gain entry does not injure anyone. If it is unsafe to speed then the Perimeter vehicle will visually track the vehicle so that no one is injured. Once the vehicle or person(s) comes within BRC, BRR will track the violator with vehicles, bikes or pedestrian Rangers as needed. DPW will be called to repair fence and/or signage as needed. CSD will be asked to assist with informing participants in the vicinity about what is happening and why. ESD will provide support if there is any injury involved. Law enforcement will be called to cite and/or arrest violators as necessary for violating the Closure Order.

f. Law Enforcement Incident Contingency Plan

In a situation where law enforcement is addressing a major incident (such as a large-scale narcotics bust, murder, suicide, etc.) then BRC/LLC staff is prepared to provide support as follows. BRC/LLC will defer to the appropriate law enforcement agency as the lead. BRR will coordinate with law enforcement about what needs to be done to help resolve the incident. ESD will increase staffing, have units standing by and add a command unit. CSD will provide support by spreading the proper information to the nearby community about what is happening and why. The Communications Department will coordinate with all of the agencies to deliver a unified statement to the media as necessary.

g. Fire Contingency Plan

If there is a report of an unplanned fire in BRC, or if a planned burn goes awry, then ESD will establish the IC, and will be responsible for extinguishing the fire and handling any injuries. The BRR will manage the incident perimeter. DPW will provide support by clearing debris, hazards and equipment as necessary. CSD will provide support by communication the proper information to the nearby community about what is happening and why. The Communications Department will coordinate with all of the agencies to deliver a unified statement to the media as necessary. The Art Department, specifically their subgroup the Fire Arts Safety Team (FAST), will provide support as necessary. Law enforcement will be on standby to provide scene safety.

h. Medical Contingency Plan

If a medical incident occurs, then the external emergency medical vendor will establish the IC. ESD will mobilize reserve EMS resources and add a command unit. BRR will manage the incident perimeter. Rangers with medical and first-aid training will report to ESD. DPW will assist with securing hazards, equipment and/or materials. CSD will provide support by spreading the proper information to the nearby community about what is happening and why. The Communications Department will coordinate with all of the agencies to deliver a unified statement to the media as necessary. Art & Performance staff will provide support as necessary. Law enforcement will be on standby to provide scene safety.

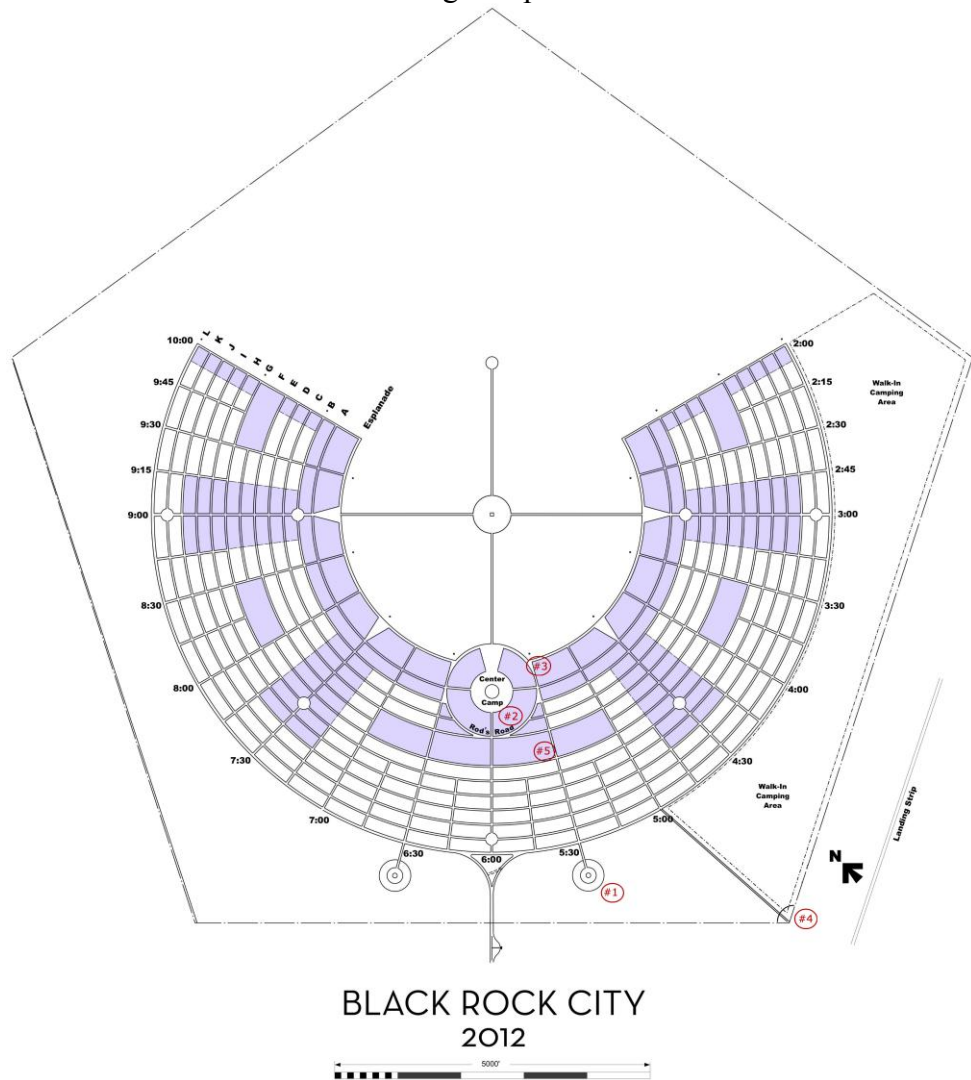
i. Structural Collapse (Without Fire or Rescue Needed) Contingency Plan

If a structure collapses without any fire or rescue support needed, DPW will establish the IC. If a fire is involved then the Fire Contingency Plan (see item g, above) will be incorporated. If a rescue or injury is involved then the Medical Contingency Plan (see item h, above) will be incorporated. DPW will repair the structure, or clear debris, hazards and/or equipment as necessary. ESD will assist by staging units at the incident scene, and will add a Command Unit. BRR will assist in keeping the area clear. CSD will provide support by communicating the proper information to the nearby community about what is happening and why. The Communications Department will coordinate with all of the agencies to deliver a unified statement to the media as necessary. FAST staff will provide support as necessary. Law enforcement will be on standby to provide scene safety and a post-accident investigation as necessary.

j. Hazardous Materials Contingency Plan

In the event of a hazardous material release, ESD will establish the IC, and will be responsible for containment of the material and mitigation of exposure risks. BRR will assist by managing the incident perimeter. DPW will assist with clearing debris, hazards and/or equipment. DPW will also assist with securing a vendor for providing a large-scale cleanup as necessary. CSD will provide support by communicating the proper information to the nearby community about what is happening and why. The Communications Department will coordinate with all of the agencies to deliver a unified statement to the media as necessary. FAST staff will provide support as necessary. If the hazard involves pyrotechnics then the Pyro Staff will provide expertise and ordnance handling. Law enforcement will be on standby to provide scene safety.

Hazardous Materials Storage Map 2012



Map Legend:

- 1) Fuel station: one (1) 2,000 gallon gas tank, two (2) 500 gallon diesel tanks
- 2) Lamplighters: one (1) 300 gallon kerosene tank
- 3) Heavy Machinery yard: one (1) 300 gallon diesel tank
- 4) Airport: 300 gallons of AV gas
- 5) Golf Cart Shack (inside Commissary): one (1) 100 gallon gas tank

k. Pre-Storm/Weather Contingency Plan

The Weather Marshall will notify BRC/LLC staff if it looks like there is a severe storm approaching. The CSD will take the lead in spreading the proper information via all of BRC's communication channels. BRR will assist CSD by disseminating the proper information to the community. The Communications Department will communicate necessary information to the media. DPW and the Art Department, specifically the First Arts Safety Team (FAST) will provide support by securing structures as necessary. Law enforcement will be asked to assist with traffic control as needed.

l. Post-Storm/Weather Contingency Plan

BRR will assess and identify what the situation requires regarding actions and resources, and provide the primary response. ESD will increase staffing and rescue resources, as well as mitigate any hazardous material risks. DPW will identify and coordinate all available physical resources. CSD will keep the community informed through all communication channels about what is happening and what participants need to know. The Communications Department will communicate necessary information to the media, as well as coordinate a unified statement. FAST will secure art and pyro materials/equipment as necessary. External agencies will assist with evacuation if required.

m. Increased Rainfall Information

Following is supplementary information to be implemented in the event of increased rainfall. The response time for heavy rains is three hours or less. BRC/LLC has the right to restrict departing vehicular traffic. The plan is based on the principle that the best thing for participants to do in BRC during a rainstorm is to return to camp, secure belongings and wait it out since everything they need to survive is already there.

- Will Roger Peterson will act as the Weather Marshall for BRC, and is responsible for advising when the actions listed below should be put into place. The Gate Crew will also act as a front line reporting team. At any time if they consider the road to be impassible due to rain, they can effect a temporary closure, to be lifted as soon as is reasonable. Any time the road is closed they will advise the entire Incident Management Team (IMT) by pager. Declaration of Level One, however, resides with IMT.
- The (IMT) should be smallest group possible, to speed decision making. It will include LLC members as available, ESD Operations Chief, Ranger Manager, LEAL Manager, DPW Project Manager, DPW Operations Manager. The Communications

Manager, Board Project Manager, Accountant and Community Services Manager should also be present. The representative for BRC/LLC, for purposes of interaction with outside agencies, will be LEAL Manager, and according to our permit stipulations the BLM is IC overall. (Note: major decisions for BRC require board consent.)

- When a Level One/Two alert is pending, all IMT members and their principle executive staff should proceed immediately to the Commissary, with plans to remain there for the duration of the alert. The Commissary will become the designated Emergency Operations Center for the management of the event, and each department will have a designated table area from which to gather information and execute decisions.

i. Level One: Shelter in Place — less than 12 hours

- Weather reports indicate likelihood of short-term rain creating conditions that will significantly affect normal movement. PSAs direct citizens to stay in camp, and allow water to soak into the ground. Participants will be advised to depend on local community aid. Heavy rain driving allowances are roughly as follows: 1 hour of rain = 4 wheel drive (nothing less will do); 2 hours of rain = 4 wheel drive with special tires; 3 hours of rain = impassable. Only IMT members and their designated executive staff will be allowed to drive during this time.
- PSAs will be prerecorded and distributed to BMIR and other stations throughout the city. On playa updates will be delivered live by Duane Hoover whenever possible, otherwise it will be by designated XRT staff.
- Key Messages to Disseminate to Participants:
 - 1) “Do not leave — you already have everything you need to survive.”
 - 2) “Set aside bedding/clothes/headlamps in safe, dry place.”
 - 3) “Cover/secure anything electrical.”
 - 4) “Get fresh ice.”
 - 5) “Use public portable toilets, then make plans to use sealable containers for all bodily waste.”
 - 6) “This is part of the experience — not a crisis.”
 - 7) “Ensure all your neighbors are well provided for.”

- 8) “Check your structures/art to ensure it will be safe in rain/wind.”
 - 9) “For life threatening medical emergencies find someone with a radio, or go to medical tents in Center Camp or the 3 and 9 O’Clock plazas.”
 - 10) “If you leave your camp to spend the storm elsewhere, please leave info about your location within your camp.”
- BRR will disseminate the message that all art cars should be returned to camp, clear deep playa of people, post signs explaining how to dispose of human waste in sealable containers once the portable toilet units are filled (to be printed by Media Mecca), thoroughly sweep BRC to ensure everyone is informed, and ensure 24+ hour supplies and power generation ability at outposts. They will close portable toilets if possible when they fill, and direct traffic to nearest operational bank. They will focus their energy mostly on unmapped areas, and leave mapped areas to CSD. Also, BRR will dispatch teams to Gerlach pending dispersal to outlying areas, and set up an off-playa Command Post at Gerlach office.
 - Exodus will assemble necessary staff, initiate Exodus plan if traffic warrants.
 - The supplier of portable toilets will send three trucks to empty pre-established toilet banks (3:30, 8:30, and 6:00). They will send three more empty trucks to remain on site. The remaining four trucks should pump as long as possible. They will leave the largest truck at the Commissary for gray water tanks, and a smaller one at the Café.
 - Lighting Suppression will send larger potable truck to the Commissary, and a smaller one to the Café to top off the tanks. Then they will park and remain in those locations.
 - XRT will initiate mass communication using Public Service Announcements via all radio stations and large-scale sound systems. They will brief the media, and print posters explaining how to dispose of human waste, for BRR to distribute. They will coordinate with radio stations for regular simulcasts of BMIR signal.
 - DPW will check structures for rain load failure potential (employing BRR if needed). Fuel and propane will be staged at the Commissary and at the Café, and water tanks will be topped off at both locations. They

will check BMIR power needs (in case of grid failure) and ensure their continued ability to broadcast. If an unexpectedly heavy exodus occurs, at the discretion of Exodus team and IMT, DPW may create alternate designated routes out of the city, using ambers and light towers to illuminate exit routes. They will streamline any deliveries to the Commissary.

- The Art Department will advise large art teams to rig/return to camp accordingly.
- CSD will accelerate the vendor schedule for deliveries to the Café and to Arctica, if possible. They will confirm that the Café has enough resources to remain operational. Placers, with the assistance of BRR, will contact all camp leads in their sectors to ensure that equipment is moved away from extremely wet areas. They will reassure participants. BMIR will be turned over to emergency broadcast mode. All stations will broadcast the BMIR signal as needed, and on regular intervals.
- BRC/LLC will ensure there is a minimum 24-hour supply of food to outposts, the Café, First Camp, and other event-critical operational facilities (specifics TBD by circumstance at time of incident). They will develop and implement procedures for re-supply. Nearby camps should be urged to take in stranded participants in Center Camp and/or bring in food if possible. Placers will help camps learn how to create in-camp toilet facilities.
- The Gate will be closed for incoming traffic (except emergency and relief vehicles), and will redirect inbound traffic. LEAL will advise and coordinate with law enforcement. LEAL will use all-terrain vehicles to move resources.
- The Airport will advise all aircraft crews and pilots of pending conditions.

ii. Level Two: Shelter In Place — More than 12 hours

The distinction between Levels One and Two is intentionally vague. Level Two should be understood to mean when either a single storm turns into several, and delays become longer than anticipated, or a single unexpected or severe rain prevents movement.

- ESD will utilize current plans to either stabilize patients in place or evacuate medical cases as deemed

appropriate, utilizing National Guard air capability if needed.

- DPW will dispatch radio calls, and the Commissary, Arctica, and the Café will remain operational. They will ensure they have fuel, means of water disposal, toilet service, firewood, battery banks, and other recourses.
- BRR will ensure power is available for Outposts and Headquarters, independent of the power grid. They will patrol on foot as long as possible, and maintain their Outposts. They will ensure as many Rangers as possible have fresh radio batteries. They will create and post signage at all banks of toilets, indicating nearest Ranger Station. Rangers should individually create signage indicating their location and possession of radio, and post it at the nearest intersection. BRR will assist with Exodus as needed. They will send self-supporting teams (with battery chargers and cell phones) to Gerlach, Wadsworth, etc, to redirect participants and ensure good community relations.
- XRT will use Public Service Announcements to explain the survival procedures for health and public safety. Through Communications Staff, they will issue regularly scheduled updates (every 30 minutes) live over all radio stations. Communications staff, working with Media Mecca, will issue briefs on a regular schedule, and coordinate with the Web Team and external media to alert inbound participants of the situation. They will communicate with pre-established holding points in Gerlach, Reno, and Fernley. Change the outgoing message on the Burning Man Hotline 415-TO-FLAME; advise key Gerlach citizens.
- The Artery will advise artists as necessary.
- The power vendor will shut down the electrical grid, and ensure that operational generators are at BMIR, the Commissary, the Café, the third-party emergency medical contractor, Dispatch, NOC, and BRR.
- Every 12 hours a decision will be made regarding what steps Arctica, the Commissary, the Café, the roads, and Gate should take.
- In the event of rain, NDOT/NHP will advise traffic exiting I-80 of conditions ahead. (NHP has indicated willingness to put up message boards.) Rangers should be stationed at pull-offs to answer questions, but traffic should be directed north, rather than allowed to accumulate. However, rangers should patrol Fernley

and Wadsworth to ensure that participants that do remain are behaving well, and are informed.

- Participant traffic already past Fernley and unwilling or unable to rent lodging in Reno should be directed to Black Rock Station and/or the work ranch. Portable toilets are available onsite, and their supplier should be kept advised of their use/condition.
- DPW/Ranch Staff must ensure spare paper and a case of hand-sanitizer solution, and develop a plan for parking, latrine staging and production, and management.
- Prior to the event, the DPW Sign Shop will make signs to be stored in Gerlach for use in case of rain. Signs will read: BURNING MAN EVENT SITE CLOSED DUE TO WEATHER CONDITIONS NO ON/OFF PLAYA TRAFFIC PERMITTED PROCEED NORTH TO EVENT STAGING AREA (Approx 20 miles) AND WAIT FOR UPDATES FROM BRC RANGERS
- USS will proactively send out trucks to pump grey water and porta potty banks. Priority grey water pumping at Medical and Café.
- Once playa conditions do not allow for driving, trucks should park by banks to provide stationary service until full.

n. Population Contingency Plan

i. Ticket Sales

- BRC LLC has closely monitored ticket sales, historical trends and other factors to ensure that the population does not increase above our ability to handle the population. Accordingly, BRC stopped public ticket sales early in late January in order to keep the 2012 average daily populations in line with the numbers agreed upon in the stipulations.
- BRC LLC does not market or advertise for the event. Instead, BRC LLC depends on word of mouth and peer to peer promotion. In 2011 and 2012, public interest in attending the event exceeded the number of tickets available for the event.
- BRC LLC reserves the right to suspend public ticket sales at any time, and did so in January 2012.

ii. Communications Pre-Event

- Education: The Media Department, Web Team, Community Services and other departments work together to communicate the proper messages to participants so that everyone will be better prepared for the event and an increased population. This includes sharing information about the event being sold out, as well as infrastructure, safety, and other acculturation issues that affect participant and cooperator satisfaction.
- Existing Publications and social media: The Survival Guide (readership of all ticket holders), Website (readership of the general public), educational blog series, and Jack Rabbit Speaks (readership of 100,000 past, present & future participants, as well as non-participants) are informing the entire BRC community about information that will help them adapt to a increased population. Twitter (20,000 followers) and Facebook (243,000 fans) also are utilized to post information about the event.
- Signage “Event Sold Out”: BRC LLC will apply for a permit from NDOT to place an electronic roadside sign on Highway 447 near Fernley advising that tickets are not available at the gate to turn people away from the area if they don’t have tickets. There will also be a similar sign on County Road 34 near the event site.

iii. Communications During Event

- Signage “Event Sold Out”: BRC LLC will apply for a permit from NDOT to place an electronic roadside sign on Highway 447 near Fernley advising that tickets are not available at the gate to turn people away from the area if they don’t have tickets. There will also be a similar sign on County Road 34 near the event site.
- On Playa Messaging: The Greeters, Play Info and BMIR will all be working to communicate to participants on playa about the information they will need to know.
- Volunteerism: We will be stepping up volunteer recruitment efforts on playa this year. First, this will give us more people that can help staff our operations and participants. Second, we have found that getting participants involved—especially newcomers—is a way of getting them on board with our principles and that they become better behaved participants that way.
- Tip Sheet: The Greeters will hand out a “Tip Sheet” with collated materials this year. This will be a one page

publication with key messages that all participants will need to know such as driving protocols, Exodus, new ice locations, etc.

- Greeters: The Greeters will inform and direct participants to where open spaces are available.
- BMIR: PSAs will be used to broadcast key information to participants such as reminding everyone about driving protocols, and asking placed camps to welcome newcomers to open spaces nearby.
- KIOSKS: CIVIKs, which stands for Civic Information Kiosks. CIVIKs will be located at all of the City Plazas, and will remind participants about the same kind of information that will be disseminated through the other communication mediums.

iv. **Communications Post-Event**

- Playa Info, BMIR and Exodus will all be working post-event to continue getting the proper information to participants as they leave the city.
- Playa Info: Playa Info will remain open in order to get information to participants and operate lost and found.
- BMIR: PSAs will be used during Exodus to broadcast key messages.
- Bullhorns: Bullhorns and PAs will be used for tactical communications to traffic in the Exodus line.
- Paging: Exodus team will send out updates via pager to the senior staff.

v. **City Infrastructure Contingencies**

- This year BRC is basing the 2012 city design on 2011, which was built to accommodate 60,000 participants with 13 annular streets and 12 blocks. Additional overflow camping with a 14th street can be created to accommodate additional participants should the city layout prove too cramped for the population. The infrastructure will be ready when the event begins in order to accommodate participants adequately.
- Temporary Camping: There will be a temporary camping area near the Greeters Station for participants to stay if they arrive after dark to avoid driving around in the dark looking for a space. The Greeters will direct them to an open space the next morning. As in previous years, the Placement Team will be inspecting the entire city as it fills up and directing larger camps to places where there is still adequate space.

- Placement Team: As last year, the Placement Team will be inspecting the entire city as it fills up and directing larger camps to places where there is still adequate space.
- Playa Safety: The Playa Safety Council (PSC) consisting of the BRR, LEAL, ESD, DMV and Gate, Perimeter & Exodus will be briefed on the anticipated population for 2012. PSC, as well as other Burning Man staff, will be increasing their staffing numbers earlier in the event so they can be fully prepared to begin all operations when the event opens. Likewise, the event will be staffed through the end of the event and into the Exodus period for as long as necessary. Also, PSC has participated in developing this contingency plan. Furthermore, all PSC staff and volunteers will be briefed on how to handle the increased population this year.
- Gate: Gate and Perimeter staff will be prepared to turn away non-ticketed participants and deal with a potential increase in attempts to gain unauthorized access.
- DMV: The Department of Mutant Vehicles is still limiting the number of mutant vehicles allowed in Black Rock City this year in order maintain a level of safety for biking and pedestrian participants. The criteria for licensing are the same as last year, but the standards are being applied even more strictly.
- Exodus: Exodus will be prepared to process more cars if necessary. The current capacity exceeds all projected population maximums.
- Rangers: There will be Rangers on portable radios to deal with participant issues and safety concerns before, during and after the event.
- ESD: There will be EMS units and staff available to handle medical issues before, during and after the event.
- Health Issues: Health concerns are of utmost importance, so this year there will be additional porta-potties on gate road and in Gerlach, as well as more hand-sanitizer stations everywhere.
- Ice: The capacity to increase ice sales scales with the demand. Additional shipments of ice are available on an ad hoc basis with the local vendor. In 2011, ice sale locations increased to three locations. In 2012, these three locations will continue.
- Law Enforcement: BLM and Pershing County will assist Gate, Perimeter and Exodus enforcement.

VI. Appendix

- A. Who to Contact**
- B. Contact Information**
- C. List of Prepares**
- D. LLC Incorporation Document**
- E. Calendar**

A. Who to Contact

Burning Man is run by a 8 member Board of Directors. The following list of names clarifies who to contact for each department. The first person on the list (and in bold) is the primary contact for that department. Names that follow the lead are LLC members and Staff who would also be able to make a decision or help clarify information, and should be contacted in the order in which they are listed.

PERMIT PROCESS:

Raymond Allen
Rosalie Barnes
Will Roger Peterson

FINANCES:

Raymond Allen
Doug Robertson

PUBLICITY, COMMUNICATIONS, WEB SITE:

Marian Goodell
Megan Miller
Rosalie Barnes

ENVIRONMENTAL EDUCATION, THEME CAMP PLACEMENT AND PARTICIPANT SERVICES:

Terry Schoop
Rosalie Barnes

BLACK ROCK RANGERS:

Wally Bomgaars
Wilfredo Sanchez

SAFETY, EMERGENCY SERVICES:

Joseph Pred
Kate Gonnella

LAW ENFORCEMENT AGENCY LIAISON:
Duane Hoover

DEPARTMENT OF PUBLIC WORKS
Marian Goodell

ART: OPEN FIRE, FLAME EFFECTS, PYROTECHNICS:
Crimson Rose
Dave Scholl

BLACK ROCK CITY AIRPORT:
Will Roger Peterson
Lissa Shoun

A. Contact Information:

- **Will Roger Peterson**
Office (415) 865-3800 x 140
Mobile (775) 750-6252
- Marian Goodell
Office (415) 865-3800 x 104
Mobile (415) 706-8951
- Larry Harvey
Home (415) 431-6523
Office (415) 865-3800 x 105
- Harley K. Dubois
Office (415) 865-3800 x 103
Home (415) 956-3969
- Crimson Rose
Office (415) 865-3800 x 113
- Raymond Allen
Office (415) 865-3800 x 137
Mobile (415) 816-8997
- Rosalie Barnes
Office (415) 865-3800
Mobile (617) 285-2867
- Duane Hoover
Mobile (806) 773-5358

Home (806) 745-2882

- Joseph Pred
Office (415) 865-3800 x 121
Mobile (415) 515-8569
- Wally Bomgaars
Office (415) 865-3800
Mobile (831) 252-1311
- Terry Schoop
Home (510) 525-5155
Mobile (510) 684-7954
- Lissa Shoun
Office (408) 297-9795

C. List of Preparers

- Will Roger Peterson, BRC/LLC Director of Nevada Relations & Special Projects
- Raymond Allen, Government & Legal Affairs
- Rosalie Barnes, Government Relations

D. LLC Incorporation Document:



LIMITED-LIABILITY COMPANY CHARTER

I, DEAN HELLER, the Nevada Secretary of State, do hereby certify that **BLACK ROCK CITY LLC** did on **February 4, 1999**, file in this office the Articles of Organization for a Limited-Liability Company, that said Articles are now on file and of record in the office of the Nevada Secretary of State, and further, that said Articles contain the provisions required by the laws governing Limited-Liability Companies in the State of Nevada.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Great Seal of State, at my office in Carson City, Nevada, on **February 4, 1999**.

Dean Heller

Secretary of State

By *Marianne Jockyer*
Certification Clerk



**BLACK ROCK CITY LLC
BURNING MAN 2012-2016
ENVIRONMENTAL ASSESSMENT**

**Appendix 3:
Black Rock City, LLC
Controlled Substance &
Alcohol Use Policy**

Black Rock City, LLC
Controlled Substance & Alcohol Use Policy

Excerpt from Terms on the back of the 2012 Burning Man Ticket to Black Rock City:

“You agree to read and abide by ALL rules in the Survival Guide and to follow federal, state and local laws.”

Excerpt from the Burning Man 2012 Survival Guide:

The use and possession of illegal drugs are violations of the law. Depending on the particular offense and the citing agency, the possession of marijuana may represent an infraction, a misdemeanor or a felony. Under federal law, possession of small quantities of marijuana for personal use is a misdemeanor. This can result in the issuance of a ticket that imposes a \$520 fine. Nevada has very strict drug laws. Any possession of marijuana is a misdemeanor, with a bail of \$250 to \$650, a fine of up to \$600 and possibly required participation in a drug treatment program. Possession of any other illegal drug is a felony offense with a bail in state court of \$1,500 or a misdemeanor with a fine of \$250. Possession of 28 to 200 grams of some controlled substances is punishable by 1 to 5 years imprisonment and a fine of not more than \$50,000.

ALERT: Medical marijuana cards are not recognized by either the Federal Government or the State of Nevada. Medical marijuana is only legal in a handful of states. Possession of marijuana is a crime in the Black Rock Desert. Having a medical marijuana card is not a defense. BE FOREWARNED!

The possession of any illegal drug with intent to distribute is a more serious felony offense in all jurisdictions. The possession of large quantities or a variety of drugs may be interpreted as evidence of intent to distribute. Furthermore, the act of distribution is not confined to the sale of such substances. It can mean any form of distribution including gifts. Gifting an illegal substance, even a very small amount, is viewed as a form of distribution. A conviction for distribution is punishable by imprisonment. State laws impose bail ranging between \$5,000 and \$250,000. The nearest courts are located in either Reno or Lovelock, depending on the crime and law enforcement agency.

Possession of drug paraphernalia with the intent to use it to ingest a controlled substance is a violation of the law. This offense is a misdemeanor under state and federal regulations. In some instances, this offense can be punishable by up to six months in jail and a fine up to \$1,000. Undercover officers patrol Black Rock City and **they use night vision goggles and other technical equipment to detect illegal drug use** and trafficking.

Giving illegal substances to someone else could rise to the level of drug trafficking. Legal considerations aside, if someone is begging for a gift, then he or she is not in tune with the gifting spirit of Burning Man. Gifts are best when given gratuitously, not when asked for. Serving alcohol to minors is a violation of the law. It is a misdemeanor in Nevada to give alcoholic beverages to anyone under the 21, regardless of whether you are in your own tent or in a public place. If your theme camp has a “bar” where alcoholic drinks are gifted, then the person serving alcohol should check IDs. **It is a State and local offence for anyone under 21 to consume alcoholic beverages or to pass themselves off as being of age.** It is a violation of Pershing County law for minors to even possess alcoholic beverages. Please do your part to keep our under-aged participants safe and lawful!

Driving Under the Influence (DUI) is a violation of the law. Nevada’s blood alcohol limit (BAC) is .08 for drivers 21 years of age and older, and 0.02 for drivers under 21. Note that the BAC is only a guide. Drivers can be arrested and convicted for DUI with a lower BAC, or for driving under the influence of controlled or prohibited substances. Be aware that you cannot refuse a test. By driving in Nevada you automatically consent to breath or blood testing. Refusing a test is grounds for arrest.