

National Park Service
U.S. Department of the Interior

Joshua Tree National Park
California



Black Rock Campground Rehabilitation Environmental Assessment Joshua Tree National Park

July 2012



[This page intentionally left blank]

Black Rock Campground Rehabilitation Joshua Tree National Park

ENVIRONMENTAL ASSESSMENT

SUMMARY

Joshua Tree National Park (Joshua Tree or park) proposes to rehabilitate the Black Rock campground in the northwestern portion of the park. The preferred alternative would add drainage improvements, reconfigure campground roads and campsites, and protect park facilities and natural resources from further deterioration. Black Rock campground is in an area that periodically receives stormwater runoff from the large upslope watershed. High-intensity short-duration rainfall events generate surface runoff that is currently conveyed through the campground in an unpredictable manner, resulting in localized erosion and flooding, property damage, and a safety risk to park visitors and staff. Campground roads are currently aligned so that stormwater runs directly down the roads, which has contributed to localized flooding and damage to campground facilities, natural resources, and adjacent private property. Degraded roads and camping areas also have contributed to increased stormwater runoff, erosion, and sedimentation. Proposed campground rehabilitation would improve the effectiveness and efficiency of park operations in this portion of the park while improving the quality of the visitor experience and safety at the campground, and protecting park scenic and natural resources.

This Environmental Assessment (EA) evaluates two alternatives: a no action alternative and a preferred action alternative (preferred alternative). Under the no action alternative, the park would continue to use the campground in its current condition. The no action alternative would not address the flooding issues that currently occur in the campground, degraded campsites, and poor vehicle circulation. The existing campground would remain inadequate to meet administrative and visitor needs. The preferred alternative would install new drainage channels to divert stormflow from the campground into Black Rock Canyon. Roads would be realigned from the current upslope-downslope direction to an alignment across the slope to improve drainage and traffic circulation. Campsites would be reconfigured for better access and definition, with provisions for group and walk-in campsites. Campground rehabilitation would also include improvements to the existing horse camp, new comfort stations, inter-campground trails, and other infrastructure improvements. The redesign and rehabilitation of the campground would provide the greatest protection of property, health, and safety, both within the campground and in downstream residential areas, from erosion and local flooding.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet objectives of the proposal, 2) evaluates potential issues and impacts on Joshua Tree's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of those impacts. Resource topics evaluated in detail in this EA are soils and geology; water resources; floodplains; vegetation; wildlife; special status species; visitor use

and experience, public health, safety, and park operations; visual quality; and socioeconomics and gateway communities. All other resource topics were dismissed because the project would result in negligible to minor effects. No major effects were identified as a result of the proposed project. No adverse effects on cultural resources under Section 106 of the National Historic Preservation Act would occur. The preferred alternative may affect, but is unlikely to adversely affect, the federally listed desert tortoise with implementation of conservation measures. A biological assessment was submitted to the U.S. Fish and Wildlife Service for review. Public scoping was conducted to assist with the development of this EA and comments were received and considered in the evaluation of effects.

Public Comment

If you wish to comment on this EA, you may post comments online using the National Park Service Planning, Environment and Public Comment (PEPC) website at: <http://parkplanning.nps.gov/jotr> or mail comments to:

Superintendent
Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, California 92277

This EA will be on public review for 30 days. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

CONTENTS

INTRODUCTION 1

Project Purpose and Need 3

Project Purpose 3

Project Need 3

Background 4

Purpose and Significance of Joshua Tree National Park 5

Related Planning Documents 6

Joshua Tree National Park General Management Plan/ Development Concept

Plan/Environmental Impact Statement 6

NPS Management Policies 2006 6

Scoping 7

Impact Topics Retained for Further Analysis 7

Impact Topics Dismissed from Further Analysis 10

Wetlands 10

Prime or Unique Farmland 10

Air Quality 11

Climate Change 11

Natural Soundscapes 12

Lightscape 13

Environmental Justice 13

Archeology 14

Historic Structures 14

Indian Trust Resources 15

Ethnographic Resources 15

Cultural Landscapes 15

Museum Collections 16

Wilderness 16

ALTERNATIVES 17

Introduction 17

No Action Alternative 17

Preferred Alternative 19

Roads and Site Circulation 20

Drainage and Utilities 22

Campsites 22

Buildings and Facilities 23

Trailheads 24

Phasing Plan 24

Staging Areas and Construction Disturbance 28

Construction Schedule and Costs 29

Sustainability 29

Resource Protection Measures 30

Alternatives Considered but Eliminated from Detailed Analysis 34

Alternative Campground Design 34

CONTENTS

Environmentally Preferred Alternative 35

Alternatives Comparison Table 35

Impact Summary 36

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 41

Introduction 41

General Methods 41

Cumulative Effects 42

Methods for Assessing Cumulative Effects 42

Past and Current Actions 42

Future Actions 43

Soils and Geology 43

Affected Environment 43

Impact Intensity Threshold 43

Environmental Consequences 44

Water Resources 46

Affected Environment 46

Impact Intensity Threshold 46

Environmental Consequences 47

Floodplains 48

Affected Environment 48

Impact Intensity Threshold 49

Environmental Consequences 50

Vegetation 51

Affected Environment 51

Impact Intensity Threshold 52

Environmental Consequences 53

Wildlife 54

Affected Environment 54

Impact Intensity Threshold 55

Environmental Consequences 56

Special Status Species 57

Affected Environment 57

Impact Intensity Threshold 60

Environmental Consequences 61

Visitor Use and Experience 64

Affected Environment 64

Impact Intensity Threshold 65

Environmental Consequences 66

Public Health, Safety, and Park Operations 68

Affected Environment 68

Impact Intensity Threshold 68

Environmental Consequences 69

Visual Resources 70

Affected Environment 70

Impact Intensity Threshold 70

Environmental Consequences 71

Socioeconomics and Gateway Communities 73

Affected Environment	73
Impact Intensity Threshold	73
Environmental Consequences	74
CONSULTATION AND COORDINATION	77
Internal Scoping	77
External Scoping	77
Agency Consultation	77
American Indian Consultation	78
Environmental Assessment Review and Recipients	78
COMPLIANCE WITH FEDERAL AND STATE REGULATIONS	79
LIST OF PREPARERS AND CONTRIBUTORS	81
REFERENCES	82
APPENDIXES	85
Appendix A – Scoping Notice	87
Appendix B – Floodplain Statement of Findings	91

TABLES

Table 1. Impact Topics Retained for Further Analysis and Relevant Laws, Regulations, and Policies	9
Table 2. Black Rock Campground Construction Phases	26
Table 3. Resource Protection Measures	30
Table 4. Alternatives Comparison	36
Table 5. Impact Summary Table	36
Table 6. Soils and Geology Impact and Intensity Thresholds	44
Table 7. Water Resources Impact and Intensity Thresholds	46
Table 8. Floodplain Impact and Intensity Thresholds	49
Table 9. Vegetation Impact and Intensity Thresholds	52
Table 10. Wildlife Impact and Intensity Thresholds	56
Table 11. Federally Listed Species with Potential Occurrence in the Project Area	58
Table 12. State Sensitive Wildlife Species with Potential Occurrence in the Project Area	59
Table 13. Sensitive Plant Species with Potential Occurrence in the Project Area	60
Table 14. Special Status Species Impact and Intensity Thresholds	61
Table 15. Overnight Visitor Use at Black Rock Campground in 2011	65
Table 16. Visitor Use and Experience Impact and Intensity Thresholds	65
Table 17. Public Health, Safety, and Park Operations Impact and Intensity Thresholds	68
Table 18. Visual Resources Impact and Intensity Thresholds	71
Table 19. Socioeconomics and Gateway Communities Impact and Intensity Thresholds	73
Table 20. Environmental Compliance Requirements	79

CONTENTS

FIGURES

- Figure 1. Joshua Tree National Park 2
- Figure 2. Deteriorating Campground Road and Stormwater Pathway 4
- Figure 3. Existing Black Rock Campground 18
- Figure 4. Black Rock Campground 19
- Figure 5. Proposed Black Rock Campground Improvements 21
- Figure 6. Black Rock Campground Improvement Phases 25

APPENDIXES

- Appendix A – Scoping Notice
- Appendix B – Floodplain Statement of Findings

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
ADA	American with Disabilities Act
BMP	Best Management Practice
CEQ	Council on Environmental Quality
cfs	cubic feet per second
DO	Directors Order
DSC	Denver Service Center
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FCR	Field contact representative
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	Green House Gas
GMP	General Management Plan
Management Plan	General Management Plan/Environmental Assessment
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
NRCS	Natural Resource Conservation Service
PEPC	Planning, Environment and Public Comment
SHPO	State Historic Preservation Officer
SOF	Statement of Findings
USFWS	U.S. Fish and Wildlife Service

[This page intentionally left blank]

ENVIRONMENTAL ASSESSMENT

BLACK ROCK CAMPGROUND REHABILITATION

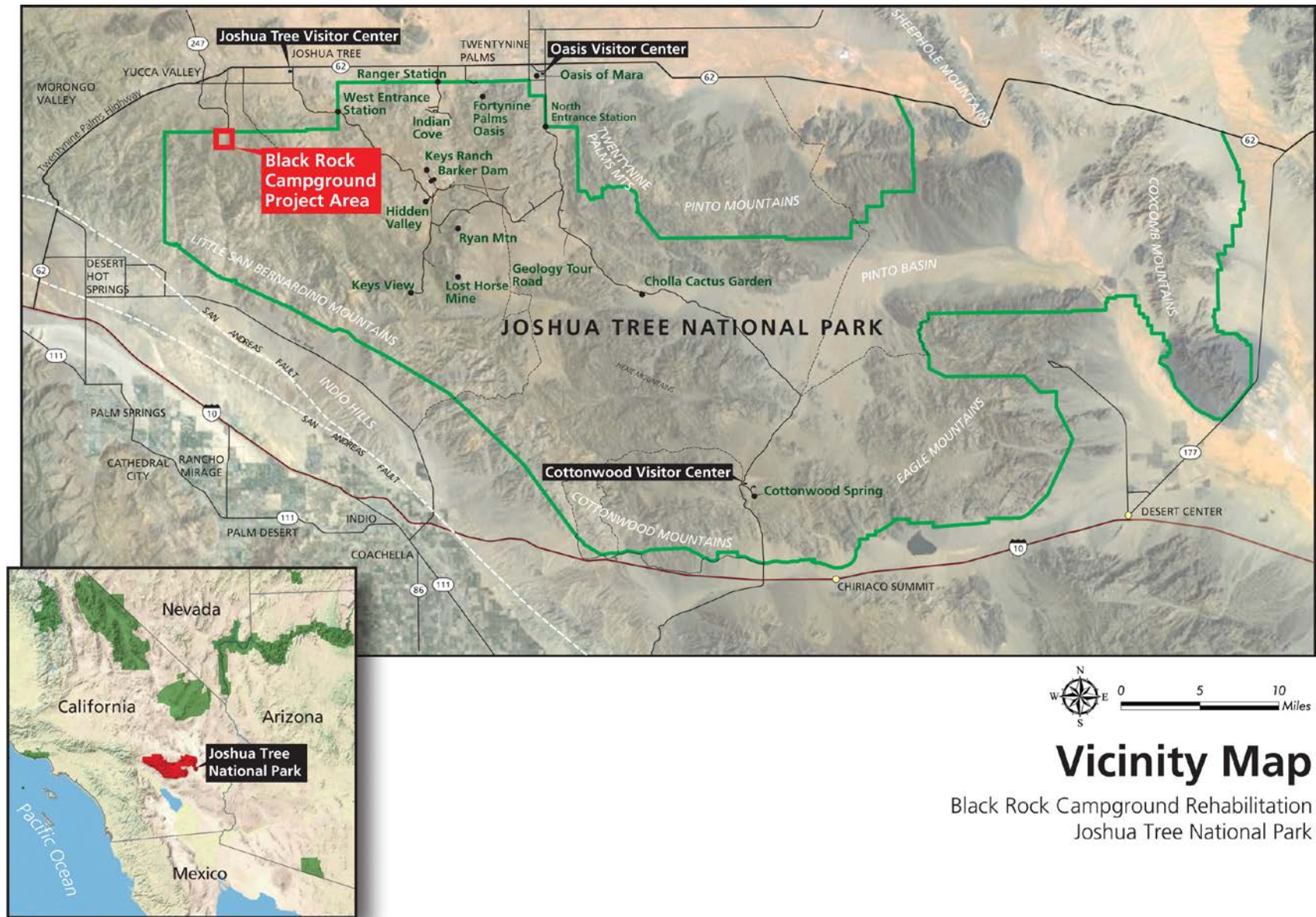
JOSHUA TREE NATIONAL PARK

INTRODUCTION

Joshua Tree National Park (Joshua Tree or park) of the National Park Service (NPS), is considering repair, rehabilitation, and reconstruction of the Black Rock campground (campground) in the northwest corner of the park near the community of Yucca Valley, California (Figure 1). The preferred alternative would include reconfiguring campground roads and campsites, adding drainage improvements, and protecting park facilities and natural resources from further deterioration. Currently the large Black Rock Canyon watershed outside of the boundaries of the campground conveys storm runoff through portions of the campground in an unpredictable manner, resulting in localized erosion and flooding. The campground, which was acquired by the NPS in 1975 from a commercial operator, was not designed to adequately convey drainage away from campground facilities. Campground roads are currently aligned so that stormwater runs directly down the roads with the potential for damaging campground facilities, natural resources, and adjacent private property.

This Environmental Assessment (EA) was prepared to evaluate potential impacts on natural and cultural resources and the socioeconomic environment associated with the proposal to rehabilitate the campground. This EA also evaluates a no action alternative in which the park would continue operation of the campground in its current configuration without substantial modifications or improvements. This EA was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations, 40 CFR Parts 1500-1508 and NPS Director's Order (DO) 12 and Handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making*. The EA would determine whether significant impacts would occur as a result of the proposed project and if an environmental impact statement (EIS) or finding of no significant impact (FONSI) would be required. The NPS has found that the preferred alternative would not have an adverse effect on properties eligible for the National Register of Historic Properties (NRHP or National Register). A biological assessment was submitted to the U.S. Fish and Wildlife Service for review and concurrence.

FIGURE 1. JOSHUA TREE NATIONAL PARK



PROJECT PURPOSE AND NEED

Project Purpose

The purpose of the proposed project is to improve drainage and the configuration of campground roads and campsites to provide the greatest protection of property, health, and safety, both within the campground and in downstream residential areas, from erosion and local flooding. Proposed campground rehabilitation also is needed to prevent further deterioration of natural resources and to improve the quality of the visitor experience. The objectives of the proposed project are to:

Provide for Visitor Enjoyment and Safety

- Reduce the potential for local flooding in the campground and provide a safe environment for park visitors
- Improve campsite layout for better definition of campsite limits, parking, and better segregation of vehicle, group, walk-in, and horse campsites
- Improve circulation for vehicles, pedestrians, equestrian riders within the campground
- Efficiently implement rehabilitation work while minimizing visitor impacts

Improve the Efficiency of Park Operations

- Address damaged campground roads, inadequate drainage, and other structural features that require replacement, repair, or rehabilitation
- Reduce maintenance requirements and costs due to deteriorating road and campground conditions from stormwater, erosion, and flood damage
- Provide park employees with a safe and healthy work environment to better meet park goals and improve operating efficiency

Protect Park and Private Property Resources

- Improve drainage function in the campground to protect park resources and reduce the likelihood for damage to downstream private property from periodic flooding
- Protect and restore native vegetation in the campground

Project Need

Black Rock campground is in an area that periodically receives stormwater runoff from the large upslope watershed. High-intensity short-duration rainfall events generate surface runoff that is currently conveyed through the campground in an unpredictable manner resulting in localized erosion and flooding. Uncontrolled stormflows through the campground threaten the nature center, comfort stations, and other structures and facilities. Erosion and flood damage also present an ongoing maintenance issue for park staff to repair areas damaged from stormwater runoff. Localized flooding also presents a safety risk to park visitors and staff. In addition, stormwater that leaves NPS property is generally conveyed

down Black Rock Canyon Road, which can result in flooding, sediment deposition, and damage to private property north of the campground.

The campground, which was acquired by the NPS in 1975 from a commercial operator, was not designed to adequately convey drainage away from campground facilities. Campground roads are currently aligned so that stormwater runs directly down the roads with the potential for damaging campground facilities, natural resources, and adjacent landowner property (Figure 2). Degraded roads, sparse vegetation and soil compaction from visitor use, and poor campsite layout also have contributed to increased storm runoff, erosion, and sedimentation. The proposed repair, rehabilitation, and reconstruction work for the campground would be designed to address these deficiencies.

FIGURE 2. DETERIORATING CAMPGROUND ROAD AND STORMWATER PATHWAY



Background

The Black Rock campground was originally developed as a commercial operation known as “Yogi Bear’s Jellystone Park Campground” built in 1971. The campground originally hosted numerous activities including a miniature golf course; outdoor theatre; pavilion for roller skating and square dancing; large rodeo arena; heated swimming pool; playground; sports area (tennis, basketball, volleyball, tetherball, horseshoes, and shuffleboard); large ranger station; general store; as well as traditional picnic areas, campsites, and community fire pits. The NPS purchased the campground in 1975 and subsequently the park took over operation of the campground and renamed it the Black Rock campground. Since NPS acquisition, the park has tried to restore the campground to a more rugged and natural setting by removing the majority of the “Yogi Bear’s Jellystone Park Campground” amenities such as the miniature golf course, swimming pool, and playground. Since the acquisition, significant NPS investment has occurred within the campground including extensive repair

of roads, drainage, and camping areas; reconstruction of two comfort stations; repairs to and remodel of the nature center; and construction of the adjacent Interagency Fire Center and Housing.

Recognizing the need for additional improvements to address degraded roads and camping areas, drainage concerns, and erosion and sedimentation, the park held a design charrette between March 26 and March 31, 2006 to develop concepts for redesigning and rehabilitating the campground. Following the design charrette, a value analysis was conducted by the NPS to compare the advantages of the design concepts (NPS 2006a). The current effort builds on the results of the design charrette and value analysis to refine the preferred alternative, conduct a flood study of Black Rock Canyon (NPS 2012a), and evaluate the impacts of proposed improvements.

PURPOSE AND SIGNIFICANCE OF JOSHUA TREE NATIONAL PARK

Joshua Tree is about 169 miles southeast of Los Angeles. The park was formed in 1936 as Joshua Tree National Monument and was upgraded to a national park in 1994. The park is a 794,000-acre natural area that protects portions of the Mojave and Colorado deserts. Several mountain ranges traverse the park including the Little San Bernardino, Pinto, Coxcomb, Cottonwood, Hexie, and Eagle ranges. The park ranges in elevation from 5,900 feet on Quail Mountain to 1,000 feet at Pinto Well. More than 80% of the park is wilderness and numerous historical, archeological, and cultural sites are in the park.

The purposes and significance of Joshua Tree, as outlined in the *General Management Plan, Development Concept Plan/Environmental Impact Statement* (NPS 1995), underlie how the national park is managed. The purposes tell why the park was set aside in the national park system. The significance of the park addresses why the area is unique—why it is important enough to our natural and/or cultural heritage to warrant national park designation, and how it differs from other parts of the country.

The purposes of Joshua Tree National Park are to:

- Protect and interpret cultural resources such as historic sites, structures, and artifacts associated with prehistoric and historic Native American groups, historic miners, and ranchers.
- Protect scenic, scientific, cultural, educational, and other values contributing to the public enjoyment of such lands.
- Protect the biologically diverse examples of the Colorado and Mojave deserts.
- Use the resources in the park as a laboratory for understanding and managing the Colorado and Mojave deserts.

Joshua Tree National Park is significant for the following reasons:

- The park is comprised of two biologically different desert environments, the Mojave and Colorado deserts, which merge within its boundaries to create an

unusual ecological transition zone. Lush palm tree oases and springs provide for historic uses of spring water and draws attention to the importance of water in the desert environment.

- The Joshua tree, with its unusual shape and adaptation, is a perfect vehicle for understanding the interdependence of organisms living in the desert.
- Plants and animals have evolved to survive in the heat and drought. These adaptations produced an interesting array of life forms. Humans, from prehistoric times to present, also adapted to an environment with little water. People who have made this area their home have adapted and have provided a colorful and varied human history.
- The picturesque landscape features, including the mountain ranges, desert basins, and rock piles, all contribute to the significance of the park. The dynamic processes that formed in this area, including erosion and earthquakes continue.

RELATED PLANNING DOCUMENTS

Joshua Tree National Park General Management Plan/ Development Concept Plan/Environmental Impact Statement

The Joshua Tree general management plan (GMP or management plan) was prepared in 1995 after the park was changed from a monument to a national park by Congressional action (NPS 1995). The management plan envisioned a number of upgrades to the Black Rock campground such as changing the campsite layout to improve the quality of the visitor experience and increase privacy; repaving roads and improving parking and trailheads; redesigning the horse camp layout; and making other improvements. Continued operation of the Black Rock Canyon nature center for environmental education and visitor contact also was a component of the management plan. The management plan did not specifically address drainage improvements, but erosion, local flooding issues, and deterioration of the campground have increased since the management plan was completed. The management plan also identified the need to maintain visitor activities and services and to protect natural and cultural resources.

NPS Management Policies 2006

The proposed rehabilitation of the Black Rock campground is consistent with NPS *Management Policies 2006*, which provides guidance for management of all national park campgrounds. Park facilities are addressed in Chapter 9, which states:

- When campgrounds are determined to be necessary, their design will accommodate the differences between recreation-vehicle camping and tent camping, and cultural landscapes, terrain, soils, vegetation, wildlife, climate, special needs of users, visual and auditory privacy, and other relevant factors will be considered.

NPS *Management Policies 2006* also provides direction for the protection of park resources including impacts on natural systems resulting from human disturbances to soils,

vegetation, water, hydrologic patterns, accelerated erosion, sedimentation; and the disruption of natural processes. In such cases the NPS will seek to return such disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated using the best available technology.

SCOPING

To inform the public and agencies about the proposed project and updates since the design charrette in 2006, a public scoping announcement was released on June 7, 2011. The scoping notice was sent to approximately 145 entities and individuals on the park's mailing list including government officials, environmental groups, businesses, and individuals. A scoping letter was sent to the California State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), U.S. Fish and Wildlife Service (USFWS), and Native American tribes traditionally associated with the park. More information regarding external scoping and agency and tribal consultation can be found in the "Consultation and Coordination" section on page 77.

In addition, the park posted a press release on their website regarding the proposed project. The scoping notice and press release requested public and agency comment on the proposed project and announced the public scoping meeting that was held at the Black Rock campground nature center on June 28, 2011. The park requested comments on the proposed project by July 28, 2011.

One written comment from the public was received during the scoping meeting held on June 28, 2011 at the Black Rock campground nature center. This comment suggested use of vaults to capture runoff for reuse. No other written comments were received during the 30-day comment period; however, several comments were expressed during the public scoping meeting. These comments included:

- Concern about the amount of stormwater flowing down Black Rock Canyon Road.
- What measures will be used to reduce and slow runoff?
- Will the campground remain open?
- Are there any future plans to address repairs to Black Rock Canyon Road?

All public scoping comments were considered in the planning process and preparation of the EA. The public, agencies, and American Indian tribes traditionally associated with the lands of Joshua Tree will have an opportunity to review and comment on this EA.

IMPACT TOPICS RETAINED FOR FURTHER ANALYSIS

In this section and the following section on "Impact Topics Dismissed from Further Analysis," the NPS takes a "hard look" at all potential impacts by considering the direct, indirect, and cumulative effects of the preferred alternative on the environment, along with connected and cumulative actions. Impacts are described in terms of context and duration.

The context or extent of the impact is described as local, parkwide, or regional. The duration of impacts is described as short-term, ranging from days to three years in duration; or long-term, extending up to 20 years or longer. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The NPS equates “major” effects as “significant” effects. The identification of “major” effects would trigger the need for an EIS. Where the intensity of an impact could be described quantitatively, the numerical data are presented; however, most impact analyses are qualitative and use best professional judgment in making the assessment.

The NPS defines “measurable” impacts as moderate or greater effects and “no measurable effects” as minor or less effects. “No measurable effect” is used by the NPS in determining if a categorical exclusion applies or if impact topics may be dismissed from further evaluation in an EA or EIS. The use of “no measurable effects” in this EA pertains to whether the NPS dismisses an impact topic from further detailed evaluation in the EA. The reason the NPS uses “no measurable effects” to determine whether impact topics are dismissed from further evaluation is to concentrate on the issues that are truly significant to the action in question in accordance with CEQ regulations at 1500.1(b), rather than amassing needless detail.

In this section of the EA, the NPS provides a limited evaluation and explanation as to why some impact topics are not evaluated in more detail. Impact topics are dismissed from further evaluation in this EA if:

- they do not exist in the analysis area, or
- they would not be affected by the proposal, or the likelihood of impacts are not reasonably expected, or
- through the application of mitigation measures, there would be minor or less effects (i.e., no measurable effects) from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Due to there being no effect or no measurable effects, there would either be no contribution toward cumulative effects or the contribution would be low. For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct, indirect, and cumulative effects is presented.

Issues and impact topics for this project have been identified on the basis of federal laws, regulations, and orders; NPS *Management Policies 2006*; and NPS knowledge of resources at Joshua Tree, as well as the questions and comments brought forth during internal and external scoping. Impact topics that are carried forward for further analysis in this EA are listed below in Table 1 along with the reasons why the impact topic is further analyzed.

TABLE 1. IMPACT TOPICS RETAINED FOR FURTHER ANALYSIS AND RELEVANT LAWS, REGULATIONS, AND POLICIES

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Soil and Geologic Resources	Drainage improvements, new roads, and rehabilitation of the campground have the potential for disturbance to geologic features and soil resources.	NPS <i>Management Policies 2006</i>
Water Resources	Existing drainage in the campground is inadequate for conveyance of stormflows to the natural drainage. Uncontrolled surface contributes to erosion and effects water quality. Proposed drainage improvements would affect surface hydrology and water quality.	Clean Water Act; Fish and Wildlife Coordination Act of 1934 (PL 85-624), as amended; EO 12088; NPS <i>Management Policies 2006</i> ; NPS-77
Floodplains	The campground is currently exposed to periodic flooding. Drainage and road improvements that reduce the potential for flooding in the campground would add additional flow to Black Rock Canyon, with the potential for affecting the flood risk downstream from the campground.	EO 11988, Floodplain Management; DO-77-2: <i>Floodplain Management</i>
Vegetation	Road realignment, drainage work, and campsite modifications would result in disturbance to native vegetation communities including Joshua trees. The introduction of invasive nonnative species is possible from ground-disturbing activities during construction.	NPS Organic Act; NPS <i>Management Policies 2006</i> ; Resource Management Guidelines (NPS-77); Federal Noxious Weed Control Act; Executive Order (EO) 13112; Invasive Species (1999)
Wildlife	Wildlife may be displaced by ground-disturbing activities and impacts on habitat during construction.	NPS Organic Act; NPS <i>Management Policies 2006</i> ; NPS-77; Migratory Bird Treaty Act
Special Status Species	The project area includes habitat and evidence of the threatened desert tortoise. Two federally listed plant species potentially occur near the project area and other state sensitive species could occur in the project area.	Endangered Species Act; NPS <i>Management Policies 2006</i> ; 16 USC 1535 Section 7(a)(2)
Visitor Use and Experience	Rehabilitation of the popular campground would improve the quality of the visitor experience, although visitors may be inconvenienced during construction. Lack of access to the Black Rock campground during construction could put additional pressure on other park campgrounds.	NPS <i>Management Policies 2006</i>
Public Health, Safety, and Park Operations	Periodic flooding in the campground poses a safety concern for park visitors and staff. Flooding and related campground deterioration is damaging park infrastructure and increases maintenance costs. Damage to private property north of the park is also a concern. Proposed measures address these issues require evaluation.	NPS <i>Management Policies 2006</i> ; OMB Circular A-123; Federal Managers' Financial Integrity Act of 1982 (31 USC 3512(d)); Government Performance and Results Act of 1993
Visual Quality	Drainage and rehabilitation work would result in a change in the configuration of the campground and the layout of campsites.	NPS <i>Management Policies 2006</i>

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Socioeconomics and Gateway Community	The campground and associated facilities and trails are a community resource for nearby residents. Proposed campground improvements may affect access, traffic, noise, and other activities. Construction related expenditures for labor, supplies, and materials would generate employment and spending beneficial to the local economy. Addressing local downstream flooding issues is needed to protect NPS and private property values from flood related damage.	<i>NPS Management Policies 2006</i>

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The following presents an overview of impact topics that were considered but ultimately dismissed from further analysis. Impact topics were dismissed from further analysis if it was determined that the project did not have the potential to cause substantial change to these resources and values. The regulatory context and baseline conditions relevant to each impact topic were analyzed in the process of determining if a topic should be retained or dismissed from further analysis. An outline of background information used in considering each topic is provided below along with the reasons for dismissing each topic from further analysis.

Wetlands

EO 11990, *NPS Management Policies 2006*, and DO-77-1 direct that wetlands be protected, and that wetlands and wetland functions and values be preserved. These orders and policies further direct that direct or indirect impacts on wetlands be avoided when practicable alternatives exist. The project area is covered by upland vegetation typical of the Mojave Desert. Black Rock Canyon is a dry wash that does not contain any wetland vegetation. No wetlands occur in the campground or the proposed area of disturbance. Because there would be no impacts on wetlands from the proposed project or the no action alternative, wetlands was dismissed as an impact topic in this EA.

Prime or Unique Farmland

In 1980, the Council on Environmental Quality (CEQ) directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the United States Department of Agriculture, Natural Resources Conservation Service (NRCS). Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; and unique farmland produces specialty crops such as fruits, vegetables, and nuts. There are no prime or unique farmlands associated with the project area; therefore, prime or unique farmland was dismissed as an impact topic in this EA.

Air Quality

Joshua Tree is a designated Class I airshed, which under the Clean Air Act, prevents significant deterioration of air quality. This air quality classification is designed to protect the majority of the country from air quality degradation. Earthwork and road construction would temporarily increase dust and vehicle emissions under the preferred alternative. All work would conform to Southern Coast Air Quality Management District Rule 403 to ensure that no dust escapes from the work site. This would include application of water or other dust suppressants as needed during earthwork and other air quality mitigation measures as listed in Table 3. With implementation of these measures the preferred alternative would have a local short-term negligible effect on air quality from fugitive dust. In addition, campground and road improvements would have a long-term beneficial effect by reducing erosion and sediment deposition on roads that generate dust from vehicle traffic.

Hydrocarbons, nitrogen oxide, and sulfur dioxide vehicle and equipment emissions during construction would rapidly dissipate by wind into the atmosphere; and visibility, deposition, and other air quality-related values are not expected to be appreciably impacted from these short-term emissions. The short-term effects of the preferred alternative on air quality would be negligible and adverse. The long-term effects of the preferred alternative would be local and beneficial. Neither park or regional air quality would be more than negligibly affected by the short-term increase in emissions. The no action alternative would continue to have a negligible effect on existing air quality from erosion and sediment deposition on roads that then generate dust from wind and vehicle traffic. Because the preferred alternative would result in local short-term negligible adverse effects and long-term minor beneficial effects, and the no action alternative would have a negligible effect, air quality was dismissed as an impact topic in this EA.

Climate Change

Climate change refers to any significant changes in average climatic conditions (such as mean temperature, precipitation, or wind) or variability (such as seasonality and storm frequency) lasting for an extended period (decades or longer). Recent reports by the U.S. Climate Change Science Program, the National Academy of Sciences, and the United Nations Intergovernmental Panel on Climate Change provide evidence that climate change is occurring as a result of rising greenhouse gas (GHG) emissions and could accelerate in the coming decades. While climate change is a global phenomenon, it manifests differently depending on regional and local factors. General changes that are expected to occur in the future as a result of climate change include hotter, drier summers; warmer winters; warmer water; higher ocean levels; more severe wildfires; degraded air quality; more heavy downpours and flooding; and increased drought. Climate change is a far-reaching, long-term issue that could affect Joshua Tree, its resources, visitors, and management. Although some effects of climate change are considered known or likely to occur, many potential impacts are unknown. Much depends on the rate at which temperatures would continue to rise and whether global emissions of GHGs can be reduced or mitigated. Climate change science is a rapidly advancing field and new information is being collected and released continually.

Joshua Tree strives to incorporate the principles of sustainable design and development into all facilities and park operations. Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for

present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques. Value analysis and value engineering, including life-cycle cost analysis, is also performed to examine energy, environmental, and economic implications of proposed management decisions and development. The park also encourages suppliers, permittees, and contractors to follow sustainable practices.

Construction activities associated with implementation of the preferred alternative would contribute to increased GHG emissions, but such emissions would be short-term, ending with the cessation of construction. Any effects of construction-related GHG emissions on climate change would not be discernible at a regional scale, as it is not possible to meaningfully link the GHG emissions of such individual project actions to quantitative effects on regional or global climatic patterns. Therefore, climate change was dismissed from further evaluation in this EA.

Natural Soundscapes

An important part of the NPS mission is preservation of natural soundscapes associated with national park units as indicated in *NPS Management Policies 2006* and *DO-47: Sound Preservation and Noise Management*. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all natural sounds within the park, together with the physical capacity for transmitting natural sound through air, water, or solid material. Acceptable frequencies, magnitudes, and durations of human-caused sound varies among national park units, as well as potentially throughout each park unit, but are generally greater in developed areas and less in undeveloped areas.

The campground is bordered by wilderness to the east, west, and south and is adjacent to low-density residential development associated with the town of Yucca Valley. Any construction associated with implementation of the alternatives (e.g., the hauling of material or the operation of construction equipment) could result in dissonant sounds, but such sounds would be temporary. Impacts on wilderness from noise disturbance are evaluated under “Wilderness.” Portions of the campground would remain open during construction and no long-term increase in the soundscape would occur following construction.

Joshua Tree strives to preserve the natural soundscape associated with the physical and biological resources of the park. Construction-related noise and disturbance of proposed facilities would have a short-term minor adverse impact on the soundscape. Because the number of campsites would remain similar to existing conditions, the rehabilitated campground would likely experience the same amount of visitors and traffic, which would result in about the same noise level as current conditions. The no action alternative would have no impact on the existing soundscape. For these reasons, natural soundscapes was dismissed as an impact topic in this EA.

Lightscape

In accordance with NPS *Management Policies 2006*, the NPS strives to preserve natural ambient landscapes, which are natural resources and values that exist in the absence of human-caused light. Joshua Tree strives to limit the use of artificial outdoor lighting to that necessary for security and human safety. Joshua Tree also strives to ensure that all outdoor lighting is shielded to the maximum extent possible to keep light on the intended subject and out of the night sky.

Black Rock campground is located at the edge of the town of Yucca Valley with lighting from adjacent roads and nearby residences contributing to ambient lighting. There would be no detectable increase in light pollution above ambient conditions in the campground under the preferred alternative. Any new or replacement light would use full cutoff luminaires light fixtures that minimize upward light emissions and impacts to the lightscape and night sky. Campground lighting would be limited to the amount necessary for campground operations, security, and safety. No night construction would be allowed. Should any security lighting be required for construction equipment this lighting would use downcast color temperature lighting (<3500degrees Kelvin) to minimize glare. Mitigation measures to protect the lightscape are included in Table 3. The preferred alternative would not increase the ambient night lighting from existing conditions and may reduce light emissions with any new light fixtures. Thus, the preferred alternative would have no adverse effect on the night sky. The no action alternative would have no affect on the existing lightscape because no additional lighting would be added. For these reasons, lightscape was dismissed as an impact topic in this EA.

Environmental Justice

Presidential EO 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, environmental justice is the

...fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

The goal of ‘fair treatment’ is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects, and identify alternatives that may mitigate these impacts.

Yucca Valley and surrounding communities contain both minority and low-income populations; however, environmental justice is dismissed as an impact topic for the following reasons:

- The park staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the preferred alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population.
- The impacts associated with implementation of the preferred alternative would not disproportionately affect any minority or low-income population or community.
- Implementation of the preferred alternative would not result in any identified effects that would be specific to any minority or low-income community.

Archeology

Section 106 of the NHPA of 1966, as amended (16 USC 470, et seq.) and its implementing regulations under 36 CFR 800, require all federal agencies to consider effects of federal actions on cultural properties eligible for or listed in the National Register. In order for an archeological site to be listed in the National Register, it must be associated with an important historic event or person(s), embody distinctive characteristics or qualities of workmanship, or have the potential to provide information important to history or prehistory. An archeological inventory was conducted for Black Rock campground and Black Rock Canyon in 2008 (NPS 2010); however, the area of potential effect for archeological resources is confined to the campground rehabilitation work. No archeological resources potentially eligible for listing on the National Register were located within the campground. An archeological site (CA-SBR-1435/H) is located near Black Rock Spring, but no work is proposed for this area. Because archeological sites would not be affected by the proposed project, and because appropriate steps would be taken to protect any archeological features that are inadvertently discovered, archeology was dismissed as an impact topic in this EA.

Historic Structures

Section 106 of the NHPA of 1966, as amended (16 USC 470, et seq.) and its implementing regulations under 36 CFR 800, require all federal agencies to consider the effects of federal actions on historic properties, including historic structures, eligible for or listed in the National Register. In order for a structure to be listed in the National Register, it must be associated with an important historic event or person(s), embody distinctive characteristics or qualities of workmanship, or have the potential to provide information important to history or prehistory. An archeological inventory conducted for Black Rock campground and Black Rock Canyon in 2008 (NPS 2010) found no historic structures and only insignificant historic features not eligible for listing on the National Register within the area of potential

effect. Any historic features within the campground were removed during early development of the park (NPS 2010). Because no historic structures or features in the area of potential effect would be affected by the no action alternative or the preferred alternative, this topic was dismissed from further discussion in this EA.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts on Indian trust resources from a proposed project or action by U.S. Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights. The order represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. No Indian trust resources are in Joshua Tree. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of American Indians due to their status as American Indians. Therefore, Indian trust resources were dismissed as an impact topic in this EA.

Ethnographic Resources

The NPS defines ethnographic resources as any “site, subsistence, or other significance in the cultural system of a group traditionally associated with it” (DO-28). Consultation was initiated with the Agua Caliente Band of Cahuilla Indians, Augustine Band of Mission Indians, Cabazon Band of Cahuilla Mission Indians, Cahuilla Band of Mission Indians, Colorado River Indian Tribe, Fort Mojave Indian Tribe, Los Coyotes Band of Mission Indians, Morongo Band of Cahuilla Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres-Martinez Band of Desert Cahuilla Indians, and Twentynine Palms Band of Mission Indians with an informational letter describing the project and a request for comments on the preferred alternative. No scoping comments were received from American Indian tribes and no specific issues related to ethnographic resources were identified. No specific issues related to ethnographic resources have been identified in past consultations for actions in Black Rock campground or as of the date of this publication. If subsequent issues or concerns are identified, appropriate consultations would be undertaken. Because it is unlikely that ethnographic resources would be affected by the preferred alternative, and because appropriate steps would be taken to protect any ethnographic resources that are inadvertently discovered, ethnographic resources was dismissed as an impact topic in this EA.

Cultural Landscapes

According to DO-28: *Cultural Resource Management Guideline* (page 87), a cultural landscape is

...a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as

roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.

The NPS has not conducted a cultural landscape inventory specific to the Black Rock campground. However, prior to the acquisition of the campground in 1976 by the NPS, the campground was privately developed as a 'Yogi Bear Jellystone' campground facility. Since acquisition by the NPS, much of the original Jellystone amenities have been removed to naturalize the landscape such that little is left of the original development. As such, cultural landscapes were dismissed as an impact topic in this EA because no significant cultural landscapes occur in the project area.

Museum Collections

Museum collections include historic artifacts, natural specimens, and archival and manuscript material. These collections may be threatened by fire, temperature, humidity, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventive conservation, supplemented by conservation treatment, when necessary. The primary goal is preservation of artifacts in the most stable condition possible to prevent damage and minimize deterioration. The preferred alternative and no action alternative would not affect the museum collections of Joshua Tree. Given the lack of archeological resources within the project area, it is unlikely that anticipated ground disturbance would generate additional artifacts during discovery situation and even if artifacts were discovered during construction monitoring, the park museum collections would not increase appreciably as a result. Because they would not be adversely impacted by either alternative, museum collections were dismissed as an impact topic in this EA.

Wilderness

NPS wilderness management policies are based on statutory provisions of the Organic Act of 1916, the Wilderness Act of 1964, and legislation establishing individual national park system units. Joshua Tree contains 591,624 acres of wilderness. Black Rock campground is bordered by wilderness on three sides – to the east, west, and south. However, the proposed project area is outside of wilderness boundaries and, therefore, is not subject to Wilderness Act requirements. Construction-related noise and disturbance would result in a local short-term negligible adverse effect on the natural quiet typically found in wilderness areas, but would have no long-term effect. To minimize dispersal of noise into adjacent wilderness areas during construction, sound attenuating barriers would be installed on the perimeter of construction zones. This as well as other noise mitigation measures listed in *Soundscales* in Table 3 would be applied. The no action alternative would have no effect on wilderness. Because of the short-term negligible indirect adverse effects on wilderness during construction with mitigation measures and the absence of direct adverse effects on wilderness resources and values, this topic was dismissed from further evaluation in this EA.

ALTERNATIVES

INTRODUCTION

This chapter describes the no action alternative and the preferred alternative for rehabilitation and drainage improvements at Black Rock campground. Under the no action alternative, the park would continue to use existing facilities at the present level of management, operations, and maintenance. The preferred alternative was developed to address the project purpose and need and to meet the objectives to provide for visitor enjoyment and safety, improve the efficiency of park operations, and protect park and private property.

The preferred alternative presents the NPS's management preferred alternative and defines the rationale for the action in terms of resource protection and management, visitor and operational use and cost, and other applicable factors. Other alternatives that were considered but eliminated from detailed analysis are discussed in this chapter. Also included in this chapter is a comparison of how well the alternatives meet the project objectives, and a summary comparison of the environmental effects of the alternatives.

NO ACTION ALTERNATIVE

Under the no action alternative, the campground would not be rehabilitated and the existing drainage and flooding problems would not be addressed. The park would continue operation of the campground in its current configuration without substantial modifications or improvements (Figure 3 and Figure 4). Park staff would continue to maintain campground facilities and repair damage from stormwater events to the extent possible. Drainage problems would persist, which would continue to impact buildings, roads, and infrastructure. Runoff from the campground would continue to flow along Black Rock Canyon Road through an adjacent Yucca Valley residential neighborhood. No funds would be expended for construction of a reconfigured campground and drainage system; however, the costs to clean up and repair damage caused by flooding would continue.

The no action alternative provides a basis for comparison with the preferred alternative and the respective environmental consequences. Should the no action alternative be selected, the NPS would respond to future needs and conditions without major actions or changes in the present course.

FIGURE 3. EXISTING BLACK ROCK CAMPGROUND

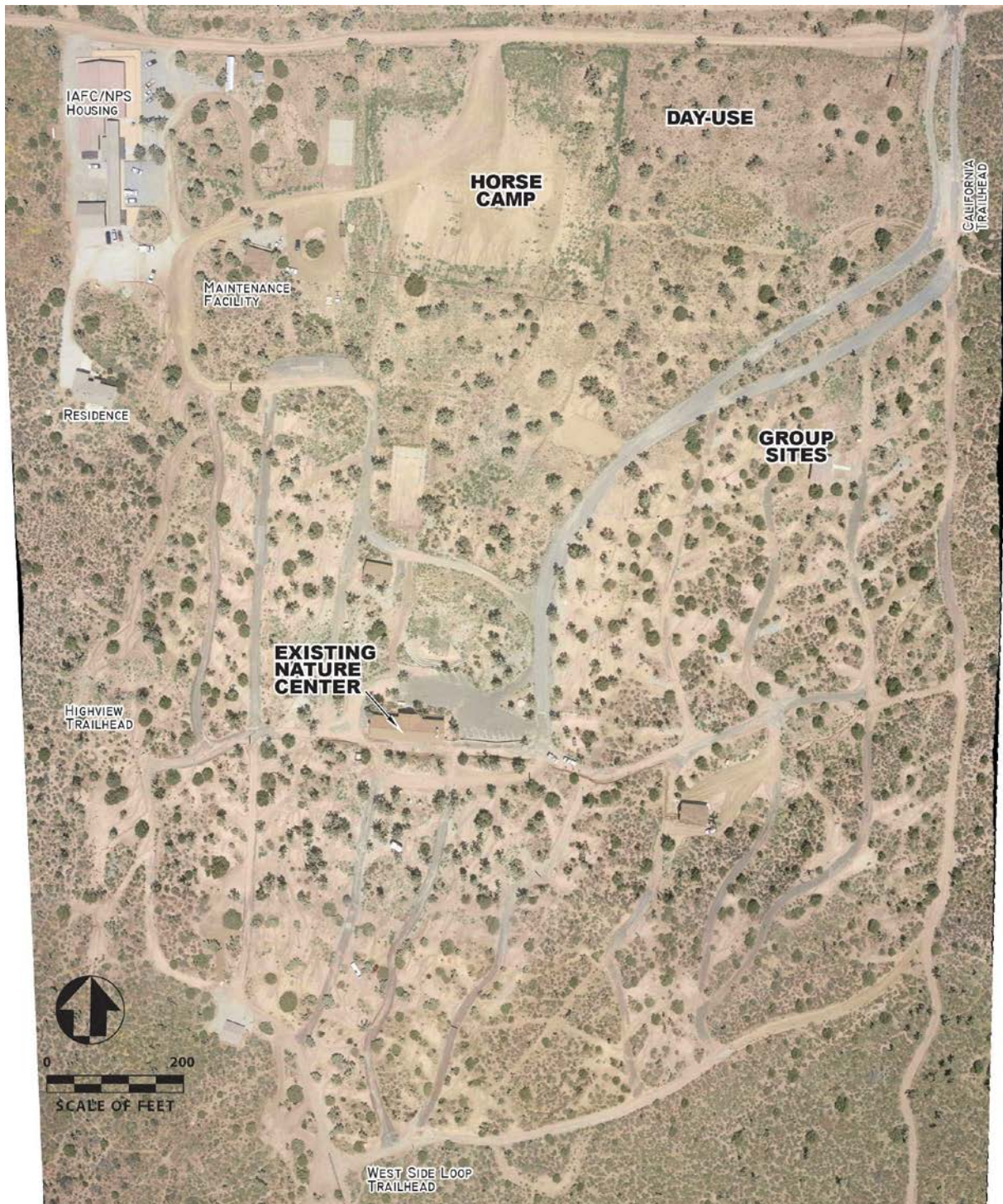


FIGURE 4. BLACK ROCK CAMPGROUND

PREFERRED ALTERNATIVE

Initial concepts for campground improvements began with a design charrette in 2006 to determine the best approach the park could take to help reduce stormwater runoff in Black Rock campground and residential areas adjacent to the park boundary (NPS 2007a). Other goals included actions to repair, rehabilitate and redesign roads, parking areas, campsites, and other facilities. In addition, all components should be designed to maximize accessibility. During charrette, each component was assessed to ensure that the installation could be accomplished in conformance with American with Disability Act (ADA) standards (NPS 2007a). Participants in the design charrette included the NPS, user groups, and the public. Following the design charrette, the NPS conducted a value analysis to identify the design concept that provided the greatest advantages in relationship to cost. Concept C provided the greatest control of runoff both within the campground and downstream, the most significant improvement in traffic circulation, better diversity and segregation of camping experiences, enhanced safety, and the maximum efficiencies in organization and maintenance. Since the design charrette and value analysis was completed, the NPS conducted a *Drainage Analysis and Flood Study of Black Rock Campground Canyon* and further refined Concept C as the preferred alternative for campground improvements (NPS 2012a). The redesign and rehabilitation of the campground would provide the greatest protection of property, health, and safety, both within the campground and in downstream residential areas, from erosion and local flooding.

The preferred alternative is proposed to rehabilitate the existing campground roads, drainage, campsite layout, buildings, and infrastructure to better protect property, health,

and safety within the campground and in downstream residential areas. Components of the preferred alternative, which are more fully described below, include:

- Reconfiguration and reconstruction of the campground roads and circulation;
- Reconstruction of horse, recreational vehicle (RV), car, and host campsites;
- Construction of walk-in and group campsites;
- Construction of new buildings and facilities, including a location for a future visitor center, comfort stations, day use facilities, and an amphitheatre;
- Rehabilitation of existing trailheads; and
- Construction of new utilities and drainage facilities.

Roads and Site Circulation

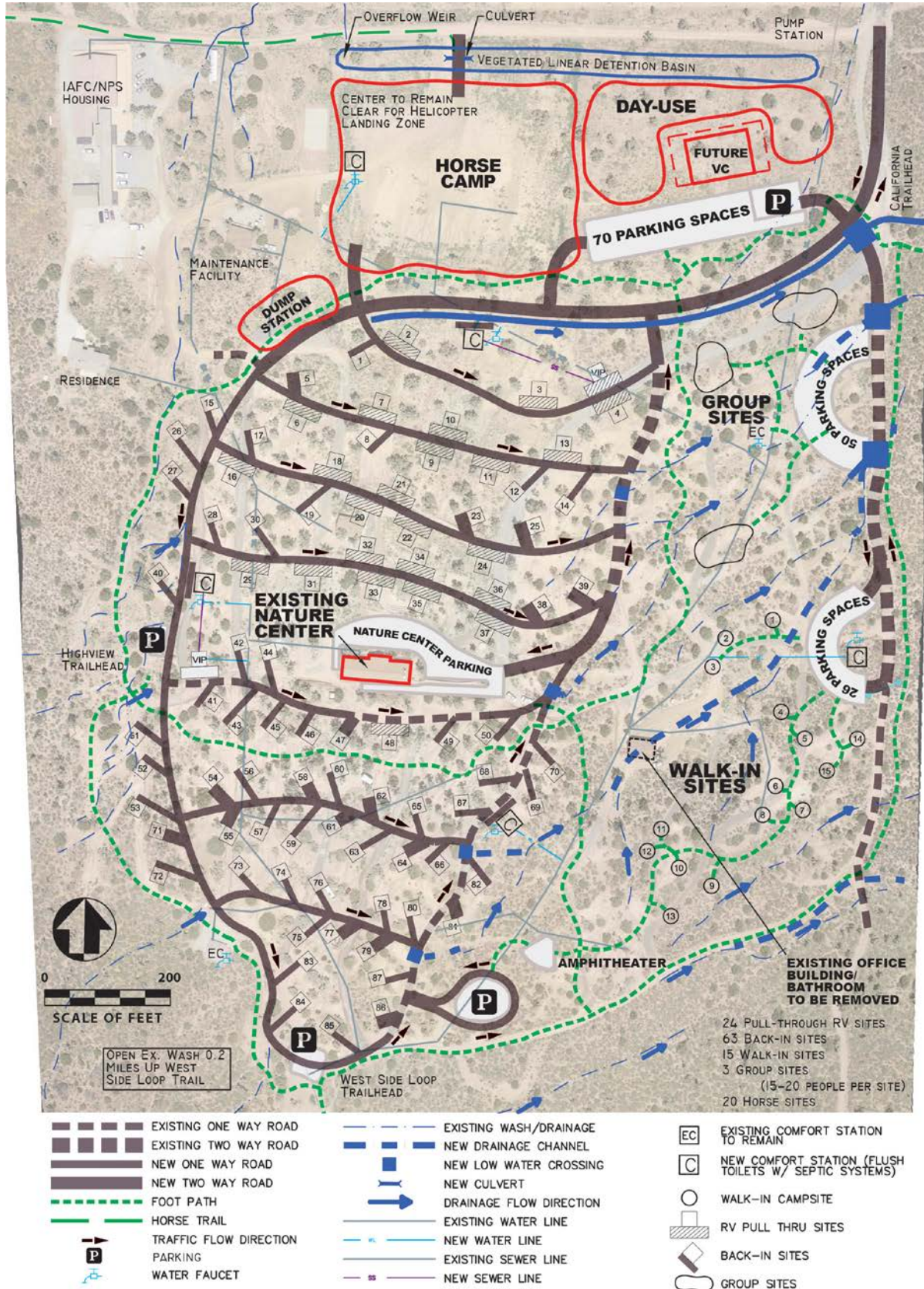
The existing roads within the campground are aligned up and down the slope, so they act as a conveyance mechanism during storm events. The nature of the existing road network allows for a substantial amount of stormflow through the campground, which results in localized flooding and property damage that requires substantial maintenance. The existing road alignment further jeopardizes the protection of property, health, and safety both within the campground and to the downstream residential area because there is currently no controlled runoff or flood conveyance system.

In order to rectify the existing drainage and flooding problem, the roads in the campground would be reconfigured to eliminate the majority of the north-south roads, and on-site and off-site runoff would be collected in multiple locations and conveyed to Black Rock Canyon (Figure 5). Reconfigured roads and campsites would also facilitate improved traffic circulation in the campground.

These following measures would be used to reduce the storm event flows through the campground:

- Construct a two-way entry road that would replace the existing divided entry road.
- Construct a loop road that extends from the northern end of the campground to the southern end. The loop road would be one-way, with the exception of a two-way portion from the entry road to the existing nature center parking lot.
- The loop road would have one-way crossroads oriented east-west to access campsites. Several of these crossroads also would be used to intercept and convey runoff easterly to the existing wash.
- The existing dirt road along the eastern edge of the campground would be paved to accommodate two-way traffic and provide access to the proposed group and walk-in campsites.

FIGURE 5. PROPOSED BLACK ROCK CAMPGROUND IMPROVEMENTS



Drainage and Utilities

New stormwater drainage channels, in conjunction with the east-west crossroads within the inner loop road would be constructed throughout the campground to intercept and direct flow east to the existing Black Rock Canyon to prevent stormwater runoff from flowing north through the campground to the adjacent residential neighborhood and Black Rock Canyon Road. Proposed improvements would reduce the amount of concentrated flows and associated erosion in the campground and downstream residential area by dispersing flows through drainage channels to Black Rock Canyon. The proposed conveyance channels would be a combination of roadside ditches and open-flow channels. Low-flow water crossings would be used where drainage channels cross campground roads (Figure 5).

The drainage from the four off-site drainage catchments that convey water through the campground would be captured by a combination of drainage channels and the drainage ditches that would parallel the new east-west aligned roads. Stormflow captured by these channels and roadside ditches would help disperse runoff and reduce the potential for flooding and associated damage. In addition, a currently plugged dry wash about 0.2 mile south (upslope) of the campground near the West Side Trail Loop would be opened to reduce the amount of off-site runoff entering the campground and divert it around the campground to Black Rock Canyon.

The preferred alternative also includes installation of new water service to the comfort stations and proposed VIP campsites. Additionally, new sanitary sewer service would be installed from the proposed VIP campsites to the proposed septic systems for the comfort stations.

Campsites

Currently the campground has approximately 100 campsites, 4 overflow sites, 2 host sites, and a horse camp that can accommodate 20 campsites, for a total of 126 campsites. Proposed campsite improvements would reconfigure the campground to provide 2 host sites, 24 RV sites, 63 car sites, 3 group sites, 15 walk-in sites, and a horse camp area that would accommodate 20 campsites, for a total of 127 campsites (Figure 5).

The RV, car, and host sites would be accessed from the inner loop and crossroads as described in the “Road and Site Circulation” section above. Each RV and host site would be designed with a pull-through parking spot for up to a 27-foot RV and a camping pad with picnic table and fire ring. Host sites would be equipped with septic (sanitary) and water hook-ups. The host septic hook-ups would connect to the septic system of the nearest comfort station. Each car campsite would be designed with a back-in parking spur to accommodate two cars and camping pad with three tent pads, a picnic table, and a fire ring.

Group and walk-in sites would be constructed to the east of the loop road (Figure 4). Separate parking lots would be constructed for the group (50 parking spaces) and walk-in sites (26 parking spaces) with foot trails from the parking lot to each site. Each group campsite would have a common camping pad with nine tent pads, six picnic tables, and three

fire rings. Each walk-in campsite would have a common camping pad with two tent pads, one picnic table, and one fire ring.

The horse camp would be constructed to the north of the inner loop road and would have 20 back-in campsites that each accommodates one vehicle with a 20-foot horse trailer. Each horse campsite would have a corral, picnic table, and fire ring.

Redevelopment of the campground layout also includes measures to reduce on-site runoff and reconfiguration of the drainage patterns to disperse the flow.

Buildings and Facilities

Several new buildings and facilities are proposed in association with the rehabilitated campground. One such facility is the day use area at the north side of the campground near the entrance. The day use area would be directly east of the horse camp and would include picnic tables with ramadas, barbecue grills, and a parking lot with approximately 12 spaces.

Under the preferred alternative, five new 24-hour accessible comfort stations, in addition to existing accessible comfort stations, would be constructed throughout the campground. Three comfort stations would be located within the inner loop road in the vicinity of the RV and car campsites, one would be located adjacent to the walk-in campsites, and one would be located adjacent to the horse camp. The comfort stations would have water service, flush toilets treated by septic systems, and electric service. A two-car accessible parking pull-out would be provided at each comfort station.

The existing office building, at the proposed walk-in campsite area, is situated directly in an existing drainage channel and is at risk of flooding and property damage. This building would be demolished and the office space would be relocated to the existing nature center as part of the proposed improvements.

An amphitheatre with a 10-car parking lot would be constructed at the south end of the campground between the inner loop road and walk-in campsites. A new RV dump station would be added at the north end of the campground, west of the horse camp and the existing dump station removed and reclaimed.

The preferred alternative would allocate an area for a future new visitor center near the campground entrance and adjacent to the day use area. The new visitor center would share a parking lot with the day use area, which could be expanded to support a total of about 70 parking spaces. The visitor center would also serve as the campground entrance station, fee collection office, a small visitor center, and as a location for interpretive presentations, and educational events and seminars. The existing nature center would remain operational until a new visitor center is constructed. Construction of a new visitor center depends on future available funding. Once the new visitor center is constructed, the old nature center would be demolished and the area would potentially be reconfigured as RV and/or car campsites; disturbed areas would be revegetated.

Trailheads

The campground currently provides access to three trailheads — California, High View, and West Side Loop. Under the preferred alternative, four-car parking areas would be constructed at each trailhead. Minor trailhead realignment would be done for connection to the parking area.

Phasing Plan

Campground improvements and drainage work would be conducted in phases, so that portions of the campground could remain open during construction (Figure 6). Proposed campground modifications would be constructed in eight phases with an additional ninth phase to construct a new visitor center as funding becomes available (Table 2). The phases were prioritized to address the drainage improvements that provide for the greatest level of improved protection to property, health, and safety. Construction phasing was designed to provide for continuity of both the campground operation and drainage conveyance between phases. Each phase would be completed as a stand-alone construction project with campground and drainage functionally independent with each phase and integrated following final construction. Striping, signs, and roadside barriers would be implemented during each phase as appropriate. Additional detail on construction phases is provided below.

Phase 1, Upper Drainage Improvements

The first phase would target drainage improvements at the upper end of the campground to provide the greatest level of flood and drainage improvements. These drainage improvements include rock-lined channels, paved roads, roadside drainage channels, and low-water crossings. In addition, this phase would include constructing the linear vegetated detention basin at the north end of the campground (south of the horse camp area), reopening the existing wash 0.2 mile up the West Side loop trail, and installing the water faucets and water service for the existing and proposed comfort stations within the phase 1 area. The portion of the campground south of the existing nature center would be closed for the duration of both phases 1 and 2.

Implementation of drainage improvements in phase 1 would divert a substantial portion of the drainage from the upper south end of the campground to Black Rock Canyon; thus, providing a significant reduction in the off-site runoff flowing through the campground and the volume of runoff generated and conveyed within the campground. The vegetated linear detention basin would further provide for detention and infiltration of runoff at the downslope north end of the campground prior to discharge to existing drainages north of the horse camp and Black Rock Canyon Road.

FIGURE 6. BLACK ROCK CAMPGROUND IMPROVEMENT PHASES

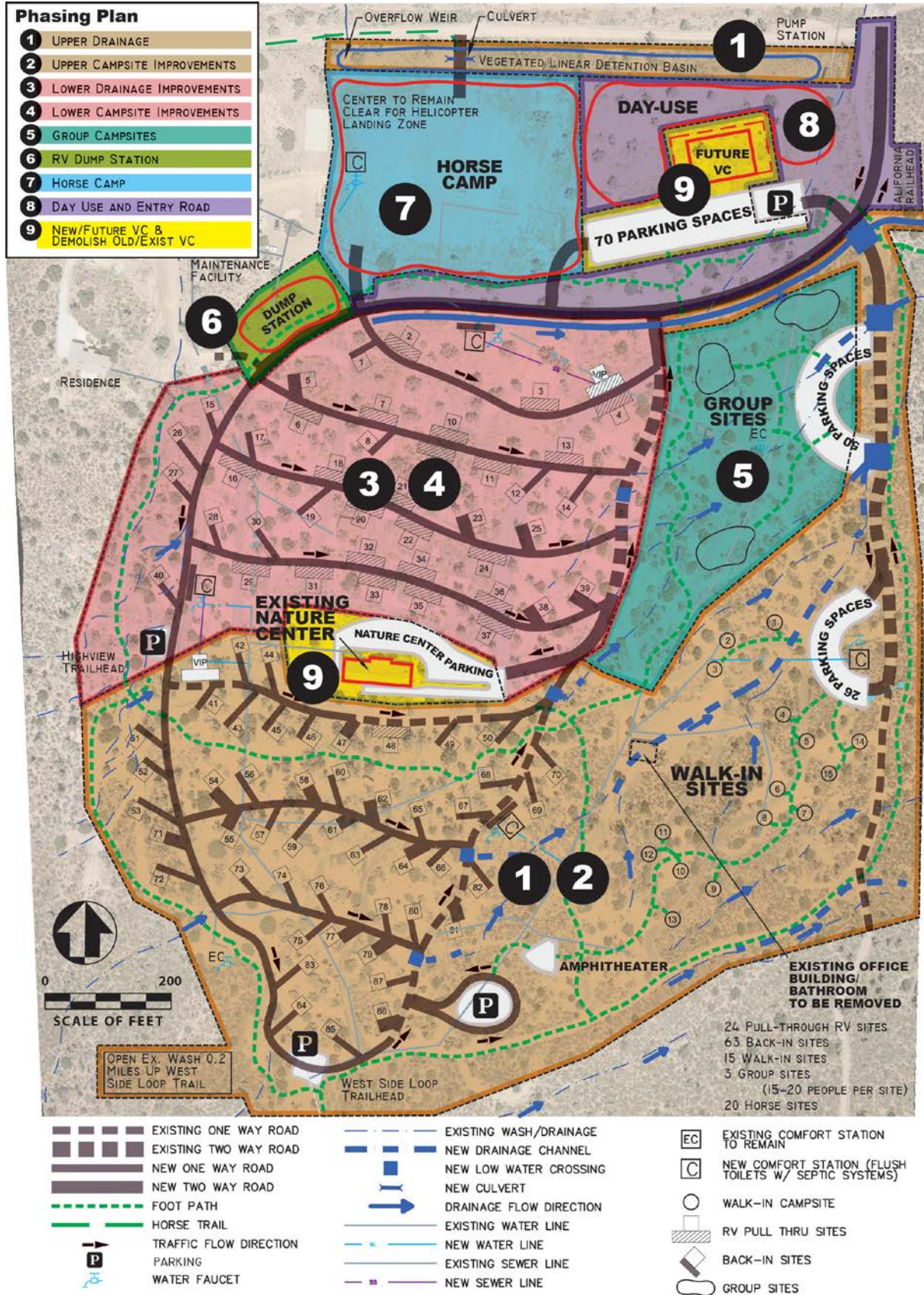


TABLE 2. BLACK ROCK CAMPGROUND CONSTRUCTION PHASES

Phase	Phase Name	Work Item
1	Upper Drainage Improvements	<ul style="list-style-type: none"> • Drainage improvements to south and southeast of existing nature center including rock-lined channels and low-water crossings • Inner loop road and east-west crossroads south of existing nature center • North-south road along east edge of campground • Open existing wash along west loop trail • Vegetate linear detention basin • Water lines and faucets at comfort stations
2	Upper Campground Campsites	<ul style="list-style-type: none"> • Campsites within inner loop road to the south of existing nature center (46 car, 1 RV, 1 VIP) • Walk-in campsites including trails, parking lot, and comfort station • Comfort station • Amphitheatre and parking lot • West side trailhead improvements • Trails
3	Lower Drainage Improvements	<ul style="list-style-type: none"> • Drainage improvements to the north of existing nature center including rock-lined channels and low-water crossings • Inner loop road and east-west crossroads north of existing nature center • Water lines and faucets at comfort stations
4	Lower Campground Campsites	<ul style="list-style-type: none"> • Campsites within inner loop road to the north of existing nature center (17 car, 23 RV, 1 VIP) • Two comfort stations • Highview trailhead improvements • Trails
5	Group Campsites	<ul style="list-style-type: none"> • Group campsites including trails and parking lot
6	RV Dump Station	<ul style="list-style-type: none"> • RV dump station including plumbing, hook-ups, and paving • Trails
7	Horse Camp	<ul style="list-style-type: none"> • Horse camp including entry road and drive aisles • Comfort station
8	Day Use Area and Campground Entry Road	<ul style="list-style-type: none"> • Day use area • Parking area • Entry road • California trailhead improvements
9	Visitor Center	<ul style="list-style-type: none"> • The visitor center would also serve as the campground entrance station, fee collection office, a small visitor center, and as a location for interpretive presentations, and educational events and seminars.

Phase 2, Upper Campground Campsites

In this phase, all campsite improvements in the area of the road and drainage improvements constructed in phase 1 would be constructed. This would include 46 car sites, 1 RV site, and 1 VIP campsite; a comfort station; parking spurs; campsite amenities such as tent pads, tables, and fire rings; and foot trails. The walk-in campsites and associated parking lot, trails, amenities, and comfort station would be constructed in this phase. An amphitheatre, amphitheatre parking lot, and West Side loop trailhead improvements also would be constructed during this phase.

Campground improvements would further reduce the amount of on-site runoff generated and, therefore, reduce the flows through the campground and to the downstream residential area. Upon completion of phase 2, the entire southerly portion of the campground would be complete and available for public use. About 60% of the drainage work would be implemented following completion of phase 2.

Phase 3, Lower Drainage Improvements

The third phase would target the remainder of the drainage improvements for the campground, while still providing campground use in other portions of the campground. Drainage improvements include rock-lined channels, paved roads, roadside drainage channels, and low-water crossings. These improvements would complete most of the drainage system improvements, which would further reduce the drainage and flood flows through the campground. Phase 3 also would include the water faucets and water service for the existing and proposed comfort stations.

The area north of the existing nature center would be closed during phases 3, 4, and 5. Visitors and staff attempting to access the portions of the campground completed during the first two phases would be temporarily routed around construction activities via gravel or paved roads (to be determined in the final design).

Phase 4, Lower Campground Campsites

Campsites (except the group site, which is scheduled for phase 5) in the area of the road and drainage improvements from phase 3 would be constructed. These improvements include the proposed campsites to the north of the existing nature center (17 car sites, 23 RV sites, and 1 VIP campsite) including two comfort stations; parking spurs; campsite amenities such as tent pads, tables, and fire rings; and foot trails. The Highview trailhead improvements would be constructed during this phase. These improvements would reduce the amount of on-site runoff generated. Upon completion of phase 4, this area of the campground would be completely open and available for public use.

Phase 5, Group Campsites

Phase 5 completes the remaining drainage system improvements and constructs the group campsites, parking lot, trails, and amenities. Visitors and staff would be temporarily routed around construction activities via gravel or paved roads (to be determined in the final design). These improvements would reduce the amount of on-site runoff generated; reduce the flows through the campground and to the residential area downstream; and further protect property, health, and safety.

Phase 6, RV Dump Station

In this phase, the RV dump station, including all plumbing, hook-ups, and paving, would be constructed. The foot trails adjacent to the RV dump station would also be constructed.

Phase 7, Horse Camp

The horse camp would be reconstructed during this phase. This would include the entry road to the horse camp from the main entry road, drive aisles, and campsite amenities such as corrals, tables, and fire rings, as well as a comfort station.

Phase 8, Day Use Area and Campground Entry Road

In this phase, the day use area and parking lot would be constructed with all landscaping, trails, picnic tables, and barbecue grills. Also during this phase, the 20-foot-wide two-way entry road from the campground entrance to the loop road, proposed foot trails in this area, and California trailhead improvements would be constructed.

Phase 9, Visitor Center

The Black Rock campground rehabilitation allocates an area for a future visitor center. Construction of the new visitor center is not a component of the current campground rehabilitation, but the visitor center was incorporated into the site plan should future funding be available. A design for the visitor center would likewise be developed in the future and would include all landscaping, sidewalks, parking lot expansion, plumbing, and electrical work. If a new visitor center is constructed, the existing nature center would be demolished and additional car and RV campsites would be constructed in the existing nature center location.

Staging Areas and Construction Disturbance

Temporary staging areas for material, supplies, and equipment during construction would be located within disturbed areas of the campground and adjacent park property. Any excess rock, soil, and native material would be stored in existing storage areas within the park. If necessary, excess material would be transported out of the park. Base aggregate, asphalt, concrete, and other materials would be delivered to the park from sources outside the park.

Much of the existing campground has been disturbed by existing roads, campsites, structures, parking areas, formal and informal trails, and erosion caused by inadequate drainage. The proposed campground rehabilitation and drainage improvements would occur within approximately 48 acres of the existing campground. New facilities would be located, to the extent feasible, within areas of previous disturbance and temporarily disturbed areas would be revegetated with native vegetation following construction. Anticipated construction disturbances include:

- **New roads.** About 8,680 linear feet of new road, including about 2,180 feet of two-lane road and 6,500 feet of one-lane road with a disturbance area of about 2.8 acres.
- **Repavement of existing roads.** About 1,040 linear feet (0.9 acre) of existing road would be repaved. Approximately 12,400 linear feet (4.6 acres) of existing road would be removed and incorporated into the new campground layout, as would portions of other existing structures and the existing RV dump station.
- **New parking lots.** About 1.7 acres of new parking areas would be constructed, including paved portions of the existing horse camp and RV dump station.
- **Campsite parking spurs.** New off-road parking spurs would result in paving about 1.2 acres. In addition, re-grading the new campsites would disturb about 1.6 acres of land, including use of aggregate rock for camp pads.
- **Trails.** About 9,450 feet of new trails (1.1 acres) within the campground would be constructed.
- **Drainage channels.** Construction of 2,350 linear feet (0.6 acre) of new drainage channels with a width of about 12 feet would be used to convey water through and around the campground. A 0.7-acre vegetated stormwater detention basin would be constructed north of the horse camp.
- **Comfort stations.** Five new comfort stations would impact about 2,000 square feet.
- **Visitor center.** About 7,000 square feet have been allocated for construction of a new visitor center. The actual size of the visitor center may vary when plans are developed. The existing 4,000-square-foot visitor center and 0.04-acre parking area would be converted to space for campsites and revegetation.

The proposed campground and drainage work would require excavation and removal of about 29,850 cubic yards of material from the site for road construction, parking, drainage, and other improvements. About 25,480 cubic yards of asphalt, aggregate, and rock would be imported to the site.

Construction Schedule and Costs

The entire cost of the project, including the new visitor center, is \$14.8 million. Phases 1 through 8 would cost \$10.7 million and phase 9, construction of the new visitor center, would cost \$4.1 million. Construction of each phase is contingent on the availability of funds sufficient to complete individual phases.

Sustainability

The Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development. The objectives of sustainability are to design park facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to maintain and encourage native biodiversity; to construct and retrofit facilities using energy-efficient materials and building techniques; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and

practices through sustainable design and ecologically sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The preferred alternative subscribes to and supports the practice of sustainable planning and design. These principles would be applied in the Black Rock campground rehabilitation by correcting drainage deficiencies, reducing the potential for localized flood, limiting and mitigating resource impacts, and promoting conservation principles by recycling of materials.

RESOURCE PROTECTION MEASURES

Resource protection measures and best management practices to protect natural resources, cultural resources, and other values, as described in Table 3, would be implemented under the preferred alternative.

TABLE 3. RESOURCE PROTECTION MEASURES

Resource Area	Measure
General Considerations	<p>Construction zones would be identified with construction fence, silt fence, or similar material prior to construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction zone. No machinery or equipment would access areas outside the construction limits.</p> <p>Construction equipment staging would occur within existing disturbed areas such as parking lots. Off-site equipment and vehicle parking would be limited to designated staging areas.</p> <p>Contractors would be required to properly maintain construction equipment (i.e., mufflers and brakes) to minimize noise. Construction vehicle engines would not be allowed to idle for extended periods.</p> <p>Material and equipment hauling would comply with all legal load restrictions. Load restrictions on park roads are identical to state load restrictions with such additional regulations as may be imposed by the park superintendent.</p> <p>Water sprinkling would be used, as needed, to reduce fugitive dust in work zones. Pooling of water would be avoided in order to protect wildlife.</p> <p>All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion.</p>
Air Quality	<p>All work shall conform to Southern Coast Air Quality Management District Rule 403 for control of fugitive dust.</p> <p>Water shall be sprayed over exposed soil, during dry conditions to minimize fugitive dust. A dust suppressant shall be applied as needed.</p> <p>Water will be use during grading operations, excavations or removals to control fugitive dust.</p> <p>Onsite particulate (dust) monitoring shall be arranged on windy days.</p> <p>Construction activity will not be conducted on days where wind speed exceeds 25 mph.</p> <p>Dust monitor shall provide weekly reports on dust abatement effectiveness</p> <p>Vegetation would be chipped or mulched on-site rather than disposing of it off-site or burning it.</p> <p>Trucks transporting soil or aggregate material to or from the project area would be covered to reduce or eliminate particle release during transport.</p> <p>Contractors would be encouraged to travel in groups to and from the project site to the extent possible (rather than in multiple separate vehicles).</p> <p>Local labor sources and large-volume material delivery would be used where possible to minimize trip generation during construction activity.</p>

Resource Area	Measure
Air Quality (Continued)	<p>Construction vehicle and equipment idling would be restricted to no longer than 15 minutes when not in use.</p> <p>Construction vehicle speeds would not exceed construction zone posted speed limits to reduce dust and possible wildlife/vehicular incidents.</p> <p>A biodiesel fuel mix would be used rather than traditional diesel fuel.</p>
Noise	<p>All motor vehicles and equipment would have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise.</p> <p>Sound attenuation devices (such as rubber strips or sheeting) would be installed and maintained on all equipment. This includes truck tail and other gate dampeners (both opening and closing) for all dump trucks on the project.</p> <p>Use of unmuffled compression brakes would be prohibited within park boundaries.</p> <p>The use of air horns within the park would not be allowed except for safety.</p> <p>The contractor must use muffled pumping equipment for water withdrawals and water diversion (i.e., pump and generator to reduce noise to levels similar to that of the average ambient noise levels).</p> <p>An 8-foot tall noise attenuation barrier would be installed adjacent to work zones to reduce dispersal of construction noise to adjacent wilderness and private property. NPS would direct the placement of the noise attenuation barrier for each phase of construction.</p> <p>Construction activity shall be limited to daytime activity only. Between dusk and dawn no detectable increase in sound shall occur above the current ambient level.</p> <p>Soundscape baseline shall be established prior to construction.</p>
Lightscape	<p>Construction would be limited to daylight hours.</p> <p>Any new or replacement outdoor lighting would use full cut off luminaires to minimize light pollution and impacts to the nightsky. As a result of this project no detectable increase in light pollution (above current ambient level) shall occur.</p> <p>Light pollution baseline shall be established prior to construction.</p> <p>Any white night lighting of staging areas for equipment security would use 3,500 degree Kelvin color temperature lights.</p>
Water Resources and Floodplain	<p>A stormwater pollution prevention plan would be developed and approved by the park and submitted to the California State Water Resources Control Board prior to commencing construction.</p> <p>Prior to the start of construction, a hazardous spill plan would be required from the contractor stating what actions would be taken in the case of a spill and preventive measures to be implemented. Hazardous spill clean-up materials would be on-site at all times. This measure is designed to avoid/minimize the introduction of chemical contaminants associated with machinery (e.g., fuel, oil, and hydraulic fluid) used in project implementation.</p> <p>Erosion-control best management practices (BMPs) for drainage and sediment control, as identified and used by the NPS, would be implemented during construction to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. These practices may include, but are not limited to, silt fencing, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas to minimize sedimentation and turbidity impacts from construction activities. BMPs would be inspected daily during project work and weekly after project completion, until removed. Accumulated sediments would be removed as needed to maintain the effectiveness of the BMPs. Silt removal would be accomplished in such a way as to avoid introduction into any flowing water bodies.</p> <p>Regular site inspections would be conducted during construction to ensure that erosion-control measures are properly installed and functioning effectively. The operation of ground-disturbing equipment would be temporarily suspended during large precipitation events to reduce the production of sediment.</p>

Resource Area	Measure
Water Resources and Floodplains (continued)	All equipment would be maintained in a clean and well-functioning state to avoid or minimize contamination from fluids and fuels. Prior to starting work each day, all machinery would be inspected for leaks (e.g., fuel, oil, and hydraulic fluid), and all necessary repairs would be made before the commencement of work.
Soil and Geologic Resources	Erosion and sediment control would be required. Topsoil would be removed from areas of construction and stored for later reclamation use. Rock outcrops would be avoided to the greatest extent possible. Temporary barriers would be placed near large outcrops to protect them.
Vegetation	<p>Temporary barriers would be provided to protect existing vegetation. Trees or other plants would not be removed, injured, or destroyed without prior approval.</p> <p>Disturbed areas would be revegetated using native seed sources according to park standard operating procedures. A variety of native plants would be removed, stored in temporary nurseries, and relocated to reclaimed areas.</p> <p>Joshua trees, California juniper, and other trees identified for transplanting would be marked or barricaded to prevent accidental removal or damage.</p> <p>All temporarily disturbed areas would be revegetated using native plants, seeds, or transplants originating from the park, and all efforts would strive to establish the natural spacing, abundance, and diversity of native plants. Until the soil is stable and vegetation is established, erosion-control measures would be implemented to minimize erosion and prevent sediment from reaching streams.</p> <p>Reclaimed / revegetated areas would be monitored after construction to determine if efforts are successful or if additional remedial actions are necessary.</p> <p>To prevent the introduction of, and minimize the spread of, nonnative vegetation and noxious weeds, the following measures would be implemented during construction:</p> <ul style="list-style-type: none"> • Soil disturbance would be minimized. • All construction equipment would be pressure washed and/or steam cleaned before entering the park to ensure that all equipment, machinery, rocks, gravel, and other materials are clean and weed free. • All haul trucks bringing fill materials from outside the park would be covered to prevent seed transport. • Vehicle and equipment parking would be limited to within construction limits or approved staging areas. • Staging areas outside the park would be surveyed for noxious weeds and treated appropriately prior to use. • All fill, rock, and additional topsoil would be obtained from stockpiles from previous projects or excess material from this project, if possible; and if not possible, then weed-free fill, rock, or additional topsoil would be obtained from sources outside the park. NPS personnel would certify that the source is weed free. • Monitoring and follow-up treatment of exotic vegetation would occur after project activities are completed.
Wildlife	The construction contractor would be required to keep all garbage and food waste contained and removed daily from the work site to avoid attracting wildlife (such as ravens and coyotes) into the construction zone. Construction workers would be instructed to remove food scraps and not feed or approach wildlife.
Special Status Species	<p>The following conservation measures would be implemented as part of the preferred alternative to reduce potential impacts on desert tortoise:</p> <ul style="list-style-type: none"> • Only authorized biologists would provide oversight of all activities within the roadway corridor. Authorized biologists are responsible for being aware of the most current USFWS protocols and guidelines for desert tortoise. NPS would submit the names and qualifications of proposed authorized biologists to the USFWS for review and approval at least 15 days prior to initiation of ground-disturbing events. No project-related activity would commence unless one or more authorized biologists have been selected.

Resource Area	Measure
Special Status Species (continued)	<ul style="list-style-type: none"> • An individual would be designated the field contact representative (FCR) to oversee project compliance and coordination. The FCR would be either the authorized biologist or a desert tortoise monitor—approved by the authorized biologist—who is on-site at the time. The field contact representative would coordinate with the USFWS and be authorized to halt any activity that may endanger desert tortoise. • The FCR would be present during all monitoring / survey efforts and construction activities that may affect desert tortoise or desert tortoise habitat. Only the authorized biologist would be allowed to handle / relocate desert tortoise. • Presence / absence surveys would be conducted prior to construction. Clearance surveys would be conducted one week prior to commencement of any construction / rehabilitation activities. All potential desert tortoise burrows within 100 feet of construction or staging areas would be examined. At the completion of construction activities, all materials used to mark or identify the tortoise burrows would be promptly removed. • Prior to the onset of construction activities, a desert tortoise education program would be presented by the FCR to all personnel who would be present on work areas within the project area. Following the onset of construction, any new employee would be required to formally complete the tortoise education program prior to working on site. • Any desert tortoise relocated or otherwise removed from areas undergoing reconstruction would be handled in accordance with the procedures described in Guidelines for Handling Desert Tortoise During Construction Projects (Desert Tortoise Council 1994). These tortoises would be translocated the minimum distance practicable, within appropriate habitat, to facilitate their safety and survival. • Temporary tortoise-proof fencing would be established around all staging areas. Details of tortoise fencing requirements can be found in the biological assessment (NPS 2011). Fence placement and construction would be supervised and approved by the FCR. All tortoise fencing would be dismantled and transported from the site following project completion. Temporary fencing established around staging areas would be inspected at least weekly and corrective action taken to maintain the integrity of the tortoise barrier. Fenced staging areas would include a desert tortoise exclusion gate. This gate would remain closed at all times, except when vehicles are entering or leaving the staging area. If it is deemed necessary to leave the gate open for extended periods of time (e.g., during high traffic periods), the gate may be left open as long as a monitor is present. This monitor would report any tortoise activity to the authorized biologist who, in turn, would take appropriate remedial actions. • All trash and food items generated by construction activities would be promptly contained in raven and coyote-proof containers provided by the contractor. Full containers would be transported regularly off Park lands. The FCR would be responsible for ensuring that trash is removed regularly from the site such that containers do not overflow, and that the trash containers are kept securely closed when not in use. • Vehicles parked in the construction area would be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the vehicle would not be moved until the desert tortoise leaves of its own accord. • If a tortoise is observed, construction would stop and the tortoise allowed to move out of the area on its own. The FCR would maintain a complete record of all encounters with desert tortoise or its sign. The record would include location, date, time, life stage, general condition, identification numbers, and action taken. Within 90 days following the completion of the project, a report of all sightings and related FCR actions would be submitted to the USFWS. • The following activities are not authorized and would require immediate cessation of the construction activities causing the incident, including 1) actions that imminently threaten injury or death to a desert tortoise; 2) unauthorized handling of a desert tortoise, regardless of intent; 3) operation of construction equipment or

Resource Area	Measure
Special Status Species (continued)	<p>vehicles outside a project area cleared of desert tortoise, except on designated roads, and 4) conducting any ground-disturbing activity without a qualified biologist present.</p> <ul style="list-style-type: none"> Any inactive burrow found within 5 feet of the proposed construction limit would be clearly fenced and construction crew members instructed on how to minimize disturbance to it. At the end of construction activities, all materials used to identify tortoise burrows would be promptly removed. If an active burrow is found within 5 feet of the proposed construction limit, all construction activities within 50 feet in any direction of that burrow would stop immediately, and the FCR contacted for direction on how to proceed. <p>Sensitive plant surveys would be conducted prior to disturbance of any suitable habitat. If sensitive species are found, the area would be avoided (if practicable), mitigation measures would be implemented to minimize impacts, or affected plants would be transplanted.</p>
Visitor Experience, Public Health, Safety, and Park Operations	<p>Visitors would be informed in advance of construction activities, the status of available campsites, and any temporary closures via a number of outlets including the park website, newspaper, and other visitor centers.</p> <p>Accommodations would be made during construction to provide for visitor contact, although services may be limited.</p>
Cultural Resources	<p>If, during construction, archeological resources are discovered, all work within 100 feet of the discovery would be halted until the resources are identified by an archeologist. If it is determined that the archeological resources are significant, they would be documented and an appropriate mitigation strategy developed, if necessary, in consultation with the California State Historic Preservation Officer (SHPO), the tribes, and/or Tribal Historic Preservation Officers (THPOs).</p> <p>Should human remains, funerary objects, sacred objects, or objects of cultural patrimony be discovered during construction, park staff would follow provisions outlined in the Native American Graves Protection and Repatriation Act of 1990.</p> <p>Archeological specimens found within the construction area would be removed only by NPS archeologists who meet the Secretary of Interior's Standards, or their designated representatives.</p>
Visual Resources	<p>The drainage system and campground layout would be designed to blend in with the landscape with minimal visual intrusion.</p> <p>The noise attenuation barrier would be constructed with material and colors to blend with the natural environment as feasible.</p>
Socioeconomics and Gateway Communities	<p>Residents near the campground would be kept informed of construction plans and the schedule for each phase of campground rehabilitation.</p>

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Alternative Campground Design

As described previously in the “Background” section, the park conducted a design charrette in 2006 to develop concepts for redesigning and rehabilitating the campground (NPS 2007a). Three campground design concepts were developed during the charrette. Concept A minimizes campground redesign and overall construction impacts by using existing road alignments. The disadvantages of this concept include confusing traffic circulation, limited space for group camping, and increased peak runoff to an existing

residential area wash, with only limited reduction in runoff directed to Black Rock Canyon Road. Concept B also limits campground redesign, but reorients campground roads along the contour and adds more drainage-control features. This alternative would increase runoff to the wash running through a residential area. Concept C, which is the preferred alternative previously described in this EA, was identified as the most advantageous alternative during the design charrette, subsequent value analysis, and following completion of a 2012 drainage analysis (NPS 2012a). Concept C provides the greatest runoff control both within the campground and downstream, the most significant improvement in traffic flow, better diversity and segregation of camping experiences, enhanced safety, and the maximum efficiencies in organization and maintenance. Because Concept C best met the project objectives, concepts A and B were eliminated from further evaluation in this EA.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

According to the CEQ regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative “that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative.”

The preferred alternative for rehabilitation of Black Rock campground is the environmentally preferable alternative for several reasons: 1) it would best preserve the natural resources in the campground because it implements structural improvements with new roads and a campsite layout that would provide long-term protection of environmental resources; 2) drainage improvements would reduce the potential for flooding, erosion, and impacts on water quality; and 3) revegetation of disturbed and degraded areas from erosion and dispersed campsite use would improve vegetation cover and site stability. For these reasons, the preferred alternative causes the least damage to the biological and physical environment and best protects, preserves, and enhances natural resources, thereby making it the environmentally preferable alternative.

By contrast, the no action alternative is not the environmentally preferable alternative because although no construction or ground-disturbing activities would damage previously undisturbed elements of the biological and physical environment 1) it would not protect park natural resources, as the campground and roads would continue to deteriorate without rehabilitation; 2) inadequate drainage could lead to erosion, loss of vegetation, and impacts on water quality and natural resources; and 3) continued high maintenance requirements would not be energy efficient.

ALTERNATIVES COMPARISON TABLE

A comparison of the alternatives and the degree to which each alternative fulfills the needs and objectives of the proposed project is summarized in Table 4.

TABLE 4. ALTERNATIVES COMPARISON

No Action Alternative	Preferred Alternative Rehabilitate Campground
Under the no action alternative, the campground and drainage improvements would not be constructed. Periodic flooding would continue to impact the nature center, park infrastructure, Black Rock Canyon Road, and downstream private property. Funds would continue to be used for cleanup and maintenance following storm events, thereby reducing the efficiency of park operations. Campsite conditions and traffic circulation would remain poor.	Under the preferred alternative, the NPS would construct drainage improvements that would divert stormwater runoff from the campground to Black Rock Canyon. The campground road alignment would be reconfigured across the slope to improve drainage and traffic circulation. Campsites would be rehabilitated to achieve better definition of the campsite limits, increase privacy, and improve access and parking. Other park infrastructure improvements include a day use area, designated group and walk-in campsites, an upgraded horse camp, an amphitheatre, additional comfort stations, new campground trails, trailhead parking, and space for a future new visitor center.
Meets Objectives?	
Safety concerns with periodic campground flooding would not be addressed. Campsite layout, pedestrian and traffic circulation, and parking would remain poor. The efficiency of park operations would not be improved. Maintenance requirements would remain high from deteriorating road conditions, stormwater erosion, and flood damage. Natural resources would continue to be adversely affected by stormwater, erosion, and poorly defined visitor campsite and use areas. The potential for periodic downstream flooding along Black Rock Canyon Road and private property would remain high.	The preferred alternative fulfills the project objectives by diverting floodwaters off of campground roads and away from the campground nature center and adjoining residential areas. Campground improvements would address safety concerns such as stormwater runoff and flooding. Rehabilitation of the campground would improve park operations and the quality of the visitor experience, and would reduce maintenance costs. The reconfigured campsites would provide improved campsite definition and vehicle circulation. Natural resource impacts would be minimized by locating the facility in an area of previous and existing disturbance and revegetating disturbed areas.

IMPACT SUMMARY

A summary of potential environmental effects for the alternatives is presented in Table 5.

TABLE 5. IMPACT SUMMARY

Impact Topic	No Action Alternative	Preferred Alternative Rehabilitate Campground
Soil and Geologic Resources	The no action alternative would have a local long-term minor adverse effect on soils and geologic resources from continued erosion related to inadequate drainage and compaction associated with visitor use and poor campsite layout.	The preferred alternative would result in a local short-term moderate adverse impact to soils and geologic resources from earthwork and construction disturbances. Proposed drainage improvements would restore more natural drainage patterns and reduce the potential for accelerated erosion. Drainage improvements, road reconfiguration, and campsite layout improvements that reduce erosion and soil loss would have a long-term beneficial effect.

Impact Topic	No Action Alternative	Preferred Alternative Rehabilitate Campground
Water Resources	The no action alternative would result in local long-term moderate adverse impacts on water resources from ongoing drainage and erosion problems associated with the lack of a proper drainage system at the campground.	The preferred alternative would have local short-term minor adverse effects on water quality and hydrology during construction due to surface disturbances that generate erosion and increase sediment in runoff. Long-term effects on water resources would be beneficial with campground drainage improvements.
Floodplains	The no action alternative would continue to have local long-term moderate adverse impacts from localized flooding in the campground and on private property north of the park. The flood risk in Black Rock Canyon downstream of the park would not change and would remain negligible.	Rehabilitation and drainage improvements in the campground would have no adverse effect on the Black Rock Canyon floodplain, and the risk to downstream homes for a 100-year flood event would not change. Drainage improvements would substantially reduce the potential for flood damage and personal risk within the campground and private property north of the park, thus impacts would be local, long-term, and beneficial.
Vegetation	The no action alternative would continue to have local long-term minor adverse impacts on vegetation in Black Rock campground due to erosion from uncontrolled runoff and flooding in and near the campground, poor campsite definition, and visitor use.	The preferred alternative would have local short-term moderate adverse effects on vegetation from construction disturbances during campground rehabilitation. Campground improvements would result in a local long-term beneficial effect from installing drainage channels that reduce erosion, reconfiguring the campsite layout to define visitor use areas, and revegetating currently disturbed areas and temporary construction disturbances with native vegetation. Weed establishment in areas of disturbed soil is possible, but would be minimized with weed-control BMPS.
Wildlife	The no action alternative would have local long-term minor adverse impacts on wildlife habitat in Black Rock campground due to erosion from uncontrolled runoff and flooding, poor campsite definition, and visitor use.	The preferred alternative would have local short-term moderate adverse effects on wildlife habitat from construction disturbances and activities that impact habitat or displace species. Campground and drainage improvements would result in local long-term beneficial effects due to a reduction of erosion from drainage improvements, better campsite layout, and restoration of disturbed areas, which would improve soil stability and native vegetation establishment.

Impact Topic	No Action Alternative	Preferred Alternative Rehabilitate Campground
Special Status Species	The no action alternative would have local long-term minor adverse impacts on special status species habitat in Black Rock campground due to erosion from uncontrolled runoff and flooding in the campground and visitor use.	The preferred alternative would have local short-term moderate adverse effects on the threatened desert tortoise during construction. Campground improvements would result in local long-term beneficial effects on special status species, including the desert tortoise, from drainage improvements, better campsite layout, and restoration of disturbed areas that reduce erosion, improve soil stability, and aid in the establishment of native vegetation. Implementing the preferred alternative would result in a USFWS determination of “may affect, likely to adversely affect” for the desert tortoise. Cumulative effects would be regional and local, long-term, minor, and adverse.
Visitor Use and Experience	Effects on visitor use and experience under the no action alternative would be parkwide, long-term, moderate, and adverse as a result of periods of localized flooding that affect use of the campground and damage campground facilities; poor traffic circulation and campsite layout; and degradation of campground facilities that lead to less visitor use and place greater strain on other park campgrounds.	Campground rehabilitation including reduced flooding from drainage improvements; new roads with better traffic circulation; improved campsite layout with designated group, walk-in, and horse campsites; additional comfort stations; trailhead parking; and other amenities would substantially improve the quality of visitor use and experience. These improvements would have a parkwide long-term beneficial effect on the quality of the visitor use and experience. A parkwide short-term moderate adverse effect on visitor use and experience would occur with implementation of each phase of rehabilitation due to reduced campsite availability and construction disturbance.
Public Health, Safety, and Park Operations	The no action alternative would result in a parkwide, long-term, moderate adverse effect on public health, safety, and park operations by not addressing the inadequate drainage system, periodic flooding, poor campsite and road layout, and other deteriorating infrastructure.	The preferred alternative would result in local long-term beneficial effects on public health, safety, and park operations by decreasing the potential for flooding and improving campground roads, campsites, infrastructure, and amenities.
Visual Resources	The no action alternative would have local long-term moderate adverse effects on visual quality within the campground as a result of flood events that cause erosion, sedimentation, and damage to natural resources and infrastructure, as well as impacts on adjacent private property. Cumulative effects would be local, long-term, moderate, and adverse.	The rehabilitation Black Rock campground would result in local short-term moderate adverse effects in visual quality near the campground from earthwork and construction-related disturbances. Over the long term, the preferred alternative would have a local long-term beneficial effect on visual quality at the campground from new roads, better campsite layout, and drainage improvements that reduce erosion and property damage.

Impact Topic	No Action Alternative	Preferred Alternative Rehabilitate Campground
Socioeconomics and Gateway Communities	The no action alternative would have potential long-term minor adverse effects on the regional economy from flood-related damage to the campground that leads to reduced visitor use and tourism-related spending in the Yucca Valley area. Residents in Sky Harbor also would be adversely affected by inadequate drainage in the campground that leads to property damage from stormflow along Black Rock Canyon Road.	The preferred alternative would have a long-term beneficial effect on the regional economy from campground rehabilitation that draws visitors and tourism-related spending. Sky Harbor neighborhood residents near the campground also would experience a long-term beneficial effect on the quality of their access and use of the park, as well as a substantial reduction in flooding risk along Black Rock Canyon Road. Short-term minor adverse effects on residents near the park and along park access roads would occur from noise and construction traffic.

[This page intentionally left blank]

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter provides a description of the resources potentially impacted by the alternatives and the likely environmental consequences. It is organized by impact topics that were derived from internal park and external public scoping. Impacts are evaluated based on context, duration, intensity, and whether they are direct, indirect, or cumulative. NPS policy also requires an evaluation of potential impairment of park resources and the potential for generating unacceptable levels of impact.

GENERAL METHODS

This section contains the environmental impacts, including direct and indirect effects, and their significance for each alternative. The analysis is based on the assumption that the mitigation measures identified in the “Mitigation” section of this EA would be implemented for the preferred alternative. Overall, the NPS based these impact analyses and conclusions on the review of existing literature and park studies; information provided by experts within the park, other agencies, professional judgment and park staff insights; and public input.

The following terms are used in the discussion of environmental consequences to assess the impact intensity threshold and the nature of impacts associated with each alternative.

Type: Impacts can be beneficial or adverse.

Context: Context is the setting within which an impact would occur, such as local (in the project area and adjacent lands), parkwide (in Joshua Tree), or regional (in San Bernardino County, California and nearby).

Impact Intensity: Impact intensity is defined individually for each impact topic. There may be no impact, or impacts may be negligible, minor, moderate, or major. Beneficial effects have a positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Duration: Duration of impact is analyzed independently for each resource because impact duration is dependent on the resource being analyzed. Depending on the resource, impacts may last for the construction period, a single year or growing season, or longer. For purposes of this analysis, impact duration is described as short-term or long-term.

Direct and Indirect Impacts: Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. Direct and indirect impacts are considered in this analysis, but are not specified in the narratives. Cumulative effects are discussed in the next section.

Threshold for Impact Analysis: The duration and intensity of effects vary by resource. Therefore, the definitions for each impact topic are described separately. These definitions were formulated through the review of existing laws, policies, and guidelines; and with assistance from park staff and NPS specialists. Impact intensity thresholds for negligible, minor, moderate, and major adverse effects are defined in a table for each resource topic.

CUMULATIVE EFFECTS

Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The CEQ regulations that implement NEPA require assessment of cumulative effects in the decision-making process for federal projects.

Methods for Assessing Cumulative Effects

Cumulative effects were determined by combining the impacts of the preferred and no action alternatives with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects that might contribute to cumulative effects. The geographic scope of the analysis includes actions in the park near the campground and surrounding lands where overlapping resource impacts are possible. The temporal scope includes projects within a range of approximately 10 years.

Past, present, and reasonably foreseeable actions were then assessed in conjunction with the impacts of the alternatives to determine if they would have any added adverse or beneficial effects on a particular natural resource, park operation, or visitor use. The impacts of reasonably foreseeable actions vary for each of the resources. Cumulative effects are considered for each alternative and are presented in the “Environmental Consequences” discussion for each impact topic.

Past and Current Actions

Past actions include activities that have influenced and affected the current condition of the environment near the project area. The campground was originally constructed in 1971 as a “Jellystone” theme campground and was operated as a commercial business until it was acquired by the NPS in 1975. The campground is currently operated and maintained by the NPS and is within the boundary of Joshua Tree National Park. The existing environment was modified by original campground and road construction, which currently consists of about 100 campsites, a horse camp area, a nature center, offices, comfort stations, a water storage tank, a caretaker residence, and a maintenance building. Three trailheads emanate from the campground and provide access to other areas of the park. The Interagency Fire Center also is adjacent to the campground and is a facility jointly operated by the NPS and Bureau of Land Management. Other nearby development includes low-density residential housing on

lands immediately north of the campground and park boundary. Access to the campground and the nearby residential areas is via Black Rock Canyon Road.

Future Actions

The park would continue ongoing maintenance and repairs to buildings, roads, and other infrastructure in the future to maintain visitor amenities in the campground. Recreation activities would continue to occur at the campground, including hiking and horseback riding via trails leaving from the campground. Improvements to Black Rock Canyon Road, which provides access to the campground, are anticipated in the future as a separate project. It is likely that private property bordering the north side of the campground would continue to be developed in the future for residential purposes with continued and increased visitation to the park by residents. No other reasonably foreseeable actions were identified that are likely to contribute to the cumulative effects of the preferred alternative.

SOILS AND GEOLOGY

Affected Environment

The campground is on a broad alluvial fan that supports poorly developed soils derived from depositional material carried from drainages running off of mountain slopes (NPS 1995). The arid climate and high evaporation results in erosion rates that exceed soil formation. The granitic soils in the project area consist primarily of unconsolidated gravel and coarse sand. Wind deposition, erosion, previous ground disturbance, flooding, and other past actions have all contributed to the varied soil conditions in the project area. High levels of campground use has reduced vegetation cover and led to soil compaction and erosion. Paved roads and parking areas and compacted soils have created an impervious surface that has reduced the infiltration rate and contributes to surface runoff and soil erosion, which is often deposited along roads and depressions. No rare or unique soils occur within the project area (NPS 1995).

Surface and subsurface materials in the project area consist of Quaternary age alluvial deposits. The deposits include medium to very coarse sand with fine sand and gravel layers. Southeast of the campground large, subangular, granitic boulders occur along the California Riding and Hiking trail. Smaller rocky outcrops are most abundant on the southern end of the campground. Several active faults are present in and near Joshua Tree. The east-west aligned Blue Cut Fault traverses the central portion of the park. The Pinto Mountain Fault is north of the park boundaries and the San Andreas Fault is west of the park. No active faults are in the campground.

Impact Intensity Threshold

Potential impacts from the alternatives were based on professional judgment and experience with similar actions. The thresholds of change for the intensity of impacts on soils and geologic resources are defined in Table 6.

TABLE 6. SOILS AND GEOLOGY IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	The action would cause very little or no physical disturbance / removal, compaction, or erosion. Alteration to soils and / or geology would be so slight that it would not affect the sites ability to sustain biota, water quality, and hydrology. Geology and soils would remain consistent with historical or baseline conditions.
Minor	The action would have a detectable effect on soils and /or geologic features from limited physical disturbance / removal, compaction, and erosion. The effect would occur in a small area, but would not appreciably increase the potential for erosion, soil loss, or the ability to sustain biota, water quality, and hydrology.
Moderate	The action would result in a readily detectable effect on soils and / or geology from physical disturbance / removal, compaction, and erosion. The effect would occur over a broad area and would impact soil and / or geologic characteristics and the ability to sustain biota, water quality, and hydrology.
Major	The action would result in a substantial impact on soils and geology from extensive earthwork, with a substantial increase in erosion and disturbance to geologic features or processes. The effect would occur over a large area and would adversely affect or the ability to sustain biota, water quality, and hydrology.

Short-term impact—recovers in less than three years.

Long-term impact—takes more than three years to recover.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. No new disturbance to soils or geologic resources would be introduced under the no action alternative other than ongoing activities needed to maintain current campground operations. Geologic processes in the campground and downstream lands would remain similar to historical conditions, including continued accelerated surface and channel erosion from stormwater runoff. Soil erosion from stormwater events would continue to occur without improvements to surface drainage in the campground. Soil compaction near campsites would remain, resulting in increased runoff during storm events, which further contributes to soil erosion. Continued erosion and soil loss would reduce soil productivity, which would impact existing vegetation and any revegetation efforts. The no action alternative would have a local long-term minor adverse effect on soils and geologic resources from continued erosion related to inadequate drainage and poor campsite layout.

Cumulative Effects. Past actions, such as construction of the original campground, visitor use, and inadequate drainage, have impacted soils and geologic resources as a result of soil excavation, grading, erosion, traffic, and runoff. Future recreational activities, maintenance work, and storm runoff would continue to impact soil resources in the campground. Rehabilitation of Black Rock Canyon Road may result in temporary soil disturbance, but would result in long-term benefits by reducing erosion. Future housing development on private land north of the campground could result in erosion and a loss of soils. The combined effects of past, present, and reasonably foreseeable actions on soils and geologic resources would be local, long-term, moderate, and adverse. The overall cumulative effects on soils and geologic resources from the no action alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, moderate, and adverse, with a minor contribution from the no action alternative.

Conclusion. The no action alternative would have a local long-term minor adverse effect on soils and geologic resources from continued erosion related to inadequate drainage and compaction associated with visitor use and poor campsite layout. Cumulative effects would be local, long-term, moderate, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Construction activities associated with the campground rehabilitation would require excavation, grading, and associated soil disturbance. Adverse impacts on site geology would be minor with no substantial change in topography or impact on important geologic features or processes. Construction activities would occur in areas that do not contain large rock outcrops. Drainage system improvements would capture and divert runoff to Black Rock Canyon, greatly reducing the potential for continued accelerated surface erosion, gullies, and channel incisement.

New road construction, parking areas, campsite pullouts, grading, trail construction, comfort stations, and drainage features would occur on about 10 acres. Most of these activities would occur within previously disturbed areas, but work would also occur in areas of undisturbed soils. Removal of some of the existing roads, parking areas, and infrastructure would result in soil being reclaimed and vegetation cover restored. Exposed soil material during construction would be subject to erosion until stabilized or revegetated. Planned use of temporary erosion-control BMPs would reduce the potential for short-term erosion and soil loss during construction. The impact on soils would be local, short-term, moderate, and adverse from construction disturbances. A long-term beneficial effect on soils would occur from drainage improvements, road reconfiguration, and campsite layout improvements that reduce erosion and soil loss.

Cumulative Effects. Past actions, such as construction of the original campground, visitor use, and inadequate drainage have impacted soils and geologic resources as a result of soil excavation, grading, erosion, traffic, and runoff. Future recreational activities, maintenance work, and storm runoff would continue to impact soils in the campground. Rehabilitation of the Black Rock Canyon Road may result in temporary soil disturbance, but would result in long-term benefits by reducing erosion. Future housing development on private land north of the campground could result in erosion and a loss of soils. The combined effects of past, present, and reasonably foreseeable actions on soils and geologic resources would be local to regional, long-term, moderate, and adverse. The overall cumulative effects on soils and geologic resources from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, and moderate, with a short-term moderate adverse effect during construction and a long-term beneficial contribution from implementation of the preferred alternative.

Conclusion. The preferred alternative would result in a local short-term moderate adverse impact on soils and geologic resources from earthwork and construction disturbances. Proposed drainage improvements would restore more natural drainage patterns and reduce the potential for accelerated erosion. Drainage improvements, road reconfiguration, and campsite layout improvements that reduce erosion and soil loss would have a long-term beneficial effect. Cumulative effects would be local, long-term, moderate,

and adverse, with a long-term beneficial contribution from implementation of the preferred alternative.

WATER RESOURCES

Affected Environment

Joshua Tree is within the Colorado River basin, but no perennial streams are in or near the park or campground. The park receives, on average, about 4.5 inches of precipitation a year, with a range of 0.3 inch in 1956 to 12.3 inches in 1983. July and August are typically the wettest months. Black Rock Canyon is a dry wash on the east side of the campground that only flows during and immediately following storm events. No historical data on flow volumes for Black Rock Canyon are available because there is no stream gage.

Four subwatersheds with small ephemeral washes or undefined swales meander through Black Rock campground. Two of these watersheds exit the campground through a wash on the north end of the campground and down Black Rock Canyon Road (NPS 2007b). The two watersheds on the east side of the campground drain toward Black Rock Canyon. Currently, runoff from storm events flows in an uncontrolled manner across the surface, along roads, and washes. Stormwater runoff typically conveys large amounts of sediment from sheet erosion of unvegetated slopes and washes in the campground. Runoff has damaged the nature center during past storm events and has washed sediment and soils onto existing roads.

Impact Intensity Threshold

Potential impacts from the alternatives are based on professional judgment, experience with similar actions, and anticipated project disturbance. The thresholds of change for the intensity of impacts on water resources are defined in Table 7.

TABLE 7. WATER RESOURCES IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	The action would have no measurable or detectable effects on water quality or the timing or intensity of streamflows.
Minor	The action would have measurable effects on water quality or the timing or intensity of streamflows. Water quality effects could include increased or decreased loads of sediment, debris, chemical or toxic substances, or pathogenic organisms.
Moderate	The action would have clearly detectable effects on water quality or the timing or intensity of flows, and potentially would affect organisms or natural ecological processes. In addition, an impact would be visible to visitors.
Major	The action would have substantial effects on water quality or the timing or intensity of flows, and potentially would affect organisms or natural ecological processes. In addition, an impact would be easily visible to visitors.

Short-term impact—following project completion, recovers in less than one year.

Long-term impact—following project completion, takes more than one year to recover.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. The no action alternative would have no new impact on water resources within the park. Existing drainage in the campground would remain inadequate, especially during large precipitation events. Stormwater would continue to cause erosion and the transport and deposition of sediment in the campground and downstream. Uncontrolled runoff from storm events would continue to have local long-term moderate adverse impacts on water resources.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and adjacent residential areas, have modified the natural drainage patterns of ephemeral washes in the area, preventing stormwater from flowing into Black Rock Canyon. North-south oriented roads currently convey runoff from storm events through the campground and into the adjacent residential neighborhood to the north. This results in erosion and sedimentation within the park. Future improvements to the portion of Black Rock Canyon Road where it enters the park would incorporate measures to convey drainage. Additional residential development north of the park would increase the area of impervious surface (such as roads and roofs), which would generate greater runoff during storm events. Past, present, and reasonably foreseeable future actions would have local long-term moderate adverse impacts on water resources in the Black Rock Canyon watershed. Those impacts, in combination with the no action alternative, would result in local long-term moderate adverse impacts, with a moderate adverse contribution from the no action alternative.

Conclusion. The no action alternative would result in local long-term moderate adverse impacts on water resources from ongoing drainage and erosion problems associated with the lack of a proper drainage system at the campground. Cumulative effects would be local, long-term, and moderate.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Proposed rehabilitation of the campground would involve excavation, grading, ground clearing, and additional exposure of soil material that would temporarily increase the potential for erosion until the drainage system, detention basin, road paving, and revegetation work are finished. Structural soil- and erosion-control measures would be implemented to contain sediment and minimize erosion. These may include the use of weed-free straw bales, silt fence, berms, check dams, temporary sediment basins, and other erosion control measures. No measurable effects on Black Rock Canyon water quality would occur with the use of sediment- and erosion-control BMPs. Any sediment contribution to this ephemeral drainage during project construction would be minor in relation to the supply of sediment and erosion that naturally occurs in this watershed.

Proposed drainage improvements would better collect stormwater runoff in the campground and route it to Black Rock Canyon. Drainage improvements would reduce the potential for erosion, sediment transport and deposition in the campground and downstream. The flow in Black Rock Canyon downstream from the campground would increase by a predicted 136 cubic feet per second (cfs) during a 100-year storm event, which

would be a 0.1-foot increase in water depth (Cardno ENTRIX 2012). The drainage modifications in the campground would not significantly change hydrologic conditions or water quality downstream of the campground and would not result in an increased risk to downstream residences, as described in the “Floodplains” section that follows. Campground rehabilitation includes a mix of new roads and parking areas, as well as removal of many of the existing roads and rehabilitation and revegetation of currently disturbed areas. The net change in the impervious surface area would be an increase of less than 1 acre. This would slightly increase stormwater runoff, but with improved drainage and revegetation efforts, this would not adversely affect water resources. Local short-term minor adverse effects on water quality and hydrology are possible during construction, but long-term effects would be local, long-term, and beneficial due to the drainage system improvements.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and adjacent residential areas, have modified the natural drainage patterns in the area, preventing runoff from the campground and nearby areas to Black Rock Canyon. North-south oriented roads currently convey runoff from storm events through the campground and into the adjacent residential neighborhood to the north. Future improvements to the portion of Black Rock Canyon Road where it enters the park would incorporate measures to convey drainage. Additional residential development north of the park would increase the area of impervious surfaces (such as roads and roofs), which would generate greater runoff during storm events. Past, present, and reasonably foreseeable future actions would have local long-term moderate adverse impacts on water resources in the Black Rock Canyon watershed. Those impacts, in combination with the preferred alternative, would result in local long-term minor adverse impacts, with a beneficial contribution from the preferred alternative.

Conclusion. The preferred alternative would have local short-term minor adverse effects on water quality and hydrology during construction due to surface disturbances that generate erosion and increase sediment in runoff. Long-term effects on water resources would be beneficial with campground drainage improvements. Cumulative effects would be local, long-term, and minor, with a beneficial contribution from the preferred alternative.

FLOODPLAINS

Affected Environment

The project site is designated by the Federal Emergency Management Agency (FEMA) as Zone D, an area in which flood hazards are undetermined, but possible. Based on an analysis by Cardno ENTRIX (2012), there is currently no risk to Black Rock campground from large floods originating from nearby Black Rock Canyon. The 100-year floodplain in Black Rock Canyon near the campground ranges from 150 to about 320 feet wide and up to 4 feet deep (Cardno ENTRIX 2012). The 500-year floodplain calculated by Cardno ENTRIX in Black Rock Canyon near the campground is up to 365 feet wide and up to 6 feet deep. Flood inundation areas along Black Rock Canyon currently do not fall within the campground area.

Black Rock Canyon is subject to periodic floods downstream of the park, but there are no long-term data on the frequency of flooding. However, it is known that on October 9, 1943, a

major storm dropped 3.9 inches of rain in about three hours, causing flash floods and debris flows that blocked roads, trapped vehicles, and damaged at least one home (National Oceanic and Atmospheric Administration 2010). Cardno ENTRIX used the National Flood Frequency Program for estimating the magnitude and frequency of flood flows of ungaged watersheds to estimate peak flows in Black Rock Canyon. Peak flows at the 100-year and other recurrence intervals were estimated for four locations in the Black Rock Canyon watershed within and downstream of the park. For the location just upstream of the campground, the 100-year peak flow is estimated to be 2,570 cfs. At the park boundary north of the campground, the 100-year peak flow is estimated to be 2,790 cfs (Cardno ENTRIX 2012).

Although the campground is not located in a designated floodplain, it is subject to local flooding in the form of surface flow primarily down roads that are oriented up and down the slope. Sheetflow across slopes and in washes also occur during storm events. Flows from the campground currently exit the campground either through a wash on the north end of the campground, down Black Rock Canyon Road, or the east side of the campground drain toward Black Rock Canyon.

Impact Intensity Threshold

Floodplains are defined by DO-77-2: *Floodplain Management* as “the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood.” EO 11988, “Floodplain Management” requires an examination of impacts on floodplains, potential risks involved in placing facilities within floodplains, and protecting floodplain values. The NPS has adopted the policy of preserving floodplain values and minimizing potentially hazardous conditions associated with flooding (DO-77-2: *Floodplain Management*). The thresholds of change for the intensity of impacts on the floodplain are defined in Table 8.

TABLE 8. FLOODPLAIN IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	There would be very little change in the ability of a floodplain to convey floodwaters, or its values and functions. The action would not contribute to flooding.
Minor	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and local, although the changes would be barely measurable. The action would not contribute to flooding. No mitigation would be needed.
Moderate	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and local. The action would contribute to flooding. The impacts could be mitigated by modification of proposed facilities in floodplains.
Major	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and regional. The action would contribute to flooding. The impacts could not be mitigated by modification of proposed facilities in floodplains.

Short-term impact—recovery usually takes less than one year; impacts would not be measurable or would be measurable only during the life of construction.

Long-term impact—recovery usually takes more than one year; impacts would be measurable during and after project construction.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Campground infrastructure, the nature center, and private property north of the campground would remain subject to periodic flooding following storm events, which would convey uncontrolled runoff and sediment. Drainage from the east side of the campground would continue to flow toward Black Rock Canyon. Drainage from the central and west sides of the campground would continue to flow via a wash through a residential area and in the ditches along Black Rock Canyon Road. Property damage from periodic flooding in the campground and on private property downstream of the park would continue to be a concern. The risk of flooding residential areas and private property along Black Rock Canyon would remain unchanged and negligible. Uncontrolled runoff from storm events would continue to have local long-term moderate adverse impacts on the campground and private property from periodic flooding.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and adjacent residential areas, have modified the natural drainage patterns of ephemeral washes in the area, preventing stormwater from flowing into Black Rock Canyon. North-south oriented roads currently convey runoff from storm events through the campground and into the adjacent residential neighborhood to the north. Uncontrolled runoff results in erosion and sedimentation within and downstream of the park. Future improvements to the portion of Black Rock Canyon Road where it enters the park would incorporate measures to convey drainage. Additional residential development north of the park would increase the impervious surface area, which would generate greater runoff during storm events. Past, present, and reasonably foreseeable future actions would have local long-term minor adverse impacts on the Black Rock Canyon floodplain and areas in the campground and north of the campground that flood during storm events. Those impacts, in combination with the no action alternative, would result in local long-term minor adverse impacts, with a moderate adverse contribution from the no action alternative.

Conclusion. The no action alternative would continue to have local long-term moderate adverse impacts from localized flooding in the campground and on private property north of the park. The flood risk in Black Rock Canyon downstream of the park would not change and would remain negligible (NPS 2012a). Cumulative effects would be local, long-term, moderate, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Rehabilitation of the campground and drainage improvements would include the installation of approximately 2,350 linear feet of new rock-lined drainage channels, new culverts, low-water crossings, and a 0.7-acre detention basin (Figure 5). The new drainage system would direct storm runoff from the campground and nearby areas into Black Rock Canyon and reduce campground flooding. According to the drainage analysis and flood study completed for the Black Rock Canyon watershed, the drainage improvements would not significantly change flood flow conditions downstream from the campground and would not result in increased flood risk to downstream residences for flood events up to the 100-year flood (Cardno ENTRIX 2012). Directing runoff from the

campground directly to the Black Rock Canyon would increase flow by about 136 cfs and water depth by about 1 inch during the 100-year flow. This change in depth would not adversely affect Black Canyon out-of-channel flow outside the park. The campground would remain outside of the 100-year flood inundation area of Black Rock Canyon (NPS 2012a).

Rehabilitation and drainage improvements in the campground would have no adverse impact on floodplain functions and values within Black Rock Canyon. Floodplain impacts would be local, long-term, and beneficial because flood damage and personal risk within the campground would be greatly reduced by directing runoff to Black Rock Canyon. Uncontrolled storm runoff from the park to the downstream private property would no longer occur, and the resulting increased runoff in Black Rock Canyon would not result in increased flood risk to the downstream homes. In accordance with EO 11988, "Floodplain Management" and DO-77-2: *Floodplain Management*, the NPS has reviewed the flood hazards for the preferred alternative and prepared a Floodplain Statement of Finding, which is found in Appendix B.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and adjacent residential areas, have modified the natural drainage patterns of ephemeral washes in the area, preventing stormwater from flowing into Black Rock Canyon. North-south oriented roads currently convey runoff from storm events through the campground and into adjacent residential neighborhoods to the north. Uncontrolled runoff results in erosion and sedimentation within and downstream of the park. Future improvements to the portion of Black Rock Canyon Road where it enters the park would incorporate measures to improve drainage. Additional residential development north of the park would increase the impervious surface area, which would generate greater runoff during storm events. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on the watershed and floodplain of Black Rock Canyon. Those impacts, in combination with the preferred alternative, would result in local long-term beneficial effects, with a beneficial contribution from the preferred alternative.

Conclusion. Rehabilitation and drainage improvements in the campground would have no adverse effect on the Black Rock Canyon floodplain, and the risk to downstream homes for a 100-year flood event would not change. Drainage improvements would substantially reduce the potential for flood damage and personal risk within the campground and private property north of the park, thus impacts would be local, long-term, and beneficial. Cumulative effects would be local, long-term, and beneficial.

VEGETATION

Affected Environment

Joshua Tree supports a diversity of plant species with nearly 800 plant species present in the park. Vegetation communities in the park are broadly divided into the Colorado Desert at elevations below 3,000 feet and the Mohave Desert above 3,000 feet. The Colorado Desert supports creosote bush, mesquite, yucca, ocotilla, and other cactus species. Black Rock campground, at an elevation of about 4,000 feet, is in the slightly cooler and moister Mohave Desert. The campground is within the Joshua tree vegetation association. Joshua trees (*Yucca*

brevifolia) are found only in North America in the states of California, Arizona, Utah, and Nevada. Joshua trees have shallow root systems with top-heavy branches that make them susceptible to wind throw and root damage.

Common Mojave Desert plant species more commonly found in undisturbed areas of the campground are California juniper (*Juniperus californica*), shadscale saltbrush (*Atriplex confertifolia*), and brittlebrush (*Encelia farinosa*). Other plants that occur around the campground include creosote bush (*Larrea tridentata*), burrobrush (*Ambrosia dumosa*), rabbitbrush (*Ericameria* sp.), annual ragweed (*Ambrosia acanthicarpa*), four-winged saltbrush (*Atriplex canescens*), teddy-bear cholla (*Cylindropuntia bigelovii*), honey mesquite (*Prosopis glandulosa*), prickly pear (*Opuntia* sp.), and barrel cactus (*Ferocactus* sp.). Construction of roads, campsites, and structures, as well as high levels of visitor use have compacted soils and degraded native vegetation communities in much of the campground. Nonnative vegetation present along the shoulders of the campground entrance and other locations includes weedy, annual species such as shortpod mustard (*Hirschfeldia incana*) and cheatgrass (*Bromus tectorum*). .

Impact Intensity Threshold

Predictions about impacts were based on the expected disturbance to vegetation communities and professional judgment and experience with previous projects. The thresholds of change for the intensity of impacts on vegetation are defined in Table 9.

TABLE 9. VEGETATION IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	The impacts on vegetation (individuals or communities) would be barely detectable. The abundance or distribution of individuals would not be affected or would be slightly affected. The effects would be on a small scale and no species of special concern would be affected. Ecological processes and biological productivity would not be affected.
Minor	The action would not necessarily decrease or increase the project area's overall biological productivity. The alternative would affect the abundance or distribution of individuals in a localized area, but would not affect the viability of local or regional populations or communities. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, would be required and would be effective. Mitigation may be needed to offset adverse effects, would be relatively simple to implement, and would likely be successful.
Moderate	The action would result in effects on some individual native plants and would also affect a sizeable segment of the species' population over a large area. Permanent impacts would occur to native vegetation, but in a small area. Some special status species also would be affected. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major	The action would have considerable effects on native plant populations, including special status species, and would affect a large area within and outside the park. Extensive mitigation measures to offset the adverse effects would be required; the success of mitigation measures could not be guaranteed.

Short-term impact—recovers in less than three years.

Long-term impact—takes more than three years to recover.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Under the no action alternative, no new land-disturbing activities would impact existing vegetation or increase the likelihood for the introduction or spread of exotic or noxious weeds. Stormwater runoff and flood events would continue to erode soils and adversely impact existing vegetation and establishment of new vegetation. Poor campsite and parking layout and social trails would continue to result in soil compaction, erosion, and degraded vegetation near campsites. For the foregoing reasons, the no action alternative would have local long-term minor adverse effects on vegetation.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development, have reduced coverage of native vegetation in the area. Ongoing future campground and trail use, stormflow erosion, and development of private lands outside of the park would continue to adversely affect native vegetation communities and allow the potential introduction of exotic plant species. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on vegetation. Those impacts, in combination with the no action alternative, would result in regional long-term minor adverse cumulative effects with a local long-term minor adverse contribution from the no action alternative.

Conclusion. The no action alternative would continue to have local long-term minor adverse impacts on vegetation in Black Rock campground due to erosion from uncontrolled runoff and flooding in and near the campground, poor campsite definition, and visitor use. Cumulative effects would be regional, long-term, minor, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Rehabilitation of the campground and drainage improvements would result in both the removal of native vegetation and revegetation of currently disturbed areas. Vegetation would be removed for construction of new roads, new parking lots, campsite upgrades, trails, drainage system, new comfort stations, and new visitor center. However, much of the vegetation in the campground has been previously removed for construction of existing facilities or disturbed by visitor use and erosion. Proposed campground rehabilitation was designed so that most of the rehabilitation work would be conducted within the footprint of existing areas of disturbance. Removal of some of the existing roads, dump station, and parking areas would allow revegetation of currently paved surfaces.

Construction activities would be confined to the smallest area necessary to complete the work, and areas of temporarily disturbed vegetation would be restored with native vegetation following construction. Additionally, existing native vegetation would be transplanted and incorporated into the landscaping of the reconfigured campground. This primarily includes transplanting and relocating approximately 60 Joshua trees and 30 California junipers that would be impacted by rehabilitation work. Joshua trees taller than about 15 feet are difficult to transplant; therefore, impacts on these larger trees would be avoided to the extent feasible. The park has successfully salvaged and replanted Joshua trees at other locations in the park

and has found that the survival rate of transplanting Joshua trees less than 15 feet high is about 75 percent, thus some loss of transplanted Joshua trees is likely.

Infestation and spread of invasive exotic plants is possible. Weeds frequently invade disturbed ground where they are easily established and outcompete native species if left unchecked. Implementation of weed-control BMPs would minimize the potential for weed establishment and long-term impacts. Revegetation of disturbed areas is expected to take more than one year because of the low soil fertility, water holding capacity of soils, and dry climate. The preferred alternative would have local short-term moderate adverse effects on vegetation within the campground from grading and clearing activities. Drainage improvements, road reconfiguration, better campsite definition, and restoration and incorporation of native vegetation into the landscaping of the campground would result in local long-term minor beneficial effects.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development, have reduced coverage of native vegetation in the area. Ongoing future campground and trail use, stormflow erosion, and development of private lands outside the park would continue to adversely affect native vegetation communities and allow the potential introduction of exotic plant species. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on vegetation. The impact of the above actions, in combination with the effects of the preferred alternative, would result in a regional long-term minor adverse cumulative effect on vegetation, with a local short-term moderate adverse contribution from the preferred alternative, as well as a long-term beneficial effect.

Conclusion. The preferred alternative would have local short-term moderate adverse effects on vegetation from construction disturbances during campground rehabilitation. Campground improvements would result in a local long-term beneficial effect from installing drainage channels that reduce erosion, reconfiguring the campsite layout to define visitor use areas, and revegetating currently disturbed areas and temporary construction disturbances with native vegetation. Weed establishment in areas of disturbed soil is possible, but would be minimized with weed-control BMPs. Cumulative effects would be regional, long-term, minor, and adverse.

WILDLIFE

Affected Environment

The diverse vegetation communities within Joshua Tree support a variety of wildlife species. NPS-managed lands provide havens for wildlife because they are more protected and generally less developed than privately owned lands. Joshua Tree is in a transition zone between two major biotic communities – the Mojave Desert and Colorado Desert regions. Approximately 350 vertebrate species inhabit the park.

Joshua Tree is home to approximately 270 bird species that either nest or migrate through the park. Commonly observed species include vultures, ravens, Gambel's quail, black-throated sparrow, roadrunner, scrub jay, and various wrens. A great horned owl is known to

nest in a Joshua tree in the campground. The park is also home to 52 species of mammals. The most common species consist of small mammals such as woodrat, white-tailed antelope squirrel, kangaroo rat, and various chipmunks. Other common mammal species include black-tailed jackrabbit and predators such as coyote, fox, and desert bobcat. There are two species of amphibians in the park and 45 species of reptiles. Common species parkwide include red spotted toad, side-blotched lizard, desert iguana, desert banded gecko, leopard lizard, shovel-nosed snake, leaf-nosed snake, Mojave rattlesnake, and sidewinder. The desert tortoise, a federally threatened species, also inhabits the park and is discussed in the “Special Status Species” section. Several invertebrates such as the venomous black widow and brown recluse spiders occur in the region. Other invertebrates such as scorpions, tarantulas, centipedes, ants, beetles, bees, and wasps occur throughout the park and the region.

Wildlife habitat in the project area has been disturbed by past vegetation clearing and high visitor use. Joshua trees, California juniper, creosote bush, cholla, and saltbrush provide habitat for a few species of birds, small mammals, and reptiles in and around the campground. Large mammal use of the campground is limited because of human activity and degraded vegetation; however, bobcat, bighorn sheep, mountain lion, and mule deer are present in the area.

Impact Intensity Threshold

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted to mean that native animal life should be protected and perpetuated as part of the park’s natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise they are protected from harvest, harassment, or harm by human activities. According to NPS *Management Policies 2006*, the restoration of native species is a high priority (section 4.1). Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems including natural abundance, diversity, and the ecological integrity of plants and animals. Information on Joshua Tree wildlife was taken from park documents and records, Joshua Tree natural resource management staff, and other sources. The thresholds of change for the intensity of impacts on wildlife are defined in Table 10.

TABLE 10. WILDLIFE IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	There would be no observable or barely perceptible impacts on native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations.
Minor	Impacts would be detectable and would not be expected to be outside the natural range of variability of native species' populations, their habitats, or the natural processes sustaining them.
Moderate	Breeding animals of concern are present; animals are present during particularly vulnerable life stages such as migration or juvenile stages; and mortality or interference with activities necessary for survival would be expected on an occasional basis, but would not be expected to threaten the continued existence of the species in the park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and would be outside the natural range of variability.
Major	Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and would be expected to be outside the natural range of variability. Key ecosystem processes might be disrupted. Loss of habitat might affect the viability of at least some native species.

Short-term impact—recovers in less than one year.

Long-term impact—takes more than one year to recover.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. No new impacts on wildlife or wildlife habitat would occur under the no action alternative. Erosion from flood events and existing impacts from human activity (e.g., traffic, and trail and campsite use) in the project area would continue to affect the quality of wildlife habitat and wildlife use in and near the campground. No substantial change in wildlife habitat or use is likely under the no action alternative, although degradation of vegetation from inadequate drainage and visitor disturbances would continue. As a result, the no action alternative would have local long-term minor adverse effects on wildlife.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development outside the park, have reduced available wildlife habitat near the campground. Ongoing future campground and trail use, erosion from stormflow, and development of private lands outside the park would continue to adversely affect native vegetation communities and the wildlife communities they support. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on wildlife. Those impacts, in combination with impacts of the no action alternative, would result in regional long-term minor adverse impacts on wildlife, with a local minor adverse contribution from the no action alternative.

Conclusion. The no action alternative would have local long-term minor adverse impacts on wildlife habitat in Black Rock campground due to erosion from uncontrolled runoff and flooding, poor campsite definition, and visitor use. Cumulative effects would be regional, long-term, minor, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Construction activities would result in disturbance to vegetation that provides habitat for birds, small mammals, and reptiles. Individual small animals and their habitat would be impacted by construction of new roads, new parking lots, campsite upgrades, trails, drainage system, new comfort stations, and new visitor center. Human presence and construction noise would temporarily disturb and may displace resident wildlife. Construction activities would be confined to the smallest area necessary to complete the work, and areas of temporarily disturbed land would be restored with native vegetation following construction to minimize impacts. Existing Joshua trees and select other native vegetation would be transplanted and incorporated into the landscaping of the reconfigured campground. Many of the existing roads, the nature center, and other infrastructure would be removed and the sites reclaimed and revegetated. Potential effects on special status wildlife species is discussed in the “Special Status Species” section.

The preferred alternative would have local short-term moderate adverse effects on wildlife within the campground from grading and clearing activities and general noise and disturbance above the levels currently present. Drainage improvements, road reconfiguration, better campsite layout, and restoration of disturbed areas would improve soil stability and native vegetation establishment. Over the long term, the proposed campground rehabilitation would have a local beneficial effect on wildlife.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development outside the park, have reduced available wildlife habitat near the campground. Ongoing future campground and trail use, erosion from stormflow, and development of private lands outside the park would continue to adversely affect native vegetation communities and the wildlife communities they support. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on wildlife. Those impacts, in combination with impacts of the preferred alternative, would result in local long-term minor adverse impacts on wildlife, with a short-term minor adverse contribution and long-term beneficial effect from the preferred alternative.

Conclusion. The preferred alternative would have local short-term moderate adverse effects on wildlife habitat from construction disturbances and activities that impact habitat or displace species. Campground and drainage improvements would result in local long-term beneficial effects due to a reduction of erosion from drainage improvements, better campsite layout, and restoration of disturbed areas, which would improve soil stability and native vegetation establishment. Cumulative effects would be regional and local, long-term, minor, and adverse.

SPECIAL STATUS SPECIES

Affected Environment

Special status species include plants and animals listed as threatened, endangered, or candidate under the Endangered Species Act (ESA); species considered sensitive by the park;

and species listed as threatened or endangered within the state by the California Department of Fish and Game. Federally listed species that may occur in the vicinity of Black Rock campground based on surveys, staff knowledge, USFWS data, available habitat, and known range are listed in Table 11.

TABLE 11. FEDERALLY LISTED SPECIES WITH POTENTIAL OCCURRENCE IN THE PROJECT AREA

Common Name	Scientific Name	Federal Status	Found in Project Area?
Triple-ribbed milkvetch	<i>Astragalus tricarlinatus</i>	Endangered	No
Parish's daisy	<i>Erigeron parishii</i>	Threatened	No
Desert tortoise	<i>Gopherus agassizii</i>	Threatened	Yes

Source: USFWS 2012.

Two federally listed plant species potentially occur in the region near the campground — the triple-ribbed milkvetch and Parish's daisy. The triple-ribbed milkvetch is endemic to California and has been documented in Joshua Tree. This species grows in sandy and gravelly soils in Joshua tree woodlands and Sonoran Desert scrub. The triple-ribbed milkvetch has been documented in the Little San Bernardino Mountains, Long Canyon, and East Deception Canyon. The triple-ribbed milkvetch was known from less than eight documented occurrences prior to listing in 1998 (USFWS 2009a). Most specimens were documented in the southeastern San Bernardino and western Little San Bernardino mountains and northern Coachella Valley (USFWS 2009a). Since listing in 1998, 12 occurrences have been documented, including 2 large populations containing more than 100 individuals northwest of Joshua Tree. In the park, this species was documented about 2 miles west of Black Rock campground and approximately 6 miles southeast of Black Rock campground (USFWS 2009a).

Parish's daisy is a federally listed threatened species that is endemic to southern California. This species is a perennial plant with a long taproot that occurs in portions of the Mojave Desert. Habitat for this species is limited to rocky areas with a high amount of carbonate. Parish's daisy was only known from less than 25 documented occurrences prior to 1994. Since the species was listed in 1994, increased survey efforts have documented 87 site-specific occurrences (USFWS 2009b). This species primarily occurs in a 35-mile-long "belt" of carbonate soils along the northeastern slope of the San Bernardino Mountains east to the Little San Bernardino Mountains within the western park boundary. Parish's daisy is typically associated with pinyon and pinyon-juniper forests, as well as blackbrush desert scrub. This species typically grows on rocky slopes and is derived from limestone and occasionally quartz (USFWS 2009b). Parish's daisy was most recently documented in 2006 in the park, approximately 2 miles west of Black Rock campground.

The desert tortoise was federally listed by the USFWS in April 1990 (USFWS 1990) as a threatened species (50 CFR 17.11 – 17.12). The state of California listed the desert tortoise as threatened in 1989. The tortoise inhabits topographically flat areas dominated by gravelly soils and creosote scrub (NPS 2003). Lands surrounding Joshua Tree are designated critical habitat for the desert tortoise under the 1994 Desert Tortoise Recovery Plan (Section II.B and E) (USFWS 1994a). The park itself is not included as critical habitat because the park

adequately protects populations of the tortoise (59 CFR 5820). The USFWS completed a final recovery plan for the desert tortoise in 1994 and recently released a revised recovery plan in May 2011 (USFWS 2011).

Desert tortoises inhabit rocky slopes, alluvial fans, and mountain slopes containing soil that is loose enough for burrow excavation and solid enough to prevent burrows from collapsing (USFWS 1994b). Desert tortoises spend much of their lives in burrows and are typically active in the Mojave Desert from mid- to late-March to about November, depending on the weather (USFWS 2010). Desert tortoises hibernate in deeper dens during winter months and use shorter, shallower burrows during the warm season (USFWS 2010). In southeastern California, desert tortoises range from below sea level to nearly 7,000 feet above sea level and frequent areas with high annual bloom potential with diverse vegetation (USFWS 2010). Desert tortoise surveys were conducted in June and July 2011 at Black Rock campground (NPS 2011). Evidence of tortoise activity was observed during the 2011 surveys, and numerous sightings of the tortoise have been confirmed in the campground in previous years.

The Black Rock campground area also provides potential habitat for two state bird species of concern — Bendire's thrasher and Le Conte's thrasher (Table 12).

TABLE 12. STATE SENSITIVE WILDLIFE SPECIES WITH POTENTIAL OCCURRENCE IN THE PROJECT AREA

Common Name	Scientific Name	Sensitivity Status
Bendire's thrasher	<i>Toxostoma bendirei</i>	SSC
Le Conte's thrasher*	<i>Toxostoma lecontei</i>	SSC

*Based on park staff knowledge of the area (Vamstad, pers. comm. 2010).

SSC = State species of concern.

Source: USFWS 2012; CDFG 2011

The Bendire's thrasher and Le Conte's thrasher are known to occur in Joshua Tree. They use a variety of habitat including Mojave Desert scrub dominated by shadescale, burrobrush, and creosote bush. No confirmed Bendire's thrasher shrub nests are known to occur within the project area. Le Conte's thrasher is a permanent resident of the Mojave and Colorado deserts (Audubon 2009). Habitat for Le Conte's thrasher consists of dense saltbrush / shadescale shrublands or cholla stands. Habitat for this species potentially occurs within the project area, although no confirmed nests are known to occur in the area.

Joshua Tree also hosts 36 plant species considered "species of concern" by the state of California because of their limited distribution (endemism) or because they are disjunct from more abundant population centers. Most of the species are known to occur in Riverside and San Bernardino counties, and are expected to occur within the park (La Doux 2009). Table 13 lists the 19 sensitive plants that potentially occur in the vicinity of Black Rock campground.

TABLE 13. SENSITIVE PLANT SPECIES WITH POTENTIAL OCCURRENCE IN THE PROJECT AREA

Common Name	Scientific Name	Habitat
Abram's spurge	<i>Chamaesyce abramsiana</i>	Sandy flats in desert shrub, including creosote scrub. Not documented in project area; suitable habitat exists.
Apressed muhly	<i>Muhlenbergia apressa</i>	Open canyon bottoms and rocky slopes, foothill grasslands, and rocky valleys.
California ayenia	<i>Ayenia compacta</i>	Rocky canyons in the Sonoran and Mojave desert below 3,900 feet (1,190 meters).
Desert portulaca	<i>Portulaca halimoides</i>	Sandy washes and flats, and Joshua tree woodlands. Potential habitat near project area; no records of occurrence in project area.
Foxtail cactus	<i>Coryphantha alversonii</i>	Mojave and Sonoran desert scrub in sandy and rocky soils. Widespread throughout the park; No records from project area; suitable habitat exists.
Munz's bedstraw	<i>Galium munzii</i>	North and east-facing slopes in shady canyon bottoms, montane coniferous forest, and pinyon-juniper woodland.
Munz's oak	<i>Quercus xmunzii</i>	Sandy washes. Two individuals known inside park boundaries.
Parish's club cholla	<i>Grusonia parishii</i>	Sandy and rocky flats in desert scrub and Joshua tree woodland.
Parish's onion	<i>Allium parishii</i>	Rocky slopes within desert scrub, Joshua tree woodland, and pinyon-juniper woodland.
Plummer's woodsia	<i>Woodsia plummerae</i>	Granitic substrate in pinyon-juniper woodland.
Revolvate spurge	<i>Chamaesyce revoluta</i>	Summer annual, rocky Mojave Desert scrub.
Robinson's monardella	<i>Monardella robinsonii</i>	Desert scrub and pinyon-juniper woodland.
San Bernardino milkvetch	<i>Astragalus bernardinus</i>	Pinyon-juniper and Joshua tree woodland.
Slender bedstraw	<i>Galium angustifolium</i> ssp. <i>gracillimum</i>	Granitic and rocky outcrops in Joshua tree woodland and Sonoran desert scrub.
Slender nemacladus	<i>Nemacladus gracilis</i>	Late spring annual, rocky slopes, or sandy washes.
Southern jewel-flower	<i>Streptanthus campestris</i>	Rocky soils in pinyon-juniper woodland and lower montane forest.
Spearleaf	<i>Matelea parvifolia</i>	Desert scrub including creosote shrubland. Potential habitat in project area; no records from project area.
Thorny milkwort	<i>Polygala acanthoclada</i>	Sandy and gravelly soils in Joshua tree and pinyon-juniper woodlands.
Wright's beebrush	<i>Aloysia wrightii</i>	Joshua tree or pinyon-juniper woodland containing rocky or limestone carbonate soils.

Source: Based on park staff knowledge of the area.

Impact Intensity Threshold

Section 7 of the ESA mandates all federal agencies to determine how to use their existing authorities to further the purposes of the ESA to aid in recovering listed species, and to address existing and potential conservation issues. Section 7(a)(2) states that each federal agency shall, in consultation with the Secretary of the Interior, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. NPS *Management Policies 2006* state that potential effects of agency actions would also be

considered for state or locally listed species (i.e., special status species). The thresholds of change for the intensity of impacts on special status species are defined in Table 14.

TABLE 14. SPECIAL STATUS SPECIES IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	The action would result in a change to a population or individuals of a species, but the change would be of barely perceptible consequence and would be well within natural variability. In the case of federally listed species, this impact intensity equates to a USFWS determination of “may affect, not likely to adversely affect.”
Minor	The action would result in a change to a population or individuals of a species. The change would be measurable, but small and localized, and not outside the range of natural variability. Mitigation measures, if needed, would be simple and successful. In the case of federally listed species, this impact intensity equates to a USFWS determination of “may affect, not likely to adversely affect.”
Moderate	The action would result in detectable impacts on special status species, their habitats, or the natural processes sustaining them and would occur over a large area. Breeding animals of concern are present, and animals are present during particularly vulnerable life stages; mortality or interference with activities necessary for survival would be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit or conservation zone. Mitigation measures would be extensive and likely successful. In the case of federally listed species, this impact intensity equates to a USFWS determination of “may affect, likely to adversely affect.”
Major	The action would result in noticeable effects on the viability of the population or individuals of a species. Impacts on special status species or the natural processes sustaining them would be detectable, both inside and outside of the park. Loss of habitat might affect the viability of at least some special status species. Extensive mitigation measures would be needed to offset any adverse effects and their success could not be guaranteed. In the case of federally listed species, the impact intensity equates to a USFWS determination of “may affect, likely to jeopardize the continued existence of a species.”

Short-term impact—recovers in less than one year.

Long-term impact—takes more than one year to recover.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. There would be no new impacts on special status species under the no action alternative. Erosion from flood events and existing impacts from human activity (e.g., traffic, and trails and campsite use) in the project area and would continue to affect the quality of special status species habitat in and near the campground. Habitat for special status species may experience continued degradation from inadequate drainage and visitor disturbances. As a result, the no action alternative would have local long-term minor adverse effects on special status species.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development, have reduced available habitat for special status species near the campground. Ongoing future campground and trail use, erosion from stormflow, and development of private lands outside the park would continue to adversely affect special status species habitat. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on special status species. Those impacts, in combination with impacts of the no action

alternative, would result in regional long-term minor adverse impacts on special status species, with a minor adverse contribution from the no action alternative.

Conclusion. The no action alternative would have local long-term minor adverse impacts on special status species habitat in Black Rock campground due to erosion from uncontrolled runoff and flooding in the campground and visitor use. Cumulative effects would be regional, long-term, minor, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Rehabilitation of the campground and drainage improvements would result in the removal of native vegetation that provides habitat for several special status species. Habitat would be removed for construction of new roads, new parking lots, campsite upgrades, trails, drainage system, new comfort stations, and other infrastructure. Much of the habitat in the campground has been previously impacted for construction of existing facilities or disturbed by visitor use and erosion. Campground rehabilitation was designed so that most of the rehabilitation work would be conducted within the footprint of existing areas of disturbance. Removal of some existing roads, dump station, and parking areas would allow revegetation of currently paved surfaces. Construction activities would be confined to the smallest area necessary to complete the work, and areas of temporarily disturbed habitat would be restored with native vegetation following construction. Reclamation and revegetation of currently disturbed areas would offset much of the new disturbances, with less than 1 acre of net new disturbance from campground rehabilitation.

The proposed campground rehabilitation would have no impact on the endangered triple-ribbed milkvetch or the threatened Parish's daisy because of the lack of suitable habitat within the project area. Although neither of these species has been observed in the campground, plant surveys would be conducted prior to construction activities.

The preferred alternative may affect individual desert tortoises, but would not likely adversely affect desert tortoise populations. Because of the existing level of disturbance, poor quality habitat, and high human activity at the campground, the preferred alternative would not likely result in a significant decline in population or affect the overall sustainability of the desert tortoise in the region. Direct impacts on the desert tortoise would likely occur from habitat loss due to construction-related activities such as ground clearing and grading, incidental death from crushing of tortoises hidden in undetected-occupied burrows, and entrapment in trenches or pits. Indirect effects would include behavioral changes due to noise, vibration, excess fugitive dust, and exhaust. Additional indirect effects include potential tortoise attraction to the construction area by water used for dust abatement and shade provided by parked construction equipment. Other potential indirect effects include inadvertent spread of nonnative, invasive plant species that may result in a reduction of native food sources for desert tortoises, handling of desert tortoises observed in the construction area, and attraction of predators such as ravens (USFWS 2011). Improved drainage, better definition of campsites and visitor use areas, and vegetation restoration may slightly improve the quality of desert tortoise habitat following project completion, resulting in long-term beneficial impacts on individuals in the area.

The NPS plans to conduct desert tortoise surveys immediately prior to each phase of ground-breaking activity associated with the project and would consult with the USFWS prior to each construction phase. The NPS has prepared a biological assessment that describes potential impacts and conservation measures for desert tortoises and submitted the report to the USFWS for review (NPS 2012c). Table 3 includes a list of conservation measures that would be implemented to reduce potential impacts on desert tortoises.

Under the preferred alternative, impacts on two state bird species of concern – Bendire’s thrasher and Le Conte’s thrasher – is possible from vegetation disturbances and displacement during construction activities. The preferred alternative would not result in impacts on any known breeding sites, but these birds may avoid foraging near the campground during construction. This avoidance would be a local short-term minor adverse impact on these species with no long-term impact.

The vegetation communities in the vicinity of the campground provide potential habitat for 19 state plant species of concern. The park has not conducted recent surveys for these species, but because much of the campground area has been previously disturbed, it is unlikely to support these species. The proposed campground rehabilitation would not likely have an adverse impact on the endangered triple-ribbed milkvetch or the threatened Parish’s daisy because of the lack of suitable habitat in the project area. Plant surveys would be conducted prior to construction to determine if these species are present and the potential for transplanting these species or other mitigation. Indirect effects on special status species resulting from the proposed project include infestation and spread of invasive exotic plants; however, implementation of weed-control BMPs would minimize the potential for weed establishment and long-term impacts.

The preferred alternative would have local short-term moderate adverse effects on special status species habitat and individual impacts on the federally listed desert tortoise from grading, clearing, and construction activities. Drainage improvements, road reconfiguration, better campsite definition, and restoration and incorporation of native vegetation into the landscaping of the campground would result in a local long-term minor beneficial effect.

Cumulative Effects. Past actions, such as construction of the campground, nature center, roads, Interagency Fire Center and housing, and adjacent residential development, have reduced available habitat for special status species near the campground. Ongoing future campground and trail use, erosion from stormflow, and development of private lands outside the park would continue to adversely affect special status species habitat. Past, present, and reasonably foreseeable future actions would have regional long-term minor adverse impacts on the desert tortoise and special status species. Those impacts, in combination with impacts of the preferred alternative, would result in a regional long-term minor adverse cumulative effect with a short-term minor adverse impact from the preferred alternative and a long-term beneficial effect following construction.

Conclusion. The preferred alternative would have local short-term moderate adverse effects on the threatened desert tortoise during construction. Campground improvements would result in local long-term beneficial effects on special status species, including the desert tortoise, from drainage improvements, better campsite layout, and restoration of

disturbed areas that reduce erosion, improve soil stability, and aid in the establishment of native vegetation. Implementing the preferred alternative would result in a USFWS determination of “may affect, likely to adversely affect” for the desert tortoise. Cumulative effects would be regional and local, long-term, minor, and adverse.

VISITOR USE AND EXPERIENCE

Affected Environment

Joshua Tree hosts about 1.4 million visitors annually (NPS 2012b). About 83 percent of Joshua Tree visitors travel to the park for the purpose of sightseeing, including visiting the visitor centers and day hikes. Other visitors come to the park for camping, bouldering, technical climbing, stargazing, visiting archeological sites, attending educational programs, bicycling, and backpacking overnight (NPS 2004). People visit the park year-round with the majority of visitors in the spring and fall, with summer visitors consisting mostly of international travelers. The most frequently visited areas are concentrated to the northwestern portion of the park. The majority of visitors come from urban areas in Riverside, San Bernardino, Ventura, Orange, and Los Angeles counties.

Black Rock campground is a popular campground in the northwest corner of the park near the town of Yucca Valley. Originally constructed and operated as a private campground, the campground has been operated and maintained by the NPS since 1976. Each campsite has a picnic table and fire ring with comfort stations and water nearby. Currently, 126 campsites are available that vary in size and can accommodate both tents and RVs. A separate horse camp area with trailer parking is provided for overnight camping or for staging a ride. A day use picnic area and a dump station are also available. The nature center serves as a hub for campground registration, information, and nature guides; and sells books and maps. The campground provides visitor services such as educational programs, children’s programs, community meetings, wildfire coordination, hiking trail access, and equestrian trail access.

The majority of Black Rock campground overnight stays occur during the cooler spring months from March to May and in the fall in October and November (Table 15). In 2011, the campground had a total of 8,467 overnight visitors, including 5,596 tent campers and 2,871 RV campers. The campground is often at capacity on weekends in the spring and fall.

TABLE 15. OVERNIGHT VISITOR USE AT BLACK ROCK CAMPGROUND IN 2011

Month	Tent Campers	RV Campers	Total Overnight Campers
January	268	259	527
February	280	278	558
March	995	467	1,462
April	1,189	493	1,682
May	673	252	925
June	103	36	139
July	55	20	75
August	69	31	100
September	159	68	227
October	726	304	1,030
November	710	360	1,070
December	369	303	672
TOTAL	5,596	2,871	8,467

Source: NPS 2012b.

The campground offers a variety of trails for hiking and horseback riding. The 1.3-mile High View nature trail provides a short scenic hike where local vegetation is identified. The Eureka Peak, Panorama Loop, and Warren Peak trails take hikers to ridge lines overlooking the often snowy peaks of San Jacinto and San Gorgonio. The trailhead for a 35-mile section of the California riding and hiking trail, a popular equestrian route begins at the campground. Backpackers can register at the backcountry board for overnight wilderness trips.

Impact Intensity Threshold

NPS *Management Policies 2006* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the NPS is committed to providing appropriate high-quality opportunities for visitors to enjoy the parks. Black Rock campground and Joshua Tree provides a diversity of recreational opportunities and the potential for change in visitor experience was evaluated. The thresholds of change for the intensity of impacts on visitor use and experience are described in Table 16.

TABLE 16. VISITOR USE AND EXPERIENCE IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	Changes in visitor use and experience would be barely perceptible. The visitor would not likely be aware of the effects associated with the action.
Minor	The visitor might be aware of the effects associated with the action, but would likely not express an opinion about it.
Moderate	Changes in visitor use and experience would be readily apparent. The visitor would be aware of the effects associated with the action and would likely express an opinion about the changes.
Major	Changes in visitor use and experience would be readily apparent and severely adverse. The visitor would be aware of the effects associated with the action and would likely express a strong opinion about the changes.

Short-term impact—occurs only during project construction.

Long-term impact—continues after project construction is complete.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. There would be no change in the fundamental nature and quality of the visitor experience or recreational opportunities within Black Rock campground under the no action alternative. Black Rock campground would continue to experience periods of high stormflow with localized flooding that may affect visitor use and access to the campground. Traffic circulation through the campground would remain poor and the condition of campsites would continue to deteriorate as a result of poor layout, erosion, and flood damage. The nature center, roads, comfort stations, and other infrastructure would continue to sustain damage during flood events, which would impact visitor facilities and the quality of the recreational experience. Park operations would continue to be interrupted by repair and cleanup of damage left by floods. Degradation of the campground may lead to less visitor use and place greater strain on other park campgrounds. Continued use of the campground in its current condition would have a parkwide long-term moderate adverse effect on the quality of the visitor experience.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and trails have benefited the quality of the visitor experience by providing an opportunity to explore the park and access park resources. Park ongoing improvements to the campground have focused on providing a more natural experience to park visitors than the original constructed commercial campground. Existing and future residential development on private land near the campground has, and would continue to, affect the solitude and quality of the visitor experience. Future improvements to Black Rock Canyon Road would improve access to the campground. The combined effects of past, present, and reasonably foreseeable actions on recreation resources and the quality of the visitor experience would be local, long-term, and beneficial. The overall cumulative effects on visitor use and experience from the no action alternative in combination with past, present, and reasonably foreseeable future actions would remain parkwide, long-term, and beneficial, but the no action alternative would contribute a moderate adverse effect.

Conclusion. Effects on visitor use and experience under the no action alternative would be parkwide, long-term, moderate, and adverse as a result of periods of localized flooding that affect use of the campground and damage campground facilities; poor traffic circulation and campsite layout; and degradation of campground facilities that lead to less visitor use and place greater strain on other park campgrounds. Cumulative effects would be parkwide, long-term, and beneficial with a moderate adverse contribution from the no action alternative.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Drainage improvements and reconfiguration of Black Rock campground would substantially improve the quality of visitor use and experience when completed. Campsites, roads, and visitor facilities would no longer be impacted or damaged by periodic flooding. Reconfiguring campground roads, including use of one-way and two-way roads, would allow for better traffic circulation and access to campsites. An improved campsite layout would provide better definition of parking areas and camp pads

and improve privacy between campsites. An area for group campsites would be established and separated from individual campsites. The separate horse camp also would be designed to provide better definition of campsites. Designated walk-in campsites would be separate from pull-in and group camping for visitors who want more privacy and a sense of seclusion. Additional comfort stations would be built throughout the campground to provide closer access to campsites. Other amenities that would improve the quality of the visitor experience include a new amphitheatre, additional trailhead parking, a new dump station, and provision for a future visitor center.

Because campground rehabilitation would be completed in phases, there would be local short-term moderate adverse effects on visitor use and experience during construction of each phase. While portions of the campground would remain open during rehabilitation, fewer campsites would be available during some phases of work, particularly phases 1 through 4. Visitors would also experience elevated noise and activity during construction work, although construction would be limited to defined daytime hours to minimize impacts on visitors and no work would occur on weekends. The park would also advertise in advance the planned construction schedule and any campsite closures. Because construction activities would only affect a small portion of the park, the temporary reduction in camping capacity would not measurably affect the number of visitors to Joshua Tree.

Once completed, it is likely the renovated multiuse campground would attract more visitors to the area. Nearby trails and the equestrian access would remain a popular asset to the park. Overall, campground rehabilitation would provide a long-term beneficial effect on the quality of the visitor use and experience in the park.

Cumulative Effects. Past actions, such as construction of the campground, nature center, and trails, have resulted in benefits to the visitor use and experience by providing an opportunity to explore the park and access park resources. Park ongoing improvements to the campground have focused on providing a more natural experience to park visitors than the original constructed commercial campground. Existing and future residential development on private land near the campground has, and would continue to, affect the solitude and the quality of the visitor experience. Future improvements to Black Rock Canyon Road would improve access to the campground. The combined effects of past, present, and reasonably foreseeable actions on the quality of the visitor use and experience would be beneficial. The overall cumulative effects on visitor use and experience from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would remain parkwide, long-term, and beneficial, with a substantial beneficial contribution from the preferred alternative.

Conclusion. Campground rehabilitation including reduced flooding from drainage improvements; new roads with better traffic circulation; improved campsite layout with designated group, walk-in, and horse campsites; additional comfort stations; trailhead parking; and other amenities would substantially improve the quality of visitor use and experience. These improvements would have a parkwide long-term beneficial effect on the quality of the visitor use and experience. A parkwide short-term moderate adverse effect on visitor use and experience would occur with implementation of each phase of rehabilitation due to reduced campsite availability and construction disturbance. Cumulative effects would be parkwide, long-term, and beneficial.

PUBLIC HEALTH, SAFETY, AND PARK OPERATIONS

Affected Environment

The ongoing goal of park operations is to provide a healthy and safe environment for visitors and park staff; maintain park physical, natural, and cultural resources; and provide recreational opportunities for park visitors. Deficiencies in the condition of Black Rock campground have made efficient park operations challenging. The campground is currently subject to periodic flooding over roads and through some campsites during storm events, which presents safety concerns and results in property damage. Some of the campsites are indistinguishable from roads, there is no separation between RV sites and private campsites, and there are no designated group camping sites. This often leads to confusion among visitors and requires more enforcement and regulation from park staff. Parking is inadequate at campsites and at day use areas for day hikers and equestrian trail users. This often leads visitors to park along roads, which creates safety concerns and causes resource damage. The lack of efficient vehicle circulation and poorly defined parking areas and campsites makes it difficult for efficient management and protection of park resources and serving visitor needs in the campground. Inadequate drainage in the campground contributes to periodic flooding north of the campground along Black Rock Canyon Road and adjacent private property, which is also a safety concern.

Impact Intensity Threshold

Public health and safety refers to the ability of the NPS to provide a healthy and safe environment for visitors and park staff, to protect human life, and to provide for injury-free visits and appropriate responses when accidents and injuries occur. Park operations, for the purposes of this EA, refers to the quality and effectiveness of the infrastructure, and the ability of park staff to maintain the infrastructure used in park operations to protect and preserve vital resources and provide for a high-quality visitor experience. The facilities included in the analysis for this EA include Black Rock campground and the campground drainage systems, roads, and campsites. The thresholds of change for the intensity of impacts on public health, safety, and park operations are described in Table 17.

TABLE 17. PUBLIC HEALTH, SAFETY, AND PARK OPERATIONS IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	The effects would be at low levels of detection and would not have appreciable effects on public health, safety, and park operations.
Minor	The effects would be detectable and would be of a magnitude that would not have appreciable effects on public health, safety, and park operations. If mitigation is needed to offset adverse effects, it would be simple and likely successful.
Moderate	The effects would be readily apparent and would result in a change in public health, safety, and park operations that would be noticeable to park staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major	The effects would be readily apparent; would result in a substantial change in public health, safety, and park operations in a manner noticeable to staff and the public; and would be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed and extensive, and success could not be guaranteed.

Short-term impact—effects lasting for the duration of the treatment action.

Long-term impact—effects continuing after the treatment action.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Under the no action alternative Black Rock campground would continue to be used and the park would maintain roads, buildings, and facilities with available resources. Periodic flooding would continue to occur without drainage improvements, causing damage to roads, campsites, the nature center, and other infrastructure. Thunderstorms with intense periods of rainfall and runoff also pose a risk to campground visitors and staff that are present when localized flooding occurs suddenly. Periodic flooding may result in damage to Black Rock Canyon Road and private property north of the campground and safety for travelers on Black Rock Canyon Road. Degraded campsites, poor vehicle circulation and parking, and poorly defined definition between RV campsites, private campsites, and roads would continue to place demands on park staff for monitoring and enforcement and would reduce staff availability to meet other needs. The inefficient operations and safety concerns at Black Rock campground may deter visitors from using this campground, which would potentially strain other areas of the park. Under the no action alternative, there would be parkwide long-term moderate adverse effects on public health, safety, and park operations.

Cumulative Effects. Past actions, such as construction of the campground, roads, and trails and the ongoing work required to maintain these facilities, have provided recreational and educational opportunities for campground visitors to enjoy the park. Future improvements to Black Rock Canyon Road would improve access to the campground and reduce road maintenance. The combined effects of past, present, and reasonably foreseeable actions on public health, safety, and park operations would be local, long-term, moderate, and adverse. The overall cumulative effects on public health, safety, and park operations from the no action alternative in combination with past, present, and reasonably foreseeable future actions would remain local, long-term, moderate, and adverse, with a moderate adverse contribution from the no action alternative.

Conclusion. The no action alternative would result in a parkwide, long-term, moderate adverse effect on public health, safety, and park operations by not addressing the inadequate drainage system, periodic flooding, poor campsite and road layout, and other deteriorating infrastructure. Cumulative effects would be local, long-term, moderate, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. The preferred alternative would greatly reduce the flood potential in the campground and the need for repairing and maintaining flood-damaged areas, as well as substantially improving safety for visitors and staff. Park operations and maintenance duties would become more efficient with campground improvements that address deteriorating infrastructure and stabilize areas currently impacted by erosion, stormflow, vehicles, and visitor traffic. Reconfigured roads and campsites would improve traffic circulation. New campground trails would facilitate pedestrian travel within the campground and increase safety with fewer visitors walking on roads. Better-defined campsites and separate group and walk-in campsites would improve operating efficiency and park staff requirements for enforcement and regulation.

Construction activities would have a short-term minor adverse effect on park operations from controlling visitor access, temporary closure of portions of the campground, construction traffic, and disruption in normal operations. The safety of park visitors and staff would be maintained throughout campground rehabilitation work with no adverse effects anticipated. Completion of campground rehabilitation would have a local long-term beneficial effect on public health, safety, and park operations.

Cumulative Effects. Past actions, such as construction of the campground, roads, and trails and the ongoing work required to maintain these facilities, have provided recreational and educational opportunities for campground visitors to enjoy the park. Future improvements to Black Rock Canyon Road would improve access to the campground and reduce road maintenance. The combined effects of past, present, and reasonably foreseeable actions on public health, safety, and park operations would be local, long-term, moderate, and adverse. The overall cumulative effects on public health, safety, and park operations from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would be local long-term and beneficial, with a substantial beneficial contribution from the preferred alternative.

Conclusion. The preferred alternative would result in local long-term beneficial effects on public health, safety, and park operations by decreasing the potential for flooding and improving campground roads, campsites, infrastructure, and amenities. Cumulative effects would be local, long-term, and beneficial.

VISUAL RESOURCES

Affected Environment

Black Rock campground is in the northwest corner of the park on a road that dead ends at the campground. The campground provides panoramic views of surrounding low-rolling mountains. The campsites are on a hillside at the mouth of Black Rock Canyon and surrounding lands support a diversity of desert vegetation including Joshua trees, junipers, cholla cacti, and a mixture of desert shrubs. Original construction of the campground and ongoing campground use disturbed much of the native vegetation within the campground perimeter. Inadequate drainage with localized flooding and erosion have contributed to reduced vegetation cover and visual quality and increased sediment deposition within the campground.

Impact Intensity Threshold

Visual resources are the features that define the visual character of an area and include natural features, vistas, viewsheds, and architecture. The thresholds of change for the intensity of impacts on visual resources are described in Table 18.

TABLE 18. VISUAL RESOURCES IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	Effects would result in barely perceptible changes to existing views.
Minor	Effects would result in slightly detectable changes to views in a small area or would introduce a compatible human-made feature to an existing developed area.
Moderate	Effects would be readily apparent and would change the character of visual resources in the area. The visitor would be aware of the effects associated with the action and would likely express a neutral to negative opinion about the changes.
Major	Effects would be highly noticeable and visible from a considerable distance or over a large area. The character of visual resources would change substantially. The visitor would be aware of the effects associated with the action and would likely express a strong negative opinion about the changes.

Short-term—following project completion, recovery would take less than three years.

Long-term—following project completion, recovery would take more than three years.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Ongoing maintenance and minor improvements under the no action alternative would not appreciably alter the visual character of the campground and surrounding vistas. Periodic flood events would continue to cause erosion, sedimentation, and damage to campground natural and physical resources. The poor campsite layout would continue to contribute to reduced vegetation cover and visual quality and increased erosion within the campground. Deteriorating and damaged campground buildings, roads, and infrastructure would diminish the visual quality of the landscape in the campground. The no action alternative would have a local long-term moderate adverse effect on the visual quality of the campground. Erosion and deposition of sediment along Black Rock Canyon Road would have similar long-term moderate adverse effects on visual quality north of the park boundary. The scenic quality of park lands bordering the campground would not be affected under the no action alternative.

Cumulative Effects. Past and present actions, such as construction and use of the campground, roads, parking areas, nature center, trails, and adjacent residential areas have influenced the visual character in the Black Rock campground area. Future improvements to Black Rock Canyon Road would improve the visual quality of the entry to the campground. Additional residential development north of the campground would introduce changes to the natural landscape and diminish the scenic quality of lands adjacent to the park. The combined effects of past, present, and reasonably foreseeable actions on visual quality would be local, long-term, moderate, and adverse. The overall cumulative effects on visual quality from the no action alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, moderate, and adverse, with a moderate adverse contribution from the no action alternative.

Conclusion. The no action alternative would have local long-term moderate adverse effects on visual quality in the campground as a result of flood events that cause erosion, sedimentation, and damage to natural resources, and infrastructure, as well as impacts on adjacent private property. Cumulative effects would be local, long-term, moderate, and adverse.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. The visual quality of Black Rock campground would be temporarily impacted during construction from earthwork, vegetation removal, equipment, dust, and road and drainage system construction. Installation of a sound attenuation fence adjacent to construction zones would help reduce noise impacts, but would introduce a contrasting visual feature. The fence would use a material to blend with the color of the landscape to minimize the visual contrast.

The reconfigured campground would be designed to be compatible with the existing landscape. Native vegetation would be used for landscaping to screen roads and campsites to aid in blending into the landscape. This would include transplanting Joshua trees and California junipers affected by rehabilitation work. Visual evidence of erosion and sedimentation would diminish with drainage improvements and revegetation. Improvements in visual quality would occur with each phase of campground rehabilitation. No existing vistas or viewsheds would be adversely affected by new facilities and reconfiguring campground roads across the slope would be less visibly intrusive than the current alignment up and down the slope. The impact on visual quality of the campground would be long-term, negligible, and adverse. The preferred alternative would have local short-term moderate adverse effects on visual quality during construction from earth exposure of bare soil, construction equipment, and other temporary disturbances. Once completed, campground rehabilitation would have a local long-term beneficial effect on visual quality. Reduction of off-site erosion and sedimentation would also improve visual quality along Black Rock Canyon Road north of the campground.

Cumulative Effects. Past and present actions, such as construction and use of the campground, roads, parking areas, nature center, trails, and adjacent residential areas have influenced the visual character in the Black Rock campground area. Future improvements to Black Rock Canyon Road would improve the visual quality of the entry to the campground. Additional residential development north of the campground would introduce changes to the natural landscape and diminish the scenic quality of lands adjacent to the park. The combined effects of past, present, and reasonably foreseeable actions on visual quality would be local, long-term, moderate, and adverse. The overall cumulative effects on visual quality from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, and beneficial, with a substantial beneficial contribution from the preferred alternative.

Conclusion. The rehabilitation Black Rock campground would result in local short-term moderate adverse effects in visual quality near the campground from earthwork and construction-related disturbances. Over the long term, the preferred alternative would have a local long-term beneficial effect on visual quality at the campground from new roads, better campsite layout, and drainage improvements that reduce erosion and property damage. Cumulative effects would be local, long-term, and beneficial.

SOCIOECONOMICS AND GATEWAY COMMUNITIES

Affected Environment

Joshua Tree is in Riverside and San Bernardino counties, California. Yucca Valley is the closest community to Black Rock campground that provides visitor services. Other nearby communities that provide tourism-related services include Joshua Tree, Twentynine Palms, and Palm Springs. With county populations of 2.0 and 2.1 million, respectively, San Bernardino and Riverside counties are some of the most populous counties in the United States (United States Census Bureau 2011). With the park's proximity to large population centers, it draws about 1.4 million visitors annually, and tourism-related spending at local gateway communities is a vital part of the local economy.

The Sky Harbor neighborhood south of Yucca Valley is adjacent to the north side of NPS property and Black Rock campground. This neighborhood has a mixture of large lot rural residential property and smaller suburban residential lots. The population in the 7.8-square-mile Sky Harbor neighborhood is about 1,900 and the average detached home price in 2009 was about \$260,000 (City-data.com 2012). Residents along Black Rock Canyon Road are closest to the campground and are affected by flood events that convey stormwater down the road and occasionally onto their property. Sky Harbor residents frequently visit the Black Rock campground because of the ready access to trails for hiking and equestrian use.

Impact Intensity Threshold

Socioeconomic and gateway issues were identified through the scoping process. Concerns covered by this section include effects on the economic contribution of Joshua Tree to the local economies in the gateway communities and the effect on the residential neighborhood near the campground. The thresholds of change for the intensity of impacts on socioeconomics and gateway communities are described in Table 19.

TABLE 19. SOCIOECONOMICS AND GATEWAY COMMUNITIES IMPACT AND INTENSITY THRESHOLDS

Impact Intensity	Intensity Description
Negligible	No effects would occur or the effects on socioeconomics and gateway communities would be below the level of detection.
Minor	The effects on socioeconomics and gateway communities would be detectable. Any effects would be small and if mitigation were needed to offset potential adverse effects, it would be simple and successful.
Moderate	The effects on socioeconomics and gateway communities would be readily apparent. Any effects would result in changes to socioeconomics on a local scale. If mitigation is needed to offset potential adverse effects, it could be extensive, but would likely be successful.
Major	The effects on socioeconomics and gateway communities would be readily apparent and would cause substantial changes to regional socioeconomics. Mitigation measures to offset potential adverse effects would be extensive and success could not be guaranteed.

Short-term impact—effects lasting for the duration of the treatment action.

Long-term impact—effects lasting longer than the duration of the treatment action.

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts. Under the no action alternative, the park would continue operation of Black Rock campground in its current configuration. No immediate impact on the number of campground visitors or tourist-related spending in Yucca Valley or gateway communities is likely. However, continued degradation of the campground from flood damage and deterioration of infrastructure could eventually affect visitor attendance in that portion of the park and may deter visitors from staying at the campground. Residents in the Sky Harbor neighborhood adjacent to the park would continue to experience periodic local flooding along Black Rock Canyon Road as described in the “Floodplain” section. Thus, failure to rehabilitate campground under the no action alternative would have potential long-term minor adverse effects on the regional economy and with long-term moderate adverse effects on the local community north of the campground.

Cumulative Effects. Construction and operation of the campground has had a positive beneficial effect on the Yucca Valley economy and has provided a convenient recreational opportunity for residents in the Sky Harbor neighborhood to access the park. Future residential development in Sky Harbor and the surrounding Yucca Valley community would add to the number of residents who visit this portion of the park. Future improvements to Black Rock Canyon Road would aid in resident and visitor access to the campground. The combined effects of past, present, and reasonably foreseeable actions on socioeconomics and gateway communities would be regional, long-term, and beneficial. The overall cumulative effects on socioeconomics and gateway communities from the no action alternative in combination with past, present, and reasonably foreseeable future actions would be regional, long-term, and beneficial, with a long-term minor adverse contribution from the no action alternative.

Conclusion. The no action alternative would have potential long-term minor adverse effects on the regional economy from flood-related damage to the campground that leads to reduced visitor use and tourism-related spending in the Yucca Valley area. Residents in Sky Harbor also would be adversely affected by inadequate drainage in the campground that leads to property damage from stormflow along Black Rock Canyon Road. Cumulative effects would remain regional, long-term, and beneficial, with an adverse contribution from the no action alternative.

Preferred Alternative—Rehabilitate Black Rock Campground

Direct and Indirect Impacts. Construction-related spending of about \$10.7 million for campground rehabilitation and drainage improvements and about \$4.1 million for a future visitor center would provide a short-term increase in employment opportunities and local and regional spending on goods, services, and materials. Campground rehabilitation would have a long-term beneficial effect on the regional economy by improving the quality of the visitor experience, which contributes to the number of park visitors and tourist-related spending in Yucca Valley and gateway communities.

Sky Harbor residents also would benefit from campground rehabilitation work that provides additional parking and trailhead and day use improvement that enhance access and the quality of the visitor experience. Residents along Black Rock Canyon Road and downstream neighborhoods would experience a long-term beneficial effect from reduced flooding risk and property damage. Campground rehabilitation would result in short-term minor adverse impacts on residents along Black Rock Canyon Road from noise and construction traffic.

Cumulative effects. Construction and operation of the campground has had a positive beneficial effect on the Yucca Valley economy and has provided a convenient recreational opportunity for residents in the Sky Harbor neighborhood to access the park. Future residential development in Sky Harbor and the surrounding Yucca Valley community would add to the number of residents who visit this portion of the park. Future improvements to Black Rock Canyon Road would aid in resident and visitor access to the campground. The combined effects of past, present, and reasonably foreseeable actions on socioeconomics and gateway communities would be regional, long-term, and beneficial. The overall cumulative effects on socioeconomics and gateway communities from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would be regional, long-term, and beneficial, with a long-term beneficial contribution from the preferred alternative.

Conclusion. The preferred alternative would have a long-term beneficial effect on the regional economy from campground rehabilitation that draws visitors and tourism-related spending. Sky Harbor neighborhood residents near the campground also would experience a long-term beneficial effect on the quality of their access and use of the park, as well as a substantial reduction in flooding risk along Black Rock Canyon Road. Short-term minor adverse effects on residents near the park and along park access roads would occur from noise and construction traffic. Cumulative effects would be regional, long-term, and beneficial.

[This page intentionally left blank]

CONSULTATION AND COORDINATION

INTERNAL SCOPING

Internal scoping was conducted by an interdisciplinary team of professionals from Joshua Tree National Park, DSC staff, and consultant specialists. Team members met multiple times in 2011 and 2012 to discuss the purpose and need for the project, various treatment options for campground rehabilitation, potential environmental impacts, reasonably foreseeable actions that may have cumulative effects, and resource protection measures and BMPs.

EXTERNAL SCOPING

External scoping began with a public scoping notice released on June 7, 2011 describing the preferred alternative and soliciting comments or concerns with the proposal from campground rehabilitation and drainage improvements (Appendix A). The park sent letters describing the proposed project and asking for comments to more than 145 interested individuals; organizations; state, county, and local governments; federal agencies; local businesses; and media outlets describing the preferred alternative and asking for comments. The results of scoping are discussed in the “Scoping” section in the “Purpose and Need” chapter.

AGENCY CONSULTATION

Compliance with section 106 of the NHPA is not being subsumed under NEPA, but is being conducted separately through ongoing consultation with the California SHPO, who was notified of the proposed project by letter on June 9, 2011. The park provided the California SHPO with an Assessment of Effect on March 30, 2012 requesting concurrence with the park’s finding that no historic properties would be affected by the preferred alternative. This EA also was forwarded to the California SHPO for review and comment.

In accordance with the Endangered Species Act (ESA), the NPS contacted the USFWS by letter on October 7, 2011 to solicit input on threatened, endangered, and species of concern for the proposed project. In June/July 2011 NPS surveys found evidence of desert tortoise activity in the Black Rock campground and the decision was made to prepare a biological assessment. On November 30, 2011, Michael Vamstad, the park wildlife ecologist, met with Nisa Marks with the USFWS at Black Rock campground to review the project area. Additional discussions were held with the USFWS on April 16, 2012 to discuss the appropriate conservation measures for the desert tortoise. The park prepared a biological assessment as part of Section 7 consultation under the ESA and submitted it to the Fish and Wildlife Service for review and concurrence.

AMERICAN INDIAN CONSULTATION

The parks contacted American Indian tribes and organizations, including the Agua Caliente Band of Cahuilla Indians, Augustine Band of Mission Indians, Cabazon Band of Cahuilla Mission Indians, Cahuilla Band of Mission Indians, Colorado River Indian Tribe, Fort Mojave Indian Tribe, Los Coyotes Band of Mission Indians, Morongo Band of Cahuilla Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres-Martinez Band of Desert Cahuilla Indians, and Twentynine Palms Band of Mission Indians on June 8, 2011 informing them of the proposed project and to determine if any historic properties or other resources were in the project area and to inquire whether the tribes wanted to be involved in the environmental compliance process. Information from the tribes also was requested to determine if any ethnographic resources are in the project area and if the tribes wanted to be involved in the environmental compliance process. The park has not received any written comments as of the date of this EA. American Indian tribes traditionally associated with the park lands also will have an opportunity to review and comment on this EA and will be contacted individually to determine if they desire formal government-to-government consultation.

ENVIRONMENTAL ASSESSMENT REVIEW AND RECIPIENTS

The EA will be released for a 30-day public comment period. To inform the public of the availability of the EA, the NPS will publish and distribute a letter to the park's general mailing list; area American Indian tribes; and federal, state, and local agencies. The park will provide a press release to the area media. Copies of this EA will be provided to interested individuals upon request.

The public is encouraged to submit written comments on the proposed project during the 30-day comment period. This EA will also be available for review at the park's visitor centers and on the Internet at <http://parkplanning.nps.gov/jotr>. Comments can be submitted through this website or provided by writing to: Superintendent, Attn: Black Rock Campground Project, 74485 National Park Drive, Twentynine Palms, CA 92277-3597.

All public comments will be reviewed and prior to the release of a decision document. The NPS will issue responses to substantive comments received during the public comment period, and will make appropriate changes to the EA as needed.

COMPLIANCE WITH FEDERAL AND STATE REGULATIONS

The NPS would comply with all applicable federal and state regulations when implementing the preferred alternative to rehabilitate the campground. Permitting and regulatory requirements for the preferred alternative are listed in Table 20.

TABLE 20. ENVIRONMENTAL COMPLIANCE REQUIREMENTS

Agency	Statute, Regulation, or Order	Purpose	Project Application
Federal			
National Park Service	National Environmental Policy Act	Applies to federal actions that may significantly affect the quality of the environment	Environmental review of the preferred alternative and decision to prepare a FONSI or EIS.
	National Historic Preservation Act, Section 106	Protection of historic and cultural resources	The park is consulting with the California SHPO on the park's finding of no historic properties affected.
	EO 11990, "Protection of Wetlands"	Requires avoidance of adverse wetland impacts, where practicable, and mitigation, if necessary	No wetlands present.
	EO 11988, "Floodplain Management"	Requires avoidance of adverse floodplain impacts, where practicable, and mitigation, if necessary	Black Rock campground is adjacent to, but outside of, the Black Rock Canyon floodplain. The campground is subject to periodic local flooding from surface runoff.
	DO-77-2: <i>Floodplain Management</i>	Protection of natural resources and floodplains	A floodplains statement of findings was prepared that determined the preferred alternative would have a negligible effect on the 100-year flood.
U.S. Army Corps of Engineers (Corps)	Clean Water Act – Section 404 Permit to discharge dredge and fill material	Authorizes placement of fill or dredge material in waters of the U.S. including wetlands	No wetlands present.
U.S. Fish and Wildlife Service	Endangered Species Act	Protection of federally listed threatened or endangered species	The park prepared and submitted a biological assessment to the Fish and Wildlife Service because of potential effects on the threatened desert tortoise.

Agency	Statute, Regulation, or Order	Purpose	Project Application
State of California			
California Environmental Protection Agency, Regional Water Board	National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Activities	Erosion control and protection of water quality	A stormwater pollution prevention plan would be developed prior to grading and surface disturbances.
	General Permit for construction dewatering	Water quality protection associated with discharge of intercepted groundwater	A permit application would be submitted if excavation activities would cause the interception and discharge of groundwater.

LIST OF PREPARERS AND CONTRIBUTORS

NATIONAL PARK SERVICE, JOSHUA TREE NATIONAL PARK

Mark Butler, Superintendent
Kirk Diamond, Road Supervisor/Acting Facility Manager
Andrea Compton, Chief of Education and Resources
John Slaughter, Chief of Maintenance
Luke Sabala, Physical Resources
Jan Keswick, Cultural Resource Specialist
Michael Vamstad, Wildlife Ecologist
Josh Hoines, Vegetation Branch Chief

NATIONAL PARK SERVICE, DENVER SERVICE CENTER

Jan Burton, Project Manager
Treff Alexander, Landscape Architect
Richard Boston, Cultural Resource Specialist
Ginger Molitor, NEPA Specialist

ERO RESOURCES CORPORATION

Mark DeHaven, Project Manager
Clint Henke, Ecologist
Barbara Galloway, Hydrologist
Sean Larmore, Archeologist
Dave Hesker, Graphic Designer
Kay Wall, Technical Editor

Cardo ENTRIX

Stephen Peck, Engineer

REFERENCES

- California Department of Fish and Game (CDFG). 2011. Inland Desert Region. Wildlife Information and Programs. Available at: <http://www.dfg.ca.gov/about/wildlife.html>. Last accessed: September 9, 2011. Cornell University.
- City-data.com. 2012. Available at: <http://www.city-data.com/neighborhood/Sky-Harbor-Yucca-Valley-CA.html>.
- Desert Tortoise Council 1994. Guidelines for Handling Desert Tortoise During Construction Projects. Revised 1999. Edward L. LaRue, Jr., ed. Wrightwood, California.
- La Doux, T. 2009. Personal communication (via e-mail) between T. La Doux with the Park Service and Clint Henke with ERO Resources Corporation. November 30.
- NOAA (National Oceanic and Atmospheric Administration). 2010. A History of Significant Weather Events in Southern California, Organized by Weather Type. Available at: www.wrh.noaa.gov/sgx/document/weatherhistory.pdf. Last updated: February.
- NPS (National Park Service)
- 1995. General Management Plan/ Development Concept Plans/Environmental Impact Statement. Riverside and San Bernardino counties, CA. February.
 - 2004. Joshua Tree National Park Visitor Study.
 - 2006. National Park Service Management Policies.
 - 2006a. Rehabilitate Black Rock Campground. PMIS 004745. Repair / Rehab Project Value Analysis Report Prepared by: Denver Service Center. May 21 to June 2.
 - 2007a. Black Rock Campground Design Charrette. Prepared by HDR. PMIS # 4745. March.
 - 2007b. Black Rock Campground Design Charrette Technical Supplement. Prepared by HDR. PMIS # 4745. March.
 - 2010. Archeological Inventory of Black Rock Campground and Black Rock Canyon Drainage, Joshua Tree National Park, San Bernardino County, CA. Prepared by: Caitlyn Marrs.
 - 2011. Desert Tortoise Presence/Absence Surveys for PMIS 158310: Black Rock Campground rehabilitation project. Prepared by Stephanie Root, Biological Science Technician and Michael Vamstad, Wildlife Ecologist. July 19.
 - 2012a. Final Drainage Analysis and Flood Study of Black Rock Campground and Canyon. To Assist in the Repair and Rehabilitation of Black Rock Campground by Alleviating Existing Drainage and Erosion Control Problems. Prepared by Cardno ENTRIX.
 - 2012b. NPS Stats. Joshua Tree National Park recreational visitor statistics. Available at: <http://www.nature.nps.gov/stats>.
 - 2012c. Black Rock Campground Biological Assessment.

- United States Census Bureau. 2011. Population finder. Available at: <<http://www.census.gov/>>. Last accessed: January 20.
- U.S. Fish and Wildlife Service (USFWS)
1990. Endangered and Threatened Wildlife and Plants: Determination of Threatened Status for the Mojave Population of the Desert Tortoise. *Federal Register* 55(63):12178-12191.
- 1994a. Endangered and Threatened Wildlife and Plants; Five plants from the San Bernardino Mountains in southern California determined to be threatened or endangered; Final rule. *Federal Register* 59(163):43652-43664.
- 1994b. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR.
- 2009a. *Astragalus tricarniatus* (triple-ribbed milk-vetch). 5 Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Carlsbad, CA. August 14.
- 2009b. *Erigeron parishii* (Parish's daisy). 5 Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Carlsbad, CA. August 13.
2010. Mojave Population of the Desert Tortoise (*Gopherus agassizii*). 5 year review: Summary and Evaluation. U.S. Fish and Wildlife Service Desert Tortoise Recovery Office, Reno, NV.
2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, CA. May 6.
2012. Species by County Report. Available at: <http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=06071>. Last accessed: March 23, 2012. August 30.
- Vamstad, M. 2010. Personal communication between Michael Vamstad, Wildlife Ecologist with Joshua Tree National Park, and Clint Henke with ERO Resources Corporation regarding sensitive wildlife species occurrence in Black Rock campground. November 4.

[This page intentionally left blank]

APPENDIXES

Appendix A – Scoping Notice

Appendix B – Floodplain Statement of Findings

[This page intentionally left blank]

Appendix A – Scoping Notice



Joshua Tree National Park News Release

National Park Service
U.S. Department of Interior
Joshua Tree National Park



Park Seeks Public Input on Rehabilitation of the Black Rock Campground for Erosion and Drainage Control

Public input is being sought regarding the National Park Service's (NPS) proposed plan to conduct drainage and erosion control improvements, along with redesign of the road and campground layout at the Black Rock Campground. Joshua Tree National Park will be hosting a public meeting on June 28, 2011 at 5:00 p.m. at the Black Rock Campground Visitor Center Auditorium to inform the public about proposed improvements to the campground. This will also be a time for the public to share their ideas and recommendations. Black Rock Campground is located at 9800 Black Rock Canyon, Yucca Valley California 92284, five miles south of Highway 62 in Yucca Valley via Joshua Lane.

The campground is sited on 80 acres in the northwest corner of Joshua Tree National Park about 1 mile south of the town of Yucca Valley. The existing campground facilities include a visitor center, comfort stations, gravel and asphalt roads, and car and recreational vehicle (RV) campsites. The large Black Rock Canyon watershed outside of the boundaries of the campground currently conveys storm runoff through portions of the campground in an unpredictable manner, resulting in localized erosion and flooding. The campground, acquired by the Park Service in 1976 from a commercial operator, was not designed to adequately convey drainage away from campground facilities. Campground roads are currently aligned so that storm water runs directly down the roads with the potential for damaging campground facilities, natural resources, and adjacent landowner property. Degraded roads and camping areas also have contributed to increased storm runoff, erosion, and sedimentation.

To address these issues, the park is proposing several changes to the campground including drainage improvements to divert storm water runoff away from campground roads and nearby residential properties into appropriate natural drainage channels. Campground roads would be realigned across the topographic contour to prevent conveyance of storm water runoff and reduce the potential for erosion. The proposed realignment of the campground road network would improve accessibility for vehicles, pedestrians, and horse riders, and it would enhance overall circulation. Improvement of campsite layout with better privacy would also be a component of the proposed rehabilitation work. The proposed project does not include improvements to the campground entrance road. This will be addressed in a future project.

An Environmental Assessment will be prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that: 1) analyzes a reasonable range of alternatives to meet project objectives, 2) evaluates issues and impacts to park resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts.

The park encourages public participation throughout the planning process. There will be two opportunities to comment formally on the project—once during initial project scoping and again following release of the Environmental Assessment.

How to Comment on Plans for Black Rock Campground Rehabilitation

The public is invited to provide input on the proposal to rehabilitate Black Rock Campground. Comments received during this scoping period will be used to help define the issues and concerns to be addressed in this environmental assessment.

Comments will be accepted until July 28, 2011. Comments can be submitted at the public open house described above or online by visiting <http://parkplanning.nps.gov>, the website for the National Park Service's Planning Environment and Public Comment (PEPC) system.

Comments also may be sent to the address below:

Superintendent
Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, CA 92277-3597

Commentors should be aware that their entire comments— including personal identifying information— may be made publicly available at any time. While commentors can ask that their personal identifying information be withheld from public review, the NPS cannot this guarantee this will be possible.

If you have questions about the project or would like more information please contact Kirk Diamond at 760-367-5683, or by email at kirk_diamond@nps.gov. If you have questions about the Environmental Assessment or would like additional information, please contact Andrea Compton, Chief of Resources, at 760-367-5560 or by e-mail at andrea_compton@nps.gov.

#

6/9/11

Media Contact: Joe Zarki, 760-367-5520

[This page intentionally left blank]

Appendix B – Floodplain Statement of Findings

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11988 FLOODPLAIN MANAGEMENT REPAIR AND REHABILITATION OF BLACK ROCK CAMPGROUND ENVIRONMENTAL ASSESSMENT

JOSHUA TREE NATIONAL PARK

Recommended: _____
Superintendent, Joshua Tree National Park Date

Concurred: _____
Chief, Water Resources Division Date

Concurred: _____
Western Regional Safety Officer Date

Approved: _____
Director, Western Region Date

**STATEMENT OF FINDINGS FOR
EXECUTIVE ORDER 11988 FLOODPLAIN MANAGEMENT
REPAIR AND REHABILITATION OF BLACK ROCK CAMPGROUND
ENVIRONMENTAL ASSESSMENT**

JOSHUA TREE NATIONAL PARK

INTRODUCTION

Executive Order (EO) 11988, “Floodplain Management” requires the National Park Service (NPS) and other agencies to evaluate the likely impacts of actions in floodplains. It is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. If a proposed action is in an applicable regulatory floodplain, then flood conditions and associated hazards must be quantified and a formal statement of findings (SOF) must be prepared. Director’s Order (DO)–77-2: *Floodplain Management* provides direction for the preparation of a floodplain SOF. This SOF has been prepared to comply with EO 11988 and DO–77-2.

PROPOSED ACTION

The NPS is considering repairing, rehabilitating, and reconstructing Black Rock campground, which is in the northwest corner of Joshua Tree National Park (park) near the community of Yucca Valley, California (Figure 1). The preferred alternative would add drainage improvements, reconfigure campground roads and campsites, and protect park facilities and natural resources from further deterioration. While the Black Rock campground is outside of the Black Rock Canyon floodplain, the large watershed above the campground currently conveys stormwater runoff through portions of the campground in an unpredictable manner, resulting in localized erosion and flooding in the campground and downstream private property, including Black Rock Canyon Road. The original campground was not designed to adequately convey drainage away from campground facilities. Campground roads are aligned so that stormwater runs directly down the roads with the potential for damaging campground facilities, natural resources, and downstream private property. Degraded roads and camping areas also have contributed to erosion and sediment deposition downstream of the campground. The objective of the preferred alternative is to convey drainage from the campground to the adjacent Black Rock Canyon without increasing downstream flooding, and reduce uncontrolled runoff and localized flooding in the campground and downstream private property.

Project Description

New stormwater drainage channels, in conjunction with the east-west crossroads within the inner campground loop road would be constructed to intercept and direct flow east to the existing Black Rock Canyon. This would prevent stormwater runoff from flowing north through the campground and to the adjacent residential neighborhood (Figure 2).

FIGURE 1. JOSHUA TREE NATIONAL PARK

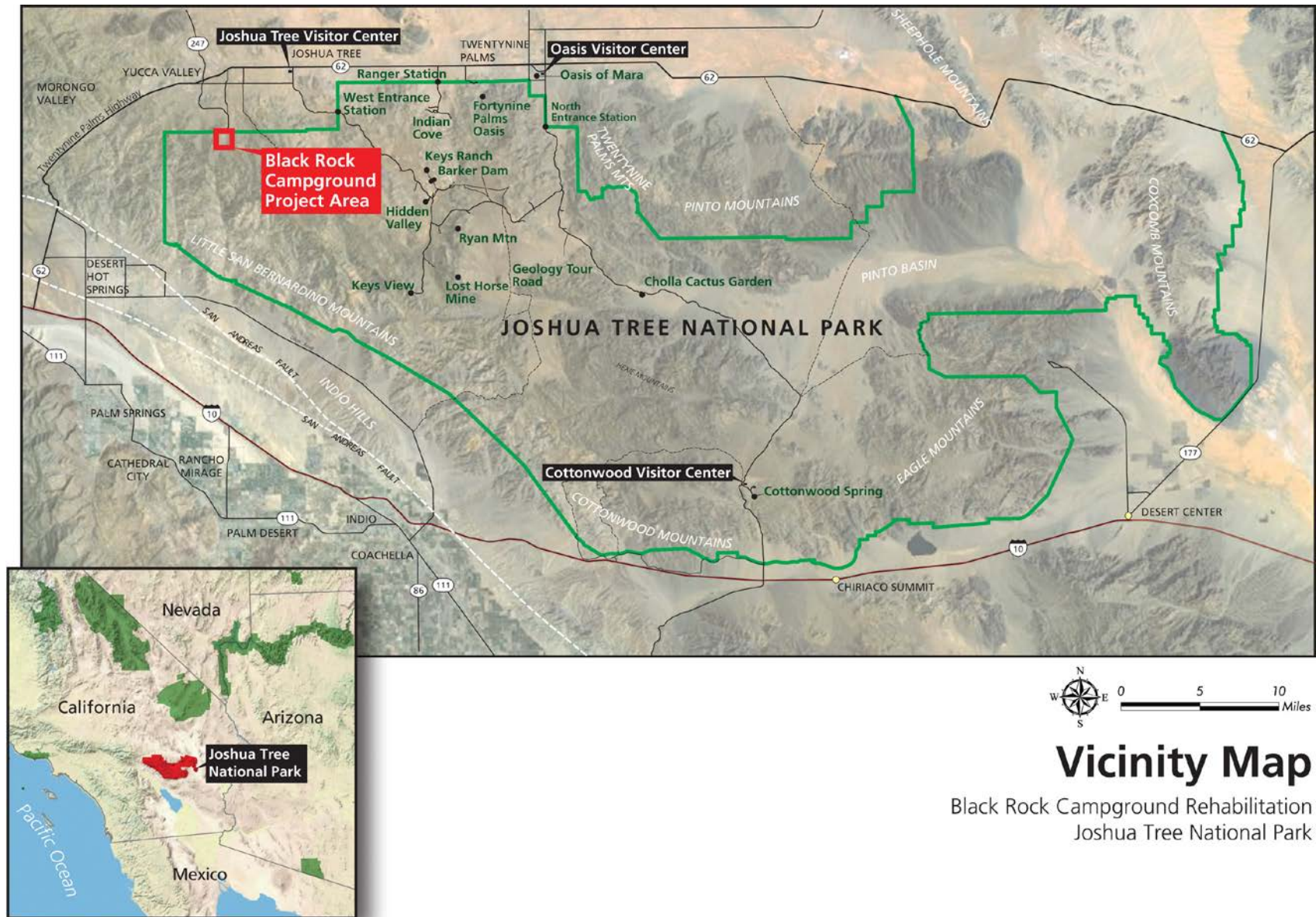
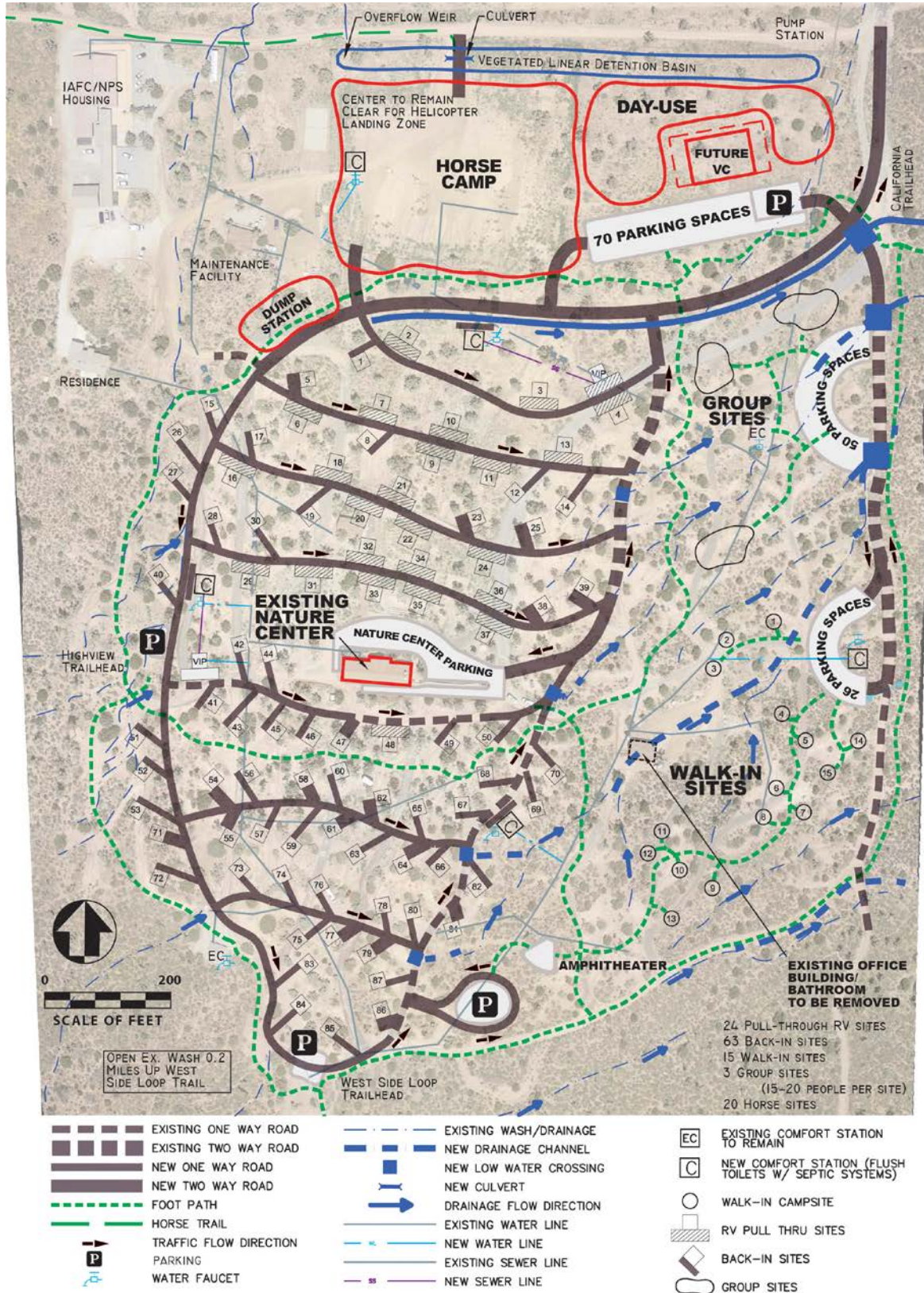


FIGURE 2. PROPOSED DRAINAGE AND BLACK ROCK CAMPGROUND IMPROVEMENT PHASES



The proposed drainage improvements would be a combination of roadside channels and open-flow channels. Low-flow water crossings would be used where drainage channels cross campground roads.

Stormflow captured by new drainage channels would help disperse runoff and reduce the potential for flooding and associated property damage and safety concerns. In addition, drainage improvements include opening a currently plugged dry wash about 0.2 mile south of the campground near the West Side Trail Loop to reduce the amount of off-site runoff entering the campground and divert it around the campground. Approximately 2,350 feet of new drainage channels are proposed with average channel widths of 12 feet. The channels would be 2 feet deep and lined with rocks. A new 0.7-acre vegetated detention basin on the north downslope boundary of the campground would provide storage and infiltration of stormwater runoff. The majority of the proposed campground improvements would be within areas of existing disturbance, although there would be new disturbance, as well as decommissioning and restoring old roads and other infrastructure. All of the proposed work would be outside of the Black Rock Canyon 100-year floodplain.

Floodplains

The campground area is designated by the Federal Emergency Management Agency (FEMA) as Zone D, an area in which flood hazards are undetermined, but possible (FEMA 2012). Based on an analysis by Cardno ENTRIX (NPS 2012a), there is no risk to Black Rock campground from large floods originating from nearby Black Rock Canyon because the campground is outside of the estimated 100-year floodplain and outside the 500-year flood inundation area of the Canyon.

Drainage and Flood Analysis of Basins in the Campground

The large Black Rock Canyon watershed upslope from the campground currently conveys storm runoff through portions of the campground in an unpredictable manner, resulting in localized erosion and flooding. Stormwater runoff through the campground currently consists of surface flow along roads, and in small ephemeral washes and swales.

There are no streamflow gages in the Black Rock Canyon watershed to provide historical flow data for calculating flood frequency. As a result, the NPS (NPS 2007) used the Rational Method and HEC-RMS model to estimate existing 100-year runoff peaks conveyed through the west, central and east basins in the campground and discharged across the north and eastern site boundaries. In the largest basin (west basin, 37 acres), the 100-year peak flow was estimated to be 83.5 cfs. In the central basin (19.5 acres), the 100-year peak flow was estimated to be 52.6 cfs, and in the east basin (17.9 acres), it was estimated to be 50.7 cfs. Under existing conditions, the campground roads are primary drainageways because the roads are perpendicular to site contours.

Justification for Use of the Floodplains

The proposed project is outside the 100- and 500-year floodplain of Black Rock Canyon, but is in an area through which uncontrolled stormwater runoff occurs. The proposed drainage improvements would capture and reroute drainage from the campground to Black Rock Canyon. This would increase the volume of stormflow to the floodplain of Black Rock Canyon and reduce localized flooding in the campground and downstream properties.

Investigation of Alternative Sites

The drainage analysis and flood study of Black Rock Canyon and the campground (NPS 2012a) also assessed two alternative concepts for rehabilitation of the campground. While both of the other concepts would not result in increased risk of flooding in residential areas along Black Rock Canyon, the preferred alternative previously described provided the greatest runoff control both within the campground and downstream. In addition, it was not feasible to relocate the campground because of adjacent wilderness areas and associated impacts. Abandonment of the current campground site for another area would still require work to address drainage issues. Thus, alternative design concepts and campground sites within the park were eliminated from further consideration.

Hydrologic Risk

According to the drainage analysis and flood study completed for the Black Rock Canyon watershed, the drainage plan for Concept C, which is the preferred alternative in the Environmental Assessment (Figure 2), would not significantly change flood flow conditions in Black Rock Canyon downstream from the campground and would not result in increased flood risk to residences for flood events up to the 100-year flood (NPS 2012a). Rerouting drainage from the campground directly to Black Rock Canyon would increase flow by about 136 cfs and water depth by about 1 inch during 100-year flow events. This small change in depth would not adversely affect the out-of-channel flow north of the park in downstream residential areas adjacent to Black Rock Canyon. Within the campground, flood flows would be more controlled, and the 100-year peak flows would be reduced (NPS 2012a).

CONTINGENCY PLAN AND MITIGATIVE ACTIONS

Because the preferred alternative would not occur within the floodplain of Black Rock Canyon, and would not significantly change peak flows downstream of the project area, no mitigative actions in accordance with the NPS floodplain guidelines and with EO 11988, "Floodplain Management" would be required. Flood flows in the campground would be mitigated by the proposed drainage improvements that would provide greater control of storm flows in and downstream of the campground. The potential for flood flows within the campground would be greatly diminished with implementation of proposed drainage and campground improvements. However the park would develop a contingency plan to protect campground users and park staff from flooding during a large storm event, which would include measures such as:

1. posting of signs at the campground warning campers of possible sudden flooding during large storm events and a map at a central location in the campground showing where to seek shelter if flooding occurs;
2. providing information at the Nature Center and campground entry about flash floods that occur at the park and in the campground; and
3. in the event of a sustained storm and flooding event occurring upstream from and/or within the campground, closing the campground and/or evacuation of the campground.

CONCLUSION

The protection of people and property is of high priority to the NPS. The proposed project would be constructed on NPS-managed land. No project actions would occur within the 100-year floodplain of Black Rock Canyon. The drainage modifications to be completed in the campground would increase runoff to Black Rock Canyon by an estimated 136 cfs, resulting in a 1-inch increase in water depth. This would not significantly change flood flow conditions downstream from the campground and would not increase the flood risk to the residential area downstream and outside of the park. The drainage improvements in the campground would effectively reduce localized flooding in the campground and along Black Rock Canyon Road and private property north of the campground.

The NPS finds the proposal to be consistent with EO 11990.

REFERENCES

- Federal Emergency Management Agency (FEMA). 2012. Flood Insurance Rate Map: San Bernardino County, California: City of Twentynine Palms, Map #06071C893OH. Available at: http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_10458408.txt.
- National Park Service (NPS). 2012. Final Drainage Analysis and Flood Study of Black Rock Campground and Canyon To Assist in the Repair and Rehabilitation of Black Rock Campground by Alleviating Existing Drainage and Erosion Control Problems. Prepared for Joshua Tree National Park, California by Carndo ENTRIX. Concord, CA. February.
- National Park Service (NPS). 2007. Black Rock Campground Design Charrette Technical Supplement. Prepared by HDR. PMIS # 4745. March.

[This page intentionally left blank]



As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

National Park Service
U.S. Department of the Interior

Joshua Tree National Park
California



Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, CA 92277-3597