Red Rock Canyon State Park
Preliminary General Plan Revision and Draft Environmental Impact Report

October 2022

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List of Acronyms

Acronym	Description
°F	degrees Fahrenheit
2018 SIP Updates	2018 Updates to the California State Implementation Plan
A-1	primarily zoned agricultural
AB	Assembly Bill
AB 939	California Integrated Waste Management Act of 1989
ACEC	Area of Critical Environmental Concern
AIS	Aerial Information Systems
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
APE	Area of Potential Effect
B.P.	Before Present
BACT	best available control technology for toxics
BLM	United States Bureau of Land Management
BMPs	Best Management Practices
Btus	British thermal units
CAA	federal Clean Air Act
CAAA	federal Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standard
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEPA	California Environmental Protection Agency
CalGEM	California Department of Conservation, Geologic Energy Management Division
CALGreen	California Green Building Code
CALGreen Code	California Green Building Standards Code
CalNAGPRA	California Native American Graves Protection and Repatriation
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
Camp KEEP	Kern Environmental Education Program
CAP	Climate Action Plan
CARB	California Air Resources Board
CaRFG	California Reformulated Gasoline
CBC	California Building Standards Code
CCAA	California Clean Air Act
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CDPA	California Desert Protection Act
CDPR	California Department of Parks and Recreation

Acronym	Description
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CLRs	Cultural Landscape Reports
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalence
Commission	California State Park and Recreation Commission
Construction General Permit	National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities [Order 2009-009-DWQ as amended by Order 2012-0006-DWQ]
CRHR	California Register of Historical Resources
CRM	Cultural Resources Management
CRPR	California Rare Plant Rank
CSP	California State Park
CVC	California Vehicle Code
CWA	Clean Water Act
dB	decibels
dBA	A-weighted dB
dBA/DD	dBA per doubling of distance
Department	California Department of Parks and Recreation/California State Parks
DN	Departmental Notice
DOF	Department of Finance
DOM	Department Operations Manual
DOSH	California Division of Occupational Safety and Health
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DRECP	Desert Renewable Energy Conservation Plan

Acronym	Description
DTRNA	Desert Tortoise Research Natural Area
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
DWR Basin ID 6-046	Fremont Valley Groundwater Basin
DWR Basin ID 6-054	Indian Wells Valley Groundwater Basin
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EKAPCD	Eastern Kern Air Pollution Control District
EOP	Emergency Operations Plan
EP	El Paso (road designation)
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	federal Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zones
FHWA	Federal Highway Administration
FHWA-RD-77-108	Federal Highway Administration's traffic noise prediction model
FLPMA	Federal Land Policy and Management Act
FTA	Federal Transit Administration
GCP	General Conservation Plan
General Plan	Preliminary General Plan Revision
GHG	greenhouse gas
GIS	geographic information system
GMP	Groundwater Management Plan
GPS	global positioning system
GSP	Groundwater Sustainability Plan
HA	Hydrologic Area
HAPs	hazardous air pollutants
HB	Hydrologic Basin
HCFCs	Hydrochlorofluorocarbons
HFCs	hydrofluorocarbons
High GWP	High Global Warming Potential
HS	Hydrologic Subarea
HSRs	Historic Structure Reports
HU	Hydrologic Unit
Hz	Hertz
IMP	Interpretation Master Plan
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change

Acronym	Description
IWVGB	Indian Wells Valley Groundwater Basin
KCIWMP	Kern County Integrated Waste Management Plan
KVIC	Kern Valley Indian Community
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
LHMP	Local Hazard Mitigation Plan
L_{max}	maximum noise level
L_{min}	minimum noise level
LOS	level of service
LRA	local responsibility areas
LUPA	Land Use Plan Amendment
LX	statistical descriptor
MACT	maximum available control technology for toxics
MH	mobile home
mm	Millimeters
MOU	Memorandum of Understanding
mph	miles per hour
MT CO_2e	metric tons of carbon dioxide equivalents
MW	Megawatts
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEMO	Northern and Eastern Mohave Desert Plan
NEPA	National Environmental Policy Act
NFWP	National Fish, Wildlife and Plants
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRD	Natural Resources Division
NRHP	National Register of Historic Places
O_3	ozone
OHMVR	Off-Highway Motor Vehicle Recreation
OHV	off-highway vehicle
Onyx Ranch SVRA	Eastern Kern County Onyx Ranch State Vehicular Recreation Area
OPR	Governor's Office of Planning and Research

Acronym	Description
OSHA	federal Occupational Safety and Health Administration
Park	Red Rock Canyon State Park
PFCs	perfluorocarbons
PLR	Public Lands Roundtable
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
project	General Plan Revision
Public Law 92-574	federal Noise Control Act of 1972
PV	photovoltaic
RACT	Reasonably Available Control Technology
Reporting Rule	final Greenhouse Gas Reporting Rule
RF	recreation and forestry
RMS	root mean square
RPS	Renewables Portfolio Standard
RRCIA	Red Rock Canyon Interpretive Association
RRCSP	Red Rock Canyon State Park
RV	Recreational Vehicle
RWQCB	Regional Water Quality Control Board
SACRF	Parks' State Archaeological Collections Research Facility
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SC	Scodie (road designation)
Scoping Plan	Climate Change Scoping Plan
SENL	single-event [impulsive] noise level
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SHS	State Highway System
SIP	state implementation plan
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPPOs	State Park Peace Officers
SPR	Standard Project Requirements
SPRP	Spill Prevention and Response Plan
SR	State Route
SRA	State Recreation Area
SRM	Sensitive Resource Management
State Parks	California Department of Parks and Recreation/California State Parks

Acronym	Description
State SIP Strategy	2016 State Strategy for the State Implementation Plan
Superfund Act	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
SVP	Society of Vertebrate Paleontology
SVRA	State Vehicular Recreation Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCP	traffic control plan
TDS	total dissolved solids
the Park	Red Rock Canyon State Park
TWRA	Tehachapi Wind Resource Area
USC	U.S. Code
USDA-SCS	U.S. Department of Agriculture Soil Conservation Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	velocity decibels
VMT	vehicle miles traveled
WUI	wildland-urban interface
Zone A	100-year flood hazard zones
µin/sec	microinch per second

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Table 1. Planning Team Members and Contributors

Name	Position	Location
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Chapter 1. INTRODUCTION

1.1 Location, Geography, and Regional Context

Red Rock Canyon State Park (the Park) lies at the southernmost tip of the Sierra Nevada mountain range, where it converges with the El Paso mountain range (see Figure 1-1). The Park is located 80 miles east of Bakersfield in Kern County. The City of Ridgecrest is located 35 miles northeast, and the City of Lancaster is approximately 50 miles to the south. The small, widespread community of Cantil is closest to the Park, approximately six miles to the south, and California City lies 17 miles to the southeast. Red Rock Canyon State Park also lies within the influence of Southern California's largest metropolitan region – Los Angeles – with nearly 20 million residents. The Great Basin District of the California Department of Parks and Recreation (State Parks or Department) manages the Park.

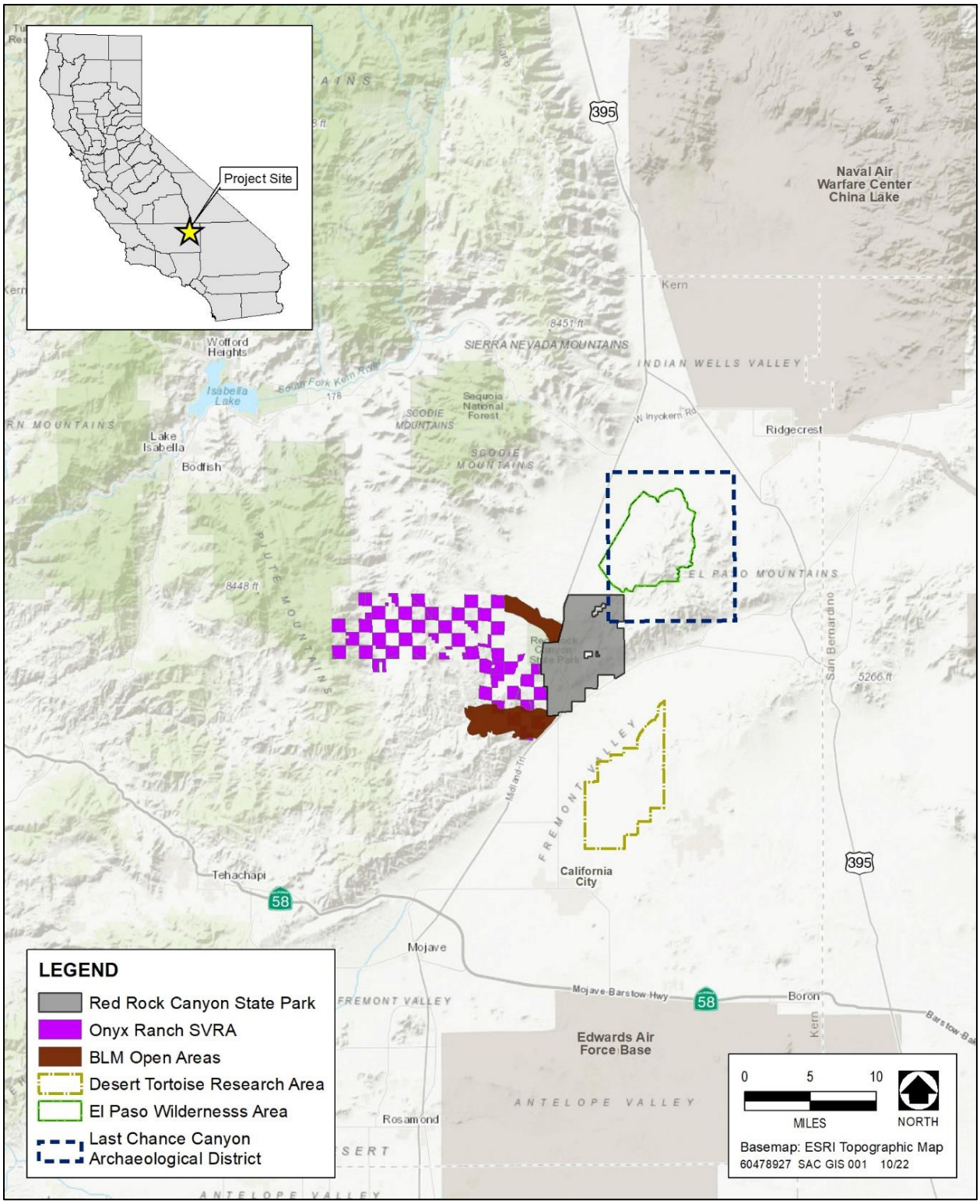
State Route (SR) 14 provides direct access to and bisects the Park in a north-south direction. West of SR 14 lies the original Park. The original Park and the portion of the Park to the east of SR 14 (Last Chance Canyon addition) acquired in the 1990s through federal land transfers under the 1994 California Desert Protection Act (CDPA) together comprise approximately 25,325 acres and are the focus of this General Plan.

The United States Bureau of Land Management's (BLM) Ridgecrest Field Office manages most public lands adjacent to the Park. The region is a popular destination for off-highway vehicle (OHV) recreation, camping, horseback riding, hiking, hunting, mineral collecting, and recreational firearm practice. The BLM Ridgecrest Field Office manages the Jawbone Canyon and Dove Springs OHV areas, located southwest and northwest of the Park. In 2014, State Parks purchased approximately 26,000 acres of privately owned land west of the Park. This acquisition, known as Eastern Kern County Onyx Ranch State Vehicular Recreation Area (Onyx Ranch SVRA), is laid out in a checkerboard pattern with BLM land.

Land uses to the east and south of the Park are managed by Kern County. Extensive private property ownership exists immediately south of the Park in the Fremont Valley. Scattered residential dwellings dot this landscape. There is a private property with a single Cantil residence, and several undeveloped private parcels adjoin the Park's southern boundary.

1.2 Purpose of Land Acquisition

The beauty of Red Rock Canyon has impressed all who have dwelt in or visited the canyon. An interest in preserving Red Rock Canyon as a public park started in 1915, with photographs depicting Red Rock Canyon eventually supporting the State Park Bond Act



Source: AECOM, 2022

Figure 1-1. Red Rock Canyon State Park Vicinity

in 1928. In 1929, the canyon, including portions of Last Chance Canyon, was formally listed by California as a desirable addition to the newly created State Park System. However, it was not until the 1960s before willing sellers and available funding allowed for the purchase and preservation of the initial Park lands.

Red Rock Canyon became a park unit of the State Park System in 1968 with the purchase of approximately 4,000 acres from private owners. By 1970, the Park had opened to the public, and the first rangers were on site to assist Park visitors. Red Rock Canyon State Park was initially classified as a State Recreation Area (SRA) in 1973. This action was taken by the State Park and Recreation Commission primarily because of OHV recreation uses historically occurring in the area. SRAs allow multiple recreational activities because they have areas of terrain capable of withstanding extensive human impact. In addition, two natural preserve subunits, Hagen Canyon and Red Cliffs, were established.

In 1980, State Parks recommended the park unit be reclassified from an SRA to a State Park in recognition of the statewide significance of resource values in the unit and the original intent of preserving the area (see ***Chapter 4 – The Plan, Section 4.3.1 State Park Classification, PRC Section 5019.53*** for the definition of a State Park). The State Park and Recreation Commission approved the reclassification on February 8, 1980. A general plan was subsequently developed with public input and adopted in 1982 (CDPR, 1982) to provide management guidelines for the Park.[1] These management directives targeted approximately 10,000 acres of existing and anticipated Park lands.

Red Cliffs day-use area is a popular destination for visitors.

[1] See pages 7-15 of the 1982 Red Rock Canyon State Park General Plan for the Resource Inventory developed for the reclassification action in February 1980.

In 1994, the 103rd Congress of the United States enacted the CDPA, which contained a provision under Title VII. Miscellaneous Provisions, section 701, transferring federal properties to the State of California as an "addition" (hereafter referenced as the Last Chance Canyon addition) to Red Rock Canyon State Park. The text of this legislation noted, in emphasis, the desire "to provide maximum protection for the area's scenic and scientific values." Before the CDPA, the Park covered 8,225 acres with 2,164 acres of BLM-owned lands managed by State Parks through a memorandum of understanding. Following the passage of the CDPA, the BLM transferred federal lands to State Parks, which more than tripled the size of the Park.

1.3 Character and Spirit

1.3.1 Sense of Place

Imposing landscapes have played an undeniable part in American history. They are embedded in the American consciousness and maintain a staunch place in our continental character. They are inseparably intertwined with the global view of American freedom, best encompassed by the rugged and scenic terrains of the American West. With its deeply furrowed canyons and colorful ridges, Red Rock Canyon represents a landscape of scenic and scientific discovery. Within these desert confines lie examples of human exploration, both past and present.

The landscape of Red Rock Canyon has had an enduring relationship with humans. It has served as home to Native Americans, a source of minerals for human consumption, a fittingly fantastical setting for Hollywood, and a place to soak in the rugged landscape of California's backcountry. It has always drawn people's attention – who have tried to protect it, enjoy it, and exploit it.

Nightmare Gulch was a stagecoach road and later a county road. Its rugged terrain is emblematic of the Desert Southwest.

Through its connection with the motion picture industry, Red Rock Canyon has become one of the most recognizable images of the American West. This portrait of Red Rock Canyon is globally known, and the Park attracts visitors from around the world. All who have visited the Park can sense that the true appeal of Red Rock Canyon transcends the physical.

The late scholar Joseph Campbell once stated,

> People claim the land by creating sacred sites, … they invest the land with spiritual powers. It becomes like a temple, a place of meditation. To turn the land where they live into a place of spiritual relevance. (Campbell and Moyers 1988, 92-93).

The internationally famous photographer Edward Weston once wrote,

> Justly famed for its extravagantly eroded and riotously colored formations, Red Rock Canyon is a source of never-ending delight for photographers and desert lovers (Weston 1938, 8).

Long ago, the Bakersfield Californian wrote,

> Want to be a writer? A poet? A painter? Want to indulge in any of the fine arts? If so, go to Red Rock Canyon. Kern County's nationally famous garden of natural wonders (January 23, 1920, 1).

In springtime, Red Rock Canyon State Park displays a colorful palette of desert wildflowers. The wildflower displays in February-April draw thousands of visitors.

Without question, Red Rock Canyon is an inspirational place. The generations of people who have interacted with Red Rock Canyon have held its beauty in reverence, even while sometimes exploiting its resources. People are drawn to this landscape - to

contemplate the silence, be awed by its grandeur, and be thrilled by discovery and adventure. Visitors are intrigued by the imprint of previous generations on this beautiful but harsh landscape. Both prehistoric and historic visitors have left evidence of their presence that further enhances this unique desert environment.

1.3.2 Site Characteristics

As its name suggests, Red Rock Canyon State Park presents a stunning landscape created by eons of erosion and geologic uplift at the intersection of the Mohave Desert and the Sierra Nevada and El Paso Mountains. The Park's colorful collage of cliffs, the drainage of Last Chance Canyon, the sheer precipices of Hagen Canyon, and the narrow washes of Scenic Canyon and Nightmare Gulch create a unique desert environment. It is also one of the best locations to stargaze in Southern California.

Color layers and folds of the rock reveal Red Rock Canyon State Park's geologic history

Red Rock Canyon contains a wealth of natural, cultural, geological, and aesthetic resources. The unique and colorful layers of white, pink, red, and brown cliffs grace both the east and west sides of SR 14. These fluted folds result from wind and rain eroding the softer materials beneath the dark cap rocks, formed by a harder lava flow layer.

The Park holds a rich paleontological history dating back to the early Pliocene epoch. Fossil evidence of ancient camels, horses, mastodons, rhinoceroses, dogs, pronghorn antelope, deer, saber-tooth tigers, cats, weasels, and rabbits have been discovered in the Park and on nearby lands. Fossil evidence of plant life indicates that the region supported woodland-savanna, chaparral, and arid scrub vegetation.

The Park is home to several special-status animal species known to occur in and around the Park, including bird species, reptiles, mammals, and bats. See ***Chapter 2 - Existing Conditions, Section 2.6.2 Plant Life and Section 2.6.3 Animal Life*** for a thorough description of biotic resources. The main vegetative communities represented in the Park include desert scrub communities, riparian communities, wetland communities, desert outcrops, and badlands. After wet winters, the Park's floral displays include goldfields, lupine, Indian paintbrush, and hundreds of other species.

This juvenile desert tortoise is an example of many sensitive species living in and around Red Rock Canyon State Park.

Red Rock Canyon State Park contains many culturally valued resources such as rocks and minerals, plants and animals, shelters, water sources, and geological formations that have drawn people here for thousands of years. Red Rock Canyon State Park is within the ethnographical territory of the Nïwï or Kawaiisu people. The Kawaiisu and their neighbors (Tubatulabal, Panamint Shoshone, Southern Paiute, Kitenemuk, Yokuts, and Serrano) have traditions that exist within the landscape of Red Rock Canyon, the Mojave Desert, the Tehachapi Mountains, and other places in the region.

The first recorded description of the Red Rock Canyon area by European and American settlers was by a group known as the Jayhawkers (1849). Then, in 1892, John Goler and Wolfgang Tauber discovered gold along the southeastern base of the El Paso Mountains. However, by 1894 the major gold strikes in the canyon had played out, and in 1897 another gold rush to the east of Last Chance Canyon drew miners away from the Red Rock Canyon area. The Red Rock Railroad was constructed for the Owens Valley Aqueduct project in the early 1900s. Since then, the region has been mined for semi-precious gemstones and industrial minerals. A few active mine inholdings remain within

the Park's boundaries. Scientists started surveying the area in the 1930s, and today, institutions of higher learning continue to utilize the Park for field studies and research.

One of the most famous uses of the Red Rock area was as a location for motion pictures and, later, television productions. As early as 1912, motion picture producers and directors sought outdoor filming locations away from the Hollywood studios, primarily for westerns and biblical epics. It is still a desired filming location for commercials and films.

Since the 1960s, Red Rock Canyon State Park has been a popular destination for outdoor recreation and a respite from busy urban life. The Park offers camping at the Ricardo Campground and miles of primitive (native dirt substrate) trails and roads for hiking biking, and horseback riding. Vehicle touring is also a popular activity in the Park. Motorized vehicles are restricted to designated park roads.

1.3.3 Park Significance

Significance statements express why a park's resources and values are important enough to warrant the State Park classification. These statements describe why a park is important within a regional and statewide context and are directly linked to the purpose of the Park. A park's significance statements are substantiated by data or consensus, which reflects the most current scientific information or scholarly inquiry and cultural perceptions, which may have changed since the establishment of the Park.

The following statements describe the significance of Red Rock Canyon State Park. State Parks protects and preserves:

- The natural character and scenic vistas in the Park and provides opportunities for people to experience its unique and dramatic topographic shapes and vivid colors.
- The qualities and opportunities that make it important for maintaining and rejuvenating the human spirit.
- Night sky viewing by eliminating and reducing light pollution and offers opportunities for different visitor experiences in the wildness of the desert, from high-intensity public use to opportunities for quiet and solitude.
- Intact ecological communities that provide refuge for a diversity of plants and animals, including rare and listed species.
- Native American archaeological and cultural resources within their ecological and geographical context and provide opportunities to study and continue traditional practices and resource management.
- The history of the Park, including Native American habitation; trade routes; mining; and historical, cultural, and natural resource conservation efforts, which have contributed to the rustic environment at the Park.

- The Native American archaeological and cultural resources of the Park within their ecological and geographical context and provides opportunities to study and continue traditional practices and resource management.

1.4 Purpose of and Need for the General Plan Revision

General plans are comprehensive policy documents intended to guide park development and management. California law requires completing a general plan for each unit of the State Park System before permanent park development (Public Resources Code [PRC] Section 5002.2). A general plan serves as a blueprint for future decisions about land use, facilities, recreation opportunities, and management of natural, cultural, and physical resources, among other topics as required by PRC Section 5002.2.

With the Congressional transfer of the Last Chance Canyon addition in 1994, a need arose to update the management strategies in the 1982 General Plan with goals and guidelines to include the added land. These new management goals and guidelines presented in this General Plan Revision result from scientific study and considerable public input. Stakeholders and public advocates have been invited to express their visions for this unique public property. Once approved, this General Plan will cover the entire Park, including the Last Chance Canyon addition, and supersede the 1982 General Plan. This General Plan defines a management framework that perpetuates the values that inspire Park visitors while providing a moderated balance between recreational uses and protecting sensitive resources.

The General Plan is primarily a “goal-based” instead of an “operation-based” document. This document does not attempt to provide detailed management recommendations, but rather, it provides conceptual operational and decisional parameters for future management actions. Within this General Plan, “goal” refers to a general overall and ultimate purpose, aim, or intent toward which management will direct effort. The “guidelines” refer to a broad set of parameters that provide direction for accomplishing goals.

General planning provides an opportunity to assess a park’s resource stewardship and interpretation, regional significance, facilities development, and recreational opportunities. It provides guidelines for future land use management within a park, including land acquisitions and the facilities required to accommodate increasing visitation. Between 1980 and 2020, California’s population increased from 24 million to almost 40 million and is projected to reach almost 42 million by 2030.

The objectives of this General Plan are to:

- Establish the purpose, significance, and vision of Red Rock Canyon State Park.

- Clearly define resource conditions and visitor experiences to be achieved at the Park.
- Provide a framework for managers to use when making decisions about protecting and interpreting the Park's resources.
- Establish how to provide quality visitor uses and experiences as well as manage visitor use.
- Determine types of facilities to develop in the Park and establish general zones where those facilities may be placed.

1.5 Environmental Analysis

General plans are subject to a comprehensive environmental review according to the California Environmental Quality Act (CEQA) guidelines included in PRC Section 21000 et seq. The Environmental Impact Report (EIR) prepared as part of the current planning process will provide the basis for future second-level environmental reviews, which will provide more detailed information and analysis for site-specific developments and projects.

An EIR prepared by state and local governments (lead agency) is usually a freestanding document intended to meet the requirements of CEQA. However, CEQA also encourages streamlining by using combined general plans and EIRs (CEQA Guidelines Section 15166) and tiering. Tiering is a process where a lead agency prepares a series of environmental assessments, progressing from general concerns at a programmatic level to more site-specific evaluations, preparing subsequent environmental documents for detailed projects (CEQA Guidelines Section 15152). When the lead agency combines a general plan and an EIR, all CEQA requirements must be covered, and documents must identify where the requirements are met.

The EIR for this General Plan serves as a first-tier EIR defined in Section 15166 of the CEQA Guidelines. The analysis of broad environmental issues found within ***Chapter 5 – Environmental Impact Report*** will be a reference for future environmental documents that will provide more detailed information and analysis for site-specific developments and projects.

1.6 Planning Context

This General Plan and EIR are prepared by State Parks, which manages and operates Red Rock Canyon State Park and serves as the CEQA lead agency. Other government agencies, including the BLM, and other federal, state, and local governments, are key partners and, along with the public, have provided input into the planning process and environmental review.

General plans are influenced and shaped by existing state and federal laws, such as:

- Public Resources Code
- State and federal Endangered Species Acts
- State laws such as Assembly and Senate Bills 32 regarding climate change
- California Code of Regulations (CCR)
- California Natural Resource Agency (CNRA) and State Parks policies

State and federal laws developed outside State Parks and policies derived from within State Parks but not specific to this General Plan help direct Park management.

In addition, this General Plan falls within a planning hierarchy established by State Parks (see Figure 1-2).

The following describes how State Parks adheres to existing laws and mandates in park management and how general planning fits into the State Parks' overall planning structure.

1.6.1 Existing Laws, Codes, and Policies

To understand the implications of the actions prescribed in this General Plan, it is important to describe the laws, codes, and policies that underlie the management actions. Many management actions for the Park are required based on law, code, and/or policy and are therefore not affected by this General Plan. A general plan is not needed to decide, for instance, whether it is appropriate to protect endangered species, control non-native invasive species, protect archaeological sites, conserve artifacts, or provide for universal access. It is our mission, and laws and policies already require State Parks to fulfill these mandates. Some state and federal laws that impact State Parks include the Americans with Disabilities Act (ADA), CEQA, and state and federal Endangered Species Acts. State Parks would continue to implement the requirements mandated in these laws, codes, and policies with or without a general plan (see ***Appendix A*** for a list of Existing Laws, Codes, and Policies).

1.6.2 State Parks Planning

When a new unit is added to the State Park System, the collection of information (data) precedes any planning and analysis efforts, such as resource inventories and an interpretive prospectus. The systemwide planning and policies component is used with this data to support and direct the unit classification and naming component. After a park is classified, a general plan is prepared for the unit. After a unit's general plan is completed and approved, various management plans and feasibility studies may be developed which provide direction on particular resources, issues or programs. Specific project plans specify the detailed information necessary to implement projects such as a

trail addition, watershed restoration effort, facilities development, or historic landscape restoration.

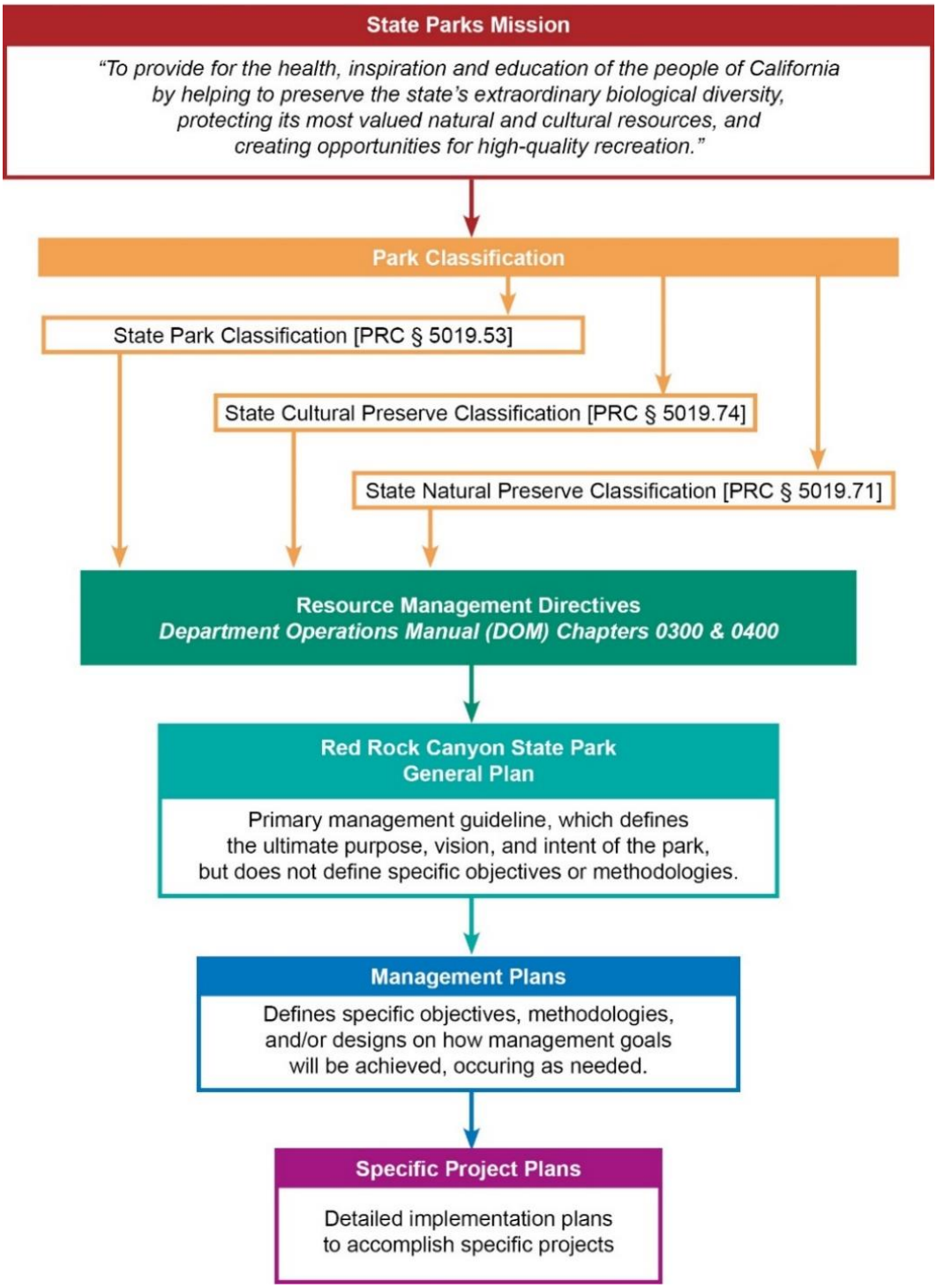


Figure 1-2. Hierarchy of Mandates that Direct Management of Red Rock Canyon State Park

Chapter 2 - Existing Conditions, Section 2.8 Planning Influences, and ***Appendix A*** of this General Plan describe federal and state laws, state executive orders and codes, and State Parks policies that guide management actions at the Park. State Parks must comply with these mandates and continue to implement their requirements regardless of whether there is a general plan in place for the Park. Furthermore, this General Plan does not have the authority to change or affect laws and codes but refer policies translating them into required management actions at the Park. Therefore, the General Plan goals and guidelines do not restate current management actions prescribed by these laws, codes, and policies to avoid redundancy.

1.6.2.1 Subsequent Planning

Major projects and programs implemented under and after General Plan approval will require additional planning in specific project plans or program management plans.

Management plans can apply to an entire park, or a part of the Park, and usually include program-level decisions that describe when specific management actions are appropriate and necessary and are often based on funding and staffing. Occurring on an as-needed basis, they typically focus on specific management topics, goals, or issues. For example, management plans include specific objectives, methodologies, and/or designs for accomplishing management goals related to resource protection, operations, and facility development. Specific project plans provide implementation details, including project design concepts and site plans.

Future planning efforts also include project-specific environmental compliance documents for management and development plans. These documents “tier off” the existing General Plan EIR (or use the general plan as a basis for further environmental work) and provide a more detailed environmental analysis for implementing the management plan and development project. Securing any permits required for future implementation projects would also be part of subsequent planning action. Finally, a general plan may need to be amended if significant new acquisitions are added to the existing Park or if other circumstances render parts of the general plan inapplicable.

1.7 Planning Process

The following summarizes the planning process typically used by State Parks and used by the planning team for revising the Red Rock State Park General Plan.

1.7.1 Establish a Project Agreement and Form the Planning Team

Revising the Red Rock Canyon State Park General Plan process began with the completion of a project agreement that established the scope and schedule of the planning effort and the formation of an interdisciplinary planning team from the State

Parks Southern Service Center in San Diego. The project planning team consisted of staff and consultants knowledgeable in natural, cultural, and recreational resource management, interpretation and education, public safety, maintenance, facilities, land use planning, geographic information systems, and environmental impact analysis.

1.7.2 Research and Describe Existing Conditions

During this phase, the planning team gathered and became familiar with the known information about the Park related to the scope of work. In some cases, the planning team conducted research and/or field surveys to clarify knowledge of the existing conditions. To understand their needs and concerns about the current conditions and future of the Park, the planning team also gathered information from the public and other concerned parties. This process included corresponding with other agencies, formal consultation with Native American representatives, public and stakeholder meetings, and responding to correspondence from interested Park users.

1.7.3 Identify and Analyze Issues, Opportunities, and Constraints

Next, the planning team identified and analyzed known issues and determined possible causes and solutions. During this time, the planning team considered local and regional demographic and recreation trends that influence the Park environment and utilized insights gained at public meetings and through public, agencies, organizations, partners, and other stakeholder comments. Resource sensitivities and constraints were identified through analysis of natural and cultural resource conditions, and possible opportunities to solve identified issues and improve Park conditions were evaluated.

1.7.4 Prepare Planning Concepts and Revised Plan Concept

Upon completing the issues, opportunities, and constraints analysis, the planning team identified five Park management zones and four related planning concepts. The preliminary planning concepts for the Park explored a broad range of visitor experiences, natural and cultural resource management approaches, and Park operations options. On one end, a planning concept showed a management zone configuration that maximized resource protection, primitive roads for street-legal vehicle access to isolated points of interest in the Park, and some primitive roads converted to non-motorized trails, and provided most other existing recreation uses. On the other end, a planning concept showed a configuration that mostly maintained visitor-use opportunities, with minimal changes to the existing route system and allowing non-street legal OHV use on the Park's primitive road network (requiring a park reclassification to an SRA), while still protecting resources. In addition, the planning team generated a draft "declaration of purpose" for the Park. The team presented these to State Parks executive staff for consideration and the public at public meetings held on March 26 and 27, 2019 in Lancaster and Ridgecrest, respectively.

Following input from executive staff and the public, the planning concepts were analyzed to determine which combination of options best served State Parks' Mission, Park purpose and vision, and General Plan objectives. In addition, the analysis incorporated opportunities to resolve the identified issues and address the public interests in the future of the Park. A single revised plan concept was then developed involving an informed synthesis of the planning concepts. The revised plan concept for the Park was presented to the public at public meetings held October 23, 24, and 25, 2019, in Ridgecrest, Lancaster, and Bakersfield, respectively.

As required by CEQA, a Notice of Preparation (NOP) of EIR was generated on October 9, 2018, and submitted to the required agencies and interested organizations through the State Clearinghouse. The planning team held CEQA scoping meetings in October 2018.

1.8 Project Outreach Efforts

State Parks recognizes the need for a framework to manage the Park effectively. Since the late 1990s, State Parks made several attempts to update the Red Rock Canyon State Park General Plan to include the Last Chance Canyon addition. State Parks collected data, performed resource inventories and assessments, met with stakeholders, and held public meetings. During the 2008/2009 update effort, State Parks made significant progress in documenting existing conditions and worked closely with stakeholders, visitors, and other interested individuals to revise the General Plan. However, the efforts were suspended due to budget constraints. State Parks restarted the General Plan Revision project in 2018.

1.8.1 Public Meetings

The project planning team restarted the project with CEQA scoping meetings in October 2018 in Ridgecrest and Lancaster, consulted with regulatory agencies and Native American tribes, and met with stakeholder groups. In March 2019, State Parks held public meetings in Ridgecrest and Lancaster to present four preliminary planning concepts and a draft declaration of purpose for the Park, share information about the new General Plan and EIR, and get input from stakeholder groups and the public. Public comments were also solicited after the public meetings through August 1, 2019.

The planning team reviewed and considered all feedback and comments, including comments about the Park's preliminary planning concepts, Park management, and the overall General Plan development and planning process. State Parks used the input received to develop a single revised plan concept for the Park, presented to stakeholders and the public during public meetings held in Ridgecrest, Lancaster, and Bakersfield in October 2019. Public comments were also solicited after the public meetings through December 12, 2019.

1.8.2 General Plan Website and Informational Emails

A project website was established for the General Plan Revision in 2018. The website provided the public and stakeholders with a single source for information about the project. The website contained public meeting agendas, handouts, and reports, the EIR NOP, 1982 General Plan, maps, Park cultural and natural resource summaries, and other Park background information. In addition, it contained an introduction to the planning process and timeline, a description of how to get involved in the planning process, the project email and standard mail addresses for the public to send correspondence, and a link to join a mailing list for project updates. Email "blasts" (periodic, informational emails) were sent to stakeholders, agencies, and other interested persons on the mailing list. Email blasts were sent before public meetings, after posting meeting summaries, and with other important project updates.

1.8.2.1 Red Rock Canyon State Park Route Network Story Map

In October 2019, State Parks released the Park Route Network Story Map tool developed for the general plan process. The interactive map tool was posted to the project website. The tool depicted the existing route network and showed changes since the 1994 CDPA federal lands transfer. The tool included changes to the route network through resource management actions over time. See ***Chapter 4 – The Plan, Section 4.5 Road and Trail Network*** for more information about the Park's road and trail network.

1.8.3 Agencies, Organizations, Native American Tribes, and Other Stakeholders

1.8.3.1 Stakeholder Meetings

The planning team held a stakeholder outreach meeting in August 2018 at the Ricardo Visitor Center. The team met with the California Department of Fish and Wildlife, a China Lake Naval Station representative, BLM Ridgecrest Field Office, and Kern County Planning Department. Other stakeholders included the Red Rock Canyon Interpretive Association, State Parks volunteers, and the Public Lands Roundtable (PLR).

The planning team attended several PLR meetings to give project updates and hear questions and concerns. The PLR comprises area residents, recreationists, and other interest groups that meet with the BLM Ridgecrest Field Office monthly. Interest groups represented in the PLR include equestrians, gem collectors, OHV clubs, and environmental conservation organizations.

1.8.3.2 Native American Consultation

The Native American Heritage Commission supplied a list of 21 Native American contacts for the Red Rock Canyon area. Letters were sent to all those on the list. These tribes included:

- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Chumash Council of Bakersfield
- Death Valley Timbi-sha Shosohone Tribe
- Fort Independence Indian Community of Paiutes
- Kern Valley Indian Community
- Kitanemuk & Yowlumne Tejon Indians
- Lone Pine Paiute-Shoshone Tribe
- San Fernando Band of Mission Indians
- Santa Rosa Indian Community of the Santa Rosa Rancheria
- Tejon Indian Tribe
- Tubatulabals of Kern Valley
- Tule River Indian Tribe
- Twenty-Nine Palms Band of Mission Indians
- Wuksache Indian Tribe/Eshom Valley Band
- Northern Valley Yokut

Of these tribes, Big Pine Paiute Tribe of the Owens Valley, Kern Valley Indian Community, and the Northern Valley Yokut requested consultation for this project.

The planning team consulted with Native American tribes at the Park in August 2018, and representatives from the Kern Valley Indian Community (KVIC) and the Big Pine Paiute Tribe attended. Parks Planning, Great Basin District cultural resource managers, and archaeologists from State Park's Southern Service Center provided updates at the KVIC Tribal Council meetings in 2019 and 2020. Members from the Big Pine Paiute Tribe also attended the KVIC meetings. Members from KVIC also attended public meetings. State Parks sent additional project updates via email and letters in 2021 and 2022 to all tribes on the consultation list.

The planning team received questions, concerns, comments, feedback, and ideas on improving the Park during stakeholder meetings, public meetings, and email and mail. The planning team considered all ideas, concerns, feedback, and comments received through the outreach efforts to develop the preliminary General Plan for Red Rock Canyon State Park.

1.8.4 Preliminary General Plan and Draft EIR

The preliminary General Plan and draft EIR were prepared in tandem. To meet CEQA requirements, a programmatic EIR was prepared to analyze potential significant impacts associated with implementing the new General Plan and, if necessary, measures that mitigate or reduce any potentially significant impacts resulting from Project implementation. The draft EIR is included in ***Chapter 5 – Environmental Impact Report*** of this document and considers alternatives for the General Plan. This preliminary General Plan and draft EIR are released to the public for review and comment for at least 45 days, as required by CEQA.

1.8.5 Final General Plan and EIR

The final General Plan and EIR will be prepared following a preliminary General Plan and draft EIR public and agency review period. They may include revisions based on feedback and comments received during the public and agency review process.

1.9 Organization of the General Plan

This General Plan is presented in five chapters that introduce Red Rock Canyon State Park and this planning effort, existing land use and resource conditions, planning issues, goals and guidelines, and an assessment of the potential environmental effects of the proposed project. The content of each chapter is summarized below:

- **Chapter 1: The Introduction** gives an overview of the Park's location, regional context, historical context, characteristics and significance, the Park General Plan Revision purpose and needs, planning context and process, stakeholder and public involvement, and subsequent planning efforts.
- **Chapter 2: Existing Conditions** describes the significant physical, natural, cultural, aesthetic, and recreational resources of the Park; the Park facilities and operations; and interpretation and education programs. The chapter also provides information about recreational trends and demographic trends in the region relevant to the planning process and other Park planning influences.
- **Chapter 3: Issues and Analysis** describes current challenges and major issues facing the Park, which help define the goals and guidelines for planning purposes to address these concerns.
- **Chapter 4: The Plan** presents a declaration of purpose and vision for the Park's future. Management zones are defined by their geographic location, similar resource characteristics, and/or associated land use. Parkwide, area-specific, and management-zone-specific goals and guidelines are presented to guide park management and facility use and development, and describe the future desired conditions and considerations for subsequent planning and General Plan implementation. This section also includes a description of the adaptive

management process used to sustain resources and provide positive visitor experiences at the Park. For planning and CEQA consideration, ***Chapter 4 – The Plan*** is considered the preferred alternative or proposed project.

- **Chapter 5: Environmental Impact Report** discloses the potential environmental effects, including any significant effects that may result from implementing the General Plan. Measures to avoid and minimize potentially significant impacts are included as goals and guidelines and alternatives to the proposed project are also discussed in this section. The General Plan is considered a programmatic EIR that will inform decision-makers and the public about the environmental consequences of adopting the Revised Plan Concept consistent with the requirements of CEQA and its guidelines.
- **Appendices** provide background information pertinent to the main document text but are too lengthy to be included in the main body of the document. The appendices may also contain documents with background data.

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Chapter 2. EXISTING CONDITIONS

This chapter documents all existing conditions at Red Rock Canyon State Park (the Park). The sections below provide context and information on land uses and recreation in the Park region. It documents the current conditions of the Park, including existing facilities, recreation opportunities, and visitor trends. The chapter also identifies significant physical, natural, cultural, and aesthetic resources in the Park. It describes operations, interpretation and education programs, and important planning influences, including laws, codes, State Parks systemwide policies and plans and regional plans. Documenting existing conditions at the Park establishes a baseline to identify issues and opportunities and supports the development of the General Plan's goals and guidelines and the Environmental Impact Report (EIR).

Hikers at Red Rock Canyon State Park

2.1 Regional Land Uses

Situated in California's Mojave Desert, Red Rock Canyon State Park occupies the western half of Kern County's El Paso Mountains. The Park is approximately 17 miles from California City (approx. 15,000 residents), 25 miles from the community of Inyokern (approx. 1,000 residents), and 35 miles from Ridgecrest (approx. 28,000 residents). The small, scattered community of Cantil in the Fremont Valley resides the closest (six miles) to the Park, with less than 100 residents.

The Park is far from large population centers. It is 50 miles from Lancaster, 80 miles from Bakersfield, and 125 miles from downtown Los Angeles. Lancaster and Palmdale's rapidly emerging suburban communities in the Antelope Valley are located within a one-hour drive south of the Park.

The Park shares most of its boundaries and the surrounding area with the federal Bureau of Land Management (BLM). However, significant amounts of private land, federal military bases, other state lands, and transportation corridors are also located in the region.

2.1.1 Federal Lands

2.1.1.1 Bureau of Land Management Public Lands

The mission of the BLM is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. Many BLM policies and visitor opportunities are consistent with those of State Parks. However, some allowable uses on BLM lands, such as off highway vehicle (OHV) recreation, rock hounding, target shooting, hunting, and resource extraction (e.g., minerals) conflict with State Park classification (Public Resources Code [PRC] Section 5019.53) and associated management policies. The Dove Springs OHV area to the northwest of the Park and the Jawbone Canyon OHV area to the southwest of the Park are owned and managed by BLM. See ***Section 2.5.4 Regional Recreation Opportunities*** for more information about these areas.

2.1.1.2 Last Chance Canyon Archaeological District

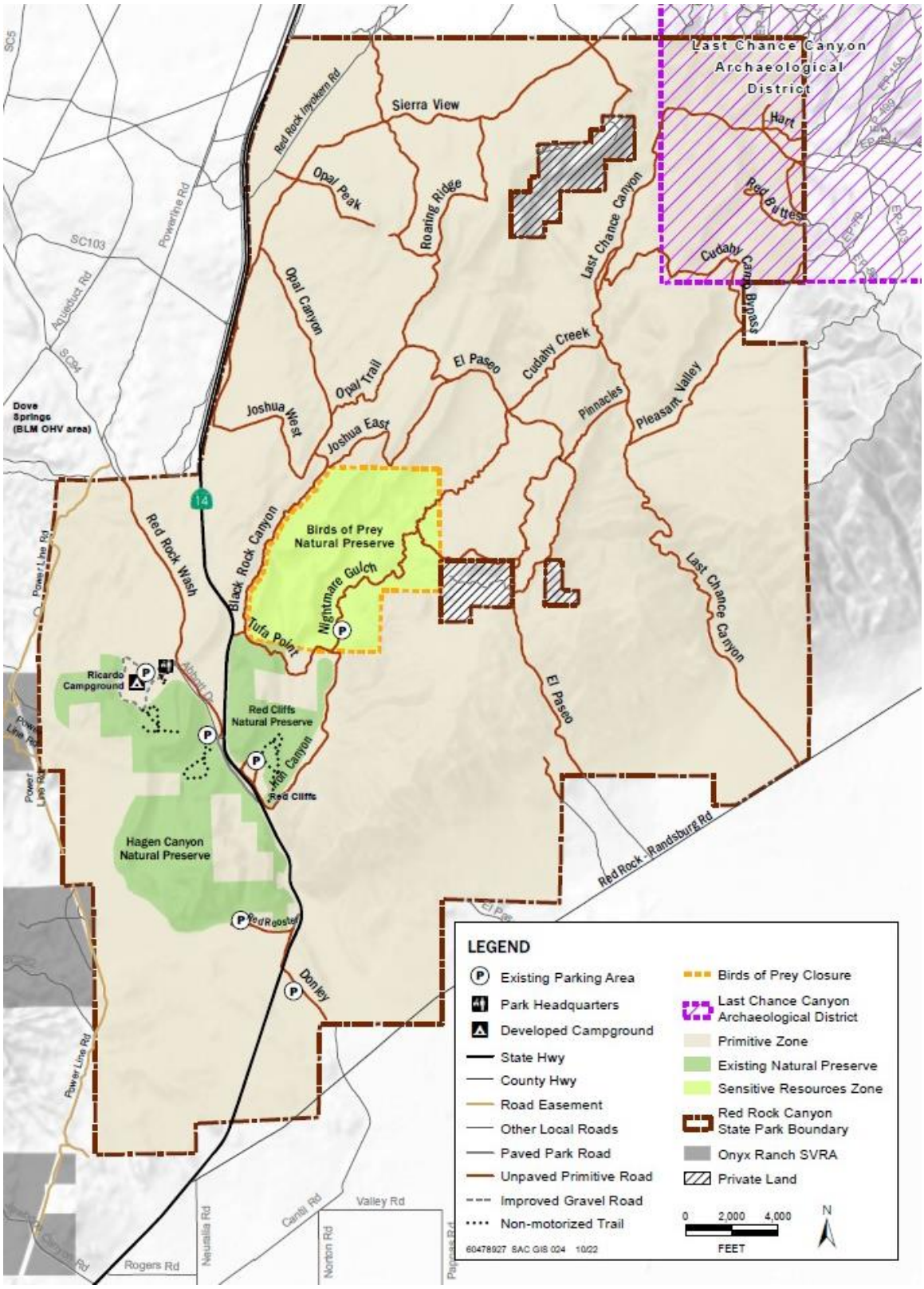
The federally designated Last Chance Canyon Archaeological District, placed on the National Register of Historic Places in 1972 due to the areas numerous cultural sites, encompasses approximately 1,487 acres of the northeastern corner of Park lands obtained in 1994 (see Figure 2-1). The National Register District encompasses 110 square miles of desert lands (see Figure 1-1). The portion of the Archaeological District within the Park is part of a proposed Cultural Preserve in this General Plan (see ***Chapter 4 - The Plan***) to recognize the cultural significance and protect the sensitive resources.

2.1.1.3 Bureau of Land Management El Paso Mountains Wilderness Area

Congress designated the El Paso Mountains Wilderness Area as part of the of the 1994 California Desert Protection Act (CDPA). Although the Wilderness Area is not contiguous with the Park's boundary, it covers 23,780 acres and lies just northeast of the Park (see Figure 1-1). The National Wilderness Preservation System provides clean air, water, and habitat critical for rare and endangered plants and animals, and recreational activities such as hiking, backpacking, horse packing, climbing, kayaking, canoeing, rafting, bird watching, stargazing, and extraordinary opportunities for solitude. Unless otherwise specified, no motorized equipment or mechanical transport is allowed in national wilderness areas.

2.1.1.4 Desert Tortoise Research Natural Area

The Desert Tortoise Research Natural Area (DTRNA) is a 39.5-square-mile area protecting the native desert tortoise (*Gopherus agassizii*). It is approximately 26 miles southeast of the Park (see Figure 1-1). In 1980, the BLM designated the DTRNA as an Area of Critical Environmental Concern (ACEC) and a Research Natural Area.



Source: AECOM, 2022

Figure 2-1. Red Rock Canyon State Park Existing Conditions Map

2.1.1.5 Naval Air Weapons Station China Lake and Edwards Air Force Base

The Naval Air Weapons Station China Lake and Edwards Air Force Base conduct military training and equipment production and testing. Though these military facilities are not immediately adjacent to the property, one can see and hear aircraft flying over the Park (see Figure 1-1).

2.1.2 State Lands

2.1.2.1 State Lands Commission

Several sections of "school lands," administered by the California State Lands Commission, are scattered throughout the El Paso Mountains, situated primarily east and northeast of the Park.[2] If these properties were sold, the future use of these properties could have an impact upon State Parks' use of their property.

2.1.2.2 Onyx Ranch State Vehicular Recreation Area

Onyx Ranch SVRA borders Red Rock Canyon State Park to the west.

The Eastern Kern County Onyx Ranch State Vehicular Recreation Area (Onyx Ranch SVRA) is west of the Park and laid out in a checkerboard pattern with BLM lands (see Figure 1-1 and Figure 2-1). Onyx Ranch SVRA is open to OHV recreation, hiking, horseback riding, and primitive camping. Red Rock Canyon State Park and Onyx Ranch SVRA share park operations facilities located in the Ricardo Campground complex

[2] According to the State Lands Commission, definition of land types, "School lands were granted by the United States to California in 1853 to benefit public education. They included the 16th and 36th sections of every township. In some cases, the 16th or 36th sections were exempted from the grant because of prior claims or other reasons. In these cases, California was given the right to select other federal lands as compensation. These other lands are known as in-lieu or indemnity lands." (California State Lands Commission, 2022)

(campground, visitor center, and park operations facilities and maintenance yard) in the Park. State Parks' Great Basin District manages both park units.

2.1.3 Major Transportation Corridors

State Route (SR) 14 is a significant state highway transportation artery that generally runs north-south through the western portion of the Park. Two Kern County roads, Red Rock-Inyokern Road and Red Rock-Randsburg Road intersect the Park's northern and southern boundaries. Red Rock-Randsburg Road proceeds northeast along the Park's southern edge, while Red Rock-Inyokern Road runs through a portion of the Park's northwest corner (see Figure 2-1).

2.1.4 Local Land Use

2.1.4.1 Kern County

The privately-held lands that lie directly east and south of the Park are primarily zoned agricultural and A-1 MH - Limited agriculture, mobile home combining, and RF – recreation and forestry.

2.1.4.2 Private Lands and Operations (Fremont Valley)

Extensive private property ownership exists immediately south of the Park in the Fremont Valley. The dispersed unincorporated community of Cantil lies within this topographic low area. Scattered residential dwellings dot this landscape. Agricultural cultivation occurred in earnest for many years within and surrounding this community. Water to support this agricultural activity was derived from local wells. A significantly lowered water table resulted in abrupt local ground subsidence and almost completely ended this past agricultural practice. The fallow fields remain unrestored and unstabilized and are subject to wind erosion. A private property with a single residence and several undeveloped private parcels adjoins the Park's southern boundary north of Red Rock-Randsburg Road.

2.1.5 Minerals and Mining Rights

2.1.5.1 Mineral Extraction

Historically, several exploratory oil wells were drilled in the northern limits of the community of Cantil. None achieved commercial petroleum production. On the northern shore of Koehn Dry Lake (east of Cantil), clay mineral development occurred near Gypsite and Gypsy (Kane) Springs. In Saltdale (northeast of Cantil), mineralized salt was extracted from the brine pumped beneath the dry lakebed. These operations ceased production before the mid-1960s and have remained inactive since. No

permanent structures, such as residences or buildings that possess a foundation, are maintained on any private properties.

2.1.5.2 Mining Claims

As part of the 1994 CDPA, federal properties were transferred to the state as an addition to Red Rock Canyon State Park. However, State Parks did not accept fee titles to all these lands. In the passage of the legislation, Congress did not dissolve the legal and continuing mineral rights of active claim holders at the time of the legislation, which were claimed under the 1872 Mining Law and subsequent statutes, provisions, and rulings. Those properties involving legal and continuing mining claims were not accepted for transfer to the state. Instead, they were retained in ownership by the BLM specifically to ensure the proper application of mining rights.

To enact the wishes as expressed by the 103rd Congress, State Parks and the BLM jointly authored and signed a memorandum of understanding (MOU) in 1995 concerning the acreage retained in federal ownership. The MOU enables the lands to be managed as a portion of Red Rock Canyon State Park, as intended by the 103rd Congress, except that pre-existing mineral claim holders retain their legal rights to mining and mining access.

Relative to the issue of retained mining rights, the MOU states that State Parks will:

> Manage the surface of all Federal and State lands within the boundaries of Red Rock Canyon State Park as a State Park, regardless of Federal or State ownership, recognizing the legitimate rights of the mining claim holders, including the right of ingress and egress to unpatented mining claims, insofar as authorized by Federal mining laws. (CDPR, 1995, p. 4)

There are currently up to 73 claims upon these MOU lands, which the BLM still identifies as active. To activate their claims beyond the status of “casual” mining, the claimants must follow the applicable mining laws as they exist and proceed through the necessary permits and paperwork required by the BLM, Kern County, and the state. The BLM does not identify any of the mining claims as possessing status beyond casual.

If a claimant initiated progressing a claim beyond casual status, State Parks would be involved in this process only as a comment provider to ensure that proper mitigation measures are considered and implemented. State Parks acknowledges that the Red Rock Canyon State Park General Plan will in no way impair the legitimate rights of individuals who hold title to specific federal mining claims.

Unique to these claims is that the lands automatically transfer to the State once they are retired or cleared. While the remaining claims are transferable, no new claims may be established, and existing claims might go on in perpetuity.

It is State Parks' intent to engage with BLM and mining claimants so that mining activities, if sought, can be developed in a fashion that will not significantly detract from or impair public enjoyment and scientific values of the Park, which led Congress to consider and enact the land transfer legislation.

2.2 Land Acquisition and Private Inholdings

Red Rock Canyon was in the initial group of outstanding areas in California recommended for acquisition into the State Park System in 1929 by Frederick Law Olmsted in his report to the state legislature. However, land acquisitions for the Park are only pursued by those willing to sell or donate land. Red Rock Canyon became a State Park in 1968 with the purchase of approximately 4,000 acres from private owners. Since then, the Park has grown to about 25,325 acres through federal land transfers, including the Last Chance Canyon addition in the 1994 CDPA. The actual federal ownership of land within the legislated boundaries of the Last Chance Canyon addition is represented as 16,665 acres. The federal lands transferred to the state surround three parcels of private property that now rest entirely inside the Park.

2.2.1 Red Rock Canyon State Park Inholdings

Private mine inholding within Red Rock Canyon State Park

All three private properties within the Park originated from previously patented mining claims. The largest of these properties encompasses approximately 288 acres (117 hectares) and is in the northeast portion of the Park. This property is more commonly referred to as the Old Dutch Cleanser Mine. From 1923 to 1947, this property was mined for volcanic pumice (ash), which was utilized as the abrasive in Old Dutch Cleanser. The current property owners completed the requisite environmental documents to mine up to 20 acres (8 hectares) of this site. Recent communications

indicate that campaign mining[3] is currently occurring, potentially increasing in intensity in the future.

Under the Federal Land Policy and Management Act (FLPMA), the property owners hold an expressed right-of-way grant that enables and maintains access (ingress and egress) through the Park to their properties and holdings. Certain implied access rights may also be valid. This access corridor is utilized to conduct the current campaign mining activities. In addition to private property holdings, the owners hold certain unpatented mining claims that border the western edge of their private holdings.

Two additional private inholdings exist in the south-central section of the Park on El Paseo Road. These properties consist of a 154-acre (62-hectare) parcel and a separate 40-acre (16-hectare) parcel, neither of which are reported to maintain a valid Kern County mining permit.

In addition to these "island" inholdings, a 160-acre (65-hectare) parcel of private property is notched into the eastern area of Last Chance Canyon. This property is surrounded on three sides by State Park lands and maintains no current or valid Kern County mining permit.

2.3 Red Rock Canyon State Park Classification and Preserves

In addition to the State Park classification, the Park includes two natural preserves -- Hagen Canyon and Red Cliffs -- subunit classifications that determine specific land uses within those units. See ***Chapter 4 - The Plan, Section 4.3 Red Rock Canyon State Park Classification*** for more information about State Park and Natural Preserve classifications.

2.3.1 Natural Preserves and Protected Areas

Red Cliffs Natural Preserve

[3] Campaign mining is a method of mining where operations are prioritized with the aim of increasing their productivity and efficiency.

Two areas in the Park have been designated as natural preserves to recognize their exceptional natural and scenic values (see Figure 2-1).

2.3.1.1 Red Cliffs Natural Preserve

Red Cliffs Natural Preserve

The Red Cliffs Natural Preserve is a 365-acre park subunit. It is located east of SR 14 and includes spectacular cliffs and lands at the mouth of Iron Canyon. It was classified as a preserve in 1974 to:

> …provide for special protection and management of the outstanding geologic features and other natural resource values in the central portion of Red Rock Canyon State Park. The Red Cliffs landform in the preserve is one of the most dramatic scenic features viewed by motorists traveling through the unit on State Highway 14 [SR 14]. Facility development and public use in or adjacent to the preserve that impair the scenic quality of the preserve as viewed from the highway or other popular vantage points shall not be permitted. Visitor use in the preserve shall be permitted to the extent that natural ecological and scenic values are not significantly altered or disturbed (CDPR, 2005, p. 327).

2.3.1.2 Hagen Canyon Natural Preserve

The Hagen Canyon Natural Preserve is a 1,145-acre park subunit. It is west of SR 14 and Abbott Drive. It was classified as a natural preserve in 1974 to:

> Provide for the protection in an unspoiled condition forever of the natural, scenic, ecological and cultural values which occur in the vicinity of Hagen Canyon, extending from state highway 14 [SR 14] west to the western park

boundary, and extending from the southwest boundary road north to the Cross Cliffs Road west of Ricardo. Excluded from the area is the land entity occupied by the White Cliffs Campground [Ricardo Campground] extending from that campground east to Highway 14 [SR 14]. Visitor activities within the Natural Preserve will be limited to day use recreation, which can be accommodated without impairing the natural, scenic, and cultural values of the area. Overnight uses may not be permitted, and vehicular access is prohibited. Particular care will be taken to avoid damage to the habitat of the Red Rock Canyon Tarweed (*Hemizonia arida*) (CDPR, 2005, p. 328)

2.3.1.3 Birds of Prey Closure

The Birds of Prey Closure was established in 1986 by the federal government to protect the reproductive capabilities and the nesting grounds of the Golden Eagle (*Aquila chrysaetos*) and the Prairie Falcon (*Falco mexicanus*). These two raptors are listed as "California Species of Concern" by the California Department of Fish and Wildlife (CDFW). This closure encompasses roughly 1,100 acres and is in effect annually from February 1st to July 1st. The Closure includes parts of the Red Cliffs Natural Preserve, Scenic Canyon, and Nightmare Gulch. Over 50 percent of Nightmare Gulch overlaps with the Birds of Prey Closure (see Figure 2-1).

2.4 Existing Facilities and Operations

Red Rock Canyon State Park is owned and operated by State Parks to provide for the health, inspiration, and education of the people of California. As such, the primary uses of the Park are public outdoor recreation, preservation of natural and cultural resources, as well as educational and interpretive program use. The public uses the Park during the day and night, year-round, 24 hours, seven days per week.

The Park offers several recreation opportunities such as camping in the Ricardo Campground and day use (e.g., picnicking, hiking, horseback riding, vehicle touring). No other camping opportunities currently exist in the Park. The Park includes elements that support public outdoor use, such as visitor and recreational facilities and park administration, maintenance, and operations facilities and staff.

2.4.1 Roads and Trails System, Access and Circulation

Entrance Sign From State Route 14

The Last Chance Canyon addition (formerly federal BLM lands), including its primitive route network, was transferred to the Park through the CDPA in 1994. Changes to roads (motorized routes) and trails (non-motorized routes) occurred subsequently in 2006 through a sustainability survey. More recent changes to routes were due to resource management protections (see ***Chapter 4 – The Plan, Section 4.5.2 Changes to Routes since the 1982 Red Rock Canyon State Park General Plan***).

Visitors drive to most destinations within the Park. The Park's main entrance is off SR 14, near Cantil. Visitors turn onto Abbott Drive and drive 1/4-mile down a paved road to reach the Ricardo Campground and Visitor Center. Park signs indicating the turnoff are visible on SR 14. The California Department of Transportation (Caltrans) maintains 100 feet of Abbott Drive from SR 14, and Kern County maintains the road to the Park gate, then State Parks maintains the road from there.

Visitors can also access other destinations in the Park using the primitive road system off SR 14 and various Kern County, state, and BLM-maintained roads originating outside the Park, including:

- Scodie (SC)-94 Red Rock Wash Road
- SC-103 Joshua West Road
- Red Rock-Inyokern Road -- Kern County maintained through the Park
- El Paso (EP)-15 to Hart Road to Last Chance Canyon Road – BLM maintained
- EP-30 -- BLM maintained
- Pleasant Valley Road
- El Paseo Road
- Sierra View Road to SC-103 to EP-15 --BLM maintains the road to the Park boundaries.

There also are a few primitive roads from the Ricardo Campground complex.

Most of the Park's primitive trails are in the Hagen Canyon Natural Preserve, Red Cliffs Natural Preserve, and Nightmare Gulch. See ***Section 2.5.1 Points of Interest*** below for information about the Park's more popular trails.

2.4.2 Public Facilities

The Park has limited public facilities, with the most developed area being the Ricardo Campground complex.

2.4.2.1 Day-Use Facilities

Ricardo Visitor Center

The Ricardo Visitor Center is located at the entrance to Ricardo Campground via Abbott Drive (see Figure 2-1). A paved parking lot and shaded picnic tables are in the day-use area adjacent to the visitor center. The visitor center has exhibits that interpret the Park's natural and cultural history, a media room where visitors can watch educational videos and participate in interpretive programs, a bookstore, restrooms, and Park orientation information. A campfire center is also adjacent to the visitor center.

The Hagen Canyon Natural Preserve day-use parking area is unpaved and off Abbott Drive. Additional unpaved day-use parking is available at Donley, Red Rooster, Tamarisk Grove, and the Red Cliffs Natural Preserve day-use area off SR 14. Unpaved day-use parking is also available at Nightmare Gulch. Pit toilets are provided at the visitor center and Red Cliffs day-use parking areas.

2.4.2.2 Overnight Facilities

Ricardo Campground

The Ricardo Campground is a developed campground and is frequently full during holidays, peak-season (spring and fall) weekends, and significant astronomical events. The campground has 50 primitive sites available to accommodate tent and recreational vehicle (RV) camping. One site is designated as a hike-in or bike-in campsite. Facilities include potable water, picnic tables, fire rings, pit toilets, and an RV waste disposal station, but no RV hook-ups or showers are available. A maximum of eight people is allowed per site, and there are no group sites. Camping is first-come, first-served and there is no reservation system. Camping is currently not allowed within the Park outside the Ricardo Campground.

2.4.3 Operations Facilities

Most Park operations facilities are located at the Ricardo Campground complex and consist of administrative, public safety, and maintenance offices, and a maintenance yard. The Park also has several manufactured homes used for employee housing adjacent to the maintenance yard. The Park shares its operations facilities with Onyx Ranch SVRA, including the maintenance, public safety, and resource management programs.

2.4.3.1 Utility Systems and Trash Collection

The California Aqueduct is the primary source of potable water. State Parks treats the water at the Ricardo Campground Complex and staff residences. The Park also uses a septic system and leach lines. Solar panel systems and diesel generators provide all power. The solar arrays are in the Ricardo Campground complex. Propane is used for heating of employee housing.

No telephone service is provided by commercial communications providers. Telephone service uses microwave and satellite technology. Cell phone service is available in the developed areas of the Park (e.g., Ricardo Campground complex). AT&T and Verizon are

the main carriers. Internet service for the Park operations facilities, such as the visitor center, is provided by a relay system through California City.

Park staff collect trash in the campground, visitor center day-use area, and the Red Cliffs Natural Preserve day-use parking area. Trash service is collected and picked up by a commercial service.

2.4.4 Staffing

State Park Ranger Matthew Williams talks with visitors at the campground

State Parks' Great Basin District manages the Park. The District Office is located at the Antelope Valley California Poppy Reserve in Lancaster, about 48 miles southwest of the Park.

Two State Parks Peace Officers (SPPOs) and a Supervising Ranger are assigned to work at the Park. Desert Lifeguards (seasonal lifeguards, also SPPOs, who work in other state parks when the beach parks have low visitation) are assigned to the Great Basin District, including Red Rock Canyon State Park, during the spring and fall months. The District's Public Safety Officer (also known as a Chief Ranger) oversees the public safety program. The District implements incident action plans for major events or busy visitation holiday weekends, such as Veterans Day, Thanksgiving, and President's Day.

The Great Basin District's Senior Environmental Scientist oversees the natural resource management program. The staff includes several environmental scientists who work within the District. The Cultural Resource Supervisor oversees the Districtwide cultural resource program, and a Museum Curator cares for the District's museum collections, including archaeological and paleontological objects.

The District also employs maintenance workers, administrative staff, and park interpreters. They work out of the District headquarters at Hungry Valley SVRA and work at Red Rock Canyon State Park when needed. The Park also has a small program of volunteers who assist State Parks employees in delivering interpretive programs and completing administrative tasks.

2.4.5 Volunteer Program

The Red Rock Canyon State Park Volunteer Program was organized in 1995. Many dedicated volunteers provide continual service throughout the year. Their interpretive tasks include keeping the visitor center open during off-season weekends, assisting in developing and maintaining interpretive trails, and providing interpretive talks and walks. Volunteers are offered training in interpretive theory and techniques and provide up to 75 percent of the public interpretive programs in the Park.

Groups of volunteers are also enlisted to help with various tasks, including trail maintenance, trash cleanup, and restoration efforts. For example, Boy Scouts of America groups perform various tasks that enhance the quality of visitor experiences. Table 2-1 shows typical volunteer tasks and duties for the Park.

Table 2-1. Volunteer Tasks and Duties

Volunteer Duties	Volunteer Tasks
Visitor Services	Staffing visitor center, special events, and outreach booths
Interpretation	Conducting tours and providing educational programs for Park visitors and school groups, and community outreach
Maintenance	Assisting staff with maintenance and beautification projects and litter clean up.
Administrative Duties/ Volunteer Coordination	Conducting individual research, recording volunteer hours and activities, recording tours and interpretive programs, scheduling

2.4.6 Americans with Disabilities Act Accessibility Features and Conditions

2.4.6.1 Campground

ADA accessible campsite at the Ricardo Campground

The Ricardo Campground has three Americans with Disabilities Act (ADA) accessible campsites: #1, #2, and #45. Sites #1 and #2 have a shade ramada over the picnic table. The restrooms near the accessible campsites are ADA accessible. Campsite #45 uses the

campground road to access the restroom; however, linear and cross slopes in the road may be difficult for some users with mobility limitations. The primitive routes from campsites to restrooms are usable in dry weather.

2.4.6.2 Parking and Picnic Areas

The parking lot next to the visitor center includes two van-accessible spaces that visitors with disabilities may use while touring the visitor center or staying at the campground. The Red Cliffs day-use area has two ADA accessible picnic sites and an ADA accessible restroom.

2.4.6.3 Visitor Center

The patio surrounding the Ricardo Visitor Center is extended and ADA accessible. The entry door may require some assistance. Exterior restrooms are generally ADA accessible.

2.4.6.4 Campfire Center

There are three open spaces designated for wheelchair seating. Nearby parking is ADA accessible, but assistance may be needed with slopes on the path of travel from the parking lot to the campfire center.

2.5 Visitor Use and Recreation

2.5.1 Points of Interest

Red Rock Canyon State Park has a variety of destinations for visitors, including unique natural, geological, historical, and human-built points of interest. These points of interest are popular among visitors and provide directions to Park waypoints.

2.5.1.1 Ricardo Visitor Center

As mentioned in ***Section 2.4.2.1 Day-Use Facilities*** above, the Ricardo Visitor Center provides Park orientation information, exhibits about natural and cultural history and resources, a bookstore, and a media room. The visitor center is open on weekends in the spring and fall, provides interpretive information about the Park's resources, and offers an opportunity to talk with staff and volunteers. See ***Section 2.7 Interpretation and Education Resources***, for more information about the facility and its offerings.

Red Rock Canyon State Park visitor center exhibits.

2.5.1.2 Ricardo Nature Trail

Ricardo Nature Trail

The Ricardo Nature Trail is located across the parking lot from the visitor center. The 1/4-mile nature trail features numbered waypoints that correspond with a brochure that discusses the Park's natural and cultural history.

2.5.1.3 Desert View Nature Trail

The Desert View Nature Trail is a one-mile loop trail located at the south end of the Ricardo Campground. It climbs to a ridge between the campground and adjoining Hagen Canyon, then climbs the steep face of Whistling Ridge to the summit.

2.5.1.4 Hagen Canyon Natural Preserve Day-Use Area and Nature Trail

Hagen Canyon Natural Preserve Day-Use Area Nature Trail

The Hagen Canyon Natural Preserve day-use area is located off SR 14 at Abbott Drive and provides a parking area. The trail is 1.2 miles long and features wildflowers in the early spring, red cliffs, rock formations, and is the site for many Hollywood movies.

2.5.1.5 Red Cliffs Natural Preserve Day-Use Area and Nature Trail

The Red Cliffs Natural Preserve day-use area is located off SR 14, approximately 1/3-mile south of Abbott Drive, and provides a parking/staging area, pit toilets, and picnic tables. The day-use area is a favorite location to view an expanse of red cliffs and other geologic formations. The one-mile loop trail is located at the end of the parking area. It offers several scenic viewpoints and is popular from October until May.

2.5.1.6 Nightmare Gulch

Nightmare Gulch

Nightmare Gulch can be accessed via the Iron Canyon dirt road from the Red Cliffs area. There is a parking/staging area next to the gated trailhead entrance. The trail is part of an old stagecoach road that has significantly eroded over time. Due to significant public safety and natural resource issues, only pedestrian and equestrian access are allowed. It

offers outstanding views of geologic formations, wildflowers, and wildlife. The area is closed from February through June to protect raptor breeding areas.

2.5.1.7 Opal Peak

Opal Peak is a popular vista point with 360-degree views of the Park and region. Access to Opal Peak is off SR 14 at Sierra View Road and Red Rock-Inyokern Road.

2.5.1.8 Last Chance Canyon

The riparian area within Last Chance Canyon

Last Chance Canyon is a popular destination for visitors and attracts a range of user groups to appreciate its aesthetic values. From broad sweeping desert views, delicate geologic textures, and towering cliffs to lush riparian areas. Photography, hiking, horseback riding, vehicle touring, and nature viewing are frequent visitor activities. Visitors access Last Chance Canyon from several routes originating outside the Park. These include Last Chance Canyon Road, El Paseo Road, Cudahy Camp Bypass, and Pleasant Valley Road.

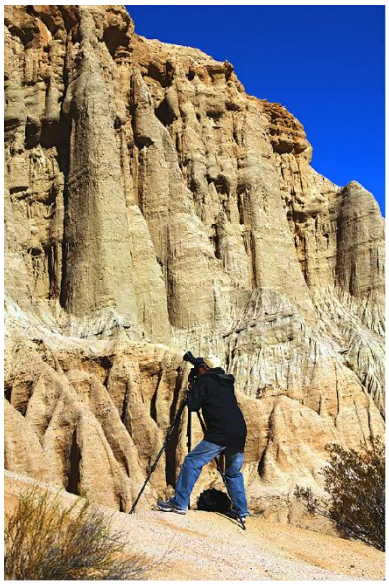
2.5.2 Recreation Opportunities

Visitors are generally interested in camping and outdoor recreational experiences in a desert landscape. Most visitors come to camp with family and friends, hike and walk through unique geological formations, stargaze, picnic, horseback ride, view wildlife, take photographs, and partake in regional motorized recreation (off-highway and 4-wheel drive vehicles, where allowed). Bicycles are allowed on designated park roads, but cycling does not seem to be a popular activity. Dogs are only allowed in picnic areas and the Ricardo Campground, and on park roads. Dogs are not allowed on trails.

2.5.2.1 Hiking

Many people visit to enjoy hiking on designated Park trails and roads or in the broader Park where allowed. Miles of trails and roads meander through the dramatic landscape, and hiking is an intimate way to experience the desert.

2.5.2.2 Nature Viewing and Photography



Photography, painting, and other art forms are popular pastimes at the Park.

Although much of the Park's area appears sparsely vegetated, it is home to a diversity of desert-dwelling plants and animals. The Park offers visitors many in-person and self-guided programs to learn about its diverse plants and wildlife. Many visitors enjoy hiking, horseback riding, and vehicle touring to experience and view nature, especially when the spring flowers bloom.

2.5.2.3 Stargazing

Red Rock Canyon State Park offers one of the few dark sky areas in Southern California.

The Park boasts a magnificent view of the night sky and is one of the few dark sky areas within the crowded Southern California area. It is popular with photographers and astronomy clubs in the area, and the Red Rock Canyon Interpretive Association (RRCIA) (described in ***Section 2.7.3 Red Rock Canyon State Park Interpretation and Education Support***) often hosts evening stargazing programs for the public.

2.5.2.4 Horseback Riding

Equestrians in nearby BLM public lands

Horseback riding is allowed on designated park roads and trails. Equestrian day use is available from the Red Cliffs day-use parking /staging area, but overnight camping is not allowed. Horses are not allowed in the Ricardo Campground.

2.5.2.5 Geocaching

Geocaching is a popular recreational activity that involves using a Global Positioning System (GPS) device and other navigation techniques to hide and seek “geocaches” or “caches.” Only virtual caches are authorized within the Park.

2.5.2.6 Vehicle Touring

Vehicle touring is a popular activity in the region.

One of the few ways to access the entire Park is to drive to destinations. Vehicle touring in only allowed in street-legal vehicles and on the designated park road system.

2.5.3 OHV Recreation

Under management as an SRA from 1973 to 1980, vehicle use was permitted at the Park:

- as a means of allowing vehicle access to certain areas in the Park for the enjoyment of scenic and other principal resource values;
- to allow access into and through the Park for users whose vehicles were not licensed for use on public highways; and
- as a recreational activity primarily related to the enjoyment and challenge of operating a motorized vehicle.

However, under the Park's existing classification as a State Park, vehicle use is appropriate only when it does not significantly impair or detract from its natural setting or quality determined to be of primary importance. Use is confined to paved areas and other areas specifically designed and maintained for normal ingress, egress and parking. (PRC Section 5001.8).

Before the CDPA of 1994, BLM managed the Last Chance Canyon area of the Park. The area was open to forms of recreation not allowed under the State Park classification management directives (by which it has been managed under agreement since 1995). Therefore, certain activities, such as unrestricted off-highway vehicle (OHV) recreation, are no longer allowed. A system of primitive roads (approximately 68 miles) was adopted to reduce impacts and allow vehicle use to access isolated scenic and natural areas in the Park. These roads may be traveled by licensed operators using vehicles that meet all applicable requirements of the California Vehicle Code (street-legal vehicles, including street-legal OHVs) and State Park unit classification (see ***Chapter 4, Section 4.5.1 Laws, Regulations, and Policies for Motorized Vehicles, Roads, and Trails***).

A contributing factor to the use of Park lands by OHV recreationists is the two open, unrestricted OHV use areas on public lands to the northwest (Dove Springs) and southwest (Jawbone Canyon). These areas are owned and managed by the BLM and experience extensive use on weekends and holidays. Traffic in these areas often overflows onto Park lands along its boundaries. During certain times of the year, many people using the Ricardo Campground and other facilities in the Park are oriented to OHV recreation. While inconsistent with Department policy and the unit classification, there is evidence that primitive roads in the Park are used by non-street legal OHV enthusiasts for trail riding and as a transportation corridor to BLM lands.

Recreational activities that were previously allowed resulted in various effects on the Last Chance Canyon area's resources, ranging from minor to extensive damage to desert vegetation and soils. Through resource management actions, such as fencing, signage, and vegetation restoration, many of the heavily affected sites in the Park are returning

to a more natural and stable state. In other areas, the impacts of earlier OHV use will be evident long into the future.

2.5.4 Regional Recreation Opportunities

There are several recreation areas within the vicinity of the Park (see Table 2-2).

Table 2-2. Recreation Areas within 60 Miles of Red Rock Canyon State Park

Recreation Area/ Land Manager	Recreation Types	Location
Onyx Ranch State Vehicular Recreation Area/State Parks	Off-highway vehicle (OHV) recreation, primitive camping, bird watching at Butterbredt Spring, and hiking – Pacific Crest National Scenic Trail connection	Kern County
Tomo-Kahni State Historic Park/State Parks	Guided interpretive tours of the cultural site	Kern County
Grass Valley Wilderness Area/Bureau of Land Management (BLM)	Camping, hiking, horseback riding, target shooting, and nature viewing	San Bernardino County
Sequoia National Forest/ United States Forest Service	Hiking, fishing, camping, mountain bike riding, horseback riding, OHV recreation, water activities, winter sports, and nature viewing	Kern, Tulare and Fresno Counties
Jawbone Canyon OHV Area/BLM	OHV recreation, primitive camping, hiking, mountain bike riding, horseback riding, rockhounding, hunting, and target shooting	Kern County
Dove Springs OHV Area/BLM	OHV recreation, primitive camping, hiking, mountain bike riding, horseback riding, rockhounding, hunting, and target shooting	Kern County

Source: State Parks 2022

2.5.4.1 Bureau of Land Management Off-Highway Vehicle Areas

Bureau of Land Management Jawbone Canyon Visitor Center

BLM OHV areas allow for all forms of cross-country travel. Other recreation activities include rockhounding, hiking, horseback riding, biking, hunting, and primitive camping. Street-legal OHV recreationalists can access BLM OHV areas and Onyx Ranch SVRA from the Ricardo Campground complex using Red Rock Wash Road. The Dove Springs OHV area connects with SR 14 directly northwest of the Park and has over 5,000 acres of

open-use public land. The Jawbone Canyon OHV area provides many OHV riding opportunities, including cross country play, trail riding, and advanced technical hill climbing opportunities.

Vehicles may operate anywhere within the posted boundaries of open OHV areas. Motorized vehicle use is restricted to designated road and trail networks outside the open OHV areas. All cross-country travel is prohibited within the Jawbone-Butterbredt ACEC.

The Jawbone Canyon Visitor Center, run by BLM partner Friends of Jawbone, is located on SR 14 at Jawbone Canyon Road. This visitor center is the starting point for many visitors in the region and has regional recreation information and maps, classroom space, a bookstore, restrooms, and other amenities.

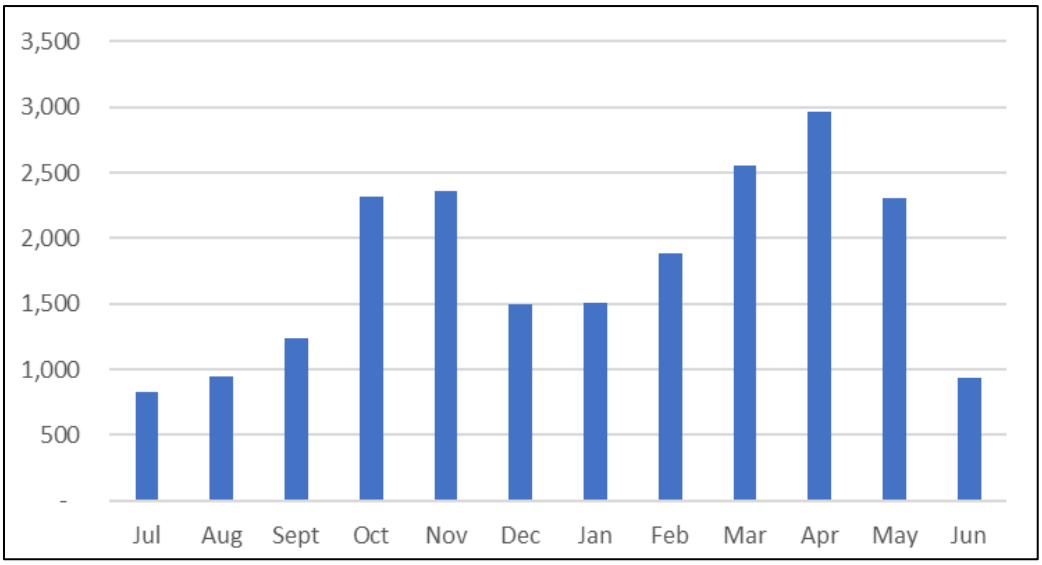
2.5.5 Red Rock Canyon State Park Visitation

The Park attracts a diversity of visitors who have separate, specific interests. However, visitors share many of the same desires regarding the overall experience they are seeking. Within this desert setting, visitors experience relative freedom from the pressures of everyday life. The experiences of exploration, discovery, solitude, and wonder are common to all. Visitors also expand their knowledge and appreciation of the desert vegetation, wildlife, and geology. Their experience is enhanced by the stories of Indigenous peoples, paleontology, history, and how the natural elements of this place affected it all.

2.5.5.1 Peak Visitation Periods

Due to the hot and arid climate, park visitation is seasonal, with peak periods during the spring and fall months when temperatures are cooler. With favorable weather, visitation increases in mid-October and usually lasts into mid-May. Holiday weekends during the peak season are very popular, and visitation is typically lower on weekdays. Visitation is nominal during hot summer months during the early morning or night. Regional residents almost exclusively visit in the summer.

Figure 2-2 shows the average monthly visitation numbers from 2017 through 2021 (four years). As shown in the graph, the highest visitation is in the spring and fall. The Park was closed in April and May 2020 due to state-mandated quarantine orders during the first few months of the COVID-19 pandemic and are not included in the average visitation numbers.



Source: State Parks 2021

Figure 2-2. Average Number of Visitors by Month from 2017 through 2021

2.5.5.2 Attendance

The Park averages around 22,000 visitors a year. Table 2-3 shows attendance by month between July 2017 and June 2021. A sharp decrease in attendance started in March 2020, which correlates with the COVID-19 pandemic. State Parks was mandated to shut down all parks from late March to June of 2020 to prevent the spread of the virus. Visitation picked up again after the closure with a spike in visitation in the fall of 2020 after the hot summer months.

Table 2-3. Visitor Attendance from July 2017 to June 2021

Month	2017/2018	2018/2019	2019/2020	2020/2021
July	766	752	657	1,120
August	1,110	901	808	953
September	1,763	1,202	909	1,056
October	2,286	2,168	1,740	3,081
November	2,449	2,028	1,796	3,167
December	2,126	1,664	1,283	911
January	1,926	1,355	1,744	996
February	2,075	1,168	1,848	2,461
March	2,722	3,100	1,074	3,305
April	2,686	3,122	Closed	3,082
May	2,476	2,572	Closed	1,875
June	1,079	1,322	532	795
Total	**23,464**	**21,354**	**12,391**	**22,802**

Source: State Parks 2021

2.5.5.3 Study of Visitor Use

The public enjoys Red Rock Canyon State Park in many ways. The following list shows the broad span of public interest and use of the Park, gathered from visitor surveys and anecdotal evidence since 1994.

- Colleges and universities for scientific research
- Elementary and secondary schools for day-use interpretive programs
- Youth club use for youth experience
- Foreign tourists experiencing the American West
- Visitors enjoying vehicle touring and experiencing the vast network of park roads and special remote places
- Amateur astronomers enjoying the relatively pristine dark desert skies
- Equestrian groups and individual horseback riders experiencing the beautiful backcountry
- Photographers, painters, and other artists inspired by the magnitude of the local beauty (including use by four California-based art institutes)
- Hikers utilizing both designated park trails and challenging rough cross-country terrains
- Participants in park-offered educational or interpretive tours, talks, and programs
- Seekers of solitude and passive relaxation
- Botanical enthusiasts touring for wildflower enjoyment
- Picnickers
- Campers at the Ricardo Campground
- Wildlife observers, including bird watchers

2013 Road and Trail Use Survey

State Parks staff conducted a visitor-use survey in March and April 2013 to learn more about how visitors use the road and trail system. The following data is a summary of those findings:

- Most visitors surveyed lived in Southern California and resided in Los Angeles County (36 percent) and Kern County (19 percent). The other highest percentage of visitors lived in Tulare County (7.2 percent) and San Luis Obispo County (7.2 percent).
- Sixty percent of the survey respondents said it was their first trip to the Park. For repeat visitors within the last year, the majority (87 percent) stated that they visited it less than five times a year.
- When visiting the Park, most survey respondents said they went with 1-2 people (47.5 percent), and 31 percent said they went with 3-5 people.

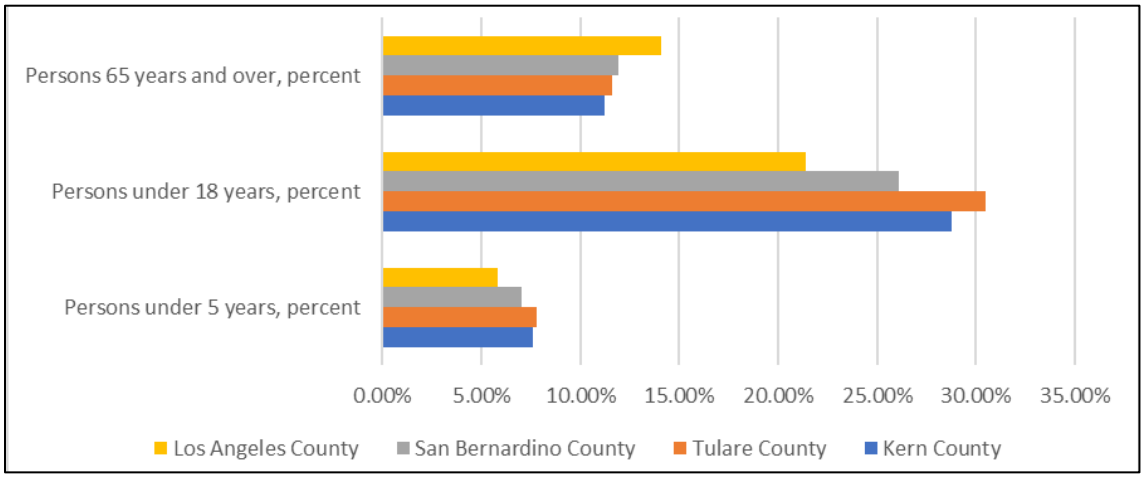
- A little more than half of the survey respondents visited for the day, and out of those who camped overnight, most stayed for two nights.
- Most of the survey respondents were found in the Hagen Canyon Natural Preserve parking lot (49 percent), followed by the Ricardo Campground (23 percent) and the Visitor Center (7.5 percent). The Hagen Canyon Natural Preserve day-use area and trail remain popular destinations in the Park, along with activities such as hiking and camping.
- The top five means of travel used by survey respondents when recreating in/exploring the Park were:
    - Hike/walk: 65.8%
    - Car/truck: 16.5%
    - Road bike/motorcycle: 6.3%
    - Jeep: 5.1%
    - Side-by-side: 2.5%
- The top reported Park uses during this survey wanted to see the desert landscape (38.8 percent); recreation fitness such as hiking, walking, and running (27.5 percent); OHV recreation (16.3 percent); as well as photography (10 percent), driving (3.8 percent), wildlife viewing (2.5 percent), and stargazing (1.3 percent).

While this survey is nearly ten years old, anecdotal evidence of recent visitor use suggests the information collected may still be valid.

2.5.5.4 Regional Demographics

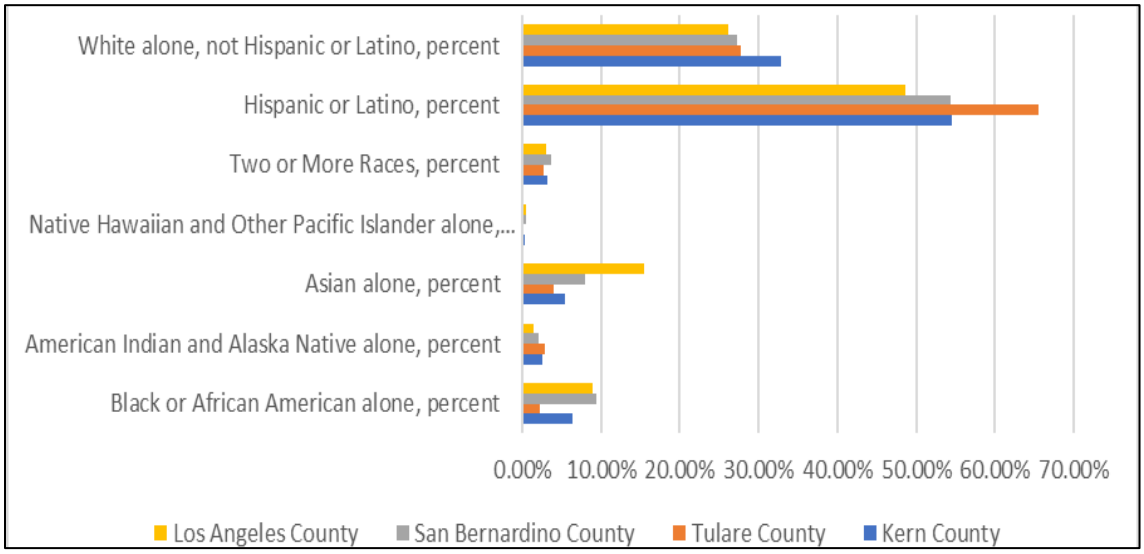
Figure 2-3 through Figure 2-5 and Table 2-4 have been created using data from the U.S. Census Bureau and the State of California Department of Finance to understand the regional context of park visitors. These figures and table show the population, demographic, social, and economic characteristics and statistics for Los Angeles, San Bernadino, Tulare, and Kern counties.

Figure 2-3. Age Distribution by County (2019)



Source: State Parks 2021; State of California, Department of Finance. Retrieved May 2021 from https://dof.ca.gov/forecasting/demographics/projections/.

Figure 2-4. Ethnic Distribution by County (2019)



Source: State Parks 2021; State of California, Department of Finance. Retrieved May 2021 from https://dof.ca.gov/forecasting/demographics/projections/

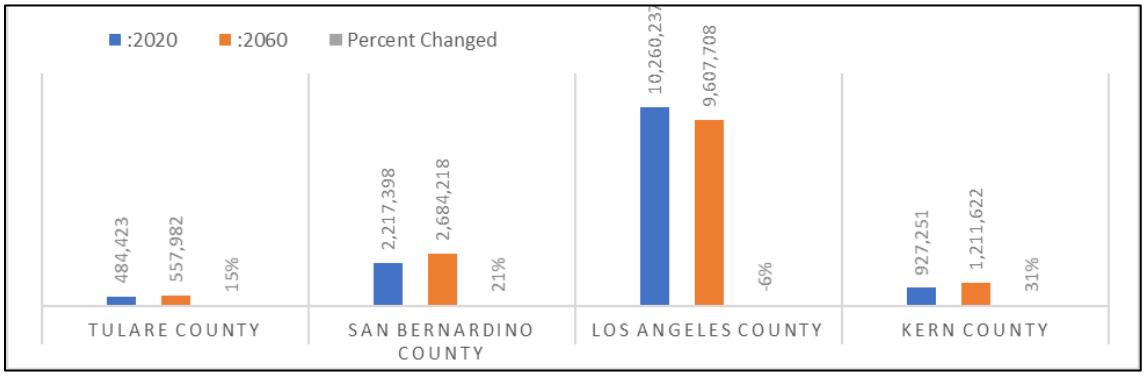
People who identify themselves as Hispanic or Latino make up the highest percentage of the four major ethnic groups in these counties.

Table 2-4. Population and Economic Factors by County (2019)

Population and Economic Factors	Kern County	Tulare County	San Bernardino County	Los Angeles County
Population estimate, July 1, 2019, (V2019)	900,202	466,195	2,180,085	10,039,107
Average persons per household, 2015-2019	3.17	3.3	3.29	2.99
Average per capita income in past 12 months (in 2019 dollars), 2015-2019	$23,326	$21,380	$25,215	$34,156
Persons in poverty, percent	19.0%	18.9%	13.3%	13.4

Source: State Parks 2021; State of California, Department of Finance. Retrieved May 2021 from https://dof.ca.gov/forecasting/demographics/projections/

Figure 2-5. Estimated Change in County Population Between 2020-2060



Source: State Parks 2021; State of California, Department of Finance Projections from 2020-2060. Retrieved May 2021 from http://www.dof.ca.gov/Forecasting/Demographics/Projections/

The region's population trends show significant growth in Kern County (30 percent) followed by San Bernadino County (21 percent) over the next 40 years, while Los Angeles County shows a population decline of six percent.

2.5.5.5 Factors Affecting Overall Level of Visitation to Red Rock Canyon State Park

The following factors affecting park visitation were gathered from public comments during the planning process.

- **General economic conditions**. If all else remains equal, a growing economy may increase visitation. Camping and some recreation types (e.g., street-legal OHV or 4-wheel drive use, horseback riding) are expensive, and some people may not be able to afford to recreate at the Park. However, COVID-19 may have increased attendance due to people's desire to recreate outdoors during the pandemic (Outdoor Foundation, 2021).

- **Location.** Due to the Park's remote location, people without adequate transportation may not be able to access the Park. Vehicle transportation may be necessary to access areas of the Park once visitors arrive.
- **Weather.** The weather is a factor that affects park visitation. Extreme fluctuation in temperatures, wind, and rain events can cause significant seasonal and weekend visitation changes.
- **Language barriers.** Due to the high level of Spanish-speaking persons living in the region, people who might not speak English may not know about the Park's interpretive and recreation opportunities using social media platforms.

2.6 Significant Resources

2.6.1 Physical Resources

2.6.1.1 Topography

Topographically, Red Rock Canyon State Park is a complex landscape. It consists of tilted sedimentary and volcanic rocks forming ridges and terraces encompassing the two principal canyons, Last Chance Canyon and Red Rock Canyon. The steep canyons, scenic vistas, and scattered buttes encompass approximately 25,325 acres.

Hikers enjoying the many geologic formations at the Park

Topographic descriptions are derived from field surveys, the U.S. Geological Survey (USGS) Cantil 7.5 minute quadrangle and Saltdale NW 7.5 minute quadrangle, and aerial photos (1:6000 scale).

The Red Rock Canyon State Park General Plan (project) area topography is mostly steep to very steep, with more level areas limited to the broad desert valleys between buttes and ridges. Slopes vary from flat to slight (0–10 percent) to steep (greater than 40 percent). It is estimated that at least 999 park acres have slopes that exceed 40 percent. In contrast, only 6,820 acres are estimated to be less than 10 percent slopes. In the Park, the highest elevation point is 3,708 feet, and the lowest point is approximately 1,990 feet.

The Park has many distinctive topographic features: the drainages of Last Chance Canyon and Red Rock Canyon; Hagen Canyon with its sheer colorful cliffs; Scenic Canyon; Nightmare Gulch characterized by a broad wash and steep, nearly sheer cliffs; and the El Paso Mountains to the southeast of SR 14. In addition to natural topographical features, there are also manufactured features such as the Old Dutch Cleanser Mine, opal mines, and remnants of other previous mining activity.

2.6.1.2 Geology and Paleontology

The Park is underlain by various geologic formations ranging in age from Precambrian (approximately 600 million years old) to late Holocene (less than 10,000 years old). Uplifting along the El Paso fault has tilted the bedding plains to the northwest. The older rock formations are exposed primarily in the Park's southern portion, and the younger formations prevail in the northwestern portions. This uplifting and tilting have brought diverse formations to the surface, where ongoing weathering erodes these exposures into the picturesque cliffs known for the area. These geologic formations contain fossils ranging from plants and small invertebrates to large vertebrates and human remains. The significant fossil-bearing formations found within the Park are (a) Dove Springs Formation, (b) Cudahy Camp Formation, (c) Goler Formation, (d) Ricardo Formation, and (e) unnamed formations of the Ice Age (Whistler, 1997).

The basement complex in the Red Rock Canyon area is composed of plutonic rocks that date back probably to the Jurassic age, about 150 million years ago. These rocks have intruded into an older series of metamorphic rocks comprising quartzite conglomerate, hornfels, and basalt porphyry. Unlike other rocks in the region, a fine-grained rhyolite granophyre occurs in the plutonic (unmetamorphosed) sequence. Granophyre is a term that describes crystal intergrowth of very fine-grained quartz and potassium feldspar. It probably represents the youngest of the plutonic rocks.

The geologic features of most public interest are the spectacular cliffs of the Ricardo formation. This formation is up to 7,000 feet thick. It comprises terrestrial deposits of sandstone, silt, clay, gravel, fragmental volcanic debris, and several olivine basalts flow laid down in the Tertiary period, two to 60 million years ago. In Red Rock Canyon proper, the soft water-laid sediments have been exposed through relative downcutting

of the canyon and uplifting of the El Paso Mountains. The caprock of basalt has acted as an erosion register and has contributed to the resulting vertical cliffs and castellated forms, spires, alcoves, and niches.

The Ricardo deposits have been uplifted and tilted to the northwest due to fault activity occurring along the El Paso fault, which runs along the base of the El Paso Mountains and is exposed at the mouth of Red Rock Canyon. The El Paso fault is a branch of the Garlock Fault, marking the structural boundary between the Mojave Desert and the Basin and Range geomorphic provinces. The Garlock fault lies parallel to and just south of the Red Rock-Randsburg Road south of the Park and is concealed beneath the valley alluvium. The relative vertical displacement of the El Paso fault has been between 2,500 and 3,000 feet, decreasing westward. In contrast, displacement along the Garlock fault has been primarily horizontal, with the northwest block moving relatively westward by at least six miles.

A complete fossil record of land animal life of the early Pliocene epoch has been found in the Ricardo formation in Red Rock and Last Chance Canyons. Fossil evidence of ancient camels, horses, mastodons, rhinoceroses, dogs, pronghorn antelope, deer, saber-tooth tigers, cats, weasels, and rabbits have been discovered in the Park and on nearby lands. Fossil evidence of plant life indicates that the region supported woodland-savanna, chaparral, and arid scrub vegetation with 15 inches of yearly summer showers.

The oldest of these fossil-bearing formations, the Goler Formation, represents the period from the late Cretaceous to the earliest Eocene (65 to 55 million years ago). California's only known terrestrial formation spans the transition from the “Age of the Dinosaurs” to the “Age of Mammals.” It is possible that important information regarding this heavily debated period could be obtained if paleontology investigations were focused on the Golar Formation. The Cudahy Camp Formation represents the period from 18 to 15 million years ago. While no fossil bones have yet been found in this formation, significant fossil trackways have been reported.

The Dove Spring Formation is 13 to seven million years old and has produced most of the fossils discovered (tens of thousands) within the Park, with over 100 species represented. Geologic and paleontological studies of this formation have been ongoing since the turn of the century. This formation has nearly continuous exposures with numerous delineating volcanic beds, and specific age data are available. Because of this, the fossil assemblages of the Dove Springs Formation have been used as a standard to define the age interval represented by similar fossils occurring throughout North America. The rich record of volcanic activity in this formation provides critical information regarding changes in magnetic polarity during the Miocene epoch. The youngest fossil-bearing formations in the Park are unnamed yet and represent the period known as the “Ice Ages.” These formations have already yielded some of the

oldest human evidence in North America and potentially could produce information that would accurately date human migration into the area.

Fossilized camelid tracks are one of many fossils seen at the Park.

Under the direction of Dr. David Whistler, field research teams from the Natural History Museum of Los Angeles have systematically collected all the fossiliferous exposures in the Red Rock Canyon Area for the past 25 years.

Placer gold, pumice, and clay are the principal mineral products of the Red Rock Canyon area, with clay mining activities leaving the most obvious reminders. Manganese, uranium, perlite, molybdenum, and lead deposits have also been explored.

Historical picture of the Yellow Aster Mine near Randsburg, California, were typical of mines and mining camps within Red Rock Canyon State Park.

2.6.1.3 Soils and Erosion

The soils at Red Rock Canyon can be characterized as poorly developed due to limited moisture and little surface organic material. As a result of natural and human-related erosion factors, soil appearance and composition differ within short distances throughout the unit. However, most soils can be alkaline since most surface water and soil moisture evaporates, leaving behind dissolved salts.

Soil erosion in the area is generally high but can vary widely from one location to the next within the Park. The dark basaltic flows that lie atop the ridges in the canyons are relatively resistant to water erosion; however, the various types of sedimentary beds that underlie the harder material are easily eroded. This erosion has contributed to creating the spectacular multi-colored canyon walls and cliffs.

Human activities have a significant effect on the soils in the area. Unlike the natural erosion process that created the impressive cliffs for thousands of years, these activities have caused changes in the landscape in less than 100 years. Although past mining and highway construction disturbances are easily seen, the most widespread disturbance in the area has been caused by off-highway vehicle recreation since 1960. Disturbance to soils and ecosystems caused by these activities are long-lived in the desert environment.

The following soil inventory was compiled from the U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS) Web Soil Survey 3.4.0 and a literature review of two surveys of the Park: the USDA-SCS Soils of Kern County California Southeastern Part and a 1995 survey by the USDA Natural Resource Conservation Service (USDA-NRCS, 2018). The Soil Survey of Kern County California Southeastern Part was produced in cooperation with the University of California Agricultural Experiment Station.

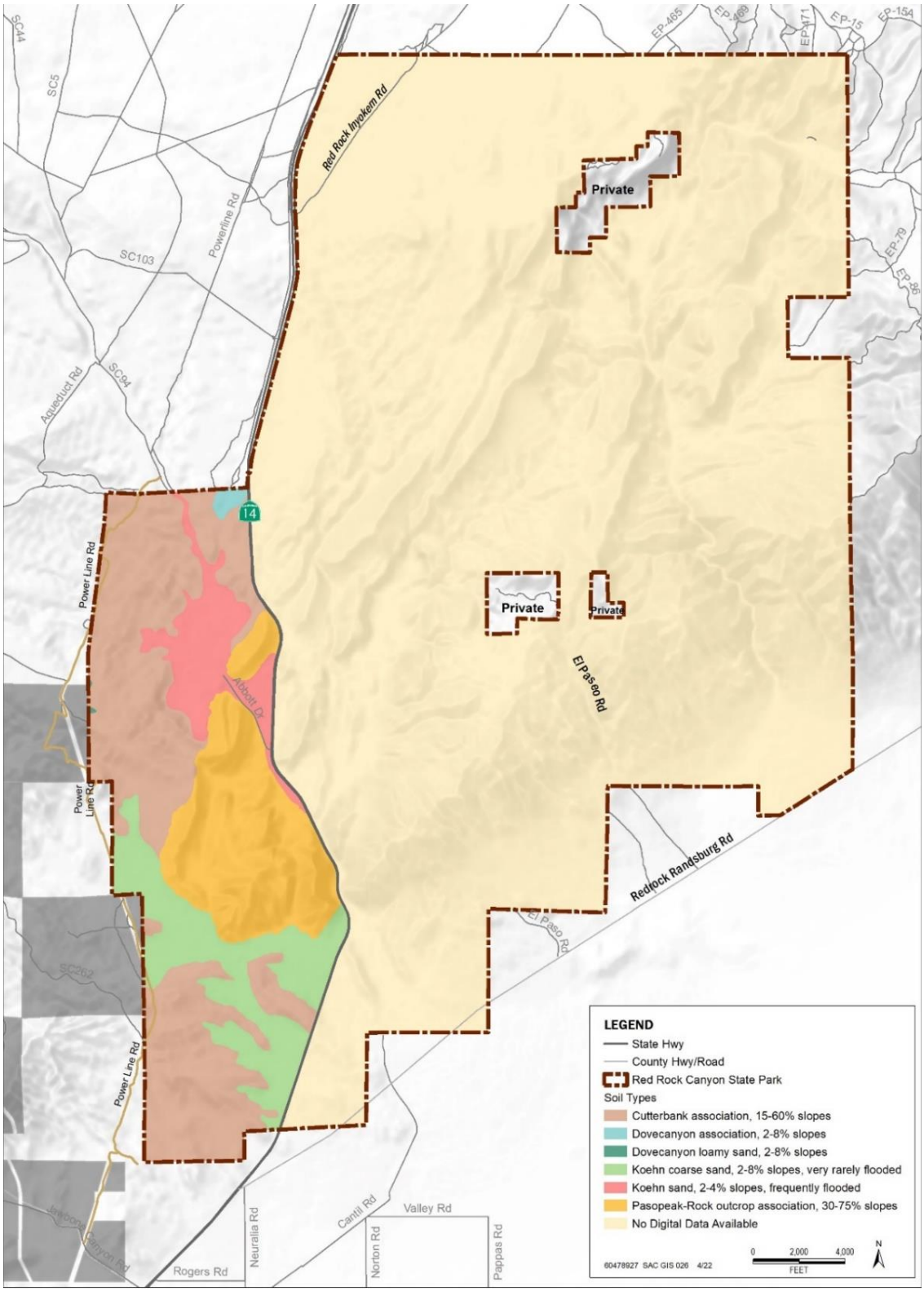
As identified in these soil surveys, six soil mapping units occur at Red Rock Canyon State Park (See Figure 2-6). Soil mapping units are delineated according to depth, slope, drainage, and parent material (USDA-SCS 1963-1976).

Soil Descriptions and Interpretations

General Descriptions

The USDA-SCS has surveyed and described the soils of Kern County, the Southeastern Part (USDA-SCS 1963-1976). The NRCS Bedrock complexity, combined with wide variation in slope and exposure, has created a complex pattern of soil types in the western Mojave Desert.

Most soils in the study area are relatively dry transitional areas between the high mountains and the Mojave Desert. Typically, these soils are nearly level to steep and are shallow, very deep, and well or somewhat excessively well-drained. They are generally comprised of gravelly loamy sand, gravelly sandy loam, or loamy sands.



Source: AECOM 2022

Figure 2-6. Red Rock Canyon State Park Soils Map

Soils with profiles that are almost alike constitute a soil series. The division of soil series into more site-specific soil phases is based on differences in surface texture, slope, stoniness, or other characteristics that affect their use by humans**.** Soil mapping units delineated in these soil surveys are composed of dominant soil or soils for which the unit is named, although they commonly include small areas of other soils. The kinds of soil mapping units delineated include soil phases and land types.

Cutterbank Association

Cutterbank association soils are found on 15 to 60 percent backslopes and side slopes of uplifted, eroded relic lakebeds in the western portion of the park unit from 2,200 to 3,610 feet in elevation. They have formed in lacustrine deposits derived from granitic rocks. A typical profile has a surface layer that is a one-inch-thick pale brown fine sandy loam, underlain by 8-inch-thick pale brown gravelly sandy loam and 50-inch-thick pale brown to brown sandy loam.

These somewhat excessively drained soils are usually dry but can become intermittingly moist near the soil surface following storm events. Flooding and ponding are rare due to very high runoff. Saturated hydraulic conductivity is high in the subsoil and moderately low in the underlying material. Wind erosion susceptibility is moderately high.

Common plants on the Cutterbank association soils include blackbrush, creosotebush, and white bursage. A layer of densic material exists four to 14 inches in depth and prevents root growth at these depths except where cracks exist.

Cutterbank and similar soils comprise 90 percent of this map unit. Other soils comprise nine percent of the map unit, including Dovecanyon soils on fan remnants and Koehn soils in drainageways and on stream terraces. Badlands comprise 1 percent of the map unit.

Dovecanyon Association

Dovecanyon association soils are found on gentle two to eight percent slopes of fan remnants in the northwest part of the park unit from 2,300 to 4,000 feet in elevation. It is very deep soil that has formed in alluvium derived from granitic rocks. A typical profile has a surface layer that is a two-inch-thick pale to yellowish brown loamy sand underlain by three-inch-thick pink to brown coarse sandy loam, 31-inch-thick light brown gravelly coarse sandy loam, 27-inch-thick reddish yellow gravelly loamy coarse sand, and 16-inch-thick light yellowish brown gravelly coarse sandy loam.

Dovecanyon association soils are well drained with very low to low runoff and moderately high saturated hydraulic conductivity and permeability. Flooding and ponding are rare. Wind erosion susceptibility is high.

Common plants on the Dovecanyon association soils include blackbrush, creosotebush, white bursage, Coo’er's golden bush, and Sandberg bluegrass.

Dovecanyon and similar soils comprise 85 percent of this map unit. Koehn soils on fan aprons comprise seven percent of this map unit. The other eight percent of this map unit is found on fan remnants and includes Goldpeak soils (five percent) and Typic torriorthents (three percent).

Dovecanyon Loamy Sand

Dovecanyon loamy sand is found on gentle two to eight percent slopes of fan remnants in the northwest part of the park unit from 2,9500 to 4,000 feet in elevation. It is a deep soil that has formed in alluvium derived from granitic rocks. A typical profile has a surface layer that is a two-inch-thick pale to yellowish brown loamy sand underlain by three-inch-thick pink to brown coarse sandy loam, 31-inch-thick light brown gravelly coarse sandy loam, 27-inch-thick reddish yellow gravelly loamy coarse sand, and 16-inch-thick light yellowish brown gravelly coarse sandy loam.

Dovecanyon loamy sand is well drained. Like Dovecanyon association soils, Dovecanyon loamy sand well drained with very low to low runoff and moderately high saturated hydraulic conductivity and permeability. Flooding and ponding are rare. Wind erosion susceptibility is high.

Common plants on the Dovecanyon loamy sand include blackbrush, creosotebush, white bursage, Coo’er's golden bush, and Sandberg bluegrass.

Dovecanyon and similar soils comprise 85 percent of this map unit. Other soils on fan remnants comprise 14 percent, including Typic haplargids (five percent), Dovecanyon warm soil (four percent), Goldpeak soil (three percent), and Typic torriorthents (two percent). Koehn soils, found on inset fans, comprise the other one percent of this map unit.

Koehn Coarse Sand

Koehn coarse sand is found on two to eight percent slopes of fan aprons and inset fans in the central portion of the park unit from 2,230 to 2,790 feet in elevation. It has formed in alluvium derived from granitic rocks. A typical profile has a surface layer that is a one-inch-thick brown to dark grayish brown coarse sand underlain by pale brown to brown sand to a depth of 63 inches.

Koehn sands are somewhat excessively drained and are usually dry but become moist during winter and spring and intermittingly moist near the surface after summer storm events. Runoff tends to be very low in Koehn coarse sands, which have a moderately high to high saturated conductivity. The sands are rarely flooded. Koehn coarse sands are highly susceptible to wind erosion.

Vegetation common to Koehn sands are mostly desert senna, creosotebush and white bursage.

Very rarely flooded Koehn sands and similar soils makes up 85 percent of this map unit. Occasionally flooded Typic torriorthents in drainageways makes up eight percent of the map unit, and rarely flooded Koehn sand on alluvial fans makes up six percent of the map unit. The remaining one percent of the map unit consists of Typic torriorthents on stream terraces.

Koehn Sand

Koehn coarse sand is found on two to four percent slopes of drainage in the central portion of the park unit from 2,400 to 3,200 feet in elevation. It has formed in alluvium derived from granitic rocks. A typical profile has a surface layer that is a one-inch-thick brown to dark grayish brown sand underlain by pale brown to brown sand to a depth of 63 inches.

Koehn sands are somewhat excessively drained and are usually dry but become moist during winter and spring and intermittingly moist near the surface after summer storm events. Runoff tends to be very low in Koehn sands, which have a high to very high saturated conductivity. The sands range from very rarely to frequently flooded. Koehn sands are highly susceptible to wind erosion.

Vegetation common to Koehn sands are mostly desert senna, creosotebush and white bursage.

Frequently flooded Koehn sands and similar soils make up 90 percent of this map unit. Koehn sand on fan aprons makes up five percent of this map unit, and very rarely flooded Koehn sand on inset fans makes up the other five percent of this map unit.

Pasopeak-Rock Outcrop Association

Pasopeak-Rock Outcrop Association is found on summits and steep sideslopes of mountains with 30 to 75 percent slopes in the central part of the park unit from 2,460 to 4,350 feet in elevation. These soils formed in residuum and colluvium derived from rhyolite and altered granitic rocks. A typical profile has a surface layer that is a two-inch-thick pale brown sandy loam, underlain by six-inch-thick brown gravelly sandy loam, three-inch-thick yellowish brown gravelly sandy clay loam, six-inch-thick yellowish brown extremely gravelly sandy clay and 10-inches of hard fractured rhyolite bedrock.

Pasopeak soils are well drained with high runoff and very low to moderately low permeability. Soil is usually dry but retains moisture in the winter and spring and can be intermittingly moist near the surface after summer rain events. Wind erosion susceptibility is moderately high.

Common plants found on Pasopeak soils include creosotebush, white bursage and other desert shrubs. Annual grasses and forbs grow in the winter and spring and include schismus, filaree and brittle spineflower.

Pasopeak and similar soils comprise 60 percent of this map unit. Rock outcrops comprise 25 percent of this map unit. The other 15 percent of this map unit consists of soils found on the backslopes and includes five percent of each: Lithic haplargids, Typic haplargids, and Typic torripsamments.

Many soil and geologic types are found near Cudahy Camp.

2.6.1.4 Meteorology

The Mojave Desert has an arid climate that is generally sunny, warm, and dry. Average temperatures range from 60 degrees Fahrenheit (°F) to 104°F, with temperatures peaking in July; days are very hot, and nights are very cool. The Mojave Desert receives approximately three inches of precipitation annually but can receive up to 6 inches, with most precipitation falling in December, January, and February. Because of the variable topography in the desert, climatic variations occur within relatively short distances, and the western Mojave is susceptible to isolated heavy summer thunderstorms. Winds are prevalently from the west-southwest, with the area susceptible to high winds throughout the year.

Topography is a dominating factor in determining the area's microclimates in the El Paso Mountains and Red Rock Canyon. The canyon forms cold air drainage that directs airflow downward at night. Therefore, the canyon floor is slightly cooler than other localities nearby.

The California Department of Water Resources (DWR) and the National Oceanic and Atmospheric Administration derive meteorological data from published reports. The weather reporting stations used in this report are listed in Table 2-5. The Kern County weather reporting stations are in the community of Mojave at 834 meters in elevation

and approximately 25 miles southwest of the Park and in the community of Randsburg at 1,088 meters in elevation, located approximately 20 miles east of the Ricardo Visitor Center on Abbott Drive. From 1955 to 1974, the National Weather Service (NWS) used the community of Cantil as a weather recording station.

Table 2-5. Weather Reporting Stations, Kern County

Station	Elevation (meters)	Legal Description (lat./long.)	Precipitation Recorded	Temperature Recorded
Mojave	834	35.05/118.17	1897–1996	1964–1996
Randsburg	1,088	35.37/117.65	1948–1996	1948–1996
Cantil	613	35.18/117.58	1955–1974	1955–1974
Ricardo Visitor Center – Red Rock Canyon State Park	N/A	N/A	1971–1992	1971–1992

There is no NWS station site-specific data for Red Rock Canyon State Park, but the stations above generally represent meteorological conditions occurring in the Park. State Parks personnel record temperature and precipitation data at the Ricardo Visitor Center (discussed in ***Section 2.6.1.5 Local Climate Conditions*** section below).

Snowfall at Red Rock Canyon State Park

2.6.1.5 Local Climate Conditions

The Mojave Desert climate is classified as an arid climatic type, with hot, dry summers and cold winters. Rainfall occurs almost entirely during the winter months, but summer thunderstorms and heavy downpours may occur as snow and freezing temperatures occur in the winter. The western Mojave Desert is frequently windy, with gusts reaching up to 75 miles per hour (mph) occasionally. The hot summer climate is moderated by its proximity to the Sierra Nevada and somewhat by the marine influence to the west. The Sierra Nevada is primarily responsible for creating this arid climate by capturing moisture from Pacific Storm fronts before they reach the broad desert valleys.

The Sierra Nevada and Tehachapi Ranges are a dominating factor in the desert climate of this region. This climate is characterized by a rain shadow created by the mountain ranges parallel to the moister coastal areas. The Mojave Desert lies on the far side of these ranges and is considered the driest of the North American deserts. A semi-permanent high-pressure area (the Pacific High) intensifies and migrates northward during the summer, keeping storm tracks well to the north. During this year, California receives little or no precipitation from Pacific storms. However, occasionally warm moist air from the Gulf of California or the Gulf of Mexico drifts northward during the summer or early fall months and produces scattered and locally heavy showers over the desert and mountain regions. The Pacific High decreases in intensity in winter and retreats southward, allowing Pacific storms to move into and across the state. These storms, which are more frequent in northern portions of the state, are responsible for most of southern California's precipitation and produce occasional heavy rains that may cause serious flooding, especially in mountainous areas. Another consequence of the Pacific High is the production of fog and low clouds along the coastal front of the Santa Monica Mountains during the summer months, resulting in temperatures in the desert over 100 degrees.

Temperature

Red Rock Canyon State Park experiences a wide range of temperatures during the year due to the moderating effects of the Pacific Ocean, the surrounding mountain ranges, and broad desert valley floors. The diurnal temperature range and maxima/minima temperatures are greatest in the summer months when cool nighttime temperatures follow hot sunny days. More moderate temperatures occur during the spring months with warm days and mild nighttime temperatures in the 60s°F

As measured at the Randsburg and Mojave weather stations, the annual average diurnal range in temperature is about 76°F for the highs to 51°F for the lows (Table 2-6). This range is greatest during June through September. The average annual temperature is 76°F as recorded at the Randsburg weather station and 74°F at the Mojave weather station. Average maximum temperatures are in the 90s in the warmest months of June through August and in the 50s and 60s from November through February. Average minimum temperatures are in the 30s to 40s from November through April and the 50s and 60s from May through October. The extreme maximum temperature of 112°F was recorded in June 2021. An extreme minimum temperature of 5°F was recorded in March. Red Rock Canyon State Park temperature data is based on recorded data from the National Oceanic and Atmospheric Administration (NOAA) Regional Climate Centers, the National Centers for Environmental Information (NCEI), and the National Weather Station and is summarized below in Table 2-6.

Table 2-6. Average Monthly Temperature Data as Recorded at Randsburg and Mojave (based on historical data from the past ten years)

Month	Randsburg Average Minimum (˚ F)	Randsburg Average Maximum (˚ F)	Mojave Average Minimum (˚ F)	Mojave Average Maximum (˚ F)
January	37	57	39	56
February	38	59	40	58
March	43	66	44	64
April	48	73	49	71
May	55	81	55	78
June	63	93	64	91
July	70	98	70	96
August	69	97	70	95
September	64	91	65	89
October	52	77	54	76
November	43	66	44	64
December	35	55	38	54

Table Key: °F = degrees Fahrenheit
Source: Applied Climate Information System (ACIS) NOAA Regional Climate Centers. ACIS is a joint project of the Regional Climate Centers, the National Centers for Environmental Information (NCEI), and the National Weather Service.

Precipitation

Almost all precipitation in the Mojave Desert falls as rain, and greater than 90 percent of this precipitation occurs from November through April. The wettest months are January and February, and the driest months are June through August. Some reports estimate that the area receives approximately four inches of snow annually. The relative humidity is below 40 percent most of the year and above 50 percent during winter nights. Summer thunderstorms with local cloudbursts can cause flash floods (e.g., the 1997 flood at the Ricardo Visitor Center).

Annual precipitation at Red Rock Canyon State Park and the surrounding desert areas varies considerably over a short distance due to the strong orographic effects produced by the broad valleys and steep mountain ranges. Precipitation data for reporting stations described in this section are included in Table 2-7. Precipitation figures are based upon annual cycles recorded at the Randsburg and Mojave weather stations.

Table 2-7. Average Monthly Precipitation as Recorded at Randsburg

Month	Randsburg Precipitation (inches)	Mojave Precipitation (inches)
January	0.8	1.1
February	0.6	1.0
March	0.5	0.7
April	0.4	0.5
May	0.3	0.1
June	0.1	0.1
July	0.8	0.2
August	0.4	0.1
September	0.3	0.1
October	0.6	0.3
November	0.3	0.4
December	0.7	1.4
Average	5.8	6.0

Source: Applied Climate Information System (ACIS) NOAA Regional Climate Centers. ACIS is a joint project of the Regional Climate Centers, the National Centers for Environmental Information (NCEI), and the National Weather Service.

Overall, the average annual precipitation for the Mojave Desert is approximately six inches annually, but it also experiences greater than six inches of evaporation during that same period.

For the Mojave Station, the average annual precipitation is six inches. The average annual precipitation for the Randsburg station is 5.8 inches. The average annual precipitation recorded at the Ricardo Visitors Center from 1971/1972 to 1991/1992 is 6.55 inches. The greatest average annual rainfall was recorded in the 1977-1978 period, measured at 15.05 inches, while the least average annual rainfall was recorded from the 1971-1972 period and measured at 1.91 inches.

As recorded at the Ricardo Visitor Center, the average precipitation at Red Rock Canyon State Park is 6.55 inches. This precipitation is a few tenths of an inch greater than the average recorded at the Mojave and Randsburg weather reporting stations. Temperature and precipitation data were recorded from 1971 to 1992.

Wind

The prevailing winds are from the west in the Mojave Desert during most of the year. Prevailing winds move inland and cool as air is forced to rise over mountains. As moisture falls on slopes facing the winds, they become very dry over the mountain crests and down the far side. Winds are prominent in autumn, late winter, and early

spring and are almost always present in the late afternoon. Strong, substantial winds above 25 mph are common, with gusts reaching 75 mph.

Several elements affect the area's basic wind patterns. During the winter, the basic pattern is altered by storms that are typically associated with cold fronts or occlusions. The latter acquires the characteristics of a cold front as they move southeastward over southern California. As a cold front approaches, strong easterly or southeasterly winds can develop, followed by northwest winds with the passing of the front. A warm-core high-pressure area develops over the Great Basin between winter storm fronts, resulting in the aforementioned diurnal land-sea breeze and clear skies.

Local Climate

This section describes localized weather conditions that differ significantly from the general climate. Aspect, elevation, vegetation, and several other factors create localized climatic differences. Within Red Rock Canyon State Park, the "aspect" is the most dominant of these factors.

Aspect (the positioning of something in a specified direction) determines solar exposure and an area's light, temperature, and water moisture characteristics. South-facing slopes receive the greatest exposure to sunlight, experience the highest temperatures, and sustain the greatest moisture stress. In comparison, north-facing slopes are cooler and moister. Typically, vegetation on south-facing slopes is less dense than that of north-facing slopes and is composed of species that have a greater ability to survive extreme heat and moisture stress during summer.

Vegetation affects climate by increasing humidity from evapotranspiration and moderating temperatures by shading. These effects are most evident along streams or near bodies of water (e.g., springs). Within the Park, the average summer daytime temperature can be cooler and the relative humidity higher along Last Chance Creek than on nearby slopes, especially those south facing.

On September 3, 1997, an isolated thunder cell related to a monsoon flow of air stalled over Red Rock Canyon and lasted only a few hours. It was very localized in its impact; there was no rain five miles south at SR 14 and Jawbone Canyon. At the State Park headquarters (Ricardo Visitor Center), an estimated 10 to 15 inches of rain fell in two hours, causing a severe flash flood that destroyed State Park's onsite residential units and other buildings. This isolated storm event was so intense that portions of SR 14 were destroyed, large boulders were moved along washes, and the Sodium Springs and Abbott Drive wash were completely reconfigured. Several slope failures were noted along cliffs within Red Rock Canyon. Based on damaged archaeological sites, a flood of this magnitude had not occurred in this area in a minimum of 200 years. Given a very conservative time estimate, this flood is expected to represent a 300- to 500-year event.

Table 2-8. Red Rock Canyon State Park at the Ricardo Visitor Center Station Local Climate Data, Kern County

Month	Temperature 1971-1992 Average Low(˚ F)	Temperature 1971-1992 Average High(˚ F)	Precipitation Monthly Average(inches)
January	29	59	1.23
February	33	64	1.22
March	38	68	1.33
April	44	77	.18
May	53	85	.13
June	61	95	.04
July	66	102	.16
August	64	100	.26
September	56	93	.51
October	46	82	.30
November	35	68	.47
December	29	59	.72

Table Key: °F = degrees Fahrenheit

2.6.1.6 Hydrology

An inventory of hydrologic resources is undertaken to provide a comprehensive body of information regarding the water resources at the Park. This information can then be used as a basis for future policy development, sound resource management practices, and informed decision-making. As a component of the Resource Inventory Summary for Red Rock Canyon State Park, it provides the knowledge necessary to accomplish integrated, long-term resource planning.

Information Sources and Organization

Specific hydrologic information for the Park is very limited, derived from a cursory field survey, aerial photos (1:6000 scale), reports, and data published by the USGS and the DWR using the California Watershed Map (CALWATER 2.2). CALWATER is a set of standardized watershed boundaries meeting standardized delineation criteria.

Personal communications with State Parks staff were very helpful. Historic maps, photos, and property descriptions provided certain information, particularly regarding the historic stream course in the Ricardo Campground area.

Although the information available was not definitive in characterizing the Park's hydrology, it provides a general picture of its water resources and their qualities, distribution, and movement. General descriptions of the hydrologic setting and unit-related watersheds are given. The Park's water resources include fresh surface waters and groundwater. Information on size, location, water quality, beneficial uses, and

associated constraints are given if available. Water-related facilities and water management practices are also discussed, and a list of planning issues and preliminary recommendations are included.

Hydrologic Designations

As defined by DWR in 1981, the western Mojave Desert is located within the South Lahontan Hydrologic Basin. A hydrologic basin is further subdivided, in decreasing size, into the hydrologic unit (HU), hydrologic area (HA), and hydrologic subarea (HSA).

Red Rock Canyon State Park is located within the Fremont and Indian Wells HUs of the South Lahontan Hydrologic Basin (HB). The Park's drainages are included in the China Lake, Dove Springs, and Koehn HAs. The largest stream in the Park, which is the drainage of Las Chance Canyon, is located in the Koehn HSA.

Hydrologic Descriptions

Based on the information provided by CALWATER 2.2 program, there are eight main watersheds within Red Rock Canyon State Park. The watersheds extend into several jurisdictions beyond the Park boundary. Total drainage areas of the principal watersheds within Red Rock Canyon State Park are given in Table 2-9. Table 2-10 summarizes the percentage of each HA within the Park. These measurements were obtained from published sources or calculated using CALWATER 2.2 boundaries and with the use of ARCINFO.

Table 2-9. Total Drainage Areas of the Principal Watersheds

Hydrologic Unit Name	Hydrologic Area Name	Planning Watershed Name*	Total Watershed Drainage (acres)	Total Watershed of Unit (acres)	Total Watershed of the Addition (acres)
Indian Wells	China Lake	South of Black Hills Well	8,219	N/A	48
Indian Wells	China Lake	North of Dove Spring Ranch	4,630	N/A	2,274
Fremont	Dove Springs	Upper Red Rock Canyon	5,971	1,506	762
Fremont	Dove Springs	West of Holloway Camp	6,711	1,032	4,555
Fremont	Dove Springs	Cantil	5,190	1,262	N/A
Fremont	Dove Springs	Lower Red Rock Canyon	3,791	1,334	N/A
Fremont	Koehn	Fremont Valley	305,200	2,783	10,047
Fremont	Koehn	Water Canyon	9,919	420	N/A

*Planning Watershed Name is provided for location purposes only

Table 2-10. Percentage of Watershed within Red Rock Canyon State Park

Hydrologic Area Name	Combined Total Watershed Acreage	Total Watershed Acreage within Park	Percent of Total Watershed Acreage within Park
China Lake	12,849	2,322	0.66%
Dove Springs	21,663	10,451	1.28%
Koehn	315,119	13,250	0.07%

Two major watersheds drain southward to the Mojave Desert through the Park. The largest watershed is the Red Rock Canyon drainage, encompassing about 51 square miles or 7,040 acres. About 5,317 acres (24.5 percent) of this drainage is within the Park. This watershed drains the western end of the El Paso Mountains and the desert lands to the northwest. The smaller drainage is unnamed and encompasses approximately nine square miles or 5,760 acres adjacent and to the southwest of the Red Rock watershed. This smaller drainage crosses SR 14, 0.75 miles from the Red Rock-Randsburg Road intersection near the southern border of the Last Chance Canyon.

Surface water flows in two small spring-fed areas. One is in upper Last Chance Creek, and surface water can be seen down to Cudahy Camp near the middle of the creek/canyon. Surface water can also be seen at the confluence of Tarweed Canyon and Red Rock Canyon during most of the year. Additionally, Nightmare Gulch is mapped as a blue-line stream course and included in the United States Fish and Wildlife Service's (USFWS) National Wetlands Inventory database.

Watershed Resources

In addition to the streams and springs of Red Rock Canyon, Last Chance Canyon, and Nightmare Gulch, several unnamed streams and secondary drainages also occur within the Park. During normal years, these streams are ephemeral in nature and contain no surface flows for most months of the year. Little information about their sporadic surface flows, intermittent flood flows, water temperatures, or water quality is available.

Current and potential beneficial uses of surface freshwater resources include non-contact recreation (picnicking, hiking, aesthetic or scenic enjoyment, camping), fresh-water habitat, riparian-associated habitats, wildlife corridors, wildlife water supply, and groundwater recharge.

Although periodic flooding and stream channel scouring are identified constraints, they are also natural processes necessary to the long-term health of riparian ecosystems. Visitor activities and facilities such as roads and trails can impact the water resources of the Park if not managed and used appropriately.

Riparian area in Last Chance Canyon

2.6.2 Plant Life

Red Rock Canyon State Park is in the Mohave Desert Region of the California Floristic Province. Plants of the Mojave Desert region have an affinity to the desert environment and can tolerate the harsh and somewhat unpredictable climate. In addition, many Mojave Desert plants can take advantage of shallow soils found in rock crevices and highly eroded areas. The arid desert climate, the diversity of topography and geology, and the convergence of southern Sierra Nevada flora with that of the Mohave Desert contribute to the region supporting a rich diversity of plants, including a high number of endemic plant species (i.e., species that occur nowhere else in the world).

California's portion of the Mojave Desert supports approximately 1,409 native plant taxa. Appendix B of the Biological Resources Report for Red Rock Canyon State Park (Dudek, 2019) (see ***Appendix B – Biological Resources Report***) lists the plant species recorded within the Park during the Report's 2018 surveys. A more recent and comprehensive plant list that combines all previous plant lists for the Park for a total of 352 species is included in ***Appendix C – Comprehensive Plant List Compendium.***

However, according to the Cal-flora database (Calflora.org, 2021), 460 plant taxa have been recorded in the Park and over 600 in the vicinity. The large size of the Park and the fact that two new species were discovered during the Biological Resources Report surveys that had not been previously recorded in the Park suggests that many more species occur in the Park that have yet to be discovered and adequately documented.

2.6.2.1 Vegetation Communities

Red Rock Canyon State Park supports diverse vegetation communities and land cover types, including specific vegetation alliances defined by the Manual of California Vegetation, Second Edition (Sawyer, et al. 2009), which employs the National Vegetation Classification Standard. The Park and the surrounding West Mojave ecoregion have been mapped using this system from multiple sources by combining fine-scale alliance-level mapping conducted in 2011, 2012, and 2014 Aerial Information

Systems (AIS) 2013; Vegetation Classification and Mapping Program (VegCAMP) et al. 2013. This land cover dataset (referred to as the CDFW West Mojave Vegetation layer) was used as the baseline layer during field reconnaissance conducted by biologists in 2018 to develop the Biological Resources Report. The Report synthesizes and updates the biological resource information for the Park, integrating information from numerous previous surveys and sources.

Additional botanical surveys were conducted by staff from State Parks Natural Resources Division (NRD) in 2017 and 2019. Surveys specifically for the Red Rock Canyon monkeyflower (*Erythranthe rhodopetra*) were conducted in the Park in 2017 by Naomi Fraga. She authored the treatment on this rare endemic species, *Erythranthe rhodopetra* in the Jepson Flora Project (Fraga, 2018)

Red Rock Canyon monkeyflower

Vegetation communities and other land covers in the Park include desert scrub communities, riparian communities, wetland communities, desert outcrop and badlands, and developed/disturbed lands for a total of 19 types (Table 2-11). Figure 7 in the Biological Resources Report shows the vegetation communities and land covers mapped in the Park. More detailed descriptions and maps of the vegetation communities are provided in the Biological Resources Report and its Attachment A – Biological Resources Mapbook.

Table 2-11. Vegetation Communities and Land Covers

General Vegetation Alliance	Park Acreage
Desert Scrub	21,777
Ambrosia dumosa (white bursage scrub)	1,328
Atriplex confertifolia (shadscale scrub)	35
Atriplex polycarpa (allscale scrub)	797
Coleogyne ramosissima (black brush scrub)	51
Grayia spinosa (spiny hop sage scrub)	549
Krascheninnikovia lanata (winterfat scrub) *	573
Larrea tridentata (creosote bush scrub)	811
Larrea tridentata - Ambrosia dumosa (creosote bush – white bursage scrub)	17,316
Salazaria mexicana (bladder sage scrub)	15
Yucca brevifolia (Joshua tree woodland) *	301
Riparian	673
Ambrosia salsola (cheesebush scrub)	112
Ericameria paniculata (blackstem rabbitbrush scrub) *	82
Lepidospartum squamatum (scale broom scrub) *	452
Madrean Warm Semi-Desert Wash Woodland/Scrub	24
Salix laevigata (red willow thickets) *	2
Wetland	2
Juncus arcticus (var. *balticus, mexicanus)* (Baltic and Mexican rush marshes)	2
Desert Outcrop and Badlands	2,821
North American warm desert bedrock cliff and outcrop	2,821
Other Land Cover	79
Developed	76
Disturbed	3
Park Total	25,351

*Vegetation communities with state rarity ranking of S1–S3.

Note: according to the current GIS shapefiles for the Park boundary and vegetation communities, the total acreage of "Original Park + Last Chance Canyon addition" is 25,325. Thus, there is a difference of approximately 28.73 acres between vegetation communities and the total Park acreage. This discrepancy is due to the lack of vegetation classification for a small area in the northeast corner of the Last Chance Canyon addition boundary. It is our understanding that portions of the Park boundary were recently surveyed and that we can expect an updated shapefile for the boundary.

2.6.2.2 Sensitive Vegetation Communities

Wetlands and Waters

Collectively, wetlands and waters refer to riparian vegetation communities, wetland vegetation communities, and non-wetland water features (e.g., unvegetated washes and braided channels) that provide habitat value and hydrologic connectivity functions. The Park supports approximately 649 acres of riparian communities and two acres of wetland communities.

The Park also contains numerous unvegetated washes and channels within upland vegetation communities. These wetlands and water features provide important habitats for resident and migratory wildlife species. They are potentially subject to federal and state regulatory agency jurisdiction (i.e., Clean Water Act Sections 404 and 401, California Fish and Game Code Section 1600, Porter-Cologne Act). Furthermore, wetlands and waters are critical features for wildlife in arid, desert landscapes and serve as climate refugia where the effects of changing climate conditions are less severe or ameliorated (California Natural Resources Agency (CNRA) 2014; National Fish, Wildlife and Plants (NFWP) Climate Adaptation Partnership 2012).

Joshua Tree Woodland

Joshua Tree

Joshua tree woodlands (*Yucca brevifolia*) are the iconic vegetation type of the Mojave Desert, and approximately 301 acres have been mapped in the Park. Additional individuals and small stands of Joshua trees are scattered in other Park areas that are too small to map. Unlawful harvest of this species and other native desert plants is prohibited under the California Desert Native Plants Act. Additionally, this community (and the species itself) increases conservation interest due to observed range contractions resulting from increasing temperatures and altered precipitation

seasonality arising from climate change (Barrows and Murphy-Mariscal 2012; Cole et al. 2011).

The Park is near the western edge of the species range, where the population has been modeled as unsustainable (Cole et al., 2011). On October 21, 2019, the California Fish and Game Commission received a petition from the Center for Biological Diversity to list the western Joshua tree (*Yucca brevifolia*) as a threatened species under the California Endangered Species Act transmitted to the CDFW for review. On September 24, 2020, the Notice of Findings was published, accepting the petition and declaring the western Joshua tree (*Yucca brevifolia*) a candidate species for listing as threatened or endangered under the California Endangered Species Act (CESA). Western Joshua tree was designated a candidate species on October 9, 2020. However, in March 2022, the "Report to the Fish And Game Commission Status Review of Western Joshua Tree" stated that, considering the current threats and climate change models, the scientific evidence did not demonstrate that species populations are negatively trending in a way that would lead it to be in serious danger of becoming extinct throughout all or a significant portion of its range in the foreseeable future. The Department concluded that listing western Joshua tree as a threatened species was not warranted (CDFW, 2022).

Other Sensitive Vegetation Communities

The Park supports 19 vegetation communities and land covers. Five vegetation communities of the 19 are considered sensitive and are listed in Table 2-12. Sensitive vegetation communities account for approximately five percent of the overall Park acreage (see Figure 7 in the Biological Resource Report).

Table 2-12. Sensitive Vegetation Communities

General Vegetation Alliance	Rarity Ranking*	Park Acreage
Desert Scrub Vegetation Alliance	**N/A**	**875**
Krascheninnikovia lanata (winterfat scrub)	G4S3	573
Yucca brevifolia (Joshua tree woodland)	G4S3	301
Riparian Vegetation Alliance	**N/A**	**537**
Ericameria paniculata (blackstem rabbitbrush scrub)	G4S3	82
Lepidospartum squamatum (scale broom scrub)	G3S3	452
Salix laevigata (red willow thickets)	G3S3	2
Park Total	**N/A**	**1,411**

* Rarity rankings from California Natural Community List (CDFW 2018b). Vegetation communities with a state rarity ranking of S1–S3 are considered sensitive.
Notes: Vegetation communities and land cover based on the CDFW West Mojave Vegetation layer (AIS 2013; VegCAMP et al. 2013) with Park-specific mapping refinements based on 2018 and 2019 field reconnaissance.

2.6.2.3 Special Status Plants

The following is a discussion of 19 special-status plant species known or have the potential to occur in the Park. A review of all potentially occurring special-status plant species in the Park's vicinity is provided in Appendix D – Special-Status Plant Species Potential to Occur, of the Biological Resources Report. Special-status plant species that have been recorded in and around the Park are shown in Figure 8, with more detailed mapping provided in Appendix A in the Report. Table 2-13 estimates the potentially suitable habitat for the special-status plant species that occur or have the potential to occur in the Park based on known habitat associations.

Table 2-13. Special-status Plant Species Potentially Suitable Habitat

Special-Status Plant Species Groupings	Species Name	Park Acreage
Species generally associated with Desert Scrub, Desert Wash, and Wetland Habitats	Alkali mariposa lily (*Calochortus striatus*) Spiny-hair blazing star (*Mentzelia tricuspis*) Wine-colored tufa moss (*Plagiobryoides vinosula)* Mojave indigobush (Psorothamnus *arborescens* var. *arborescens*)	22,451
Species generally associated with Desert Scrub Habitats	Red rock tarplant (*Deinandra arida*) Red rock poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*) Kern County evening-primrose (*Camissonia kernensis* ssp. *kernensis*) White pygmy-poppy (*Canbya candida*) Mojave spineflower (*Chorizanthe spinosa*) Death Valley sandmat (*Euphorbia vallis-mortae*) Solitary blazing star (*Mentzelia eremophila*) Creamy blazing star (*Mentzelia tridentata*) Crowned muilla (*Muilla coronata*) Charlotte's phacelia (*Phacelia nashiana*) Mojave fish-hook cactus (*Sclerocactus polyancistrus)*	21,777
Species generally associated with Desert Wash and Wetland Habitats	Red Rock Canyon monkeyflower (*Erythranthe rhodopetra*) Sierra Nevada monkeyflower (*Erythranthe sierrae*)	674
Species generally associated with Woodland Habitats	Inland gilia (*Gilia interior*)	301

Special status plant species are defined as species that are legally protected or otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- Species officially listed by the State of California or the federal government as endangered, threatened, or rare
- Candidates for state or federal listing as endangered, threatened, or raretaxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the State California Environmental Quality Act (CEQA) Guidelines
- Species identified by the CDFW as Species of Special Concern
- Species afforded protection under local planning documents
- Taxa considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California." CNPS includes six rare plant ranks California Rare Plant Rank (CRPR) for categorizing plant species of concern, which are summarized as follows:
    - 1A Plants presumed extirpated in California and either rare or extinct elsewhere
    - 1B Plants rare, threatened or endangered in California and elsewhere
    - 2A Plants presumed extirpated in California but common elsewhere
    - 2B Plants are rare, threatened, or endangered in California but more common elsewhere
    - 3 Review List: Plants about which more information is needed
    - 4 Watch List: Plants of limited distribution

  Threat Ranks - Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are determined as follows:

    - 1 Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
    - 2 Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
    - 3 Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

Federal and State Listed Plant Species

No federally listed plant species are known to occur or potentially occur within the Park. Additionally, no state-listed endangered or threatened species occur or potentially occur in the Park. However, the Joshua tree (*Yucca brevifolia*) was recently reviewed for

listing as threatened under CESA. Red rock tarplant, a state-listed rare species, has been documented in the Park and is described below.

Red Rock Tarplant (*Deinandra arida*)

Red rock tarplant (*Deinandra arida*) is a state-listed rare species and a CRPR 1B.2 species. Red rock tarplant is an annual herb that occurs within Mojavean desert scrub on clay and volcanic tuff soils. Beyond the Park boundaries, it is known to occur at only a few additional locations in Kern County. This species is recorded in the California Natural Diversity Database (CNDDB) within the Park and the State Parks' dataset and was documented during fieldwork in 2018 and 2019. The tarplant was observed in several locations, mainly in the Park's south-central region.

Other Special Status Plant Species of Interest

The following provides a discussion of 18 additional sensitive plant species that occur or potentially occur in the Park. Updated park-wide botanical surveys need to be completed in order to validate the presence of some species that have been documented nearby and for which appropriate habitat exists in the Park. Additional species are likely to be discovered and added to the plant species list.

Alkali Mariposa Lily (*Calochortus striatus*) CRPR 1B.2

This perennial bulbiferous herb occurs in chaparral, chenopod scrub, Mojavean desert scrub, and meadows and seeps on mesic alkaline soils (CNPS 2018). Alkali mariposa lily has been recorded in the CNDDB within the Park along and west of SR 14 (see Figure 8 in the Biological Resources Report).

Kern County Evening-Primrose (*Camissonia kernensis* ssp. *kernensis*) CRPR 4.3

This annual herb occurs within chaparral, Joshua tree woodland, pinyon, and juniper woodland on sandy, gravelly, or granitic soils (CNPS 2018). Kern County evening-primrose was recorded in creosote bush scrub in the Park's northeastern portion along the eastern fork of Last Chance Canyon in 1960 (CCH 2018).

White Pygmy-Poppy (*Canbya candida*) CRPR 4.2

This annual herb occurs in Joshua tree woodland, Mojavean desert scrub, pinyon, and juniper woodland on gravelly, sandy, or granitic soils. There has been a single historical occurrence of this species in the central area of the Park since 1932 (CCH 2018).

Lemmon's Jewelflower (*Caulanthus lemmonii*) CRPR 1B.2

This annual herb occurs in pinyon and juniper woodland and grasslands (CNPS 2019). A single plant of this species was observed in bloom next to a wash along Last Chance Canyon in April 2019. The species had not been previously known to occur in the Park.

Mojave Spineflower (*Chorizanthe spinosa*) CRPR 4.2

This annual herb occurs in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and playas. Soils where this species occurs, are sometimes alkaline. This species has been recorded within the Park on either side of SR 14 and was observed in 2019 (see Figure 8 in the Biological Resources Report).

Red Rock Canyon Monkeyflower (*Erythranthe rhodopetra*) CRPR 1B.1

This species occurs in Mojavean desert scrub and canyon washes in sandy soils. The entire range of this rare endemic species barely extends beyond the Park boundaries. This species is recorded in the CNDDB within the Park and was observed during fieldwork in 2017, 2018, and 2019 and during additional surveys conducted in portions of the Park in 2017 by Naomi Fraga (Fraga 2018). The species has been reported along and within the wash just west of SR 14, near Cudahy Camp, near Red Rooster rock formation, near Hagen Canyon, near Red Buttes, and in Last Chance Canyon. Several occurrences of Red Rock Canyon monkeyflower were observed in 2019 along the canyon northwest of the El Paso Mountains from north SR 14 to near Cudahy Camp. Numerous patches were also found throughout Scenic Canyon/Nightmare Gulch.

Sierra Nevada Monkeyflower (*Erythranthe sierrae*) CRPR 4.2

Sierra Nevada monkeyflower occurs in openings in cismontane woodland and lower montane coniferous forest, dry meadows and seeps, vernally wet depressions, swales, and along stream banks. The plant can typically be found in substrates, usually granitic and sandy. This species was previously documented along Tarweed Creek in the Park in 1969. Records indicate the monkeyflower was common in moist sub-alkaline sand in creosote bush scrub along the small creek (CCH 2018).

Red Rock Poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*) CRPR 1B.2

Red rock poppy occurs in Mojavean desert scrub on volcanic tuff substrates. This annual herb has been recorded in the CNDDB within the Park and is included in the Park dataset, including from 2019 fieldwork. Outside the Park, this endemic species is only found in a few locations in Kern County. The species occurs at the base of the El Paso Mountains, near and northeast of Cudahy Camp, along Last Chance Canyon, between Last Chance Canyon and SR 14, and on either side of SR 14 in the Park's western portion (see Figure 8 in the Biological Resources Report). Red Rock poppy was observed during the Natural Resource Division's (NRD) 2017 and 2019 surveys in both Last Chance Canyon and Nightmare Gulch, with populations widely but sparsely distributed on the canyon bottoms, terraces, and canyon walls.

Death Valley Sandmat (*Euphorbia vallis-mortae*) CRPR 4.2

Death Valley sandmat occurs in Mojavean desert scrub in sandy or gravelly soils. This perennial herb has been recorded in four locations west of SR 14 within the Park (CCH 2018) and was documented in similar locations during fieldwork in 2018 (see Figure 8 in the Biological Resources Report).

CRPR 4.2 Inland Gilia (*Gilia interior*) CRPR 4.3

Inland gilia occurs in rocky cismontane woodland, Joshua tree woodland, and lower montane coniferous forest. This annual herb has not been recorded in the Park but has a moderate potential to occur. There is suitable Joshua tree woodland habitat, and the nearest record is approximately five miles north of the Park. There are several records north and northwest of the Park (CCH 2018).

Solitary Blazing Star (*Mentzelia eremophila*) CRPR 4.2

Solitary blazing star

Solitary blazing star occurs in Mojavean desert scrub. This annual herb has been recorded in several locations within the Park, primarily along SR 14 and the road west of SR 14 and in Scenic Canyon (CCH 2018), and was also documented in similar locations during fieldwork in 2018. In 2019, this species was observed along Last Chance Canyon and at the northern end of Nightmare Gulch (see Figure 8 in the Biological Resources Report).

Spiny-Hair Blazing Star (*Mentzelia tricuspis*) CRPR 2B.1

Spiny-hair blazing star occurs in Mojavean desert scrub on slopes or in washes with sandy or gravelly substrates. This species has been recorded two miles north of Red Rock Canyon along SR 14 at the edge of the Park (CCH 2018).

Creamy Blazing Star (*Mentzelia tridentata*) CRPR 1B.3

Creamy blazing star occurs in Mojavean desert scrub in rocky, gravelly, and sandy soils (CNPS 2018). This annual herb has been recorded in the CNDDB at one location within the Park, west of SR 14 and north of Park Headquarters (see Figure 8 in the Biological Resources Report).

Crowned Muilla (*Muilla coronata*) CRPR 4.2

Crowned muilla occurs in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland (CNPS 2018). There is a historical sighting of this species from 1932, just east of the Park (CCH 2018). Two records of this perennial bulbiferous herb occur west of SR 14 within the Park (Calflora 2018). Crowned muilla was also observed in Nightmare Gulch in 2019.

Charlotte's Phacelia (*Phacelia nashiana*) CRPR 1B.2

Charlottes phacelia

Charlotte's phacelia species that occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland in soils that are usually granitic and sandy (CNPS 2018). This annual herb is included in the CNDDB within the Park and in the Park dataset in several locations, including Last Chance Canyon and the El Paso Mountains.

An extensive stretch of Charlotte's phacelia was mapped along Last Chance Canyon in 2019 (see Figure 8 in the Biological Resources Report).

Wine-Colored Tufa Moss (*Plagiobryoides vinosula*) CRPR 4.2

Wine-colored tufa moss occurs in cismontane woodland, Mojavean desert scrub, meadows and seeps, pinyon and juniper woodland, and riparian woodland. Substrates that support this species are typically granitic and sometimes clay, with occurrences generally documented along seeps and streams. This moss has a moderate potential to occur but has not been recorded in the Park. There is suitable desert scrub habitat and seeps and streams within the Park. The Park falls within the species' range, with a record from the Cinco quadrangle just west of the Park (CNPS 2018).

Mojave Indigobush (*Psorothamnus arborescens* var. *arborescens*) CRPR 4.3

Mojave little-leafed indigobush

Mojave indigobush is a perennial deciduous shrub that occurs in Mojavean desert scrub and riparian scrub. A historical record of this variety occurs along SR 14 within the Park, but no CNPS records are known in the Park's vicinity (Calflora 2018; CCH 2018; CNPS 2018).

Mojave Fish-Hook Cactus (*Sclerocactus polyancistrus*) CRPR 4.2

Mojave fish-hook cactus occurs in Great Basin scrub, Joshua tree woodland, and Mojavean desert scrub, generally on carbonate substrates. Mojave fish-hook cactus has been recorded within the Park dataset in the southern portion of the Park and was observed in that area in 2019 (See Figure 8 in the Biological Resources Report).

Other Sensitive Botanical Resources

Western Joshua Tree – (*Yucca brevifolia*). Candidate for listing.

The Park is near the western edge of the species range, where the population has been modeled as unsustainable (Cole et al., 2011). On October 21, 2019, the California Fish and Game Commission received a petition from the Center for Biological Diversity to list the western Joshua tree (*Yucca brevifolia*) as a threatened species under the California Endangered Species Act, and the petition was transmitted to the CDFW for review. On September 24, 2020, the Notice of Findings was published, accepting the petition and declaring the western Joshua tree (*Yucca brevifolia*) a candidate species for listing as threatened or endangered under the CESA. Western Joshua tree was designated a candidate species on October 9, 2020. However, in March 2022, the "Report To The Fish And Game Commission Status Review Of Western Joshua Tree" stated that, considering the current threats and climate change models, the scientific evidence did not demonstrate that species populations are negatively trending in a way that would lead it to be in serious danger of becoming extinct throughout all or a significant portion of its range in the foreseeable future. The Department concluded that listing western Joshua tree as a threatened species was not warranted. (Report to the Fish and Game Commission – Status review of Western Joshua Tree (Yucca brevifolia), March 2022)

Cottontop Cactus (*Echinocactus polycephalus* var. *polycephalus*) (no rare plant rank)

Cottontop cactus is a stem-succulent cactus that occurs in the Mojave Desert region of California, Arizona, Nevada, and northern Mexico. Though common in San Bernardino and Inyo counties and not considered a sensitive species throughout its range, it is considered locally rare in Kern County, with one of the two populations occurring in Last Chance Canyon within the Park (Kern County Flora, 2016). It can be found on rocky hills and canyon walls in clusters of as many as 30 stems, each up to .5 meters tall. The fruits are densely woolly, giving the common name "cottontop cactus." The cottontop cactus distribution is shown in Figure 8 in the Biological Resources Report, along with the other sensitive species, often co-occurring with Mojave fish-hook cactus.

Creosote Clone Rings

The creosote bush (*Larrea tridentata*) is one of the most easily recognizable and widespread of all desert shrubs. It is also one of the oldest living things on earth, with the original plant living up to 100 years. Creosote plants produce clones of themselves through a process in which the inner stems die and new stems appear on the periphery. This produces a circular pattern of genetically identical plants with the rings expanding outward at about one meter every 500 years. Creosote ring age can be estimated from the average radius calculated for each ring. Growth rates have been estimated from Carbon 14 dating and are measured in millimeters and average between 0.39

millimeters (mm) to 1.00 mm per year. The oldest creosote clone ring has been estimated at 11,700 years old; this is commonly referred to as King Clone and is found in the Mojave Desert north of the Park.

Through investigations and mapping efforts, Red Rock Canyon State Park and the surrounding vicinity have been found to support several creosote clone rings. In 1986, Mark Faull, State Park Ranger, mapped creosote clone rings within Red Rock Canyon State Park. In 1997, Laurie Archambault, State Park Environmental Scientist, mapped additional clone rings from aerial photography.

Non-native Invasive Species

Approximately 36 species of non-native plants have been documented in Red Rock Canyon State Park. Many of these species are associated with a disturbance from previous settlements, mining claims, and off-road vehicle activity. The most widespread of these are non-native annual grasses, mustards, and tamarisk trees. Tamarisk (*Tamarix ramosissima*) is spreading in washes, wetlands, and riparian areas at the expense of native plants in Last Chance Canyon and along Last Chance Creek. Athel (*Tamarix aphylla*) was known to occur at the Ricardo Campground; however, the 1997 flood removed these trees. The species is still present at Cudahy Camp in Last Chance Canyon. On-going tamarisk eradication efforts within the Park are helping to keep populations under control and prevent them from further spreading into native plant communities. However, it is difficult to control tamarisk within drainages that originate outside the Park boundaries. Therefore, it is expected that management efforts will continue to be an important aspect of invasive plant management in the Park.

2.6.3 Animal Life

The Park is characterized by diverse desert scrub, riparian and wetland, and outcrop and cliff habitats that can support a variety of wildlife species. The presence of herbaceous species in the spring provides additional foraging and food for species adapted to the desert environment. Resident species are mainly rodents and reptiles, but numerous species of migratory birds can be observed as they pass through the area.

Joshua trees are often the only arboreal species in desert scrub habitats, providing additional desert wildlife habitat features such as song perches, lookout posts, and nest sites. The spiny leaves provide protective habitats for birds and lizards both on the live plant and the fallen branches. Characteristic animal species that may be found in this habitat include the side-blotched lizard, antelope ground squirrel, rattlesnakes, wood rats, and pocket mice. In Red Rock Canyon State Park, this habitat is often associated with populations of the state-listed threatened Mohave ground squirrel (*Spermophilus mohavensis*).

Riparian habitats are of extreme value to wildlife in desert environments. They provide important drinking water sources and structures for shelter, nesting, and foraging. Riparian habitats also serve as migration and dispersal corridors. Within Red Rock Canyon State Park, the intermittent Last Chance Creek and associated riparian corridor represent the Park's most significant riparian habitat. Other areas supporting riparian habitat occur in Hagen Canyon, along Scenic Canyon-Nightmare Gulch, along the Park's western boundary, and in some scattered locations in the southern portion. Occasional pools in this habitat remain year-round and provide important drinking water for wildlife in an otherwise dry environment. Emerging aquatic insects become prey to many species of birds - such as the black phoebe and other flycatchers - and bats. Mammals such as coyotes also use this habitat.

2.6.3.1 Reptiles

The Mojave Desert is one of the areas of highest reptile species diversity in California (Atlas of Biodiversity of California, CDFW, 2003). Nine reptile species were observed in the Park during surveys conducted in 2018 (see ***Appendix B - Biological Resources Report***). Commonly observed reptiles included the common side-blotched lizard (*Uta stansburiana*), desert horned lizard (*Phrynosoma platyrhinos*), and zebra-tailed lizard (*Callisaurus draconoides*). Many other reptiles that have been previously documented in the Park include yellow-backed desert spiny lizard (*Sceloporusuniformis*), chuckwalla (*Sauromalus atar*), coachwhip (*Masticophis flagellum*), desert sidewinder (*Crotalus cerastes*), desert night lizard (*Xantusia vigilis),* desert iguana *(Dipsosaurus dorsalis),* and western whiptail (*Cnemidophorus tigris*) (CDFW 2014; iNaturalist). The federally and state-listed Desert Tortoise (*Gopherus agassizi*) is often found in this habitat, especially during spring months, foraging on wildflowers. The desert tortoise is discussed in ***Section 2.6.3.4 Special-Status Wildlife Species.***

Desert Tortoise

Chuckwalla

2.6.3.2 Mammals

Characteristic mammal species observed in desert scrub habitat include various rodents and lagomorphs such as desert woodrat (*Neotoma lepida*), desert cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*). Other mammalian species associated with desert scrub include the desert kit fox (*Vulpes macrotis*), gray fox (*Urocyon cineroargenteus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Several bat species are also found in this habitat type.

Four mammal species were detected in the Park during surveys conducted in 2018 (see ***Appendix B – Biological Resources Report***). Commonly observed mammals included the white-tailed antelope squirrel (*Ammospermophilus leucurus*) and black-tailed jackrabbit (*Lepus californicus*). Additionally, several unidentified bat species were detected during the 2018 reconnaissance. Other common mammal species that have been previously reported in the Park include Merriam's kangaroo rat (*Dipodomys merriami*), long-tailed pocket mouse (*Chaetodipus formosus*), and the deer mouse (*Peromyscus* sp.) (CDFW 2014). Special-status mammal species, including Mohave ground squirrel (*Xerospermophilus mohavensis*), bat species, and other small mammals and furbearers, are discussed in Section ***2.6.3.4 Special-Status Wildlife Species***.

Mojave ground squirrel

2.6.3.3 Birds

Bird populations fluctuate greatly in the Park, depending on weather conditions and food supplies. The highest population levels and species diversity occur in the spring, followed by fall, winter, and summer. Representative species include both migratory and resident bird species such as the mourning dove (*Zenaida macroura*), burrowing owl (*Athene cunicularia*), California quail (*Callipepla californica*), killdeer (*Charadrius vociferus*), common raven (*Corvus corvax*), horned lark (*Eremophila alpestris*), canyon wren (*Catherpes mexicanus*), western meadowlark (*Sturnella neglecta*), house finch (*Heamorhous mexicanus*), roadrunner (*Geococcyx californianus*), yellow-rumped warbler (*Setophaga coronata*), and Bell's sparrow (*Artemisiospiza belli*).

Twenty-two bird species were observed in the Park during the 2018 surveys (see ***Appendix B – Biological Resources Report***).

Commonly observed birds included the black-throated sparrow (*Amphispiza bilineata*), mourning dove (*Zenaida macroura*), and common raven (*Corvus corax*). Other common bird species that have been previously reported at the Park include rock wren (*Salpinctes obsoletus*), Wilson's warbler (*Cardellina pusilla*), white-throated swift (*Aeronautes saxatalis*), and red-tailed hawk (*Buteo jamaicensis*) (CDFW 2014). The Park on the eBird website checklist includes 149 species (eBird.org). Special-status bird species - including riparian birds, scrub birds, golden eagle (*Aquila chrysaetos*), and other raptors - are discussed in the next section.

2.6.3.4 Special-Status Wildlife Species

The following is a discussion of special-status wildlife species known to occur or have the potential to occur in the Park. A review of all potentially occurring special-status wildlife species in the Park's vicinity is provided in Appendix E – Special-Status Wildlife Species Potential to Occur, of the Biological Resources Report. Special-status wildlife species that have been recorded in and around the Park are shown in Figure 9, with more detailed mapping provided in Appendix A in the Report. Table 2-14 below estimates the potentially suitable habitat for the special-status wildlife species that occur or have the potential to occur in the Park based on known habitat associations. Updated park-wide biological surveys, following accepted protocols for each taxa, need to be completed in order to validate the presence of some species that have been documented nearby and for which appropriate habitat exists in the Park. Additional species are likely to be discovered and added to the species list.

Table 2-14. Special-status Wildlife Species Potentially Suitable Habitat

Special-Status Wildlife Species Groupings	Species Name	Park Acreage
Species generally associated with Desert Scrub, Desert Washes, and Desert Outcrops and Badlands	Desert tortoise (*Gopherus agassizii*) Golden eagle (*Aquila chrysaetos*) and other raptors (foraging habitat) American badger (*Taxidea taxus*) Desert kit fox (*Vulpes macrotis arsipus*)	25,270
Species generally associated with Desert Scrub and Desert Washes	Mohave ground squirrel (*Xerospermophilus mohavensis)* Loggerhead shrike (*Lanius ludovicianus*) Bendire's thrasher (*Toxostoma bendirei*) Crissal thrasher (*Toxostoma crissale*) LeConte's thrasher (*Toxostoma lecontei*) Brewer's sparrow (*Spizella breweri)* Tulare grasshopper mouse (*Onychomys torridus tularensis)* Yellow-eared pocket mouse (*Perognathus parvus xanthonotus)*	22,450
Species generally associated with Desert Outcrop and Badlands	Golden eagle and other raptors (nesting habitat) Bat species (roosting habitat)	2,821
Species associated with Riparian Woodlands	Willow flycatcher (*Empidonax traillii*)	2
Species associated with Wetlands	Tricolored blackbird (*Agelaius tricolor*)	2

Federal and State Listed Wildlife Species

The following provides a discussion of federally and state-listed wildlife species that occur or potentially occur within the Park.

Desert Tortoise

The Mojave population of the desert tortoise (*Gopherus agassizii*) occurs north and west of the Colorado River in California, Arizona, Nevada, and Utah. It is federally and state listed as threatened. Federal critical habitat was designated for the desert tortoise in 1994, and a Recovery Plan for the species was issued in 2011 (USFWS 2011). The Park is near the western edge of the species' range, bounded in the West Mojave Desert by the Tehachapi and the Sierra Nevada mountain ranges.

A study also found evidence of tortoise population decline in the Park, similar to findings in the adjacent Fremont Valley. From 2002 through 2004, the USGS surveyed

the Park's western portion for desert tortoises using demographic and landscape plots. This study estimated that population densities were less than five individuals per kilometer (2.7 to 3.6/square kilometers), and the total Park desert tortoise population was estimated at approximately 108 individuals (Berry et al. 2008). Occurrence points for desert tortoises indicate the spatial distribution and suitability of the Park to support the species, rather than any indication of the number or density of tortoises in the Park.

USFWS's critical habitat for a desert tortoise is designated just three miles east of the Park. The BLM Desert Tortoise Research Natural Area is located just south of Koehn Lake, approximately four miles from the Park. Nearly the entire Park, except for the El Paso Mountain Range, is modeled as suitable for the desert tortoise based on the USGS species distribution model (Nussear et al., 2009). Available database occurrences for the desert tortoise are shown in Figure 9 of the Biological Resource Report (magenta symbols). Desert tortoise was most recently reported in CNDDB and BLM datasets in the Park in 2007. No live tortoises were detected when CDFW/State Parks conducted desert tortoise surveys in Nightmare Gulch and Last Chance Canyon 2013 and 2014. Signs were observed at eleven Nightmare Gulch study area locations, primarily in the desert scrub areas above the canyon bottom. However, during these surveys, no sign of desert tortoise was detected in Last Chance Canyon (CDFW 2014). During the 2018 field survey in upper Nightmare Gulch, biologists discovered a tortoise carapace wedged under a low rock overhang, but no further information could be gathered regarding this observation without damaging the shell or rock (see ***Appendix B - Biological Resources Report***). In April 2022, a botanist from NRD discovered and reported an active burrow in Nightmare Gulch (Leah Gardner, personal communication. Based on all available information, as summarized above, all areas of the Park would generally be considered suitable for desert tortoises except for areas of steep rock outcrops, cliff faces, and rocky canyon bottoms where habitat is limited or inaccessible to the species.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a resident songbird largely endemic to California. The species is in a marked decline throughout much of its range, and in 2018, the California Fish and Game Commission determined that listing the species as threatened in California was warranted. The tricolored blackbird nests in large breeding colonies, typically characterized by freshwater wetlands with emergent vegetation composed of cattail (*Typha* spp.), bulrush (*Schoenoplectus* spp.), blackberry (*Rubus armeniacus*), and/or willows (*Salix* spp.), and forages in adjacent fields (Beedy and Hamilton 1999). This species is also noted frequently moving to different breeding sites each season.

No records of tricolored blackbirds occur in the Park. Very little breeding habitat is known within the Park, and foraging opportunities for a breeding colony are limited. A

tricolored blackbird breeding colony and occurrence records occur less than two miles southwest of the Park at Koehn Lake. Due to the proximity of this breeding colony location to the Park, this species has the potential to occur near and/or migrate through the Park.

Willow Flycatcher

Three subspecies of willow flycatchers (*Empidonax traillii*) occur in California: the southwestern willow flycatcher (*E. t. extimus*), little willow flycatcher (*E. t. brewsteri*), and Great Basin willow flycatcher (*E. t. adastus*). The southwestern willow flycatcher is federally listed as endangered and the willow flycatcher (regardless of subspecies) is state-listed as endangered in California.

Willow flycatchers are small, insect-eating, Neotropical migratory birds that breed in the United States and Canada and winter in southern Mexico, Central America, and northern South America (Sogge et al. 2010; USFWS 2014). Due to variability in geography, elevation, weather, and other factors, the little and Great Basin willow flycatcher subspecies migrate through areas of nesting southwestern subspecies early (northbound migrants) and late (southbound migrants) in the southwestern breeding season. Due to their similarities in appearance and song, willow flycatchers observed within the southwestern willow flycatcher range can be assumed to be southwestern only during the period of approximately June 15 through July 20 (USFWS 2002).

The Park is situated at the boundary between the breeding ranges for southwestern willow flycatcher and little willow flycatcher. The breeding range of the little willow flycatcher extends from the Tehachapi and southern Sierra Nevada mountains north through California and the Pacific Northwest, whereas the southwestern willow flycatcher breeding range includes southern California and the arid southwest (Sogge et al. 2010). The southwestern willow flycatcher has not been reported in or near the Park's vicinity. The area nearest to the Park known to support southwestern willow flycatcher is at Lake Isabella approximately 22 miles northwest of the Park.

During the 2018 field reconnaissance, biologists detected willow flycatcher at one location in the Park: the riparian habitat in Last Chance Canyon near Cudahy Camp (see Figure 9 in the Biological Resources Report). This observation was made on May 8; therefore, the subspecies of willow flycatcher were not determined. Other database records for willow flycatcher (undetermined subspecies) occur outside the Park, including at Koehn Lake and in Butterbredt Canyon. Based on all available information, willow flycatcher likely uses the Park for foraging and stopovers during annual northward and southward migration. However, the nesting habitat for willow flycatcher is limited and likely would only occur in the riparian habitat at Cudahy Camp.

Mohave Ground Squirrel

The Mohave ground squirrel (*Xerospermophilus mohavensis*) is a state threatened species that occurs entirely within the western Mojave Desert of California. The range of this species extends from the Antelope and Victor valleys in the south, through the entire west Mojave Desert, including Edwards Air Force Base, western San Bernardino County, the California City area, and north into the Owens and Searles valleys (Leitner 2013; 2008). Nearly the entire Park is modeled as suitable for Mohave ground squirrel based on the USGS species distribution model (Inman et al., 2013). Additionally, BLM has designated the Mohave Ground Squirrel ACEC over the Park and surrounding lands. Further, extensive trapping and camera studies for the species have been conducted in the region over the past several decades to support planning efforts in the West Mojave, which CDFW synthesized into designated Mojave Ground Squirrel "Important Areas." Important areas include key population centers, habitat linkages between population centers, expansion areas around key population centers, and a climate change extension (CEC et al. 2014). The Park's northern portion is part of the Little Dixie Wash key population center, and the remainder of the Park outside the El Paso Mountains is considered part of the species' population expansion area.

Numerous focused surveys for Mohave ground squirrels have occurred in recent times, both within and around the Park. Leitner conducted trapping surveys for Mohave ground squirrel at the Park in 2007, 2008, and 2010 (Leitner 2009, 2010). Surveys in 2007 detected the species at four locations in the Park's northwestern portion, and surveys in 2008 confirmed that these areas could support the species (Leitner 2009). Surveys in 2010 again detected Mohave ground squirrel in the northwestern sections of the Park; however, the species was not detected in the Park's southwestern portions west of SR 14 (Leitner 2010). Mohave ground squirrel camera trapping surveys were conducted by CDFW/State Parks in Nightmare Gulch and Last Chance Canyon in 2013 and 2014. No Mohave ground squirrels were detected in either canyon during these surveys, and these canyon bottoms were determined to provide little to no habitat for this fossorial species due to limited soil development and rocky substrates (CDFW 2014).

In 2015, Leitner and Delany (2015) conducted camera study surveys west of the Park in and around the Desert Tortoise Research Natural Area. In addition, trapping and camera surveys for Mohave ground squirrel and other small mammals were conducted in 2012 on the adjacent Eastern Kern County Acquisition lands acquired by State Parks (Biosearch Associates 2012). The species has been documented in areas around the Park to the west, north, and east (Leitner and Delany 2015; Leitner 2013; Biosearch Associates 2012). Available database occurrence records for Mohave ground squirrel are shown in Figure 9 of the Biological Resources Report. Occurrence points for this species indicate the spatial distribution and suitability of the Park to support Mohave ground squirrel, rather than any indication of the species' number or density within the Park.

Based on all available information as summarized above, all areas of the Park would generally be considered suitable for Mohave ground squirrel except for areas of steep rock outcrops, cliff faces, and rocky canyon bottoms where habitat is limited or inaccessible to the species.

2.6.3.5 Other Wildlife Species of Interest

The following provides a discussion of other wildlife species of interest that occur or potentially occur in the Park.

Golden Eagle

Golden eagle (*Aquila chrysaetos*) is a fully protected species in California and a BLM Sensitive species protected under the Bald and Golden Eagle Protection Act and California Fish and Game Code. Golden eagles occur throughout western North America and are primarily a year-round resident in California. The species uses essentially all terrestrial habitats with preferred nesting areas in the desert region consisting of cliffs, rock outcrops, and ledges of mountain ranges. Golden eagles are extremely wide-ranging, with the average home range size in Southern California being estimated at 36 square miles (Dixon 1937) and foraging home ranges in the western U.S. being estimated at 8.5 to 12.7 square miles during the breeding season (Kochert et al. 2002). More recently, Braham et al. (2015) found that eight telemetered golden eagles in the Mojave Desert had an average home range size of 118.8 square miles, but that spatial use varied widely (range from 1.7 to 1,369.6 square miles) depending on the time of year, elevation and terrain, breeding status, and age.

In their resource management planning efforts in the California Desert, BLM identified the El Paso Mountain Range as one of the “key raptor areas” for the golden eagle and other raptor species in the Mojave Desert (CEC et al., 2014). Based on a review of the cumulative BLM golden eagle nest dataset, CNDDB, and State Parks datasets, the Park and the surrounding lands are important areas for golden eagle nesting and foraging. The golden eagle has been recorded at four locations in the Park (see Figure 9 in the Biological Resources Report): the peaks above Nightmare Gulch, the cliffs of Hagen Canyon, and the cliffs of Ricardo Campground. Additionally, golden eagle activity may occur in the area referred to as Red Bluffs east of Cudahy Camp. Surrounding the Park, golden eagle occurrences/nest locations are concentrated in three locations: approximately four miles southwest of the Park in Jawbone Canyon, approximately four miles west in Dove Springs Canyon, and approximately five miles east in the El Paso Mountains above Garlock.

Based on all available information as summarized above, all areas of the Park would generally be considered foraging habitats for golden eagle. Additionally, the Park and

surrounding areas, particularly areas of steep rock outcrops and cliff faces, support and have historically supported nesting golden eagles and serve as excellent nesting habitat.

Other Raptors

The Park is known to provide a nesting and foraging habitat for a suite of owls, hawks, and falcons. In addition to the golden eagle, other raptor species of interest that occur or have the potential to occur in the Park include the long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), and prairie falcon (*Falco mexicanus*). The long-eared owl is a California species of special concern whose range stretches throughout nearly all of North America, except the extreme northern regions and tropical coastal regions. In the west, this species prefers shrubby habitats adjacent to open spaces. In the past, multiple occurrences (i.e., CNDDB, eBird) of long-eared owl have been documented in the Park.

Prairie falcons, a USFWS bird of conservation concern, are indiscriminate residents of grasslands, shrublands, and open areas with suitable cliffs or ledges for nesting (Cornell Lab of Ornithology, 2019). According to existing databases (i.e., CNDDB, eBird), many observations of prairie falcon have been recorded within the Park. the

The burrowing owl *(Athene cunicularia*) is a California species of special concern, and a USFWS bird of conservation concern found throughout nearly all the southern portion of western North America, most frequently in arid, open landscapes with sparse or low vegetation. This species does not typically dig or burrow but rather relies on rodents and other fossorial animals such as badgers, skunks, and tortoises to create their burrows for them (Cornell Lab of Ornithology 2019). Multiple records (i.e., CNDDB, eBird, iNaturalist) of the species have been noted in the Park's vicinity, but not within the Park boundaries.

The Park is also known to support more common raptor species like the great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), merlin (*Falco columbarius*), red-tailed hawk (Buteo *jamaicensis*), and American kestrel (*Falco sparverius*). Evidence of raptor nesting activity (i.e., stick nests, whitewash) is primarily concentrated in four areas of the Park: Nightmare Gulch, Hagen Canyon, Ricardo Campground, and Red Bluffs east of Cudahy Camp (see "raptor" points on Figure 9 in Biological Resources Report).

Desert Scrub Birds

A variety of desert scrub bird species of interest that occur or have the potential to occur in the Park include Loggerhead shrike (*Lanius ludovicianus*), Bendire's thrasher (*Toxostoma bendirei*), Crissal thrasher (*Toxostoma crissale*), LeConte's thrasher (*Toxostoma lecontei*), and Brewer's sparrow (*Spizella breweri*). See Figure 9 in the Biological Resources Report for occurrence locations for each species.

Loggerhead shrike is a California species of special concern and a USFWS bird of conservation concern that may be common in localized areas but is in population decline. As a predatory species that hunts other birds, reptiles, small mammals, and insects, shrikes prefer open habitats to hunt and nest, including shrubland, deserts, and other landscapes with low-growing plants (Cade and Woods 1997). Several Loggerhead shrikes were identified during the 2018 surveys within the Park. Based on all available information, Loggerhead shrikes are likely present in the Park year-round (Yosef 1996).

Three thrasher species are also potentially present within and around the Park: Bendire's, Crissal, and LeConte's. Bendire's thrasher is a California species of special concern and a USFWS bird of conservation concern. Database records show that this species has been detected in the Butterbredt Spring area, approximately five miles west and may use the Park for nesting or foraging. Crissal thrasher is a California species of special concern. The CNDDB records indicate that this species was identified within the Park in 1978; however, the nearest documented occurrence is 145 miles east in Mojave National Preserve. LeConte's thrasher is a California species of special concern and USFWS bird of conservation concern. Database records show that this species has been detected in and around the Park. Based on all available information, LeConte's thrasher likely uses the Park year-round for nesting, breeding, and foraging.

Butterbredt Spring Wildlife Sanctuary, Onyx Ranch SVRA, is an important bird area near Red Rock Canyon State Park.

Brewer's sparrow (*Spizella breweri*) is a USFWS bird of conservation concern. The species primarily use scrub habitats and prefers landscapes dominated by big sagebrush (*Artemisia tridentata*), creosote (*Larrea tridentata*), and saltbush (*Atriplex* spp.) (Rotenberry 1999). Brewer's sparrow usually reaches the Mojave Desert by September (Small 1994), and database records show that the species has been documented in and around the Park during the fall southward migration.

Migratory Birds

The Pacific Flyway is one of the primary migratory bird routes in the western hemisphere. Each year, millions of birds travel along this route that stretches from the Bering Strait to the southern tip of South America. The Mojave Desert and the Park lie within the portion of the pathway known as the "interior" Pacific Flyway. Due to the Park's geographic location and unique habitats such as riparian areas and Joshua tree woodland, many migratory birds use the Park as a place to breed, rest, and feed during their journeys to and from their wintering and breeding grounds.

The availability of surface water features provides important stopover resources for migratory birds. Seeps and springs and riparian habitat in the Park and the nearby Koehn Lake can serve as attractants for migratory birds. Least Bell's vireo (*Vireo bellii pusillus*), mountain plover (*Charadrius montanus*), western snowy plover (*Charadrius nivosus nivosus*), yellow warbler (*Setophaga petechial*), and yellow-breasted chat (*Icteria virens*) are just a few of the vast array of migratory bird species that may use the Park or adjacent features.

Bat Species

The Park is known to provide roosting and foraging habitat for a variety of bat species of interest including the pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and western mastiff bat (*Eumops perotis californicus*). The abundance of caves, steep cliffs, rock outcrops, and abandoned mine features in the Park and the potential water sources in and around the Park provide roosting and foraging habitat for these and other species of bats. Pallid bat, Townsends' big-eared bat, spotted bat, and western mastiff bat are all BLM species of special concern.

Small Mammals

The Tulare grasshopper mouse (*Onychomys torridus tularensis*) is a California species of special concern. According to CNDDB records, a female specimen was identified in the park in 1970; however, as with many small mammals, there is limited research available, and current range and population data are not fully understood. Compared to similar rodents, this species is believed to have larger home ranges and lower overall population densities (McCarty 1975; Tremor et al. 2017). Tulare grasshopper mice prefer arid grassland and shrub habitats. Their diet consists of various invertebrates, and the species can be preyed upon by a suite of larger animals within the Park (Collins 1998).

Yellow-eared pocket mouse (*Perognathus parvus xanthonotus*) is a BLM-sensitive species. The species is known to inhabit the eastern slopes of the Piute Mountains and the extreme western edge of the Mojave Desert, but overall has a relatively small range,

and its population status is not fully understood. This pocket mouse is especially sensitive to habitat disturbance, and research has shown that OHV activity may be a potential threat as it damages vegetation communities and degrades pristine habitats (Laabs 2005). The species has been documented in a variety of habitats, including desert scrub, sagebrush, and Joshua tree woodland habitat, which can all be found within the Park (Laabs 2005).

Other Mammals

The American badger (*Taxidea taxus*) is a California species of special concern that has been previously recorded in the Park. Their diet consists of small rodents, insects, lizards, and occasionally birds. Badgers prefer habitats with ample open space and very little cover, such as grasslands and deserts. The desert kit fox (*Vulpes macrotis*) is a mammal species of increasing conservation interest that has the potential to occur within and around the Park. In California, their range extends throughout nearly the entire southeastern portion of the state, including the Mojave and Sonoran deserts.

2.6.3.6 Invertebrates

Desert habitats are rich in invertebrate diversity and the Park supports a variety of invertebrates that utilize the diverse habitats and provide a food source for rodents, reptiles, and birds. Common terrestrial invertebrates include scorpions, spiders, grasshoppers, crickets, butterflies, moths, bees, ants, cicadas, and beetles. Riparian areas within the Park support aquatic invertebrates such as dragonflies and damselflies, diving beetles, and other water bugs. No systematic inventory of invertebrates has been conducted in the Park to date to ascertain the true invertebrate composition and to locate any rare or unique species to the area.

The Park supports some unique terrestrial invertebrate species. The El Paso Mountains support two closely related terrestrial snails of the same family (*Helminthoglyptinae*). The type locality for the mimic shoulderband (*Helminthoglypta micrometalleoides*) is the El Paso Mountains. The closely related El Paso shoulderband (*Mohavelix micrometalleus*) is also found in the El Paso Mountains, and its type locality is Last Chance Canyon (Miller 1970). These land snails are both listed as G1, Critically Imperiled, by NatureServe. This Global Conservation Status Rank is applied to species “At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors” (NatureServe.org).

The Park also supports two day-flying moths known only from their type localities. Chemsak’s desert moth (*Eremanthe chemsaki*) is a very small species of moth first collected in Red Rock Canyon in 1960. It has been collected outside the Park but is only known from the Mojave Desert (Munroe 1972). *Plumipalpiella martini,* another day-

flying moth, is only known from its type locality in Dove Springs, but habitat associations suggest that it could occur within the Park adjacent to the Dove Springs area separated only by SR 14 (Munroe 1961, 1972). Both species need focused survey efforts to determine their distribution within the Park and learn more about their life histories to better protect them and their habitat.

Additionally, in May 2003, a Lepidopterist from the University of California at Davis contacted park staff. This moth specialist has been studying the relationship between certain moths of the genus *Heliothodes* and several genera of tarplants in the family Asteraceae. His initial investigation concerning populations of the Red Rock tarplantt (*Deinandra arida*) discovered the adult moth and larval young of what appears to be a new *Heliothodes* to science. Since the life cycle of this *Heliothodes* appears to intertwine with exclusivity to tarplants, this new *Heliothodes* will likely be endemic to the park.

A small species of rock scorpion (*Serradigitus torridus*) is known to occur within Red Rock Canyon State Park. The scorpion is known to inhabit rocky outcrops, cliffs, and canyons in the southwestern Mojave Desert and was named in reference to the hot, dry habitat where it is found. This small golden yellow scorpion (up to 31 mm in length) was described based on a collection from Red Rock Canyon State Park in the fall of 1980 and 1981. Further investigations into the abundance and distribution of the species are needed to help manage and protect the habitat of this rare scorpion.

Table 2-15. Unique and Rare Invertebrate Species within the Red Rock Canyon State Park

Species	Range within the Park
Helminthoglypta micrometalleoides Mimic shoulderband	El Paso Mountains
Mohavelix micrometalleus El Paso shoulderband	El Paso Mountains, Last Chance Canyon
Eremanthe chemsaki (day flying moth species)	Unknown, but suitable habitat exists within the Park
Plumipalpia martini (day flying moth species)	Unknown, but suitable habitat exists within the Park (species is endemic to the Mojave Desert)
Serradigitus torridus Rock scorpion	Unknown, but suitable habitat exists within the Park (species is endemic to deserts in Kern County)

2.6.3.7 Wildlife Corridors and Habitat Linkages

Terrestrial wildlife species typically occupy habitat patches most favorable to each species within a landscape matrix, and they may move between favorable habitat patches through less favorable habitats (Rosenberg et al. 1997). These wildlife movement areas between larger habitat patches are referred to by several names such as habitat linkages, landscape linkages, bio corridors, or movement corridors.

Movement ecology is particularly species and scale-specific and often includes short-term individual movements, such as foraging within an organism's home range; long-term dispersal or one-time emigration and immigration events between disparate populations; and seasonal or periodic migration. Corridors and habitat linkages can allow for long- or short-term movements, dispersal, and migration depending on a particular species' life history requirements and ability to travel through a landscape. Locations that serve as habitat linkages for some species may serve as core habitats for other species. Habitat linkages also allow for range shifts of natural communities and plant and animal species in response to changing climate conditions.

The Park is situated at the boundary between two major ecoregions and supports varied terrain and topographies that indicate the Park plays an important role in regional landscape connectivity and wildlife movement. The Park is located at the western edge of the Mojave Desert ecoregion near the boundary with the Sierra Nevada ecoregion, and this unique location suggests that the Park may be used by terrestrial wildlife for up- or downslope seasonal movements or range shifts between desert and forest ecosystems. The southwest-to-northeast oriented El Paso Mountain Range bisects the Park, and the ridgelines and slopes of these mountains provide for local terrestrial wildlife movement within the Park and a habitat linkage to adjacent lands to the northeast, including the BLM El Paso Mountains Wilderness Area. The mountain canyons provide for movement and dispersal between upper and lower elevations and connectivity to the broad, surrounding alluvial plains.

The Park is considered relatively permeable to wildlife movement, as it is predominately unfragmented habitat and connected to adjacent areas. Wildlife movement is generally unconstrained by land uses, except for SR 14, other roadways, fences, and other structures that can limit or restrict movement for some species. The steep cliffs and escarpments likely limit wildlife movement pathways in some areas of the Park, particularly for smaller or less mobile species. Resident birds and migratory birds using the Pacific Flyway movement corridor move relatively unimpeded through the Park and its surroundings.

Habitat linkages and corridors are modeled through the least cost pathway and landscape permeability analyses. Least cost pathway analyses identify corridors between habitat cores that would require the least effort (cost) for a traveling individual. Landscape permeability analyses incorporate physical landforms to analyze regional permeability. As shown in Figure 10 of the Biological Resources Report, three habitat connectivity modeling studies identify the Park as providing important regional habitat linkage functions: the California Essential Habitat Connectivity Project (Spencer et al. 2010), the California Desert Connectivity project (also referred to as the Desert Linkage Network) (Penrod et al. 2012), and the West Mojave Connectivity Mapping

project (CBI 2017). Based on these studies, the Park contributes to providing the following important habitat connectivity:

- *El Paso Mountains and Fremont Valley to Southern Sierra Nevada Mountains*: The Park provides a habitat linkage between the Fremont Valley southeast of the Park through the El Paso Mountains and into the southern Sierra Nevada Mountains (Spencer et al. 2010; Penrod et al. 2012). Penrod et al. (2012) model specific corridors along the El Paso Mountains and in the western portion of the Park along Dove Springs Canyon and Butterbredt Canyon.
- *West Mojave transition to Tehachapi Mountains*: The Park is part of a broad habitat linkage along the southwest-to-northeast oriented Tehachapi Mountain Range, which is a transition zone along the *edge* of the Mojave Desert (Spencer et al. 2010)
- *Fremont Valley to Indian Wells Valley*: the Park links the desert floor of the Fremont Valley southeast of the Park to the Indian Wells Valley north of the Park through a broad corridor along *the* entire western portion of the Park (CBI 2017).

As these studies show, the Park is a regionally important area for habitat connectivity and wildlife movement. On a local scale, wildlife movement is influenced by landscape features and individual species' movement and dispersal capabilities. Landscape features like washes, canyons, riparian habitats, and ridgelines are landforms often used by species for movement. They would be considered important for maintaining habitat connectivity in the region (see Biological Resources Report).

2.6.4 Cultural

Red Rock Canyon State Park contains a myriad of culturally valued resources such as rocks and minerals, plants and animals, shelters, water sources, geological formations, etc., that have drawn people here for thousands of years. Evidence of this is documented in tribal cultural resources and sacred sites; Native American archaeological artifacts, features, and sites; as well as 19th and 20th Century structures, landscapes, and sites. These cultural resources have been researched, documented, and inventoried by State Parks historians and archaeologists in consultation with local Native American groups. Details and descriptions of these locations are included in separate cultural resources inventories and reports.

Threats to known and undocumented cultural resources include erosion, flash floods, wildfires, burrowing animals, construction, unauthorized trails, illegal off-road vehicle use and camping, mining and rockhounding, vandalism, target shooting, artifact digging and collecting, etc.

2.6.4.1 Archaeological and Ethnographical Background

Red Rock Canyon State Park is within the ethnographical territory of the Nïwï, Niwiwi, or Kawaiisu people. The Kawaiisu and their neighbors (Tubatulabal, Panamint Shoshone, Southern Paiute, Kitenemuk, Yokuts, and Serrano) have traditions about the creation of the world and its peoples, and supernatural beings and places that exist within the landscape of Red Rock Canyon State Park, the Mojave Desert, the Tehachapi Mountains, and other places in the region.

The earliest archaeological evidence of people in this region is from scattered "Clovis-like" fluted points that may date to as early as 12,000 years ago. Although "pre-Clovis" stone tools and sites have been reported by some, their authenticity has not been confirmed nor widely accepted. Within Red Rock Canyon State Park, the earliest archaeological evidence includes several early Holocene spearpoints that date between 8,000 and 10,000 years ago.

The abundance of multicolored fine-grained cherts and other stones in and around the Park made it an important location for raw material quarrying and stone tool manufacture. Other resources, including wildlife, plants, and water sources, were more abundant at various times in the past, and archaeological evidence indicates that there were certainly periods when ancient people lived and flourished in camps and villages across the region.

2.6.4.2 Tribal Cultural Resources

The Kawaiisu call Red Rock Canyon *'aga-tï-bi-pa'a-dï, 'aga-tï-mbi-pa'a-dï* in their language (Garfinkel and Williams 2010). Sacred sites and traditional places that continue to hold significance to the Native Americans of the region have been identified within Red Rock Canyon State Park. For example, the El Paso Mountains have been identified as an area of religious importance to the Kawaiisu. The giant, man-carrying bird *nihnihnoovi* also lived within the area now encompassed by Red Rock Canyon and the vertical-ribbed rock formations of the area are said to represent its skeleton. A portal from the Underworld is also present in Red Rock Canyon and is where the Kawaiisu would exit after meeting with Yahwera, the Master of the Animals. Additional places of religious significance to the Kawaiisu and other local Tribes are scattered throughout the Park.

There are also traditional gathering and procurement areas for rocks, plants, and other resources located within Park.

2.6.4.3 Archaeological Resources

Archaeological investigations in the Red Rock Canyon region began in the 1960s with site documentation by Alex Apostolides, primarily on BLM lands but including at least one site within the Park (CA-KER-147). The first archaeological excavations in the Park also occurred at this site in 1973.

Over the years, there have been many other archaeological surveys and excavations within the Park, including significant efforts in the late 1980s, 1990s, 2000s, and 2010s. These studies have resulted in the identification and formal recordation of over 240 archaeological sites and isolated artifacts. Nearly 175 traditional Native American sites include villages, camps, grinding features, rock shelters, rock art sites, procurement areas, quarries, and workstations.

Over 50 nineteenth- and twentieth-century archaeological sites and isolates are also recorded within the Park, mostly related to mining, habitation, transportation, and early recreational use. The remaining sites contain both historical and traditional Native American materials or are rock features that cannot be attributed to a specific period.

There are also approximately 50 known or suspected sites and isolates that have not been formally recorded. These have been noted or reported within the Park by State Parks staff, researchers, and/or visitors.

Archaeological surveys within the past 30 years have only inspected about two percent of the total Park acreage, indicating a high probability that additional archaeological sites exist within those areas of the Park that have not yet been examined.

2.6.4.4 Historical Background

The following outlines the various historical periods that represent the sweep of history that passed through Red Rock Canyon State Park following the arrival of Europeans to the continent. It is meant to summarize historical background information to place significant historical resources from these periods in their proper historical perspective for identification, preservation, and interpretation. Refer to the Resources Inventory and other history reports for more details.

<u>Post-Contact Exploration and Settlement</u>

European Exploration and Travel (ca. 1770-1849)

Although the Kawaiisu people and other Indigenous groups have lived in and traversed the area of Red Rock Canyon for many centuries, people from Europe only arrived in the area within the past 200 to 250 years. Unsubstantiated reports suggest that Spanish explorers Lt. Pedro Fages and Father Francisco Hermengildo Garces may have been some of the first Europeans to observe the Red Rock Canyon area during their travels

through the Mojave Desert during the 1770s. Others, including Canadian fur trapper Peter S. Ogden (1826 and 1830) and U.S. Army topographical engineer John C. Fremont (1843), passed through or adjacent to the canyon during their travels. The first written description of the Red Rock Canyon area was by a group known as the Jayhawkers (1849), an advance party belonging to a larger group trying to find a shorter route to the California gold fields. They skirted what is now the Park's northwestern boundary before entering and camping in Red Rock Canyon itself.

Early U.S. Military Activities (1855-1867)

The federal government also made several excursions into the Red Rock Canyon area during the mid-1800s. In 1855, H. S. Washburn headed a survey crew that divided the land into Township squares. In 1859, soldiers at Fort Tejon traversed the area to pursue accused horse thieves. In 1863, supply wagons for Camp Independence, a military camp in Owens Valley north of the Mojave desert, passed through Red Rock Canyon. This route became known as the "Bullion Road." After the Civil War (1861-1865), more troops were dispatched to the area, leading to additional settlement and mining in the eastern Sierra Nevada and Owens Valley. The increasing numbers of miners, settlers, and livestock passing through and increasingly staying in this and other nearby areas strained the already limited resources and created conflicts between the local Indigenous groups and the soldiers, settlers, and miners. The Kawaiisu and their neighbors tried to defend their territory and their way of life, but many were killed or driven from their homes during hostile confrontations and massacres.

Increase in Road Traffic and Rail Connections (1860-1894)

As early as 1860, Basque and Mexican shepherds had driven sheep from as far away as San Gabriel and San Bernardino through the desert to the eastern Sierra meadows. Cattle were also driven through the canyon from the Kern River for winter and spring feeding on salt grass.

The steam railroad arrived in the Mojave basin during the mid-1870s. The closest Southern Pacific Railroad shipping point, located at Mojave, served as a distribution center for hay, grain, and other provisions for miners working in the El Paso Mountains. These trains also shipped gold north to the United States Mint at San Francisco.

Even with the coming of the railroad, horse-driven vehicles along the road through Red Rock Canyon continued to serve as important transportation and communication links. Besides the stage and freight lines, shepherds and cattlemen were frequent road users. The years 1879 and 1881 saw as many as 16,000 to 24,000 sheep pass through Red Rock Canyon.

Owens Valley Aqueduct Construction/Red Rock Railroad (1908-1910)

Red Rock Railroad

Completed in 1913, the Owens Valley to Los Angeles Aqueduct brought water from the Owens River to the growing city of Los Angeles. A temporary aqueduct construction camp and warehouse at Dove Springs required the construction of a branch rail line to haul aqueduct-related construction material through Red Rock Canyon. Constructed in 1908 and owned and operated by the City of Los Angeles, the Red Rock Railroad carried men and tons of material to the Dove Springs camp. The railroad was dismantled in September 1910 and sold for scrap.

Homesteading and Commercial Enterprise (1913-1940s)

The first homestead patent for a portion of the area that would become Red Rock Canyon State Park was issued to Rudolf Hagen in 1913. Hagen provided goods and services to stage passengers and miners from this homestead. Other homestead patents were issued for lands within what is now the Park in 1921, 1924, 1930, 1932, 1938, 1940, and 1946. Many of these homesteads were located along the highway. They followed Hagen's example, opening a variety of roadside businesses and services such as gas stations, rock shops, and a notorious roadhouse.

Rudolph Hagen

Mining and Mineral Extraction

The Advent of Gold Prospecting and Placer Mining (1851-1867)

Cudahy Camp mining camp in Last Chance Canyon

Quarrying and rock collecting has occurred for centuries in Red Rock Canyon. The Indigenous people of the area sought out colorful cherts and other fine-grained rocks to make a wide variety of stone tools and implements. But the first documented Euromerican mining in the area began in 1851, when prospectors searching for placer and hard rock gold and silver deposits followed the Kern River drainage into the El Paso Mountain range. The 1859 discovery of the rich Comstock Lode to the northeast further stimulated interest in the area. By the early 1860s, miners had established the "El Paso Mining District" in the mountain range extending northeastward from Red Rock Canyon to the El Paso Peaks. By 1867, prospecting and mining in the area had diminished.

Early Transportation Linkages Established (1863-1890)

The "Bullion Road" was the main transportation corridor between the Owens Valley mines and the Port of Los Angeles. The section of the corridor through Red Rock Canyon was an important link in that route. Between 1868 and 1873, several entrepreneurs established lucrative stagecoach and freight wagon stops in the canyon, including Henry Robinson and Remi Nadeau. Nadeau reportedly hauled $2 million in silver ingots from Cerro Gordo to Los Angeles in 1874. One of his freight stations, reportedly the first non-Native American structure built in the canyon, eventually became the town of Ricardo. The stage and freight lines were the primary links to the area's mining interests until the expansion of steam railroad lines into the area during the 1880s.

1890s Gold Rush (1892-1896)

In 1892, John Goler and Wolfgang Tauber discovered gold nuggets in a placer trace along the southeastern base of the El Paso Mountains. “Goler Gulch” and the Red Rock Canyon area became the loci for another rush of prospective gold seekers to the area. In 1893, prospectors filed as many as 300 claims in Iron Canyon alone. However, the principal gold-bearing areas were the tributary canyons on the east side of Red Rock Canyon and between Holloway Camp and the mouth of Bonanza Gulch in Last Chance Canyon.

By 1894, the major gold strikes in the canyon had played out. This, plus another nationwide economic depression, prohibited investors from seeking to develop additional claims. In 1897, another gold rush to the east of Last Chance Canyon drew most away from the Red Rock Canyon area.

Commercial and Subsistence Mining (1902-1940)

Competing with the area’s promotion as a film location and tourist destination (see under Tourism and Conservation below) an increase in mining activities also occurred during the early to the middle part of the 20th century. Between 1902 and 1904, the Red Rock Gravel Mining Company purchased at least thirty-nine disparate claims in Iron Canyon at the cost of $1,510.

The gold mining landscape began to change again during the 1930s, as small-time independent prospecting returned to the Red Rock area. The revival of dry placer mining at the old diggings and hard-rock shaft mines during this time was prevalent throughout the Mojave Desert region as the price of gold gradually increased and people sought ways to make money during the Great Depression (1929-1939).

Semi-precious Mineral Mining and Collecting (1920s-1972)

An increase in tourism led to the collecting and selling of semi-precious minerals from the area. In response, several local entrepreneurs shifted their efforts from gold prospecting toward collecting and selling these items. By the mid-1920s, several tourist-oriented gem and rock shops and opal mines sprang up in the area. In addition to semi-precious stones and minerals, the stores sold fossilized wood specimens. A “petrified forest” in the Last Chance Canyon area was a tourist destination until the late 1950s, when it was stripped of its petrified wood specimens by collectors and rockhounds.

Industrial Mineral Mining and Extraction (1923-1978)

Concurrent with the increase in improved gold-mining activities in the Red Rock/Last Chance Canyons area during the early to mid-20th century was the introduction of industrial mining. Instead of precious metals, American industrial and manufacturing industries sought to exploit the area’s vast amount of exposed volcanic ash/pumicite deposits. Two of the most active mines were the “Old Dutch Cleanser” (started in 1923)

and "Holy Cleanser" (started in 1939) mines in the Last Chance Canyon area. The two mines yielded approximately 150,000 tons of material, which amounted to nearly all the pumice and pumicite mined and used in the country for over 40 years. The mines and the artifacts left behind are surviving examples of the level of engineering and technology associated with early to mid-20th century industrial mineral mining operations in the Great Basin Region of the Western United States.

Another type of earth-based resource mined in Red Rock Canyon State Park was bentonite clay, an active ingredient used by the oil-refining and hard rubber-processing industries. The Los Angeles Clay Company operated the "Snow White Mine" in an elevated ridgeline exposed between the Nightmare Gulch and Last Chance Canyon drainages and a smaller operation in Iron Canyon. Both mines produced tens of thousands of tons of absorbent white clay during the 1920s and 1930s. Forty years later, the All Mineral Corporation and the American Colloid Company mined low-grade bentonite out in Scenic Canyon from the leased Three Bears placer claim. The mine produced some 12,000 to 13,000 tons of clay from 1976-1978. Originally viable as a binder for alfalfa cube feed pellets, it soon became too "gritty" for continued commercial use, causing production to decline and eventually close down.

Housing at Cudahy Camp

Tourism and Conservation

Aesthetic Appreciation, Conservation, and Recreation (1893-Present)

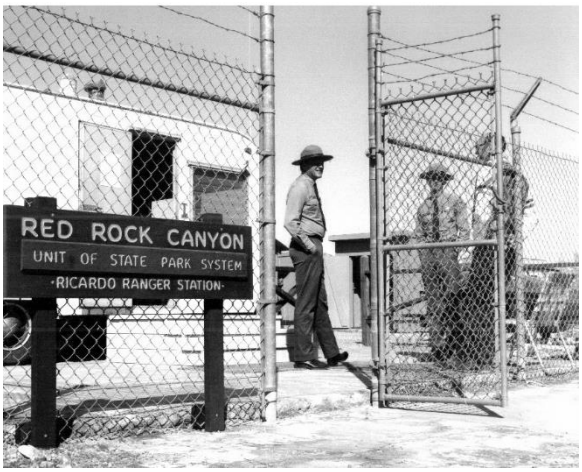
OHV enthusiasts at the Park c. 1973.

In 1893, a reporter from the San Francisco Chronicle described the area as containing "some of the most splendid natural architectural effects upon earth." Between 1915 and 1920, John L. von Blon published a series of articles recommending the Federal government protect the area's natural scenery under the aegis of a national monument designation. During the mid-to-late-1920s, the Automobile Club of Southern California promoted this "desert wonderland" as a must-see automobile tourist destination for "photographers, [painters] and [other] desert lovers." As a result of the local and regional promotion and road and highway improvements, travel and access to the Mojave Desert and Red Rock Canyon increased during the 1920s and 1930s.

But preservationists feared unrestricted recreation, vandalism, deteriorating road maintenance, and a lack of governmental supervision were viable threats to the area's "enchanting" and "alluring" natural environment. Starting in the 1920s, they lobbied the government to acquire and protect the land.

The growing popularity and proliferation of recreational off-road vehicles in the 1960s and 1970s and unrestricted off-road vehicular travel resulted in the visible alteration of the landscape. So much so that concerned citizens renewed their lobbying efforts to have the Federal, state, or county governments acquire and preserve "California's Little Grand Canyon" as a natural park.

Following a favorable 1966 feasibility study, State Parks acquired Red Rock Canyon in August 1968. The 3,985-acre acquisition was originally classified as a State Recreation Area but later was reclassified as a state park in 1980. On October 31, 1994, the 103rd Congress passed the CDPA. After President Clinton signed it into law, it transferred certain lands from the BLM-administered California Desert Conservation Area to the State of California. Through the law, approximately 20,500 acres in the Last Chance Canyon area were added to Red Rock Canyon State Park.



Ricardo Ranger Station and employees c.1973.

Exploration and Scientific Study of Paleontological, Geological, and Natural Resources (1894-Present)

In 1894, placer gold miners reported discovering a petrified forest in Last Chance Canyon. Two years later, state geologist Harold W. Fairbanks published a report highlighting the area's paleontological and geological resources. During the 1930s, other natural scientists and botanists began surveying the area. Throughout the 1940s and 1950s, there was an increase in geologic-based field trips. Today, institutions of higher learning continue to utilize the park as a natural research laboratory and/or classroom for field studies and research.

Automobile-Oriented Tourist Destination (1905-1939)

Car camping in the desert c. 1920s.

The first automobile reportedly traversed the canyon in 1905. In its beginning, automobile driving through the desert was no less hazardous than riding a horse-drawn buggy. Seeking to mitigate the problem, starting in 1912, the Automobile Club of Southern California began to install roadside directional signs to help desert travelers reach their destinations.

To most Californians, the Red Rock/Last Chance Canyon area remained virtually unknown until the Los Angeles Times published an article in January 1919 describing its scenic geological and paleontological resources as destinations in themselves. With the completion of the Roosevelt Memorial Highway and the Lincoln Highway a few years later, thousands of automobile tourists and scholars reportedly traveled thousands of miles cross-country to marvel at and investigate the area's geological formations and search for prehistoric fossils. By the late 1930s an ever-increasing number of automobile-tourists, armed with better maps and increased automobile dependability, no longer regarded the Mojave as a desolate expanse.

Hollywood's Back Lot (1912-Present)

Another notable use of the Red Rock Canyon area was as a location for motion pictures and, later, television productions, music videos, and commercials. As early as 1912, motion picture producers and directors sought outdoor filming locations away from the Hollywood studios, primarily for Westerns and Biblical epics. Red Rock Canyon was considered one of the most picturesque desert sites within driving distance of the Hollywood studios. Table 2-16 contains a few examples of the more than one hundred movies containing scenes filmed in the Park. Besides helping to promote the movie-going public's mythic image of the American Southwest, the Park's colorful geological formations stood in for exotic Middle East desert locations and even extraterrestrial landscapes. But this exposure came at a cost to the landscape. Not only were there vehicles, people, animals, and other equipment driving, climbing, and trampling over plants, formations, and archaeological sites; sometimes, to enhance action scenes, directors ordered the dynamiting of rock formations, destroying centuries-old geological landmarks.

Table 2-16. Examples of Movies with Filming Locations at Red Rock Canyon State Park

Release Date	Film Title
1923	*The Ten Commandments*
1930	*Hell's Heroes*
1932	*The Mummy*
1936	*The Petrified Forest*
1938	*Painted Desert*
1939	*Buck Rogers*
1940	*Melody Ranch*
1942	*Saboteur*
1943	*The Outlaw*
1950	*Rocketship X-M*
1953	*Law and Order*
1954	*20,000 Leagues Under the Sea*
1956	*The Ten Commandments*
1958	*The Big Country*
1963	*4 for Texas*
1967	*Hondo*
1970	*Beneath the Planet of the Apes*
1971	*The Andromeda Strain*
1973	*Westworld*
1977	*Capricorn One*
1986	*Poltergeist II: The Other Side*
1991	*Hot Shots!*
1993	*Jurassic Park*
2001	*K-PAX*
2003	*Holes*
2021	*Ghostbusters: Afterlife*

Modern Highway Improvements (1920s-Present)

State Route 14 c. 1941

The increase in auto-oriented tourists to the Red Rock Canyon area during the 1920s exacerbated the need for highway improvements. Still, it wasn't until 1931 that Caltrans began to grade and pave a new highway through Red Rock Canyon. The new highway's building was considered so important that as many as 3,000 people, mainly from Los Angeles, reportedly attended the road's February 22, 1931, dedication ceremony. Incredibly, they could squeeze 1,500-parked automobiles into the natural amphitheater formed by the Red Cliffs. Hundreds of other cars were parked in other parts of the canyon.

Over the years, the asphalt-covered paved highway has been given several designations. It was originally listed as State Route 23 in 1931. Concurrent with a statewide effort to sign and re-number state highway projects, in 1934 it became State Highway 7. However, by 1937 it was absorbed into U. S. Route 6. It remained so until 1964, when the state again assumed control and designated it as State Route 14 (SR 14). The improved and widened highway would further the public's interest in the Red Rock area and continues to bring people to the Park.

2.6.5 Aesthetic

A collage of geologic formations, with lakebed depositions, terrestrial sedimentation, volcanism, and massive uplifting await those who explore Red Rock Canyon State Park. A visitor to this sweeping desert landscape can explore the ongoing forces that have shaped and continue to shape the land. Colorful and unusual rock outcrops are contorted and carved by wind, rain, and the more rapid sculpting by thunderstorms, flash floods, and cloudbursts.

While the mode of travel within the Park has been via motorized vehicles, a visitor's experience of the Park could be richer if other modes are considered. Enjoying vistas,

discovering special places, and exploring unique environments can be enhanced through non-vehicular modes of travel such as walking, hiking, and horseback riding.

Sweeping desert vista at Red Rock Canyon State Park

Aesthetic experiences within the Park include activities that allow visitors to discover and enjoy the beauty of Red Rock Canyon visually, such as the numerous and distinctive rock formations that have been given descriptions or fanciful names. The Citadel is a red columnar structure embedded in an otherwise gray hillside; White House Cliffs, composed of numerous towers and domes; and Red Rock Cliffs, which are most impressive while traveling north on SR 14. Because of the spectacular kaleidoscopic formations in Red Rock Canyon, the motion picture industry and other commercial filmmakers have used the area extensively. The brilliant night skies, the soft array of colors at sunset and dawn, the unique land configurations, different textures, and spectacular settings create places to capture the imagination and pique the sights, the sounds, and the scents imperative to capturing the essence of the desert.

Hiking trails enrich visitors' experience by bringing them physically closer to nature. Hiking allows access to places away from roads, slowing down the visitor's pace through the Park and revealing the landscape from a different perspective. While existing roads are “walkable,” they are designed primarily for vehicular traffic. Trails that are designed for hiking function differently from these roads because it considers the view and experience from a pedestrian scale. Trails designed for hiking promote a more intimate experience that incorporates experience at all sensory levels uninterrupted by the noise or the glass panels of a car.

During a day-long hike through Hagen Canyon, one will see the changing colors of the Mirage Cliffs and view the numerous rock formations such as Organ Lady, Closed Cathedral, Buried City, Pillars of Hercules, and White Chapel, and walk through the Amphitheater. While meandering through the Scenic Canyon, hikers can walk through and touch the walls of the Nightmare Gulch and climb up to see the Turtle Gate, Tai Shan Temple, and Magic Silent City up close. As one nears the riparian corridors at Cudahy Canyon and near SR 14, one can feel the changing, cooler temperature. As you

stroll along a trail, one can smell the earth and see the seasonal and diurnal shifts in color and texture of the rocks. At night, one can stargaze while resting at a campsite; during the day, one can climb a steep hill and experience a sudden yet rewarding panorama of each tributary of Red Rock Canyon and its unique landscape.

A glimpse of these aesthetic resources can be viewed while driving along SR 14. Established in 1969 by the State Public Works Board and granted to the Department of Public Works, Division of Highways (now known as Caltrans), much of the land along SR 14 that traverses through the Park was designated a scenic easement to recognize the framed view as you enter and exit the road. The purpose of this easement was to set specific land-use restrictions to preserve, protect, and improve, where necessary, for scenic purposes, the spectacular scenic views along the highway in the Park.

2.6.6 Museum and Interpretive Collections

There are several reasons museum collections are developed and maintained by a park. One reason is to preserve natural, cultural, and historical elements that are original to the site. Another reason a park acquires and maintains museum objects is to preserve documentation of people, events, cultural features, or natural features central to the park's purpose. A third reason is to support the interpretation of themes relevant to the park.

There is a draft Scope of Collections for Red Rock Canyon State Park. Recordation has started but is not complete. The Park currently has approximately 1,500 partially cataloged slides, 284 cataloged photographs, 825 photos, and 59 historic postcards that are not cataloged. Collections in storage include one box of partially cataloged Native American artifacts, five boxes of partially cataloged historical objects, four boxes of historical artifacts that are not cataloged, and one cabinet of paleontological specimens that are not cataloged. The Ricardo Visitor Center exhibits objects that include 11 geological specimens, 36 paleontological specimens, 35 Native American artifacts, 35 historical objects, 44 photographs and documents, and 11 taxidermy animals, most of which are not cataloged. Fifteen paleontological specimens are on loan from the Natural History Museum of Los Angeles County. Several thousand objects have been collected and are under review and cataloging at California State University Bakersfield.

Archaeological collections from the Park are also located at other state facilities, including the State Parks Southern Service Center in San Diego and the State Archaeological Collections Research Facility in Sacramento.

2.7 Interpretation and Education Resources

Interpretation is an important communication tool that inspires emotional and intellectual connections between visitors and a park's significant resources. As a

mission-based tool, interpretation also helps park managers guide appropriate visitor access and resource usage within a park. Effective interpretation should increase visitors' understanding and enjoyment of a park's resources while learning to recreate safely and responsibly.

Red Rock Canyon State Park provides a variety of programs and media. The Park website, social media, maps, and other publications help visitors learn about available recreation, trail conditions, and Park rules and regulations. Once visitors arrive, signage and facilities provide information about the protected resource. Campfire programs also frequently occur in the Park, where State Parks staff discusses natural and cultural resources and Park stewardship.

This section presents an overview of the existing interpretive conditions at Red Rock Canyon State Park. It includes staff and facilities that support interpretation, programs, interpretive media, partners and stakeholders, and other regional interpretive opportunities.

Other planning documents, such as interpretation management plans and project plans, more precisely define how the goals and guidelines of the general plan will be achieved. The State Parks Interpretation Planning Handbook describes these plans and processes in more detail.

2.7.1 Previous Interpretive Planning

Since the 1982 General Plan and Interpretive Prospectus was adopted in 1981, the Park has made slow but steady progress in developing educational and interpretive services and programs to help the public understand and appreciate the area's unique resources. An interpretive plan was completed in 1993 to provide direction for developing exhibits for the Ricardo Visitor Center.

2.7.2 Interpretive Programming (Staff)

Natural, cultural, and geological resource interpretation has been a key focus for the visitor services at Red Rock Canyon State Park. Since the 1970s, interpretation and education responsibilities have been shared by Park staff but mainly run by seasonal and volunteer employees. The Park has no full-time interpretive position, and a seasonal employee runs the volunteer program there. A permanent State Park Interpreter III manages the Great Basin District's interpretation and education program.

2.7.3 Red Rock Canyon State Park Interpretation and Education Support

The Red Rock Canyon Interpretive Association (RRCIA), a non-profit cooperative association, has volunteered thousands of hours and resources to the Park's interpretive staff to present high-quality interpretive programming. The RRCIA is funded through sales made at the Park, but they use those funds to put back into the Park. The RRCIA

raises money to support the interpretive and educational programs and facilities at the Park. This group has funded over $60,000 in exhibit construction for the Ricardo Visitor Center. The RRCIA has also funded trail development, interpretive brochure development, and trailhead signage near the visitor center.

In addition, as discussed in ***Section 2.4.5 Volunteer Program***, Red Rock Canyon State Park has a dedicated volunteer program. These volunteers aid the Park with many essential tasks, such as campfire programs, hikes, tours, talks demos and school programs.

2.7.4 Interpretation and Education Facilities

2.7.4.1 Ricardo Visitor Center

Red Rock Canyon State Park has one facility that contains indoor interpretive exhibits. The Ricardo Visitor Center is located at the entrance to Ricardo Campground. This facility contains a public safety office, a sales area, an interpretive exhibit space, and an audio-visual room. The space available for exhibit development within the visitor center is approximately 30 by 35 feet.

Over the past decade, RRCIA has raised funds for professional exhibits for public enjoyment and education. Approximately 20 to 25 percent of the desired exhibit for the visitor center has been installed. Informal exhibits on the Park's history and natural resources supplement the professional exhibits. An Interpretive Plan was developed for the visitor center, which provides the flow and general themes utilized to develop specific exhibits.

The audio-visual room within the visitor center is approximately 22 by 20 feet. The wall space is used for rotating art exhibitions of various artists. Seating for the room is portable and temporary. The room can hold approximately 30 to 35 people. The room has been used for interpretive talks and programs. A media player shows videos on park-related information, such as the Red Rock Flood of 1997, desert wildflowers, and motion pictures filmed at the Park.

2.7.4.2 Ricardo Campfire Center

A campfire center exists adjacent to the visitor center. The tiered seating can accommodate approximately 150 people.

2.7.5 Education Programs

2.7.5.1 Personal Interpretation

Interpretive program held at the Ricardo Campfire Center

Personal interpretation involves an interpreter interacting with visitors through face-to-face contact. Personal interpretation services include walks, talks, demonstrations, children's programs, roving interpretation, and campfire talks at the Ricardo Visitor Center, Campfire Center, and Campground. The Park's volunteers, seasonal aides, and law enforcement officers provide most of the personal interpretation through the Park. See Table 2-17 for a list and description of personal interpretation programs offered at Red Rock Canyon State Park.

Table 2-17. Personal Interpretation

Interpretive Programs and Activities	Description
Roving Interpretation	Interpretive and other park staff make spontaneous visitor contacts daily. These contacts include providing information and conversing with visitors at the campground, entrance kiosks, trails, and special events.
Nature Walks	Docents lead nature walks at the Ricardo Nature Trail, which has various plants and wildlife, and interprets how they have adapted to the harsh desert environment. Visitors can also attend the program, "A Walk Through Time," where park docents discuss geology, paleontology, extinct and present wildlife, and Native American uses of plants.
Evening Campfire Programs	The Park offers evening campfire programs about the Park's cultural and natural history, including the Red Rock Railroad, geology, and astronomy, allowing visitors to experience different aspects of the Park.
Special Programs (Guest Speakers)	Special guest speakers come to the Park and talk about the Park's history, astronomy, flora and fauna, and geology.
Special Workshop (Beginning Birder)	This program introduces participants to the Park's bird species and their calls, followed by an opportunity to find them in the Park.

2.7.5.2 Non-Personal Interpretation

Non-personal interpretation is interpretive media available to visitors to use without staff. Non-personal interpretive media can include brochures, exhibits, signs, videos, audio programs, interpretive panels along trails, and kiosks. All interpretive media has been developed to be universally accessible and available in various formats. Red Rock Canyon State Park hosts social media sites on Facebook and Instagram. Park information is also updated on the Park webpage of the State Parks website. Table 2-18 provides a list of non-personal interpretation (interpretive media and self-guided activities) for the Park.

Table 2-18. Non-personal Interpretation

Interpretive Media and Self-Guided Activities	Description
Ricardo Visitor Center	Visitor center exhibits interpret the Park's geology, fossils, and Native American culture. A media room displays various films and publications about Red Rock Canyon State Park. The gift shop sells books and other educational items related to the Park's interpretation.
Interpretive Panels	There are multiple interpretive panels throughout the Park. The Park recently received an Environmental Enhancement and Mitigation Program Grant to create ten new interpretive panels. Topics will focus on resource management, natural and cultural resource protection, geological landscapes, habitat conservation, and related subjects. The panels will be placed at the visitor center, campground, Wash entrance, Hagen Canyon parking area, and Red Cliffs parking area.
Information Kiosks	One bulletin board (updated with the most recent Park and interpretive program information) is at the visitor center. Two exhibit cases are in front of the visitor center. Two display cases are at the entrance of the campground. Four display cases are in the campground
Red Rock Canyon State Park Map	The Park currently has a map printed on 8 ½ x 11-inch printer paper. This map gives a broad view of all the roads, trails, and park facilities.
Red Rock Canyon State Park Social Media Sites	The Park uses social media platforms like Facebook, Instagram, and Twitter to advertise interpretive events and Park projects and posts educational content.
Junior Ranger Activity Guide	The Park has a self-guided Junior Ranger activity guide for children between the ages of seven and 12 to explore the visitor center. Once completed, the children can be sworn in as State Park Junior Rangers and receive a badge.
Native Plant Habitat	Volunteers planted a native plant garden in front of the visitor center.
Publications	The Park offers publications on motion pictures filmed at the Park, paleontology, and archaeology publications.
Red Rock Canyon State Park Videos	The Park shows three videos at the visitor center on various topics like motion pictures, cultural history, historical footage, and other topics.
Red Rock Canyon State Park Interpretive Association website	The cooperating association hosts a website with Park information, natural and cultural history topics, interpretive program schedules, volunteer information, and visitor activities.

2.7.5.3 Visitor Attendance to Interpretation and Education Programs

Red Rock Canyon State Park began recording visitor attendance for interpretation and education programs in 2017. These programs include campfire programs, hikes, tours, talks, demonstrations, audiovisuals, K-12 school programs, and the Junior Ranger self-guided activity. Table 2-19 shows the number of programs and attendees from 2017 to 2020 and Table 2-20 shows the number of attendees to the Ricardo Visitor Center from 2017 to 2020.

Table 2-19. Interpretation and Education Program Attendance 2017-2020

Date	Number of Attendees	Number of Programs
2017-2018	996	49
2018-2019	718	47
2019-2020	29	0
Total	**1743**	**96**

Table 2-20. Visitor Center Attendance 2017-2020

Date	Number of Attendees
2017-2018	10,983
2018-2019	12,275
2019-2020	7,511
Total	**30,769**

During the Covid-19 park closure, in-person interpretive programs were suspended until September 2021. The District Interpretive Staff produced two online interpretive programs during the park closure for about 150 people. Therefore, the Park's interpretation programs did not receive the same attendance in 2020 and 2021 as in pre-pandemic times.

2.7.6 Regional Interpretive Providers and Partners

Multiple organizations and government agencies provide interpretive and educational programs with similar interpretive themes and topics to Red Rock Canyon State Park. Many of these providers are existing partners with the Park, and some could become partners to collaborate on programs that complement, not compete with other interpretive providers.

Bureau of Land Management Education Programs

- Every Kid Outdoors- A federal public lands program created for fourth graders
- Junior Ranger
- Citizen Scientist

National Park Service Education Programs

- Junior Ranger
- Every Kid Outdoors
- Visit parks with Kids
- Archeology for All
- Young Stewards
- Spaceflight explorer
- Astronomy

National Forest Education Programs

- Workbooks about wildflowers
- Non-native invasive species learning kit
- Forest Service for Kids- go outside and discover, color the outdoors, Team Smokey and wildflower pollinators

Kern County Superintendent of Schools

- Kern Environmental Education Program (Camp KEEP)
- Outdoor education program
- Provides overnight accommodations and education facilities for teachers and students
- Currently, the program has two locations – beach and mountain area
- Teaches environmental education and gets children outdoors.
- Astronomy Club

2.7.6.1 Partner Organizations

Table 2-21 shows the partner organizations that work with Red Rock Canyon State Park to provide high-quality interpretive programs and displays.

Table 2-21. Partner Organizations

Interpretive Presenters	Interpretive Topic/Programs	Audience	Location
Maturango Museum	State Park Brochures	Visitors of the museum	Ridgecrest, CA
Mojave Chamber of Commerce	Promoting Red Rock Canyon State Park- Providing the park website	Mojave visitors	Mojave Chamber of Commerce website
Los Angeles Natural History Museum	Geology and Paleontology of Red Rock Canyon	Visitors	Ricardo Visitor Center
Gene Albitre, Kumeyaay Spiritual Leader	Native American Cultural	Visitors	Ricardo Visitor Center
Gary Pickett	Flintknappers – make tools out of stone	Students	Ricardo Visitor Center
Kern County Superintendent of Schools	CAMP KEEP	Students	San Luis Obispo and others
Ridgecrest Astronomy Club	Astronomy	Public	Ricardo Visitor Center

2.8 Planning Influences

The recommendations described in ***Chapter 4 - The Plan*** have emerged from an analysis of multiple, complex factors. These include the Park's regional context and adjacencies; its existing physical conditions; the status of its natural, cultural, and aesthetic resources; its use by the public, including visitor demographics and visitation trends; and finally, the input and aspirations of stakeholders and the public. In addition, state and federal laws, codes, state executive orders, State Parks policies and systemwide planning, and regional planning have helped define the plan and are summarized in this section. Appendix A of this document describes some specific federal and state laws, codes, and State Parks policies that guide management actions at the Park. State Parks maintains a planning and policy hierarchy to ensure that all laws are followed and policies within State Parks remain consistent with those laws.

2.8.1 Overview of State Parks Systemwide Regulations, Policies, and Planning Influences

Systemwide planning influences may be applied throughout the State Park System because many of the same general principles that help protect park resources can be applied to all park units. State Parks policies and systemwide planning influences include planning tools for resource management, operations, interpretation, and recreation to prepare a general plan. Systemwide planning also allows for a more consistent management approach across all park units.

State Park Mission Statement. The mission of State Parks is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

California Public Resources Code. PRC Sections 5019.50 through 5019.80, "Classification of the State Parks System," provides guidelines for the designation of State Parks and guiding principles for park improvements. The PRC classifies different types of state park units and provides guidelines for the upkeep and improvements of parks. It is also used as a general guide to plan appropriate improvements. Other PRC sections provide procedures for protecting specific types of resources, such as cultural resources. PRC Sections 5001-5019.5 describe the State Park's management of state park units, including developing general plans (Section 5002.2).

California Code of Regulations. State Parks laws were established to protect park resources, administer the parks, and maintain a park atmosphere. The California Code of Regulations (CCR) is the official compilation and publication of the regulations adopted, amended, or repealed by state agencies under the Administrative Procedure Act. State Parks' rules and regulations can be found in Title 14, Natural Resources Division 3, Department of Parks and Recreation, Chapter 1.

Department Operations Manual. The Department Operations Manual (DOM) provides a single source of approved policies and procedures which are pertinent to the operation of the State Park System, including for natural and cultural resources and environmental review and associated departmental notices. It is the basic policy document for State Parks.

The Cultural Resources Management Handbook. The handbook supplements the DOM and provides State Parks guidelines and information about cultural resource management, operations, processes, and procedures.

The Natural Resources Handbook. The handbook supplements the DOM and contains specific information about resource management operations, processes, and procedures such as prescribed fire, wildfire, non-native species, and tree protection guidelines.

California State Parks Accessibility Guidelines. The Guidelines "are intended to convey to State Parks staff general information regarding accessibility standards and recommendations for complying with laws and regulations related to accessibility." The guidelines provide practical ways to allow people of all abilities to access and use programs and facilities while maintaining the quality of experience people come to a State Park to enjoy. The guidelines also offer recommendations and regulations for complying with the standards for accessibility.

California State Park System Plan. The plan is a two-part planning document that first lays out the changes occurring to the State Park System, such as changes in population, park usage, and user interests. The second part outlines steps that must be undertaken to keep pace with the challenges described in part one for the State Park System to continue to succeed.

Planning Handbook. The Planning Handbook provides guidelines for preparing general plans and other planning documents for state park units. It emphasizes focusing on critical short term and long-range issues without being an exhaustive study of a park unit. Additional planning shall take place via specific studies, management plans, feasibility studies, and environmental impact analyses.

California Recreational Trail Plan and Progress Report. This plan is a guide produced by State Parks for all California agencies and recreation providers that manage trails. The Plan includes information on the benefits of trails, acquiring funding, effective stewardship, and encouraging cooperation among different trail users. The plan assesses the present and future demand for trails and recommends an integrated system of trail routes.

Additionally, State Parks is responsible to coordinate with other state agencies, such as the CDFW and the State Water Resources Control Board, that have planning tools that State Parks should try to follow in planning for the Park's future.

2.8.2 Regional Planning Influences

There are several regional planning efforts where the Park is located. These include planning efforts by Kern County and BLM, including general and conservation plans. These planning efforts also helped to shape this general plan

Bureau of Land Management's California Desert Conservation Area Plan. Congress designated the 25 million-acre California Desert Conservation Area (CDCA) in 1976 through the Federal Land Policy and Management Act (FLPMA). The CDCA Plan serves as the land-use guide for the management of public lands. The CDCA Plan and its multiple-use class zoning and special designation strategies for protecting resources and providing users on public lands were approved in 1980. The CDCA Plan includes changes resulting from the CDPA of 1994.

Bureau of Land Management's Northern and Eastern Mojave Desert Management Plan and Final Environmental Impact Statement. The CDCA was amended through six concurrent plans, including the Northern and Eastern Mohave Desert Plan (NEMO). The NEMO planning area is in the northeastern CDCA, primarily the eastern Mojave Desert, western Basin, and Rangelands surrounding Death Valley National Park. The six plans together provide a landscape approach to managing desert ecosystems. While the CDCA Plan still applies, within the NEMO planning area, the plan adopts, for example,

standards for public land health and guidelines for grazing management; recovery and/or conservation of federally endangered and threatened plant and animal species; and conservation of special status plants, animals, and natural communities, among other things.

Bureau of Land Management's West Mojave Plan/Habitat Conservation Plan. Red Rock Canyon State Park is in the western Mojave Desert. The West Mojave Plan/Habitat Conservation Plan and CDCA Plan amendment present a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part while providing a streamlined program for complying with the requirements of the California and Federal Endangered Species Acts. The planning area includes 3.2 million acres of public land and 3.0 million acres of private land. The document was produced through a collaborative effort of state and federal agencies and local jurisdictions.

103rd Congress' 1994 California Desert Protection Act. The CDPA established the Death Valley and Joshua National Parks and the Mojave National Preserve in the California desert and designated 74 new wilderness areas in the California Desert. The Mojave National Preserve consists of approximately 1.4 million acres. Congress made findings of the need to protect the Mojave Desert. The Secretary must administer the preserve according to National Park System laws and permit hunting, fishing, and trapping as allowed by federal and state laws, with certain exceptions. The National Park System laws govern mining claims, and grazing is permitted to continue at not more than the current level. The Act also transferred public lands from BLM to the State of California to expand Red Rock Canyon State Park.

Bureau of Land Management's Last Chance Canyon Area of Critical Environmental Concern Management Plan and Environmental Assessment.

ACECs is a Federal BLM designation, similar to State Park Natural and Cultural Preserves. ACECs have special management actions to protect important historical, cultural, and scenic values, or fish and wildlife or other natural resources management requirements. According to the 2016 Desert Renewable Energy Conservation Plan, Land Use Plan Amendment (LUPA), Last Chance Canyon ACEC has national cultural significance:

> As much as 10,000 years of human occupation is represented in the assemblage in Last Chance Canyon. Ethnographic interviews during the CDCA Plan [California Desert Conservation Act Plan] revealed Black Mountain as an area of religious and cultural significance to the Kawaiisu and related contemporary Tribal groups. A larger National Register Archaeological District surrounds the currently designated boundary, verifying the national cultural significance of this place. A complete cultural resource inventory has not been conducted within the boundary; the potential to increase the national cultural significance of this area

is high. Historic cabins and mining features located within the boundary may be eligible for listing on the NRHP, in part as examples of vernacular architecture and mining development of the West. (BLM, 2016, p. 1255)

Kern County General Plan. Red Rock Canyon State Park is in unincorporated eastern Kern County. The Kern County General Plan is a policy document with planned land use maps and related information designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County. County plans do not apply to State Parks.

Bureau of Land Management's Desert Renewable Energy Conservation Plan. The Desert Renewable Energy Conservation Plan (DRECP) is a multiagency (BLM, CDFW, USFWS, and California Energy Commission) conservation and planning document intended to guide renewable energy projects in the Mojave, Colorado, and Sonoran Deserts of California. The DRECP is designed to provide for the conservation of sensitive species and ecosystems and streamline environmental review and permitting for renewable energy and transmission projects. The plan will meet the requirements of the Federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and the Federal Land Policy and Management Act.

The DRECP planning area encompasses seven California counties, including Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego, and 22.5 million acres of private, state, and Federal lands. Approximately 50 percent of the planning areas are on BLM-administered lands. Thirteen State Parks lay within the planning area, including Red Rock Canyon State Park.

The DRECP consists of several components:

- BLM LUPA per the Federal Land Policy and Management Act.
- Natural Community Conservation Plan (NCCP) to comply with the California NCCP Act and the California Endangered Species Act; and
- General Conservation Plan (GCP) to comply with the Federal Endangered Species Act.

The BLM signed the Record of Decision approving its Land Use Plan Amendment on September 14, 2016, completing Phase I of the DRECP.

Chapter 3. ISSUES AND ANALYSIS

This chapter identifies key parkwide issues and significant area-specific issues identified during the planning team's analysis of natural, cultural, physical, aesthetic, and recreational resources; public and stakeholder meeting input; and public comments. These issues are influenced, in part, by factors described in ***Chapter 2 – Existing Conditions***, and are addressed in ***Chapter 4 – The Plan*** goals and guidelines.

3.1 PLANNING ISSUES

State Parks staff, Native American tribes, government agencies, interested stakeholders, the public, and representatives from various organizations identified issues and concerns about Red Rock Canyon State Park (the Park) during the General Plan planning process and initial stages of preparing the General Plan. Issues and concerns included Park management actions, public use, and facilities. The public's issues and concerns involved the types of recreational use and facilities offered at the Park, such as vehicle use and pedestrian and equestrian trails. Many identified a desire to ensure a high degree of protection of the Park's sensitive resources (physical, natural, and cultural) and desert landscape and access to the Park's remote points of interest and scenic vistas and activities.

3.1.1 Parkwide Issues

Parkwide issues for Red Rock Canyon State Park are intrinsically connected to the Park's remote and undeveloped nature. The size, extreme terrain, and rugged character of the Park provide a unique visitor experience and ongoing management challenges. With more than 25,325 acres, the Park offers many different opportunities for public use. However, its deep canyons, rocky terrain, and fragile desert ecosystem make installing and maintaining signage, basic facilities, and communication infrastructure and enforcement in the Park a challenge. While the rough terrain keeps people out of some sensitive Park areas, it also makes it difficult for State Parks staff to access them. It will be crucial for Park management to balance future development with providing needed public safety, recreation, and resource management services.

The following is a summary of issues relevant to the entire Park. The order presented does not signify importance or designate a chronological order for the resolution of the issue.

3.1.1.1 Issue 1: Resource Conservation and Management

The Park has an ongoing need for resource conservation and management activities such as regularly updating resource inventories, such as archaeological sites, fossils, geologic features, habitats, plants, scenic viewsheds, water sources, and wildlife.

3.1.1.2 Issue 2: Vehicle Damage to Natural or Cultural Resources

State Parks staff and the public have concerns about damage to physical, natural and cultural resources caused by vehicles. Some of the damage is from visitors taking unauthorized routes or going off designated roads. A two-year study funded by the State Parks' Cultural Stewardship Program assessed damage to archaeological sites caused by OHVs and vehicular recreation, undertaken from 2004 to 2006. The report pointed out sensitive areas in the Park that needed to be closed and areas rehabilitated to meet current resource codes. More recent field evaluations also identified roads that impacted natural, cultural, and aesthetic resources. State Parks staff have closed some roads to vehicular traffic in sensitive areas and restored areas where damage has occurred.

3.1.1.3 Issue 3: Public Safety Response

Currently, there are two State Parks peace officers or rangers at the Park. Although the rangers regularly patrol the Park, visitors are expected to recreate responsibly and handle unexpected conditions in the harsh environment. Visitors may have trouble requesting assistance when emergencies occur because of spotty cell phone service throughout the Park. State Parks and other entities that provide emergency response services (including other state, federal and local governments) can have difficulty reaching visitors.

3.1.1.4 Issue 4: Climate Change Impacts

The 1982 Red Rock Canyon State Park General Plan (1982 General Plan) did not consider the potential impacts of climate change as the phenomenon was poorly understood at the time. California's fourth Climate Change Assessment (2018) identified regional impacts for the Mojave Desert including higher average temperatures and changed precipitation patterns, such as more intense winter rainstorms with decreased summer monsoonal storms, along with both extreme flooding and extreme droughts. These and other changes will impact wildlife and likely change Park visitation patterns. Impacts from climate change will require Park management responses.

3.1.1.5 Issue 5: Gaps in Management of Sensitive Resource Areas

The 1982 General Plan does not address site-specific issues within sensitive resource areas, such as protection of the riparian corridor in the Cudahy Camp area and the provision of side roads to accommodate circulation around the riparian corridor. In addition, areas that have been impacted by recreational activities – including other riparian areas and hillsides – need to be restored within several other areas of the Park.

3.1.1.6 Issue 6: Limited Americans with Disabilities Act Accessibility

Outside of the Ricardo Visitor Center and Campground and the Red Cliffs Day-use area, the Park has limited Americans with Disabilities Act (ADA) accessible trails for people with mobility challenges.

3.1.1.7 Issue 7: Lack of Park Identity and Marketing

Red Rock Canyon State Park lacks identity and an external image that promotes the Park's valuable natural resources and recreational amenities. For example, existing signs indicating entry into the Park are in inconspicuous places, illegible, or easy to ignore. In addition, the State Parks website and social media sites are not updated regularly to provide current Park conditions and trip planning tools.

3.1.1.8 Issue 9: Inadequate Wayfinding Signage and Outdated Trip Planning Tools

The lack of wayfinding signage, an outdated brochure, and web-based information do not promote easy, user-friendly movement within the Park. Visitors should be easily directed to significant points of interest in the Park, such as Red Cliffs and Red Rooster, from the visitor center. Specifically, the brochure lacks current wayfinding, resources, safety messaging, and other Park information. Some user-developed maps also show routes in the Park that are closed to public use.

3.1.2 Recreation Issues

3.1.2.1 Issue 10: Regional Route Connectivity

The Park is situated within a large recreation corridor with adjacent public lands. Many people travel through the Park to access federal Bureau of Land Management (BLM) OHV Areas and Onyx Ranch SVRA using their OHVs. The General Plan planning team received comments and requests from OHV users and organizations to maintain OHVs through the Park. Other recreation users, such as hikers and equestrians, also want to retain regional trail connections through the Park.

3.1.2.2 Issue 11: Unsafe Crossing at State Route 14 for Pedestrians

Pedestrian movement is presently hindered by the unsafe crossing conditions of SR 14. Visitors cannot safely walk from the Ricardo Visitor Center and Campground located to the west of SR 14 to destinations to the east of SR 14, many of which are the main points of interest in the Park, including Red Cliffs and Last Chance Canyon.

3.1.2.3 Issue 12: Accommodate New Trends in Recreation

Every generation of visitors have different needs and approaches to recreation. For example, as technology changes, visitors may want to use this technology while at the Park. State Parks should stay current on visitor demographics, their needs and recreation expectations and explore ways to accommodate new trends in recreation to maximize Park recreational uses and access to scenic resources while protecting natural and cultural resources.

3.1.3 Natural Resource Management Issues

3.1.3.1 Issue 13: Connectivity of Habitat Corridors

Maintaining and expanding habitat connectivity is crucial to the continued survival of many species in an era of decreasing habitat and climate change. There are opportunities to connect existing habitat corridors within the Park to habitat corridors on protected or conserved public lands external to the Park. Approaches include restoring degraded areas (e.g., riparian areas) within the Park and collaborating with BLM and other entities on management of those corridors outside of the Park. Identifying restoration priorities and resources for ongoing maintenance of intact or restored habitats will be critical to the success of this issue.

3.1.3.2 Issue 14: Conservation of Sensitive Natural Resources

The Park contains biological resources that are considered sensitive by state and local agencies, such as state and federally listed species (desert tortoise, Mohave ground squirrel, Red Rock tarplant), plants with a 1B rarity rank (Red Rock poppy, Red Rock Canyon monkeyflower), and sensitive natural communities (Joshua tree woodland, desert riparian habitat) that are of high resource value and in need of protection. Many other species are endemic to the area or of local importance.

3.1.3.3 Issue 15: Protecting Important Water Sources for Wildlife and Associated Wetland and Riparian Habitat

The Park contains limited surface water resources that are extremely important to local wildlife. The associated wetlands and riparian corridors also provide high-quality habitat and movement corridors for wildlife. Historic and on-going uses have degraded wetlands and riparian corridors, reducing the Park's biological values.

3.1.3.4 Issue 16: Increased Pressure on Natural Resources from Renewable Resource Projects and other Development Occurring on Surrounding Public Lands

In recent years, pressures on sensitive biological resources in the Mojave Desert have increased significantly because of increased development. Most recently, the ongoing and proposed installation of numerous large-scale solar and wind energy facilities near the Park and throughout the Mojave Desert has resulted in the conversion of thousands of acres of desert habitat to single function uses that will severely limit the use of these sites by wildlife. Preservation of high-quality existing habitats is more important than ever to enable local resources to adapt to these changes.

Federal and state resources agencies (BLM, California Department of Fish and Wildlife [CDFW], and others) completed the regional Desert Renewable Energy Conservation Plan (DRECP) that will enable development project applicants to pay into a mitigation fund that, in turn, will be used for large-scale regional habitat conservation. This may have implications for the Park's role in regional conservation and land uses on adjacent lands.

3.1.3.5 Issue 17: Threats from Invasive Exotic Species

The Park currently contains a relatively small number of non-native invasive species compared to the proportion of introduced exotics that exist in the desert province. However, invasive exotics may become a larger problem in the future, especially in high-use areas. Factors such as increased visitor use, intensive recreation, natural and human-induced disturbances, and climate-change driven impacts may contribute to this threat. Early detection and management of invasive species should be a high priority for preserving the Park's natural resource values.

3.1.3.6 Issue 18: Opportunities for Scientific Study – Natural Resources

The Park is well-known for its rich, diverse, and unique natural resources and is routinely used by universities and other groups for field trips, excursions, teaching events, and research. These events help raise awareness about the Park's resources, further understanding of the local biodiversity, and can be a source of information to inform Park management. The Park could expand partnerships with universities and other organizations to further scientific study of the Park's natural resources.

3.1.4 Cultural Resources Management Issues

3.1.4.1 Issue 19: Protection/Preservation of Significant Cultural Resources

The Park contains highly significant cultural resources, including archaeological sites, tribal cultural resources, and historical sites. Many of these resources are endangered by public uses and other threats. A few of these resources are located within the federal Last Chance Canyon Archaeological District, listed on the National Register of Historic Places (NRHP), and extend into BLM lands to the north and east.

3.1.4.2 Issue 20: Cultural Resource Conservation and Maintenance

Much of the Park has not been examined or inventoried for cultural resources. Those areas that have been inventoried by State Parks staff, volunteers, and outside entities contain significant cultural resources. Additional studies and surveys should be conducted to thoroughly identify and record cultural resources in the Park.

3.1.4.3 Issue 21: Condition Assessment of Cultural Resources

Public use damage (including vehicle use, trail use, camping, rock and mineral collecting, vandalism, etc.) and natural damage (including erosion, flooding, wildfires, earthquakes, plant and animal damages, etc.) are ongoing threats to cultural resources.

3.1.4.4 Issue 22: Opportunities for Scientific Study – Cultural Resources

The Park is well-known for its rich, diverse, and unique archaeological, historical, and tribal cultural resources and is used by universities, and other groups for field trips, excursions, teaching events, and research. These events help raise awareness about the Park's resources, develop greater understanding of the area's cultural history, and can help inform Park management. The Park could expand partnerships with universities, Native American tribes, historical societies, and other organizations to further scientific research and cultural studies of the Park's cultural resources.

3.1.5 Inappropriate Motorized Vehicle Use On and Off the Primitive Road System Issues

Input from State Parks staff, aerial photograph examination, and site analyses indicate that many of the routes used by vehicles are not a part of the Park primitive road system. Due to a lack of signage and enforcement, vehicles continue to use unauthorized routes, non-system roads, or roads that are closed. This problem is made worse by not having a designated primitive road system for the Last Chance Canyon addition.

This section describes the issues related to motorized vehicle use on and off the Park's primitive road system. It includes a discussion about conflicts with state laws and State Parks policies, the Park 1982 General Plan, Park classification and Park planning that authorized (and restricted) motor vehicle use in the Park. Management of the entire Park road and trail system must be consistent with the Park's classification, general plan, declaration of purpose, and State Parks policies and statutory requirements as discussed in the following issues.

3.1.5.1 Issue 23: Conflicts with the 1982 Red Rock Canyon General Plan

The 1982 General Plan expanded a system of primitive roads to enable visitors to reach the Park's isolated scenic and natural areas. However, many of these roads in the Park are being used by motorized vehicles for recreation purposes (i.e., the technical challenge or sport of operating a motorized vehicle in rough terrain or under difficult-driving conditions both on and off designated roads that are not associated with low-speed, self-guided vehicle touring to access the Park's isolated natural and historical features.

Under classification and management as a State Recreation Area (SRA) from 1973 to 1980, vehicle use was permitted:

1) as a means of allowing vehicle access to certain areas in the unit for enjoyment of scenic and other principal resource values;

2) to allow access into and through the unit for users whose vehicles were not licensed for use on public highways; and

3) as a recreational activity primarily related to the enjoyment and challenge of operating a motorized vehicle.

In February 1980, the State Park and Recreation Commission reclassified the Park from a SRA (PRC Section 5019.56) as a State Park (PRC Section 5019.53). The 1982 General Plan identified allowable use and intensity (including changes in vehicle use and intensity policies) for Red Rock Canyon State Park under the new classification as a State Park. The activities of primary importance listed in the 1982 General Plan include sightseeing, nature observation, hiking, scientific research and educational study, photography, and painting and sketching. Vehicle recreation for the challenge or sport of operating a motorized vehicle is listed as an inappropriate use. Street-legal vehicle use on the designated park road system is an allowable use, but an activity of secondary importance. Vehicle use off the road system is an illegal use.

3.1.5.2 Issue 24: Conflicts with State Park Classification

As mentioned above, State Parks staff have documented vehicle use in areas of the Park restricted from this use, which conflicts with the State Park classification. State park classification directs allowable recreational uses and management of the Park. Under the State Park classification, vehicle use is appropriate only for normal ingress, egress, and parking.

3.1.5.3 Issue 25: Conflicts with State Parks Policies and State Regulations

Existing vehicle use in Red Rock Canyon State Park conflicts with State Park and Recreation Commission policies and statutory requirements for state parks, natural preserves and cultural preserves. The following policies and laws are related to roads and motorized vehicle use in state parks and natural and cultural preserves. The entire language for each is in ***Chapter 4 – The Plan, Section 4.5.1 Laws, Regulations, and Policies for Motorized Vehicles, Roads, and Trails***.

- State Park Recreation Commission Policy II.7 Primitive Roads (amended May 1994) allows primitive roads to make natural or historical features accessible in park units where vehicles are not expressly prohibited. If further states that visitors shall keep their vehicles on the designated route, shall operate their vehicles so as to minimize the occurrence of both noise and dust, and shall use these primitive roads in ways that do not detract from the enjoyment of the natural or historical features by other visitors who may be in the area
- Title 14, Division 3, Chapter 2, Section 4351 of the California Code of Regulations (CCR) prohibits the operation of any type of vehicle, motorized equipment, motorboats, mechanical transport, and aircraft in state wildernesses, cultural preserves, and natural preserves except as authorized by the Director of State Parks for specific management needs.
- Public Resources Code Section 5001.8 also prohibits the use of motorized vehicles in state wilderness and natural and cultural preserves. In state parks, state reserves, state beaches, wayside campgrounds, and historical units, use is confined to paved areas and other areas specifically designated and maintained for normal ingress, egress, and parking.
- State Park Recreation Commission Policy IV.1 Off-Highway Vehicles in the State Park System (amended May 1994) states that motorized vehicles must be highway licensed to be permitted on primitive roads or designated routes of travel in any units of the State Park System unless designated as off-road vehicular recreation area or on specific areas authorized by the general plan.

The above policies and statutory requirements specifically exclude OHVs without a highway license (non-street legal) from primitive roads in a State Park unless on specific areas authorized in the general plan. Motorized vehicles that are street-legal in State Parks are confined to areas designated and maintained for normal ingress, egress, and parking. Motorized vehicles are also prohibited in preserves.

However, OHV use within the Park is often inconsistent with these policies. These policies are not fully enforced in the Park. Although many roads and non-system routes have been closed and restored, State Parks should evaluate the Park's existing primitive road system and propose changes to fully comply with State Park and Recreation Commission policies and statutory requirements.

3.1.5.4 Issue 26: Road System Needs to Serve Key Natural and Historical Park Features

The State Park and Recreation Commission's Primitive Road Policy (Policy 39) was in effect from January 11, 1974 until 1983 and reads (in part) as follows:

> Primitive roads in units of the State Park System are ingress and egress routes established by the State Parks to make more easily available for enjoyment by park visitors certain natural or historical features <u>which would not otherwise be accessible to them</u> (emphasis added).
>
> Visitors utilizing primitive roads are authorized to do so only for the purposes for which such routes were established. Visitors shall keep their vehicles on the designated routes at all times, shall operate their vehicles to minimize the occurrence of both noise and dust, and shall utilize these primitive roads in ways which do not detract from the enjoyment of the natural or historical features by other visitors who may be in the area.

Additionally, Commission Resolution 8-80 recognized that many scenic resources of Red Rock State Park are isolated (California State Park and Recreation Commission, 1980):

> Many of these values are isolated and are best reached for enjoyment by off-road vehicles…the Commission has previously recognized this need by establishing a system of Primitive Roads to enable people to reach the isolated scenic and natural areas of the Park. This Commission recognizes the need to extend the Red Rock Canyon Primitive Road System to lands recently acquired.

In February 1980, the State Park and Recreation Commission reclassified the Park from a SRA (PRC Section 5019.56) as a State Park (PRC Section 5019.53). In July 1981 and later in September of 1981, the Commission held public hearings to approve the General Plan for Red Rock Canyon State Park. The September staff recommendation provided clarification on which roads were to be closed and which roads were to become part of

the Park's designated road system that was consistent with the primary purpose of ingress, egress and access to scenic resources on designated roads, under the State Park classification. The Plan included approximately 26 miles of primitive roads for off-road vehicles, nine miles of (California State Park and Recreation Commission, 1980) paved road, and two-wheel drive roads to camping areas. The use of vehicles was allowed on designated primitive roads only when it could be consistent with Commission Policy 39, Resolution 8-80 (California State Park and Recreation Commission, 1980). The 1982 General Plan (adopted in September 1981) recommended a more extensive primitive road network to extend onto BLM lands to which the State Parks had applied for a transfer. After adopting the 1982 General Plan, which includes management directives targeted at approximately 10,000 acres of existing and anticipated Park lands, vehicle use on undesignated primitive roads and vehicle use significantly impairing or detracting from the natural setting were no longer allowed.

In 1994, the California Desert Protection Act (CDPA) was signed into law. The law provides for certain lands within the California Desert Conservation Area to be transferred to the State of California and incorporated with the existing Red Rock Canyon State Park. As defined by the CDPA, this action intends to provide maximum protection of the region's outstanding scenic and scientific values. Following the CDPA, the BLM began transferring 16,665 acres (Last Chance Canyon addition) to State Parks. Before the CDPA, the Park covered 8,225 acres with 2,164 acres of BLM-owned lands managed by State Parks through a memorandum of understanding. Following the passage of the CDPA, the BLM transferred federal lands to State Parks, which more than tripled the size of the Park. This transfer included approximately 68 miles of non-maintained dirt roads and trails in the Last Chance Canyon area.

A memorandum of understanding (MOU) was developed between the two agencies in August 1995 so land not yet conveyed or not able to be immediately transferred due to the encumbrance of unpatented mining claims might be appropriately managed. The MOU gives the State Parks management responsibility for all 16,665 acres, regardless of conveyance status, except for mining claims.

Changes to roads occurred after the 1982 General Plan (see ***Chapter 4 – The Plan, Section 4.5.2 Changes to Routes since the 1982 Red Rock Canyon General Plan***). The majority of the Park's current road system provides access to key natural, historical and recreational resources, allows efficient Park operations, and satisfies safe access requirements without significantly impacting resources. However, any roads that do not meet any of these criteria should be decommissioned and possibly reclassified as a non-motorized trail.

3.1.5.5 Issue 27: Too Many Entrances into the Park

There are too many entrances into the Park, including unmapped primitive roads, for a state park of this size. Too many points of ingress/egress make it challenging to manage the Park and direct and protect the more than 150,000 visitors that come to the Park each year. The BLM has agreed to work with State Parks to plan and manage their roads and connectivity consistent with State Parks management. The BLM is currently working on a route plan for the El Paso area immediately adjacent to the Park and additional lands. Time is of the essence to participate in this planning that may require that State Parks close and abandon several of these roads. Additionally, it is important to educate the public, and adequately sign the roads, to make it easier for the public to understand where they can drive their vehicles.

3.1.6 Adjacent Land Use Issues

3.1.6.1 Issue 28: Lack of Understanding about OHV Riding Areas Outside the Park

There is a lack of Park visitor understanding about the availability of local and regional OHV riding areas outside the Park.

3.1.7 Interpretation and Education Issues

3.1.7.1 Issue 29: Visitors have Difficulty Interacting with Park Staff and Volunteers due to Limited Staffing and Visitor Center Hours of Operations

Visitors cannot access basic information during weekdays because the Ricardo Visitor Center is closed. Staffing is limited. There is no camp host site or campground host to help campers when needed.

3.1.7.2 Issue 30: Limited Access to Technology, Electricity, and Communication Infrastructure for Delivering Interpretive Programs

Poor internet connectivity, cell phone reception, and electricity for State Parks staff are barriers to providing interpretive programs outside the visitor center, especially distance learning programs that require these technologies. The infrastructure also affects visitors' ability to access information and communication within the Park.

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Chapter 4. THE PLAN

This chapter establishes the overall long-range purpose and vision for the future of Red Rock Canyon State Park (the Park). Specific goals and supporting guidelines further clarify the vision for the Park. These goals and guidelines are designed to address the identified Park issues described in ***Chapter 3 – Issues and Analysis*** and provide for continued and improved resource protection, preservation, rehabilitation, recreational opportunities, facility development, and interpretation at the Park. The goals and guidelines provide direction for Park managers and set the parameters for the subsequent management and development plans.

The Park's General Plan is, by necessity, visionary in nature. Although currently identified issues drive much of its content, future park issues cannot be fully predicted. Therefore, the General Plan establishes desired future conditions of Park resources and the desired visitor experience. This visionary approach allows managers to apply new resource information, emerging technology, and improved management concepts to current issues and provides direction for resolving issues that may arise in the future.

Hikers enjoying the day at Red Rock Canyon State Park

4.1 California State Parks Mission

California Public Resources Code (PRC) Section 5019.91(b) states that:

> The mission of the California State Park system is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. State parks are set aside to protect their natural, historical, cultural, and recreational values in perpetuity for the people of the state.

4.2 Red Rock Canyon State Park Purpose and Vision

The declaration of purpose and vision statement for Red Rock Canyon State Park defines the overall purpose and vision for the Park. These statements are the foremost park-specific directives and set the tone for all Park goals and guidelines presented in this General Plan.

4.2.1 Declaration of Purpose

A foundation for planning and management of park units of the State Parks System is found in the park declaration of purpose. The declaration of purpose is a formal statement of the overall management intent for and significance of the park. A declaration of purpose is required by PRC Section 5002.2(b), "setting forth specific long-range management objectives for the unit consistent with the unit's classification…." The purpose statement provides a basis for decisions made about a park unit. It presents some of the most fundamental criteria against which the appropriateness of all planning recommendations, operational decisions, and management actions are measured. Management directives described in this General Plan shall support this declaration:

Declaration of Purpose for Red Rock Canyon State Park:

> The purpose of Red Rock Canyon State Park is to preserve and protect the extraordinary high desert landscape, exceptional natural ecosystems, unique vegetation communities, wetland/riparian resources, diverse flora and fauna, and irreplaceable archaeological and historical resources, and to recognize, honor, preserve, and interpret the culture and traditions of people who once called the Park home. Prime geologic and scenic resources in the unit include Red Cliffs, Whitehouse Cliffs, Mirage Cliffs, Red Rooster, Hagen Canyon, Scenic Cliffs, Red Buttes, Cudahy Camp, Last Chance Canyon, and Nightmare Gulch.
>
> Consistent with the 1994 California Desert Protection Act (Public Law 103-433, October 1994), the priority is to manage the health of these resources while providing appropriate recreational opportunities for the public. Visitor use shall allow for and encourage enjoyment of the prime resource values of the unit without degrading these features, so future generations have the same opportunities to experience these resources. Appropriate development in the Park includes enhancing public uses and providing for necessary management needs while protecting the integrity of the resources.

4.2.2 Vision

In addition to the declaration of purpose, another State Park planning and management directive is found in the vision statement. Vision statements describe what the park unit will ultimately strive to become, fulfilling its highest purpose and ultimate public value. The vision of Red Rock Canyon State Park is based on current and foreseen Park management intent, desires of the public, and opportunities perceived by the General Plan planning team.

4.2.2.1 Vision for the Future of Red Rock Canyon State Park

Red Rock Canyon State Park reflects the rugged beauty of California's Mojave Desert. As a natural area unencumbered by modern visual intrusions, it offers visitors of all ages and abilities opportunities to experience the majestic desert landscape with colorful badlands, cliffs, and canyons of California's backcountry. It is a place for visitors to seek personal renewal and inspiration from nature far from the intrusions of bustling cities.

Guiding Principles for Managing Red Rock Canyon State Park

- Red Rock Canyon State Park will provide visitors an opportunity to experience unique geological, scenic, natural, and cultural resources within the rugged landscape of California's backcountry.
- State Parks will strive to make the Park a place where visitors can enjoy a desert setting with deeply furrowed canyons and colorful ridges. Visitors will see and hear native wildlife, hike or ride the trails, experience the breathtaking views of the rugged and scenic terrains of the American West, delight in a campfire with family and friends, stargaze, and learn about past cultures and events.
- The Park will be a premier destination for all children to experience a unique desert environment to learn first-hand about the Park's values, natural resources, and cultural heritage.
- State Parks will honor, interpret, preserve, and protect the traditions, stories, lifeways, and evidence of past people and cultures, so future generations of Park visitors can become aware of and appreciate their histories and legacies.
- State Parks recognizes the ongoing presence and importance of California Native American tribal communities and encourages their participation in telling their stories, helping others understand their culture, and maintaining their relationship with the land.

- State Parks will promote an active and vibrant volunteer program to assist Park staff to operate, maintain, fund, and protect its natural and cultural resources and reach out to current and prospective visitors.

The Park will be a welcoming place to all visitors, and outreach efforts will strive to connect with a broader cross section of Californians who can be enriched with the experience, understanding and appreciation of this special place.

4.2.3 Planning Assumptions

The planning team has considered existing mandates (e.g., laws, regulations, polices) and constraints during the General Plan planning process while formulating General Plan area concepts. All concepts must comply with and complement existing mandates and constraints outlined in this section.

The following primary planning assumptions are based on the current state and federal laws, regulations, and State Parks policy, which form a basis for planning and set the parameters for addressing planning issues for the Park. Additional planning influences and assumptions can be found in ***Chapter 2 – Existing Conditions*** and ***Appendix A – Existing Laws, Codes, and Policies.***

State Parks will:

- Continue to manage Red Rock Canyon State Park, which is classified as a state park (PRC Section 5019.53), to preserve outstanding natural, scenic, and cultural values, and manage its use compatible with the primary purpose for which the Park was established. Management will also follow the requirements for natural preserve and cultural preserve subclassifications within the Park boundaries, as defined in the PRC (Section 5019.71 and 5019.74, respectively).
- Manage and protect the unique ecosystems and rare species that depend on them. Rare species include but are not limited to the desert tortoise, Mojave ground squirrel, raptors, Red Rock tarplant, Joshua trees, and desert riparian habitats as required by federal and state laws. Manage and protect all other sensitive animal and plant species and vegetation communities in the Park.
- Manage and protect the Park's unique paleontological resources, geologic formations, fossils, desert soils, and other topographic features.
- Protect and preserve the Park's cultural resources, including Native American sites, tribal cultural resources, historic sites and structures, and cultural landscapes, following the Secretary of the Interior's Standards for the Treatment of Historic Properties to achieve compliance with the California Environmental Quality Act (CEQA) and PRC Section 5024.5.

- Curate and conserve the Park's collections of geological, biological, paleontological, archaeological, and historical items and documentation.
- Consider the issues and concerns of adjacent landowners and residents during the planning and project implementation process; seek input from local, regional, and statewide interests.
- Coordinate with planning efforts at Eastern Kern County Onyx Ranch State Vehicular Recreation Area (Onyx Ranch SVRA), other local governments, state and federal agencies to evaluate potential connectivity and compatibility of state park recreational opportunities and resource management programs with surrounding land uses.
- Continue to provide educational programs, trail guidance, and enforcement efforts that enhance recreational opportunities while conserving, restoring, and protecting natural, cultural, and physical resources.

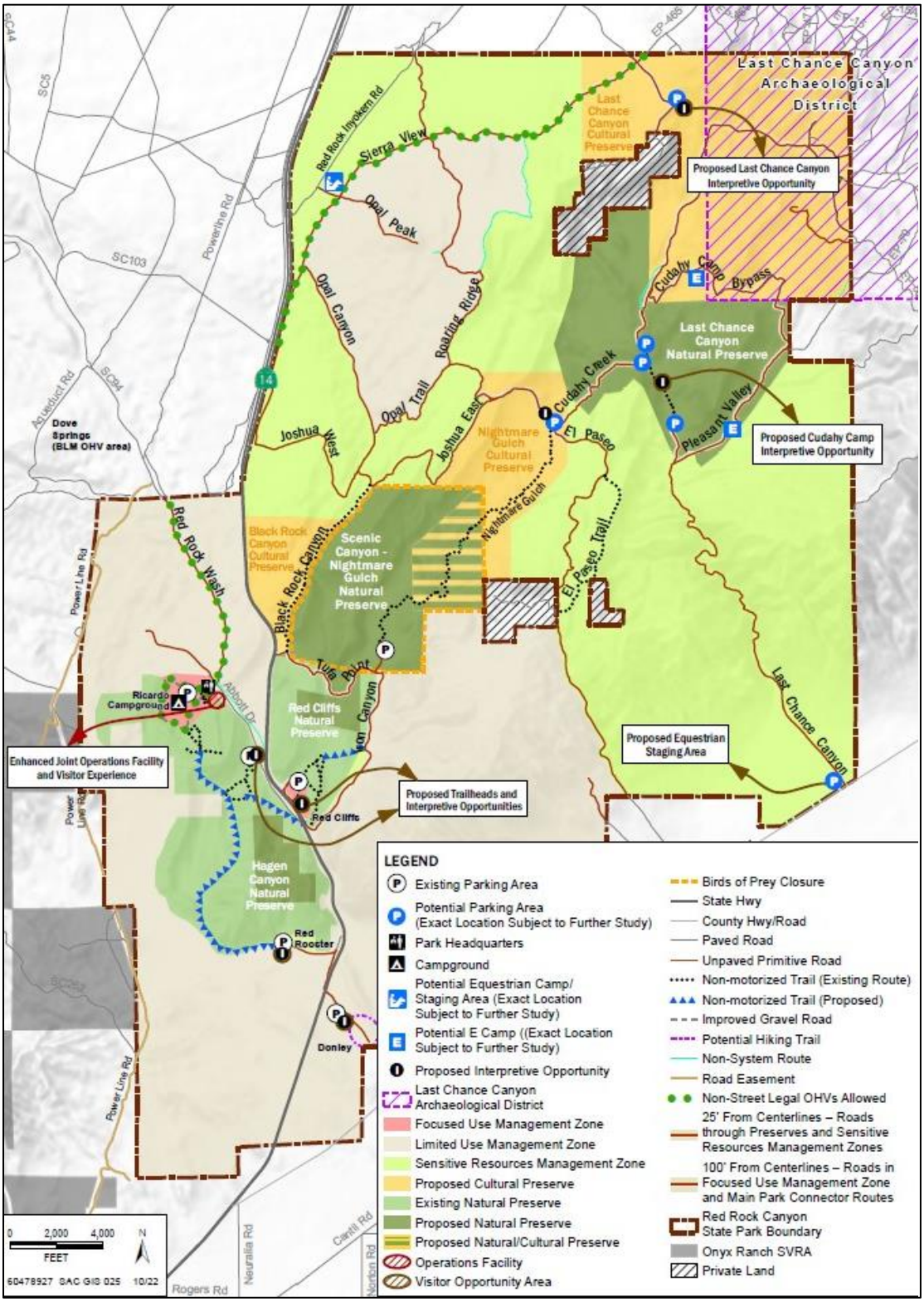
4.3 Red Rock Canyon State Park Classification

In addition to the declaration of purpose and vision statements, park management and development are further directed by park unit classification as specified in the PRC. The classification of a park unit guides its management, operation, and development. Red Rock Canyon State Park is classified as a state park. The PRC also establishes several subclassifications that may be included within the boundaries of a park unit of the State Parks System. In addition to two previously established natural preserves, Red Rock Canyon State Park has two proposed natural preserves and three proposed cultural preserve subunits (see Figure 4-1 – General Plan Concept Map for Red Rock Canyon State Park and ***Section 4.4.4 Cultural and Natural Preserves***). Red Rock Canyon State Park classification and subunit classifications are described in the next section.

4.3.1 State Park Classification, PRC Section 5019.53

State parks consist of relatively spacious areas of outstanding scenic or natural character, often containing significant historical, archaeological, ecological, geological, or similar values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of ecological regions of California, such as the Sierra Nevada, northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.

Figure 4-1. General Plan Concept Map for Red Rock Canyon State Park



Each state park shall be managed as a composite whole to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established.

Improvements undertaken within state parks shall make the areas available for public enjoyment and education consistent with preserving natural, scenic, cultural, and ecological values for present and future generations. Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as those improvements involve no major modification of lands, forests, or waters. Improvements that do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves or otherwise available to the public within a reasonable distance outside the park, shall not be undertaken within state parks.

State parks may be established in the state's terrestrial or nonmarine aquatic (lake or stream) environments.

4.3.2 Cultural Preserve Classification, PRC Section 5019.74

Cultural preserves consist of distinct nonmarine areas of outstanding cultural interest established within the boundaries of other state park system units to protect such features as sites, buildings, or zones that represent significant places or events in the flow of human experience in California. Areas set aside as cultural preserves shall be large enough to effectively protect the prime cultural resources from potentially damaging influences and permit the effective management and interpretation of the resources. Within cultural preserves, complete integrity of the cultural resources shall be sought, and no structures or improvements that conflict with that integrity shall be permitted.

4.3.3 Natural Preserve Classification, PRC Section 5019.71

Red Cliffs Natural Preserve from the day-use parking area

Natural preserves consist of distinct nonmarine areas of outstanding natural or scientific significance established within the boundaries of other state park system units. The purpose of natural preserves shall be to preserve such features as rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California before the impact of civilization [European and American settlement], geological features illustrative of geological processes, significant fossil occurrences or geological features of cultural or economic interest, or topographic features illustrative of representative or unique biogeographical patterns.

Areas set aside as natural preserves shall be of sufficient size to allow, where possible, the natural dynamics of ecological interaction to continue without interference, and to provide, in all cases, a practicable management unit. Habitat manipulation shall be permitted only in those areas found by scientific analysis to require manipulation to preserve the species or associations that constitute the basis for establishing the natural preserve.

4.4 Red Rock Canyon State Park Management Zones

In this General Plan, management zones act as an additional foundation for Park planning and management. The zones describe a range of desired conditions for resources, appropriate types of visitor activities and facilities, and describe management approaches to be achieved and maintained in specific areas of the Park. The management zones include goals and guidelines which further prescribe management intent and actions to achieve the desired conditions. The management zones are consistent with State Parks' mission and the Park's classification, declaration of purpose, and vision.

The Park includes five management zones: Focused Use, Limited Use, Sensitive Resources, Cultural Preserve and Natural Preserve (see Figure 4-1 and Table 4-1 – Management Zone Uses). These zones are primarily based on the purpose and focus of the zone and the degree of public use and facility development. Collectively, the zones represent a gradient in the level of public use with the intent to provide different visitor experiences (from high-intensity public use to increased opportunities for solitude). Each of the following zone descriptions incudes a summary of desired resource character and management, typical visitor use, range of appropriate facilities, and goals and guidelines, which further define management direction and actions. Appropriate facilities and activities of some key user groups such as hikers, equestrians, and bikers are also addressed.

Table 4-1. Management Zone Uses

Management Zone:	Focused Use	Limited Use	Sensitive Resources	Cultural Preserve	Natural Preserve
Zone Descriptions:	The zone is managed for high-quality recreational experiences and maintained to protect the natural character, including sensitive watersheds, wetlands, and creeks.	This zone is managed for moderate recreational use balanced with the protection of resources.	This management zone protects sensitive resources.	The zone contains a high concentration of significant cultural resources and focuses on preserving, protecting, and interpreting these resources.	The zone contains significant, rare, or endangered natural resources and focuses on preserving, protecting, and interpreting these resources.
Classification:	State Park	State Park	State Park	State Cultural Preserve	State Natural Preserve
Resource Character and Management:	The development includes visitor facilities (e.g., visitor center, campground), park operations facilities, vehicle access and parking, day-use areas, and interpretive elements to support orientation to the Park.	Minimal development includes primitive roads and parking/staging areas, primitive/environmental and equestrian camping areas, non-motorized trails, and interpretive elements mixed with open space and natural settings.	Minimal development includes primitive roads and parking/staging areas, primitive/environmental camping areas (if feasible), non-motorized trails, and interpretive elements mixed with open space and natural settings.	Same as Sensitive Resources Zone	Same as Sensitive Resources Zone
Visitor Experiences:	Moderate to highest intensity of visitor use. Moderate contact with others.	Moderate to low-level use and contact with others and some opportunities for quiet and solitude.	Low-level use, minimal contact with others, opportunities for quiet and solitude. Visitors will have maximum opportunity to experience nature's sights, smells, and sounds.	Same as Sensitive Resources Zone	Same as Sensitive Resources Zone
Time of Use:	Day Use; Overnight use in campground.	Day Use; Overnight use in designated primitive/environmental and equestrian camping areas.	Day Use; Overnight use in designated primitive/environmental camping areas (if feasible).	Same as Sensitive Resources Zone	Same as Sensitive Resources Zone
Typical Visitor Activities/Uses:	Diverse visitor-use opportunities, including enjoying scenic views; picnicking; accessing trailheads for hiking and horseback riding; biking; acquiring Park information (e.g., maps, services); partaking in educational programs and interpretive opportunities; self-guided driving tours; and individual or group camping.	Enjoying scenic views; primitive/environmental and equestrian camping; hiking, biking, horseback riding; interpretive opportunities; and self-guided driving tours.	Enjoy scenic views; hiking, biking and horseback riding; interpretive opportunities; self-guided driving tours; and, if feasible, primitive/environmental and equestrian camping.	Enjoy scenic views; hiking, biking and horseback riding; interpretive opportunities; self-guided driving tours; and, if feasible, primitive/environmental camping.	Same as Cultural Preserve
Range of Appropriate Facilities:	Campground; visitor center; campfire center; park operations facilities; vehicle access roads; day-use parking and picnic areas; trailheads; parking/staging areas for hiking, biking, and	"Dry" (no water or other developed facilities) primitive/environmental and equestrian camping areas; primitive roads; primitive trailhead/scenic vista parking and picnic areas; non-	"Dry" (no water or other developed facilities) primitive/environmental and equestrian camping areas (to be determined by Park staff and	"Dry" (no water or other developed facilities) primitive/environmental camping areas (to be determined by Park staff and resource specialists); primitive roads;	Same as Sensitive Resources Zone

Management Zone:	Focused Use	Limited Use	Sensitive Resources	Cultural Preserve	Natural Preserve
	equestrian use; non-motorized trails; primitive roads; and interpretive/educational elements.	motorized trails; and interpretive/educational elements.	resource specialists); primitive roads; primitive trailhead/scenic vista parking and picnic areas; non-motorized trails; and interpretive/educational elements.	primitive trailhead/scenic vista parking and picnic areas; non-motorized trails; and interpretive/educational elements.	
Camping*:	Individual and group camping allowed in the developed campground with primitive campsites and minimal facilities.	Primitive/environmental and equestrian camping in designated areas.	Primitive/environmental and equestrian camping in designated areas, if feasible (to be determined by Park staff and resource specialists).	Primitive/environmental camping in designated areas, if feasible (to be determined by Park staff and resource specialists)	Same as Cultural Preserve
Hiking*:	Allowed throughout this zone	Same as Focused Use Zone	Same as Focused Use Zone	Allowed on roads and trails	Same as Cultural Preserve
Horseback Riding*:	Allowed on designated roads and trails	Same as Focused Use Zone	Same as Focused Use Zone	Same as Focused Use Zone	Same as Focused Use Zone
Biking*:	Allowed on designated roads	Same as Focused Use Zone	Same as Focused Use Zone	Not allowed on unpaved roads in preserves. Biking is allowed on primitive roads, which are outside preserve boundaries (see Section 4.4.4 – Cultural and Natural Preserves for more information.)	Same as Cultural Preserve
Street-Legal Vehicle Touring*:	Allowed on designated roads	Same as Focused Use Zone	Same as Focused Use Zone	Not allowed in preserves. Street-legal vehicle touring is allowed on designated roads, which are outside preserve boundaries (see Section 4.4.4 – Cultural and Natural Preserves for more information)	Same as Cultural Preserve
Non-Street Legal Off-Highway Vehicles (OHVs)*:	Only allowed in the Ricardo Campground and on designated connectivity roads to adjoining OHV riding areas (see Section 4.5.1.1 – Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park)	Same as Focused Use Zone	Same as Focused Use Zone	Not allowed in preserves. Non-street legal OHVs are only allowed on designated connectivity roads to adjoining OHV riding areas (see Section 4.5.1.1 – Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park), which are outside preserve boundaries (see Section 4.4.4 – Cultural and Natural Preserves for more information)	Same as Cultural Preserve
Academic/Scientific Research, Filming*	Permit required	Same as Focused Use Zone	Same as Focused Use Zone	Same as Focused Zone	Same as Focused Zone

* Recreational use of specific trails and roads may be modified through Superintendent Orders and Change In Use due to concerns such as safety and impacts to sensitive resources.

4.4.1 Focused Use Management Zone

This management zone consists of areas receiving the highest intensity of visitor use. Visitors will have the opportunity to enjoy and appreciate natural, scenic, and cultural settings with a moderate level of contact with others. The area may have a moderate level of use.

The Focused Use Management Zone is managed for high-intensity recreational experiences and maintained to protect the natural character, including sensitive watersheds, wetlands, and creeks. Visitor use opportunities will be most diverse within this zone. Activities may include group and individual camping in designated campsites, hiking throughout the zone, horseback riding on designated roads and trails, biking on designated roads, and participation in interpretive programs. Stargazing is a favorite activity of many Park visitors due to the dark night sky.

Visitor facilities, including primitive campsites, each with a fire pit and picnic table, in a developed campground with pit/vault toilets and potable tap water, as well as a visitor center and campfire center are provided. Day-use parking and picnic areas, trailheads, non-motorized trails, parking/staging areas for hiking, biking and equestrian use, and interpretive elements such as signs and panels that orient and educate visitors on natural/historical features are also provided in this zone. Park operations facilities and structures are in this zone, including administrative, public safety, and maintenance offices; staff housing; and maintenance yard. Opportunities for natural, historic, cultural, outdoor education, and recreation programs will be allowed. However, a permit will be required for all academic and scientific research, as will the limited filming activities allowed within the zone. When recreation activities require the use of large equipment (e.g., Recreational Vehicles [RVs], trailers), this equipment will be allowed within designated day-use parking/staging and camping areas only.

Street-legal vehicles are allowed on designated primitive roads for low-speed, self-guided driving tours. Non-street-legal off-highway vehicles (OHVs) are only allowed on designated ingress and egress connectivity roads identified in ***Section 4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park***. Vehicle use is intended for visitors' access, enjoyment, and inspiration of primary resource values. However, should this activity, or any others, significantly impair or detract from the natural setting or quality of Park uses determined to be of primary importance, the activity will be altered, limited, or discontinued. Roads and trails may be developed, improved, re-routed or closed as necessary to protect sensitive resources.

4.4.2 Limited Use Management Zone

The Limited Use Management Zone allows visitors to experience the natural environment setting with a moderate to low level of use and contact with others and some opportunities for quiet and solitude. This management zone is managed to balance recreation mixed with open space and natural settings and the protection of resources. Facilities may include non-motorized trails, parking/staging areas for hiking, biking, and equestrian use, and interpretive elements such as minimal signage that educates and orients visitors to scenic vista points and natural/historical features. Primitive scenic vista or trailhead parking areas may include picnic tables and trash cans. This management zone may also include designated "dry" (no water or other developed facilities) primitive/environmental and equestrian camping areas. Opportunities for natural, historic, cultural, outdoor education, and recreation programs will be allowed within the zone However, a permit will be required for all academic and scientific research, as will the limited filming activities allowed within the zone.

Camping is allowed in designated primitive camping areas. Hiking is allowed throughout this zone, biking is allowed on designated primitive roads, and horseback riding is allowed on designated primitive roads and trails. When recreation activities require the use of large equipment (e.g., RVs, trailers), this equipment will only be allowed within designated parking/staging and camping areas. Street-legal vehicles are only allowed on designated primitive roads for low-speed, self-guided driving tours. Non-street-legal OHVs are only allowed on designated ingress and egress connectivity roads identified in ***Section 4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park***. Vehicle use is intended for visitors' access, enjoyment, and inspiration of primary resource values. However, should this activity, or any others, significantly impair or detract from the natural setting or quality of park uses determined to be of primary importance, the activity will be altered, limited, or discontinued. Primitive roads and trails may be developed, improved, maintained, re-routed, or closed as necessary to protect sensitive resources.

Trailhead in Last Chance Canyon area

4.4.3 Sensitive Resources Management Zone

The Sensitive Resources Management Zone protects sensitive resources, including the previously designated Red Rock Canyon historic mining district. Visitors will experience low-level use, offering minimal contact with others and maximum opportunities for solitude and tranquility. As an area of low-level use, visitors will also have the full opportunity to experience nature's sights, smells, and sounds. The Sensitive Resource Management Zone is managed to maintain and protect the natural character, including the conditions of solitude, biological diversity, and cultural resources.

Facilities may include non-motorized trails, parking/staging areas for hiking, biking, and equestrian use, and interpretive elements such as minimal signage that educates and orients visitors to scenic vista points and natural/historical features. Primitive scenic vista or trailhead parking areas may include picnic tables and trash cans. This management zone may also include designated "dry" (no water or other developed facilities) primitive/environmental and equestrian camping areas, if feasible (to be determined by Park staff and resources specialists). Opportunities for natural, historic, cultural, outdoor education, and recreation programs will be allowed within the zone However, a permit will be required for all academic and scientific research, as will the limited filming activities allowed within the zone

Camping is allowed in designated primitive camping areas. Hiking is allowed throughout this zone, biking is allowed on designated primitive roads, and horseback riding is allowed on designated primitive roads and trails. When recreation activities require the use of large equipment (e.g., RVs, trailers), this equipment will only be allowed within designated parking/staging and camping areas. Street-legal vehicles are only allowed on designated primitive roads for low-speed, self-guided driving tours. Non-street-legal OHVs are only allowed on designated ingress and egress connectivity roads identified in ***Section 4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park***. Vehicle use is intended for visitors' access, enjoyment, and inspiration of primary resource values. However, should this

activity, or any others, significantly impair or detract from the natural setting or quality of park uses determined to be of primary importance, the activity will be altered, limited, or discontinued. Primitive roads and trails may be developed, improved, maintained, re-routed, or closed as necessary to protect sensitive resources.

Riparian habitat in the Last Chance Canyon Natural Preserve

4.4.4 Cultural and Natural Preserves

Cultural and natural preserves contain a high concentration of significant cultural and natural resources, respectively, and focus on preserving, protecting, and interpreting these resources. Hiking and horseback riding are only allowed on designated roads and trails in cultural and natural preserves.

Motor vehicles are not allowed in cultural and natural preserves pursuant to PRC Section 5001.8 and Title 14, Division 3, Chapter 2, Section 4351 of the California Code of Regulations (CCR), which prohibits the operation of any type of vehicle, motorized equipment, motorboats, mechanical transport, and aircraft in cultural or natural preserves except as authorized by the Director of State Parks for specific management needs (see ***Section 4.5.1 Laws, Regulations, and Policies for Motorized Vehicles, Roads, and Trails***). Additionally, bikes are only allowed on paved roads in cultural and natural preserves (State Parks Recreation Commission Policy IV-2).

However, boundaries for the Park's existing and proposed cultural and natural preserves are delineated not to include or affect designated primitive roads for motorized vehicle and bike use. Therefore, the preserve boundaries will be located 25 feet from the centerline (50 feet total) of designated primitive roads or to the right-of-way in the case of highways or other paved roads. Non-street-legal OHVs are only allowed on designated ingress and egress connectivity roads identified in ***Section 4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park***. Vehicle use is intended for visitors' access, enjoyment, and

inspiration of primary resource values. However, should this activity, or any others, significantly impair or detract from the natural setting or quality of park uses determined to be of primary importance, the activity will be altered, limited, or discontinued. Primitive roads and trails may be developed, improved, maintained, re-routed, or closed as necessary to protect sensitive resources.

Primitive scenic vista and trailhead parking areas are allowed in this zone and may include picnic tables and trash cans. Interpretive elements may include minimal signage that educates and orients visitors to scenic vista points and natural/historical features. Other potential facilities include designated “dry” (no water or other developed facilities) primitive/environmental camping areas that are consistent with protecting sensitive resources. Opportunities for natural, historic, cultural, outdoor education, and recreation programs will be allowed within the zone. However, a permit will be required for all academic and scientific research, as will the limited filming activities allowed within the zone. When recreation activities require the use of large equipment (e.g., trailers), this equipment will be allowed within designated parking/staging areas only.

The cultural and natural preserve zones are unique; however, some lands within the preserves remain encumbered by mining claims. State Parks will be responsible for managing the surface of the entire Park lands at a minimum and consistent with state park classification, regardless of ownership and recognizing the legitimate rights of the mining claim holders, including ingress and egress to unpatented claims, insofar as authorized by federal mining laws. In the case of the natural and cultural preserves, those lands encumbered by mining claims will automatically become a part of the designated preserve upon abandonment or retirement of the claim, reclamation, removal of encumbrances, and transfer of ownership to State Parks.

Designating preserves requires approval by the State Park and Recreation Commission.

4.4.4.1 Cultural Preserves in Red Rock Canyon State Park

As part of this planning process and based upon the significance of the cultural resources in the Last Chance Canyon, Nightmare Gulch, and Black Rock Canyon areas, the subunit classification of a cultural preserve is being proposed in these locations (see Figure 4-1). The cultural preserve subunit provides additional protection and focused management for a significant cultural resource area of a park.

Last Chance Canyon Cultural Preserve

The 2,170-acre Last Chance Canyon Cultural Preserve is being established in the northeast corner of the Park to heighten the protection and interpretation of this distinct area of outstanding cultural interest. This area contains a wide variety of cultural resources, including:

- A large concentration of Native American sites (46 recorded sites), some dating to over 4,000 years ago.
- A portion of the Last Chance Canyon Archaeological District within the Park. This culturally significant archaeological district is listed on the National Register of Historic Places (NRHP).
- Several petroglyph and pictograph (rock art) sites. Knight (2007) notes: "The sites in the various drainages feeding into middle Last Chance Canyon…are the most southerly concentrations of petroglyphs … in this part of California."
- Tribal cultural resources, sacred and ceremonial areas, and other traditional cultural places are important to the Kawaiisu and the other tribes of this area.
- Twenty-eight historic mining sites and camps. These are part of the potentially NRHP- or California Register of Historical Resources (CRHR)-eligible Red Rock Canyon historic mining district.

Historic mining site in the Last Chance Canyon Cultural Preserve

Black Rock Canyon Cultural Preserve

A 299-acre Black Rock Canyon Cultural Preserve is being established between SR 14 and Black Rock Canyon Road to heighten the protection and interpretation of this distinct area of outstanding cultural interest, which includes:

- An important rock art/cupule site described as "unique in the configuration of the pecked elements" and as a probable ritual location (Sampson 2009).
- A large area of stone tool manufacturing, including two adjacent lithic processing and procurement sites that encompass nearly 100 acres. The

larger site was noted to contain dense concentrations of flaked chert debitage resulting from the manufacture of "amorphous/incipient bifacial blanks" Flenniken (2000). The stone raw material acquired here was used on a region-wide basis.

- A concentration of recorded archaeological sites that covers over half of the preserves' examined area.

Nightmare Gulch Cultural Preserve

An 878-acre cultural preserve is being established in the Nightmare Gulch region of the Park to heighten the protection and interpretation of this distinct area of outstanding cultural interest, which includes:

- A high concentration of Native American sites within the areas of the preserve that have been examined. The 18 documented archaeological sites cover approximately 300 acres.
- An ancient (8,000-10,000 years ago) archaeological site, possibly the oldest site in the Park.
- The only known geoglyph/ground figure (intaglio) in Kern County. An important ceremonial location.
- The largest single archaeological site (244 acres) in the Park.

Bifacial rhyolite blade point, Nightmare Gulch Cultural Preserve

4.4.4.2 Natural Preserves in Red Rock Canyon State Park

As part of this planning process and based on the significance of the natural resources in the Last Chance Canyon and Scenic Canyon-Nightmare Gulch areas, the subunit classification of a natural preserve is being proposed in these locations (see

Figure 4-1). The natural preserve subunit classification provides additional protection and focused management for a significant natural resource area of a park.

The Last Chance Canyon Natural Preserve and the Scenic Canyon – Nightmare Gulch Natural Preserve are instrumental in conserving the region's significant natural resources. These land designations protect native plant communities, including rare and endangered plant and animal species, and the supporting ecosystems. More information on this topic can be found in ***Chapter 2 – Existing Conditions*** and ***Appendix B – Biological Resources Report.***

Last Chance Canyon's aesthetic rock formations are awe-inspiring. The special nature of the geologic carvings, the erosional processes displayed, and the combination of colorful contrasting sedimentary and volcanic sequences within the preserves are unique in California. The stratigraphy exposed in the preserves represents some of California's most important fossil beds. These scenic formations can be fragile and should be protected for future generations.

In addition to the recovery of fossil bone, the preserves contain fossil footprint trackways left in situ. Highly significant fossil occurrences are found throughout the canyons within the Park. The richness and diversity of the fossil heritage of Red Rock Canyon State Park have been unmatched in California for its principal time. The preserves are key elements for protecting this heritage for future generations.

Fossilized rhinoceros jaw on exhibit at the Ricardo Visitor Center

Last Chance Canyon Natural Preserve

Last Chance Canyon Natural Preserve, riparian area

The canyon walls bordering Last Chance Canyon are characterized by an extraordinary array of colors and complex textures. The Last Chance Canyon Preserve contains at least one stratigraphic series of camel and other fossilized footprints in the Cudahy Camp formation deposits dating between 15 and 18 million years ago.

The intricately eroded, steep-walled canyon cliffs in the Last Chance Canyon Natural and Cultural preserves provide excellent habitat for various nesting raptors. Golden eagle aeries have been spotted on ledges within the Last Chance Canyon Preserve, indicating the suitability of this habitat.

Desert riparian areas are among the rarest or most threatened of all habitats in California. The wetland and riparian area found in the Last Chance Canyon Natural Preserve drainage comprises the only stream riparian area within the Park, providing much-needed surface water, structure, and processes for the desert ecosystem. This drainage is critical to the region's ecological health and supports many of the Park's sensitive species.

Although the localized and isolated nature of these environments may contribute to the development of biodiversity, these characteristics are also a major reason these environments and the species that depend on them are so vulnerable to human disturbance or extirpation. The concentrated visitor uses, expanding impacts (such as camping), adjacent land-use effects on water quality and quantity, exotic species invasion, and random environmental changes may have dramatic and devastating consequences for these environments, especially the less mobile species. Once damaged, desert environments are challenging and slow to restore.

The Last Chance Canyon Natural Preserve complements and serves to accomplish the intent of other California legislation and State Parks directives aimed at protecting the state's diminishing wetland habitats, including:

- The Keene-Nejedly California Wetlands Preservation Act (1976), PRC Division 5, Chapter 7:
- Section 5811 - discusses findings regarding the need for protection & restoration
- Section 5814 - directs State Parks
- Section 5816 - requires State Parks to "give particular recognition to opportunities for protecting and preserving wetlands lying within, or adjacent to, existing units of the state park system"
- California Riparian Habitat Conservation Act (1991), CDFW Code Chapter 4:
- Section 1386 - defines wetlands as a "valuable and finite resource"
- Section 1387 - defines goals for California
- Section 1389 - names State Parks as one of the entities where "preservation and enhancement of riparian habitat shall be a primary concern"

Scenic Canyon – Nightmare Gulch Natural Preserve

Scenic Canyon-Nightmare Gulch Cultural Preserve

Nightmare Gulch represents the best fossil-producing exposure spanning the oldest period of local fossil history. There are no other consistent fossil-bearing strata of similar age in the Park.

Both Golden Eagle and Prairie Falcon have been documented as utilizing ideal ledges high on the steep walls of Scenic Canyon as nesting habitats. Documentation of such utilization in 1985 and 1986 led the federal government to establish a bird of prey closure annually from February 1st to July 1st. This closure provides the solitude necessary for these two species to accomplish the highest degree of nesting success possible. When in effect, the closure prohibits all human entry

This General Plan establishes the Scenic Canyon – Nightmare Gulch Natural Preserve that was recommended in the Park's original 1982 General Plan. Over 50 percent of Nightmare Gulch overlaps with the Birds of Prey Closure and is now contained within

the Scenic Canyon - Nightmare Gulch Natural Preserve. This natural preserve also partially overlaps the Nightmare Gulch Cultural Preserve.

Hagen Canyon Natural Preserve and Red Cliffs Natural Preserve

The Hagen Canyon Natural Preserve is a 1,147-acre subunit of the Park that was classified as a natural preserve in 1974. The Red Cliffs Natural Preserve is a 376-acre subunit of the Park also was classified as a natural preserve in 1974. Both preserves contain non-preserve "islands." These areas of will be incorporated into the existing preserves to improve Park management efficiencies.

4.4.4.3 Compound Subunit Classifications – Description and Management Objectives

In some cases, natural and cultural preserve subunit classifications are compounded (overlap each other), such as the Scenic Canyon-Nightmare Gulch Natural Preserve and the Nightmare Gulch Cultural Preserve. These subunits overlap because:

- Significant natural and cultural resources occupy the same specific geographic location within the Park.
- These significant natural and cultural resources and visitor experience values are equally important, respected, and worthy of the level of recognition and protection afforded by these subunit classifications while being compatible with the land use management intent for these specific areas of the Park.

The resources justifying the cultural and natural preserve designations may be similar but slightly different management objectives. Cultural and natural resources are not inherently hierarchical and therefore are needed to justify the broad range of values to be managed within these specific land use areas.

4.5 Road and Trail Network

4.5.1 Laws, Regulations, and Policies for Motorized Vehicles, Roads, and Trails

The Park road and trail network provides access to recreational and scenic resources and allows efficient park operations and emergency response and access. Most roads within the Park (except for SR 14, which bisects the Park, and Abbott Drive) are maintained as native surface roads (i.e., primitive roads).

The Park is classified as a State Park and contains natural and cultural preserves. The following laws and policies pertain to motorized vehicles, roads, and trail use within the State Parks System, including state parks, natural preserves and cultural preserves.

PRC Section 5001.8. Use of Motor Vehicles in Units of the State Park System states:

(a) The use of motor vehicles in units of the state park system is subject to the following limitations:

(1) In state wildernesses, natural preserves, and cultural preserves, use is prohibited.

(2) In state parks, state reserves, state beaches, wayside campgrounds, and historical units, use is confined to paved areas and other areas specifically designated and maintained for normal ingress, egress, and parking.

(3) In state recreation areas, use is confined to specifically designated and maintained roads and trails.

(b) The use of motor vehicles on lands in the state vehicular recreation areas is confined to areas and routes designated for that purpose.

The State Park and Recreation Commission Policy II.7 Primitive Roads states:

> Primitive roads in units of the State Park System are ingress and egress routes established by the State Parks to make certain natural or historical features more easily available for enjoyment by park visitors.
>
> Title 14, Division 3, [Chapter 2, Section 4351] of the California Code of Regulations prohibits the operation of any type of vehicle in State Wildernesses, Cultural Preserves, or Natural Preserves.
>
> Where vehicles are not expressly prohibited, visitors using primitive roads are authorized to do so only for the purposes for which such routes were established. Visitors shall keep their vehicles on the designated routes at all times, shall operate their vehicles so as to minimize the occurrence of both noise and dust, and shall use these primitive roads in ways that do not detract from the enjoyment of the natural or historical features by other visitors who may be in the area.
>
> In existing units of the State Park System for which general plans have been approved prior to the adoption of this policy, proposals for primitive roads shall be submitted by the Director to the Commission for approval. New or revised general plans that are submitted to the Commission shall indicate primitive roads as recommended by the Director, and approval of such plans by the Commission shall be evidence of approval for the primitive roads included.

Title 14, Division 3, Chapter 2, Section 4351 of the CCR prohibits the operation of any type of vehicle, motorized equipment, motorboats, mechanical transport, and aircraft in state wildernesses or cultural or natural preserves except as authorized by the Director of State Parks for specific management needs:

(a) Except where it is necessary in an emergency within the wilderness area, cultural preserves, and natural preserves, there shall be no use of motorized vehicles, motorized equipment, or motorboats, no other form of mechanical transport (not withstanding Section 4360(a)), and no permanent structure or installation within any state wilderness, cultural preserve, or natural preserve, no landing or hovering of aircraft, no flying of aircraft lower than 2,000 feet above the ground in wilderness except to the extent the Director of the Department of Parks and Recreation, or his/her designee makes the following findings in writing ("Findings"):

(1) the use of motorized vehicles, motorized equipment, or motorboats, the landing or hovering of aircraft, or flying of aircraft lower than 2,000 feet above the ground in wilderness, the use of any other form of mechanical transport (not withstanding Section 4360(a)), or the placement of a temporary or permanent structure or installation must meet a minimum management requirement. A minimum management requirement is defined as the minimum management actions that are necessary to administer the area for the purposes of this Chapter as defined in Public Resources Code Sections 5093.36, 5019.71 and 5019.74.

(2) the approach proposed to perform the minimum management requirement will make use of the "minimum tool" to best preserve the wilderness, cultural or natural values under the given circumstances. The "minimum tool" is defined as "the least intrusive tool, equipment, device, regulation, action, or practice that will achieve the minimum management requirements."

(3) the result of the work will be a condition as near as natural as possible and shall leave no permanent trace or permanent installation or structure except those necessary to protect the cultural and natural resources. Temporary structures including but not limited to signage and fencing are not considered permanent structures.

(b) Upon making the Findings required in section 4351 (a), the Director or designee, may authorize officers, employees or agents of the Department of Parks and Recreation to occupy and use a particular state wilderness, cultural preserve, or natural preserve within the California State Park System on a case-by-case basis to conduct a minimum management requirement.

(c) Prior to the Director or designee, making the Findings, Department of Parks and Recreation staff shall make a recommendation to the Director or designee, on the proposed Findings. The recommendation shall provide sufficient background, analysis, data and research to allow the Director or

designee, to fairly and objectively evaluate the material considerations for the Findings. The staff recommendation shall include:

(1) an analysis of whether a wilderness, cultural resource or natural resource management need exists;
(2) a description of the proposed minimum management requirement and the minimum tools to be used, including when, where and the time frame for the proposed action;
(3) the alternative approaches considered, including a discussion of the pros and cons of the alternatives; and
(4) any measures that minimize the effects of the proposed activities.

(d) The process set forth in California Code of Regulations section 4351.1 shall be used only to evaluate and arrive at a project description and a proposed action and shall not replace or supplant any required analysis under the California Environmental Quality Act (CEQA) and Public Resources Code Section 5024.

Title 14, Division 3, Chapter 1, Section 4325 of the CCR restricts off-trail use in natural and cultural preserves and reserves:

(a) No person shall leave trails or board walks in Natural Preserves, Cultural Preserves, State Cultural Reserves, or State Natural Reserves within the California State Park System except:

(1) on routes of travel that are identified in a general plan or management plan;

(2) in an area that has been designated open for off-trail use by the park unit's general plan or management plan;

(3) or, on a route of travel or in an area that the District Superintendent designates open for off-trail use by posted order after determining that off-trail use is important for public access and where it has been determined that impacts to the resources for which the park unit was established will not be significant.

(b) Section (a) shall not restrict Department employees or their agents for the purpose of management, including but not limited to research, enforcement, rescue, or educational programs.

4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park

The California Vehicle Code (CVC), beginning with Section 38006, defines off-highway motor vehicles (i.e., OHVs):

> As used in this division, an "off-highway motor vehicle" is any of the following:
>
> (a) A motor vehicle is subject to the provisions of subdivision (a) of Section 38010.
> (b) A motor vehicle registered under Section 4000, when such motor vehicle is operated on land to which this division has application.
>
> (c) A motor vehicle owned or operated by a nonresident of this state, whether or not such motor vehicle is identified or registered in a foreign jurisdiction when such motor vehicle is operated on lands to which this division has application.

CVC Section 38012 further defines OHV vehicle registration:

> (a) As used in this division, "off-highway motor vehicle subject to identification" means a motor vehicle subject to subdivision (a) of Section 38010.
> (b) As used in this division, "off-highway motor vehicle" includes, but is not limited to, the following:
>
> (1) A motorcycle or motor-driven cycle, except for any motorcycle that is eligible for a special transportation identification device issued pursuant to Section 38088.
>
> (2) A snowmobile or other vehicle designed to travel over snow or ice, as defined in Section 557.
>
> (3) A motor vehicle is commonly referred to as a sand buggy, dune buggy, or all-terrain vehicle.
>
> (4) A motor vehicle is commonly referred to as a jeep.
>
> (5) A recreational off-highway vehicle as defined in Section 500.

State Park and Recreation Commission Policy IV.1 Off-Highway Vehicles in the State Park System (amended May 4, 1994) states:

> It is the policy of this Commission that motorized vehicles must be highway licensed to be permitted on primitive roads or designated routes of travel in any units of the State Park System unless designated as Off-Road Vehicular

Recreation Area or on specific areas authorized by the general plan. (portion of policy regarding snowmobiles is excluded)

State park roads are considered highways per CVC Sections 360 and 590. Therefore, only vehicles that meet the requirements to operate on highways, including street legal OHVs, are allowed on designated primitive roads within the Park. However, non-street legal OHVs will be allowed on designated connectivity roads in the Park pursuant to the below.

This General Plan proposes to authorize non-street-legal vehicles registered as off-highway motor vehicles per the CVC on Sierra View Road and Red Rock Wash per CVC Section 38026, Designating Highways: Combined Use:

(a) In addition to Section 38025 and after complying with subdivision (c) of this section, if a local authority, an agency of the federal government, or the Director of Parks and Recreation finds that a highway, or a portion of a highway, under the jurisdiction of the authority, agency, or the director, as the case may be, is located in a manner that provides a connecting link between off-highway motor vehicle trail segments, between an off-highway motor vehicle recreational use area and necessary service facilities, or between lodging facilities and an off-highway motor vehicle recreational facility and if it is found that the highway is designed and constructed so as to safely permit the use of regular vehicular traffic and also the driving of off-highway motor vehicles on that highway, the local authority, by resolution or ordinance, agency of the federal government, or the Director of Parks and Recreation, as the case may be, may designate that highway, or a portion of a highway, for combined use and shall prescribe rules and regulations therefor. A highway, or portion of a highway shall not be so designated for a distance of more than three miles, except as provided in Section 38026.1. A freeway shall not be designated under this section.

CVC Section 38026 allows State Parks to designate a section of a highway within a state park that provides a connecting link between OHV trail segments that meet certain distance requirements. Sierra View Road and Red Rock Wash will provide ingress and egress between the Ricardo Campground loop trail and Bureau of Land Management (BLM) OHV area routes and the Onyx Ranch SVRA, and between popular BLM OHV areas that adjoin the Park.

4.5.1.2 Electric Bicycle Definition and Allowable Use in Red Rock Canyon State Park

Electric bicycles are defined by CVC Section 312.5:

An "electric bicycle" is a bicycle equipped with fully operable pedals and an electric motor of less than 750 watts.

(1) A "class 1 electric bicycle," or "low-speed pedal-assisted electric bicycle," is a bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.
(2) A "class 2 electric bicycle," or "low-speed throttle-assisted electric bicycle," is a bicycle equipped with a motor that may be used exclusively to propel the bicycle and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour.
(3) A "class 3 electric bicycle," or "speed pedal-assisted electric bicycle," is a bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to assist when the bicycle reaches the speed of 28 miles per hour and equipped with a speedometer.

State Parks policy for electric bicycles, also known as e-bikes, states:

No person shall operate an e-bike in a park unit of the State Parks System, except on public roadways[4].

E-bike use on trails and nonpublic, controlled-access[5] roads shall be allowed only where designated by Superintendent's Order in the following park unit classifications:

- State Recreation Area
- State Vehicular Recreation Area

Regardless of park unit classification, e-bikes may be allowed on paved (asphalt or concrete) bike trails used for local or regional commuting where such designation (e.g., classification of e-bikes allowed) is consistent with e-bike designations of adjoining trails operated by other agencies.

Regardless of unit classification, upon issuance of a Superintendent's Order, class 1 e-bike may be allowed for research or demonstration purposes necessary to improve knowledge and understanding of potential issues related to e-bike use. E-bike designations for these purposes may only occur on trails and non-public access (controlled access) roads already designated for traditional (non-electric) bicycles or new routes constructed for test purposes.

[4] Public roadways are those roads open to public street-legal vehicles use
[5] Nonpublic, controlled-access roads are roads not open to vehicle use by the public but are occasionally driven by authorized vehicles for administrative or emergency purposes, and are typically open for public trail use. Typically referred to as fire roads, these roads are often gated to prevent vehicle access by the public

Requests for the use of e-bikes to provide access for people with disabilities shall follow Departmental Notice 2015-04, Other Power-Driven Mobility Devices.

E-bike use in park units other than SRA and SVRAs:

Class 1 e-bikes may be temporarily allowed by Superintendent's Order for use on trails and nonpublic, controlled-access roads for research and demonstration purposes.

Except for public roadways, class 2 or 3 e-bikes are not allowed.

Because e-bike use is allowed on public roadways (roads open to public street-legal vehicles) in a State Park, Class 1, 2, and 3 e-bikes are allowed on designated roads in the Park.

4.5.2 Changes to Routes since the 1982 Red Rock Canyon State Park General Plan

California Desert Conservation Area (CDCA) lands and the associated route network was transferred to the Park through the CDPA in 1994 (Figure 4-2). This transfer included approximately 68 miles of non-maintained dirt routes and trails in the Last Chance Canyon area.

Changes to motorized and non-motorized routes occurred in 2006 through a sustainability survey (Figure 4-3). More recent changes to routes were due to resource management protections (Figure 4-4). The existing Park route network is shown in Figure 4-5.

A Destination Analysis Methodology was used to analyze the Park's existing road network. The steps were as follows:

- Establish road network - BASELINE
- Identify roads needed for park operations - KEEP
- Identify roads that impact significant resources - DECOMMISSION
- Identify dangerous/hazardous roads – DECOMMISSION
- Identify roads that lead to key user destinations – KEEP
- Cluster analysis to identify redundant single-destination roads – DECOMMISSION
- Destination roads reconfigured as hiking trail – DECOMMISSION AND RECLASSIFY AS TRAIL (based on recommendations in the 1982 General Plan).

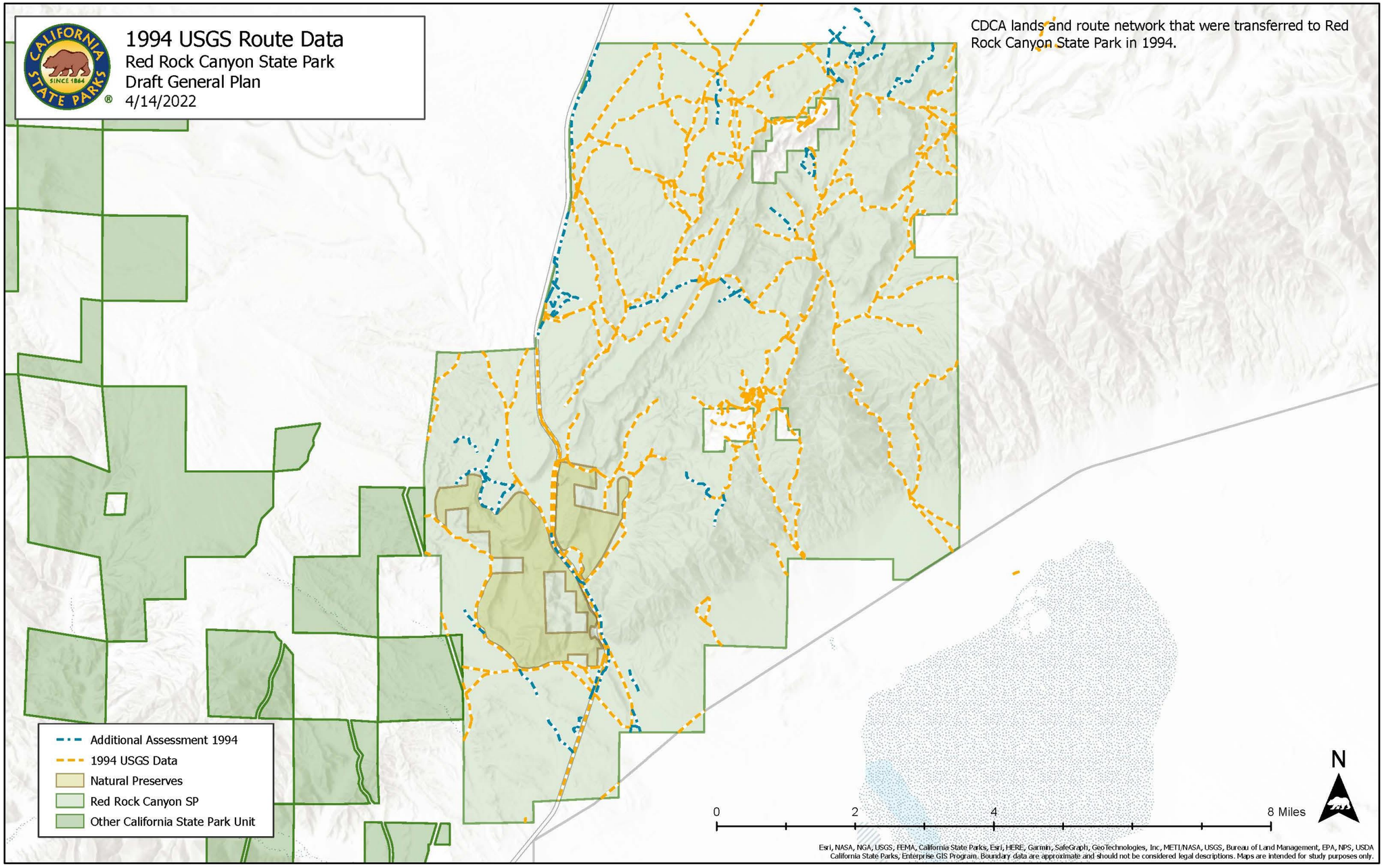


Figure 4-2. 1994 CDCA lands and route network transferred to the Park.

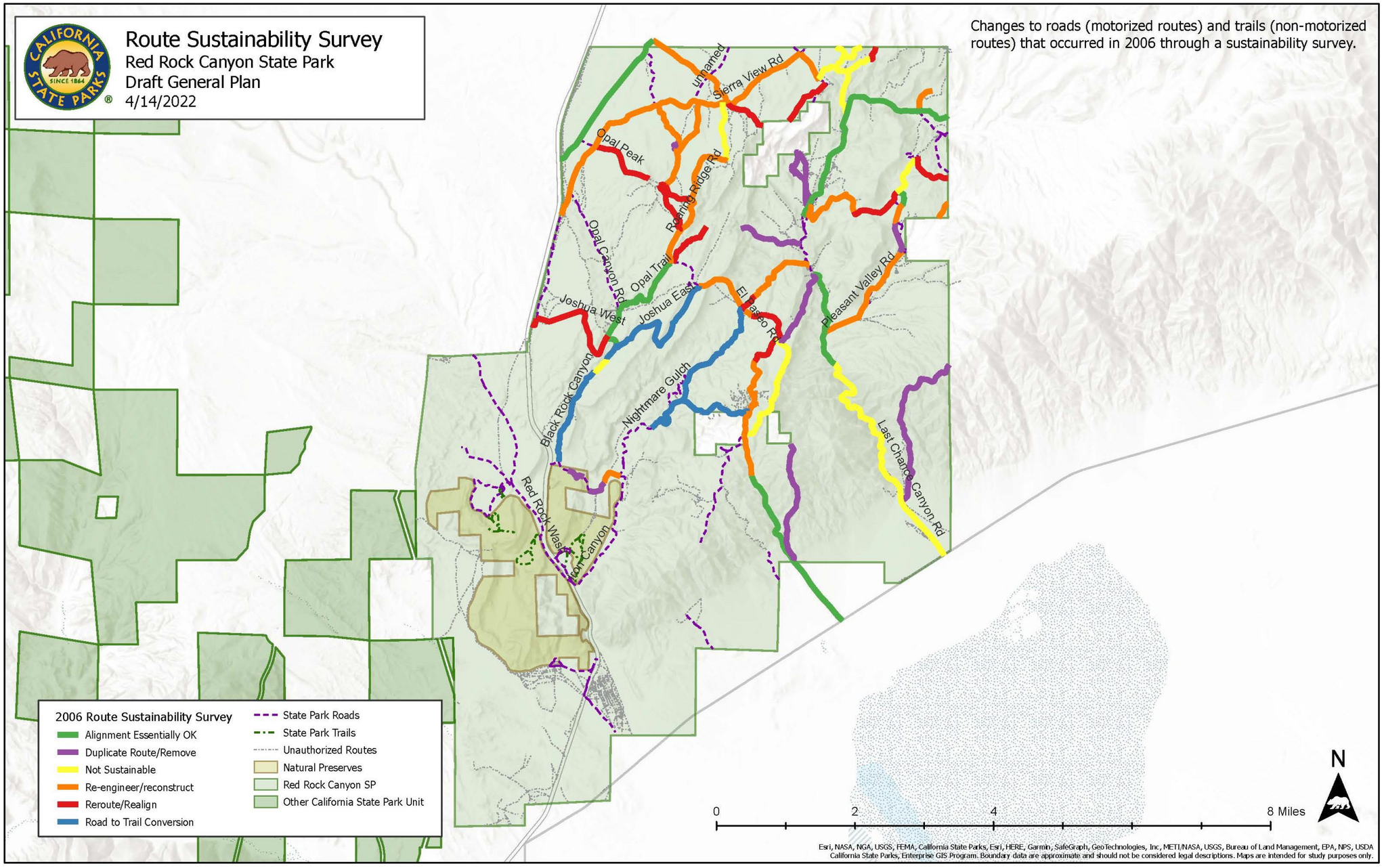


Figure 4-3. 2006 Route Sustainability Survey and Recommended Route Changes at the Park

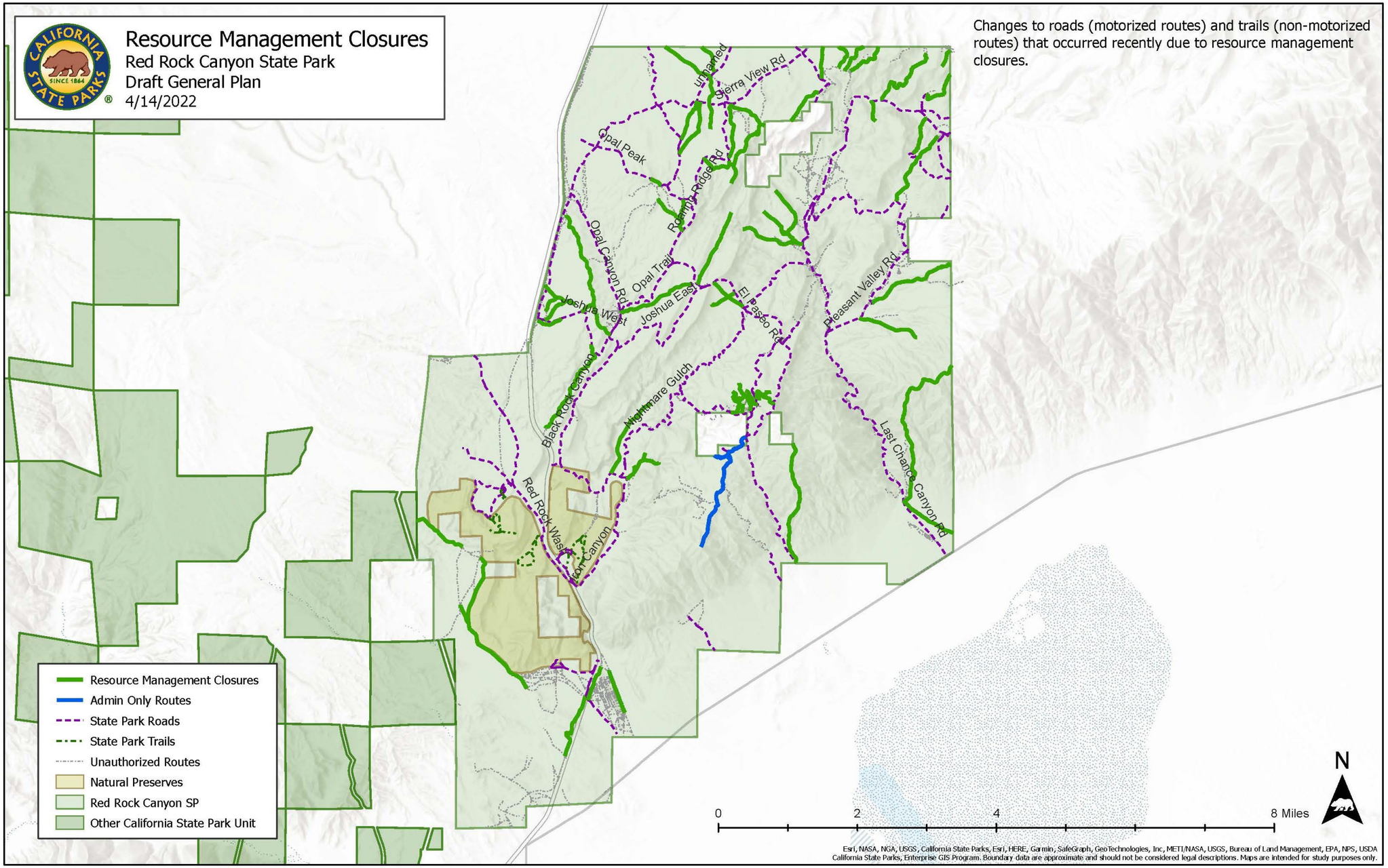
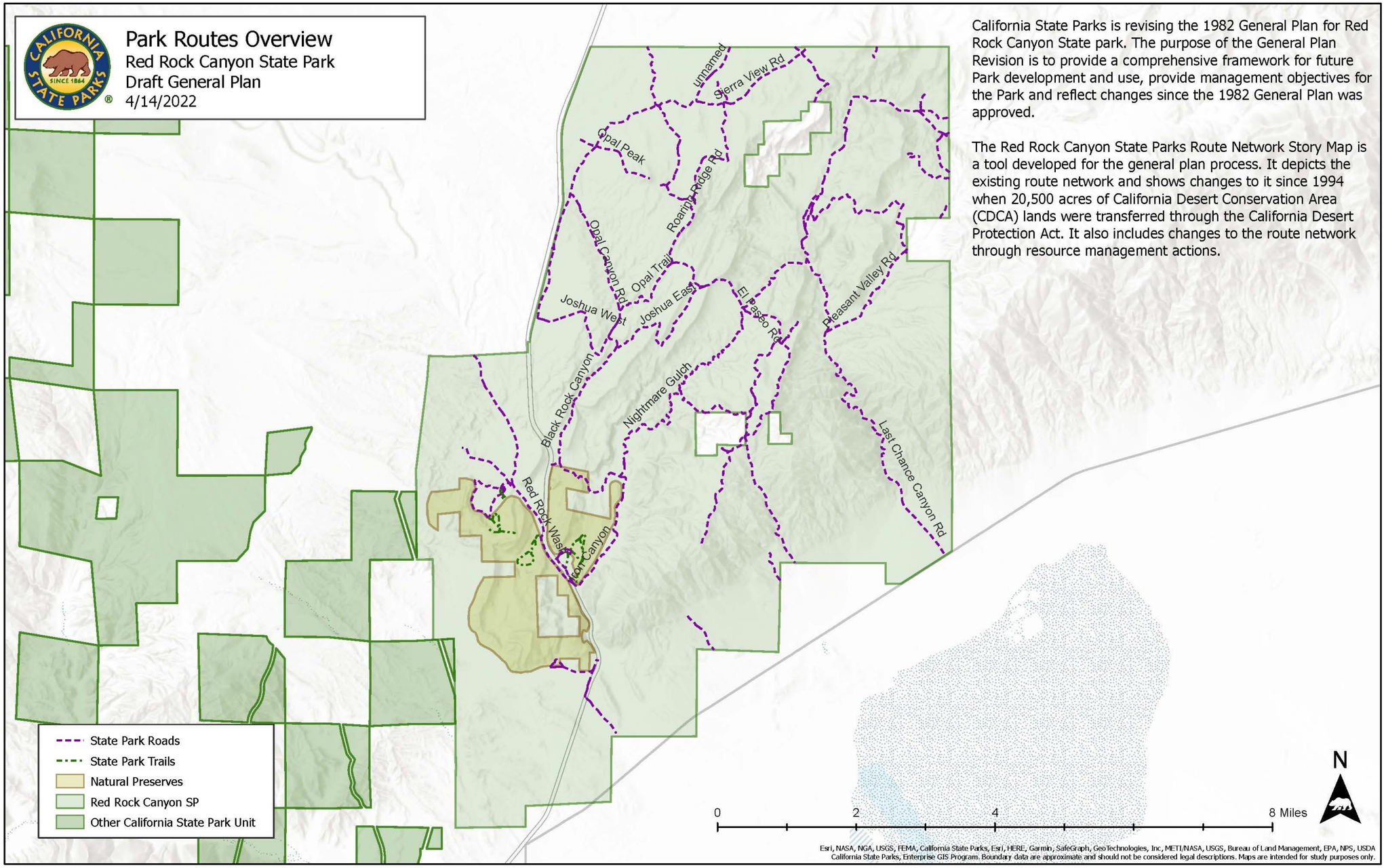


Figure 4-4. Routes Closed Recently for Resource Management



California State Parks is revising the 1982 General Plan for Red Rock Canyon State park. The purpose of the General Plan Revision is to provide a comprehensive framework for future Park development and use, provide management objectives for the Park and reflect changes since the 1982 General Plan was approved.

The Red Rock Canyon State Parks Route Network Story Map is a tool developed for the general plan process. It depicts the existing route network and shows changes to it since 1994 when 20,500 acres of California Desert Conservation Area (CDCA) lands were transferred through the California Desert Protection Act. It also includes changes to the route network through resource management actions.

Figure 4-5. Existing Route Network at the Park

4.5.3 General Plan Preferred Concept Route Changes

This General Plan will formally incorporate segments of the Last Chance Canyon addition primitive road system into the Park's overall designated primitive road system. The General Plan planning process evaluated all changes to roads, including location, closure, and conversion to trails or non-system (non-public) roads to ensure the retained roads were consistent with the Park classification and declaration of purpose. The evaluation identified roads needed for Park operations and those that lead to key user destinations, as well as roads that impacted significant resources, were dangerous/hazardous, or redundant single-destination roads. Some closed or decommissioned roads were also considered for reconfiguration as non-motorized trails. The primitive road system and trails proposed in this General Plan are necessary and relate directly to access and the enjoyment and inspiration of the Parks primary historical and natural resource values.

This section describes changes to roads and trails shown in Figure 4-1. The proposed route changes follow the laws, regulations, and policies described in ***Section 4.5.1***. This General Plan proposes the following:

1. Convert four primitive roads into non-motorized trails. These include:

   (a) Black Rock Canyon Road, which will be renamed Black Rock Canyon Trail,

   (b) El Paseo Road spur road, which will be renamed El Paseo Trail,

   (c) An approximate half-mile section of Last Chance Canyon Road near Cudahy Camp, which will be named the Last Chance Canyon Trail (see ***Section 4.5.3.2*** for detailed information), and

   (d) Nightmare Gulch (see ***Section 4.5.3.3*** for detailed information)

1. Convert the Roaring Ridge Road spur road to a non-system road.

2. Convert several short primitive routes in the Last Chance Canyon and one along Abbott Drive into non-system routes (see Figure 4-1).

3. Provide primitive roads that will allow non-street legal vehicles registered as OHVs to connect to OHV trails and riding areas outside the Park, including:

   (a) Red Rock Wash Road from the Ricardo Campground loop trail to the Dove Springs BLM OHV Area.

   (b) Sierra View Road connecting EP 465 to the Dove Springs BLM OHV Area.

4. Add two non-motorized primitive trails in the Hagen Canyon Natural Preserve (exact trail alignment to be determined by Park staff and resource specialists).

5. Add a non-motorized primitive trail in the Red Cliffs Natural Preserve connecting existing trails to Iron Canyon Road (exact trail alignment to be determined by Park staff and resource specialists).
6. Potentially add a hiking trail at the Donley day-use area.

4.5.3.1 Black Rock Canyon Road and El Paseo Road spur road

The General Plan proposes converting Black Rock Canyon Road to a trail because it is in an area with a high concentration of sensitive resources. The road bisects a proposed natural preserve and proposed cultural preserve. The El Paseo Road spur road runs parallel to El Paseo Road and is redundant. The spur road would be converted to a non-motorized trail and shortened to prevent Park visitors from entering private property.

4.5.3.2 Last Chance Canyon Road Near Cudahy Camp

State Parks identified an approximate one-half mile segment of Last Chance Canyon Road within the proposed Last Chance Canyon Natural Preserve as an environmentally and cultural resource-sensitive corridor during the General Plan planning process. Cudahy Camp, a historic area for past mining operations, is located along this segment and was also utilized by Native Americans for millennia.

A spring flows year-round at the northern end of the road segment and supports a dense array of riparian vegetation and sensitive species. As noted in ***Section 4.4.4.2 Natural Preserves in Red Rock Canyon State Park***, desert riparian areas are among the rarest or most threatened of all habitats in California, and it is the only stream riparian area in the Park.

In 2013, State Parks installed fencing in the Cudahy Camp area to redirect public vehicles away from the area. The barriers were required to protect natural and cultural resources from vehicles driving off the designated road. State Parks staff restored impacted areas once the fencing was erected. The restoration project encompassed the Cudahy Camp area and a small portion of Cudahy Creek Road.

<u>Alternative Route Assessments</u>

States Parks contracted with the California Geological Survey (CGS) in 2007 to evaluate alternatives to reroute Last Chance Canon Road to avoid the sensitive Cudahy Camp area. The goals of the assessment were to:

- Eliminate or minimize vehicular damage in the streambed portions of Last Chance Canyon containing riparian vegetation, and rehabilitate damaged streambed areas to natural conditions, allowing for natural processes to be reestablished.

- Establish a road reroute that will allow vehicles to travel efficiently from the southern portion of Last Chance Canyon to the northern portion of Last Chance Canyon, and then into BLM lands.
- Minimize long-term erosion and maintenance costs associated with maintaining roads in the canyon (Harris, 2007, p. 4)

CGS identified one alternative reroute to meet the above goals and allow continued vehicle travel through the area. State Parks realigned the road to avoid impacts on surface water and natural and cultural resources.

State Park's Southern Service Center also conducted a route assessment and evaluated road realignment alternatives in the Cudahy Camp area for this General Plan. However, due to significant natural and cultural resources in the area, fragile desert riparian habitat, steep topography, and erosion concerns, this General Plan proposes eliminating public vehicle use in the area altogether to avoid impacts on the riparian zone and cultural sites. Therefore, the approximate half-mile section of Last Chance Canyon Road will be converted into a non-motorized trail. Vehicles can still access the northern portion of Last Chance Canyon via Pleasant Valley Road and the Cudahy Camp Bypass.

4.5.3.3 Nightmare Gulch

On I 9, 2013, State Parks temporarily closed Nightmare Gulch's primitive road to vehicles per District Superintendent's Order No.: 900-13-003. This closure was necessary for State Parks staff and public safety and to protect natural and cultural resources per PRC Sections 5003 and 5008 and CCR Title 14, Sections 4301(I) and 4326. The closure was based on an analysis conducted by State Parks staff, including staff from the Off-Highway Motor Vehicle Recreation (OHMVR) Division. The primitive road poses a significant public safety hazard and negatively impacts natural and cultural resources. A large summer storm in 2013 washed out several large sections of the road, causing extreme drop-offs and dangerous conditions, making the road impassable for most vehicles traveling through Nightmare Gulch. Based on the analysis and environmental review (including archaeological sites or records of Native American places and features), State Parks chose to prohibit motorized recreation in this area.

In 2017, State Parks conducted resource inventories of the road's physical condition, existing natural resources, and cultural resources to assess if re-opening the road to vehicles is feasible, sustainable, or maintainable without significant negative impact on the area's resources. Consultants and State Parks environmental scientists conducted subsequent natural and cultural resource inventories and surveys for this General Plan.

The road assessment found public and State Parks staff safety concerns from unstable slopes, drainage areas, erosion, rockfall, and negative impacts to vegetation and habitat. Resource management surveys also found significant cultural and natural resources and

species within Nightmare Gulch that could be impacted by vehicle use. See ***Chapter 2 – Existing Conditions, Section 2.6 Significant Resources and Sections 4.4.4.1 and 4.4.4.2*** for more information about the studies and resources within Nightmare Gulch.

The General Plan proposes converting Nightmare Gulch's primitive road to a non-motorized trail. The trail traverses through the proposed Scenic Canyon-Nightmare Gulch Natural Preserve, Nightmare Gulch Cultural Preserve, and the Bird of Prey Closure, and will be restricted to pedestrian (e.g., hiker) use.

4.5.3.4 Roaring Ridge Road spur road and Other Non-System Routes

The Roaring Ridge Road spur road will be changed to a non-system road. Several other short primitive routes in Last Chance Canyon and one along Abbott Drive will be changed to non-system routes (shown on Figure 4-1) because they are redundant, impact sensitive resources or dead end. Non-system routes may be restored to native habitat.

4.5.3.5 Red Rock Wash and Sierra View Road

This General Plan proposes to authorize non-street-legal vehicles registered as off-highway motor vehicles per the CVC on Sierra View Road and Red Rock Wash per CVC Section 38026, Designating Highways: Combined Use. Sierra View Road and Red Rock Wash will provide ingress and egress between the Ricardo Campground loop trail and Bureau of Land Management (BLM) OHV area routes and the Onyx Ranch SVRA, and between popular BLM OHV areas that adjoin the Park (see ***Section 4.5.1.1*** for additional information).

4.5.3.6 Hagen Canyon and Red Cliffs Natural Preserves and Donley Trails

A new non-motorized primitive trail will connect Red Rooster to existing trails in the Hagen Canyon Natural Preserve day-use area and ultimately to the Ricardo Campground Complex (campground, visitor center, Park operations facilities and maintenance yard). A second non-motorized primitive trail will connect existing trails in the Hagen Canyon Natural Preserve day-use area to Red Rock Wash at the bridge going under SR 14 to Red Cliffs (exact trail alignment to be determined by Park staff and resource specialists per the Road and Trail Management Plan).

4.5.4 <u>Road Maintenance Work Limits</u>

The following work zones allow maintenance operations along Park roads and SR 14 through the Park.

- **Paved roads (e.g., SR 14, Red Rock-Randsburg Road, Abbott Drive):** 100 feet from the road's centerline (total of 200 feet in width) to provide a work zone for Caltrans, Kern County, and State Parks maintenance operations.
- **Roads in Focused Use Management Zones and Limited Use Management Zones:** 100 feet from the centerline of the road (total of 200 feet in width) to provide for road realignment or road and brush maintenance adjacent to the road as may be required.
- **Roads in Sensitive Use Management Zones, including Natural Preserves and Cultural Preserves:** 25 feet from the road's centerline (total of 50 feet in width) to provide road realignment or road and brush maintenance adjacent to the route as may be required.

4.6 Goals & Guidelines

4.6.1 Parkwide Goals and Guidelines

Laws, regulations, policies, and directives govern the general management of resources within the State Park System. The following parkwide goals and guidelines respond to existing issues identified in Chapter 3 and guide Park managers to manage significant Park resources and achieve its long-term vision. They are not management zone or area specific. "Goal" refers to an overall aim or intent toward which management will direct effort. "Guideline" refers to a broad set of parameters or strategies that provide direction for accomplishing the goal.

A few sections have over-arching goals that apply to several sub-sections, such as vegetation management, which includes native plant communities and sensitive plant species. Each sub-section will have guidelines for the over-arching goal and that specific sub-section. The following goals and guidelines address protecting, managing, and interpreting the Park's resources, providing recreation facilities and opportunities, and operating and maintaining the Park.

This section also incorporates goals and guidelines that are still applicable from the 1982 Red Rock Canyon State Park General Plan.

4.6.1.1 Visitor Experience and Recreation Opportunities

The public enjoys many different forms of recreational activities at the Park. These activities provide renewal, pleasure, relaxation, and adventure. For some, it means exploring the rugged desert environment; for others, it is simply the passive enjoyment of the natural scenery and contact with nature. Some people use recreational opportunities to gather socially, and for others, it is to seek solitude. Parks fulfill the public need for a place to recreate in many ways.

However, some recreational activities may potentially negatively affect sensitive desert resources. Future increases in Park visitors could multiply these negative effects. In addition, some recreational activities may interfere with each other, such as equestrian use and motorized vehicles on primitive roads. The Park may consider developing a Road and Trail Management Plan (see ***Section 4.7.1 Roads and Trails Management Plan***) to further evaluate visitor use and make changes to roads and trails to meet visitor needs.

Park Visitation

Red Rock Canyon State Park is a popular destination for visitors seeking diverse recreational experiences, such as nature viewing, hiking, camping, horseback riding, and vehicle touring. These visitors may have been introduced to such forms of recreation through childhood visits to state and national parks with family and friends. However, people living in urban settings may not get these early experiences due to family culture or a lack of transportation, time, money or knowledge of the Park. Many people experience the Park only while traveling along SR 14, stopping briefly for a photograph at Red Cliffs or Hagen Canyon, and viewing the scenery. Although many have the time or interest in exploring the Park, a more thorough understanding and appreciation can be gained by hiking a trail, attending an interpretive presentation, accessing the Ricardo Visitor Center, etc.

The following goals and guidelines would promote the unique qualities of the Park to draw new visitors and enhance the Park's overall appearance. Some of the goals and guidelines may overlap with interpretation and education goals and guidelines in ***Section 4.6.1.15 Interpretation and Education*** and should be used in conjunction when developing marketing and visitor programs and plans.

Park Visitation Goal: State Parks will encourage and foster Park visitation and use by diverse and underrepresented populations.

Visitation Guideline 1-1: Provide information about Park interpretive events at day-use area parking lots and parking pull-outs along SR 14 to encourage visitation and greater Park use.

Visitation Guideline 1-2: Provide Park information in English, Spanish, and other languages on social media, in brochures, and in informational and promotional materials to encourage Park use by diverse and underrepresented populations.

Visitation Guideline 1-3: Promote free or low-cost family and group activities and recreational opportunities, such as FamCamp®[6].

[6] https://www.parks.ca.gov/?page_id=24915

Visitation Guideline 1-4: Collaborate with community organizations in rural and urban areas that provide education, experience in nature, and recreational opportunities for children and promote the Park as a location to host their program activities.

Visitation Guideline 1-5: Collaborate with transportation providers in rural and urban areas to offer low-cost transportation options to the Park.

Visitation Guideline 1-6: Encourage Park volunteers to interact with new Park visitors and people in their communities to promote participation in their group activities or interpretive programs at the Park.

Visitation Guideline 1-7: Encourage and provide ways for new Park users to learn about the Park, engage in recreational activities, learn about Park resources and etiquette, and how to recreate safely.

Visitation Guideline 1-8: Improve the marketing of the Park to the millions of people living in urban areas around the region using all possible methods such as social media, brochures, public outreach, and collaboration with local organizations like libraries, chambers of commerce, and tourism boards.

Visitation Guideline 1-9: Foster stewardship ethics for visitors through interpretive programs and volunteer events, such as clean-up and restoration work (must be organized and approved by State Parks). Promote stewardship messaging in various media and methods that reach a broad audience.

Visitation Guideline 1-10*:* Increase the presence of volunteers and encourage people from diverse backgrounds, abilities, and experiences to join the volunteer program.

Visitation Guideline 1-11**:** Actively recruit Park employees from diverse backgrounds and experiences.

Visitation Guideline 1-12: Conduct periodic visitor surveys and meet with user groups to find out about changes in visitor needs, recreation uses, and possible barriers to access the Park

Park Allowable Use & Intensity

Allowable use and intensity in a park are determined by analysis of three components:

1. Management goals and objectives
2. Visitor perceptions and attitudes
3. Impact of any development and use on natural and cultural resources.

State Parks' overall management objectives and goals for Red Rock Canyon State Park are outlined in the statutes defining a state park and natural and cultural preserves, and the Park declaration of purpose and vision.

Determining visitor perceptions and attitudes involves assessing the social objectives of State Parks, what recreationists perceive as an acceptable recreational environment, what degree of isolation or crowding is acceptable, and other perceptions and attitudes about the quality of visitors' recreation experiences. Although these factors are very difficult to quantify, this component's influence is extremely important. The assessment of visitor attitudes and needs of Red Rock Canyon was obtained through public meetings, surveys, and monitoring by field personnel. State Parks must continue to take a leading role in increasing public awareness and appreciation of high-quality recreation experiences through public relations and interpretive programs, responsible facility development, and proper resource management.

The third component involves an analysis of the natural and cultural resources to determine the area's physical limitations for the development of facilities and the ability of the ecosystem to withstand human impact (ecological sensitivity). This analysis is based on several considerations, including cultural resource sensitivity; soils and their erodibility; geological factors, such as slope stability and relief; occurrence of paleontological strata; hydrologic consideration, including the potential for pollution of surface waters, flooding, and depleting surface groundwater; vegetation characteristics, such as durability, fragility, and regeneration rates; and wildlife considerations, such as tolerance to human activity, wildlife population levels, and stability. Additional considerations in determining ecological sensitivity are rare or endangered plants and animals, unique botanic features or ecosystems, and examples of ecosystems of regional or statewide significance.

Based on the allowable use and intensity analysis, representative examples of different types of visitor activities and their appropriateness in the Park are listed as follows:

Allowable Use – Activities that are directly related to the enjoyment of scenic, natural, and cultural values.

- **Activities of Primary Importance** that relate well to primary values as identified in the Red Rock Canyon State Park Declaration of Purpose, including:
    - Sightseeing
    - Nature Observation
    - Scientific research and educational study
    - Hiking
    - Photography
    - Painting and sketching

- **Activities of Secondary Importance** that are appropriate when they enhance or do not detract from the recreational experience of activities of primary importance, including:
  - Picnicking
  - Camping
  - Horseback riding
  - Astronomy
  - Vehicle use on designated roads *

Inappropriate Use - Activities that are not directly related to the primary resources and purpose of the Park or may significantly conflict with allowable activities:

- Rock climbing
- Vehicle recreation **
- Wayside camping

Prohibited Uses (or use allowed only by special approval):

- Non-Street Legal Off Highway Vehicle (OHV) use ***
- Vehicle use off designated roads***
- Camping outside designated areas
- Hunting
- Target shooting
- Rock and mineral collecting (prospecting) ****
- Grazing
- Hang Gliding
- Disturbing or collecting natural or cultural resources
- Drone operation

** Under the state park classification, vehicle use is appropriate only when it is directly related to enjoyment and inspiration of primary resource values and does not significantly impair or detract from the natural setting or quality of park uses determined to be of primary importance.*

*** Vehicle recreation for the technical challenge and sport of driving in rough terrain is an inappropriate use in the Park.*

**** Activities such as mineral collection and motorized vehicle use are popular with visitors. These activities may negatively impact the Park's natural and cultural resources and sensitive desert habitat. See Section 4.5.1 for more information about where non-street legal OHVs and other motorized vehicles are allowed.*

***** Mineral collecting and rockhounding are only allowed in state recreation areas (SRAs) per the California Code of Regulations (CCR) Title 14, Division 3, Chapter 1, Section 4611. This general plan will follow the Department's mineral collecting policies within Red Rock Canyon State Park, which require a special permit from the District superintendent*

Proposed enhancements to visitor and operations facilities and the potential locations for new visitor use and related facility development are shown in Figure 4-1 – General Plan Preferred Concept Map and described below under the recreation and operations facilities headings. Mapping information in Figure 4-1 for new facilities is intended only as a general guide in planning for visitor use and development. Detailed investigations shall be made before approval of any specific site for development.

Recreation

At the General Plan planning team's public meetings in October 2018 and March 2019, attendees demonstrated a sharp contrast in their uses of the Park. Some participants were passionate OHV enthusiasts. In contrast, others were deeply concerned about the impacts of motorized vehicle use on the sensitive resources in the Park. Generally, all participants are drawn to the Park for similar reasons: the wildness of the desert, solitude, scenery, discovery, and the quality of the night sky.

This section will address general recreation and allowable uses, and the needs of specific user groups such as hikers and equestrians, and other recreation enthusiasts. It will describe how to best accommodate these uses.

Recreation Goal 1: State Parks will maintain the Park's qualities of solitude and wildness for future generations. Management decisions will favor the desert environment, promote the health and well-being of desert ecosystems, and promote sustainable activities over time in providing for the health, inspiration, and education of Californians.

Recreation Goal 1 Guidelines

Recreation Guideline 1-1: Preserve night sky viewing by eliminating or reducing light pollution.

Recreation Guideline 1-2: Recognize that the aesthetic improvements that come with natural resource restoration efforts contribute to a high-quality experience for all visitors.

Recreation Guideline 1-3: Continue to work with appropriate agencies to minimize the negative effects of aerial flyovers, noise, and other impediments to visitor solitude and the remote desert experience.

Recreation Goal 2: State Parks will provide a variety of high-quality recreational experiences while ensuring the protection of Park resources.

Recreation Goal 2 Guidelines

Recreation Guideline 2-1: Work closely with recreational groups to ensure that their needs are addressed and incorporated into management decisions, where feasible and appropriate.

Recreation Guideline 2-2: Ensure that appropriate recreational opportunities are available for people of all abilities, including seniors, children, and people with disabilities.

Recreation Guideline 2-3: Minimize user conflicts and facilitate discussions between competing user groups. As appropriate, consider management measures including, but not limited to, special designations of routes or areas for specific user groups.

Recreation Guideline 2-4: Continually assess new and trending recreational activities for compatibility with land management zone designations.

Recreation Guideline 2-5: Identify the level and type of State Parks staff and visitor interaction appropriate for enhancing the visitor experience.

Recreation Goal 3: State Parks will recognize historical uses and cultural heritage by identifying appropriate recreational/celebratory activities.

Recreation Goal 3 Guideline

Recreation Guideline 3-1: Incorporate a broad range of ethnic and cultural perspectives to manage recreational opportunities in the Park. Focus on California's major ethnic and cultural groups, especially those with historical/traditional ties to the Park area.

Recreation Goal 4: State Parks shall recognize that many recreational activities associated with nature provide values that are often intangible or hard to define. State Parks will strive to incorporate these "deeper" values into their management decisions.

Recreation Goal 4 Guideline

Recreation Guideline 4-1: Preserve the qualities and opportunities that make Red Rock Canyon State Park essential for maintaining and rejuvenating the human spirit.

Hiking

Hiking is one of the most popular forms of recreation. It is one of the main ways visitors can access and experience the unique natural environment offered at the Park while

fostering a greater understanding of Park values and promoting physical health and overall well-being. Hiking at the Park takes several forms. It can include hours-long hikes on primitive trails and in rough terrain or short hikes and walks on nature and interpretive trails and campground roads.

Hiking Goal 1: State Parks will perpetuate and encourage hiking within the Park in cooperation with other trail user groups and consistent with protecting sensitive resources.

Hiking Goal 1 Guidelines

Hiking Guideline 1-1: Provide a range of hiking options for different hiker interests and abilities.

Hiking Guideline 1-2: Regularly maintain trails so that access to the Park's unique geologic and natural areas is sustained and the benefits of hiking at the Park are fostered.

Horseback Riding

Equestrians have enjoyed the Park's natural beauty and horseback riding opportunities. Over the years, parking/staging areas at trailheads have been added in the Park to improve access to trails and the horseback rider experience.

Horseback Riding Goal 1: State Parks will perpetuate and encourage equestrian use in the Park in cooperation with other trail user groups and consistent with protecting sensitive resources.

Horseback Riding Goal 1 Guidelines

Horseback Riding Guideline 1-1: Strive to maintain the Park as a foremost regional destination for equestrians by providing quality equestrian routes and facilities.

Horseback Riding Guideline 1-2: The Park should partner with equestrian groups to improve trail experience.

Horseback Riding Guideline 1-3: Provide clear signage for equestrians on designated routes, and continually update park brochures, online information, and bulletin boards to show where horseback riding is allowed.

Bicycling

Bicycles (including certain electric bicycles) are allowed on designated roads in the Park (see ***Section 4.5.1.2 Electric Bicycle Definitions and Allowable Use in Red Rock Canyon State Park***). The intent of bicycle use in a state park classification is primarily to enjoy the resources of the area and not for technical challenge.

Bicycling Goal 1: State Parks will provide information so bicycle (all types) users will know where they can recreate within the Park and consistent with protecting sensitive resources.

Bicycling Goal 1 Guidelines

Bicycling Guideline 1-1: Provide clear signage for bicyclists (all types) on designated routes, and continually update park brochures, online information, and bulletin boards, to show where specific types of bicycles are allowed.

Bicycling Guideline 1-2: The Park shall comply with statutory requirements and State Parks policies regarding electric-bicycle (e-bike) use.

Camping

Red Rock Canyon State Park offers primitive campsites in the Ricardo Campground. The campground is popular with visitors in the spring and fall, or on holiday weekends. There is no reservation system and campsites are available on a first-come, first-served basis. It is the only developed campground in the Park. Horses are not allowed in the campground.

Overnight campers with OHVs often use the campground as a vehicle staging area. OHV enthusiasts requested the General Plan allow continued non-street legal OHV use in the campground, and on designated connectivity roads to adjoining OHV areas (e.g., Onyx Ranch SVRA, Dove Springs and Jawbone Canyon BLM OHV Areas). See ***Section 4.5 Road and Trail Network*** for proposed ingress and egress routes for OHVs that are not street legal.

Camp hosts are recruited to be visible representatives of State Parks at campgrounds and day-use areas. As a condition of their service, hosts may reside in a state park unit for up to six months. Hosts assist visitors and serve as the “eyes and ears” for rangers and maintenance staff who cannot constantly monitor each campground or day-use area. The General Plan proposes to consider the recruitment of a camp host for the campground.

The General Plan also proposes “dry” (no water or other developed facilities) primitive/environmental camping areas in the northeast section of the Park. The walk-in camping areas with a single campsite each would be unpaved and in undisturbed natural settings. The campsites, each with a clearing for a tent, may offer a picnic table

The General Plan planning team also received requests from equestrians to consider an equestrian camping area in the Park. The General Plan proposes an equestrian day-use and dry camping area within the Park’s northwest section. The primitive camping area with up to two campsites or one small group camping area would be unpaved and in an undisturbed natural setting, with parking/staging area and possible shade ramada for

temperature moderation and corral. The primitive equestrian camping area, with clearings for tents, may offer picnic tables.

Table 4-2 shows the proposed locations for campsites by type, management area, and possible amenities.

Table 4-2. Proposed Campsite Types, Locations, and Possible Amenities

Campsite type	Proposed Area	Management Area	Possible Amenities
Equestrian	Sierra View Road/Opal Peak Road/Roaring Ridge Road area	Limited Use Management Zone or Sensitive Resources Management Zone	Picnic tables and clearing for tents. Space for recreational vehicles (RVs), self-contained camping vehicles or horse trailers. No water or other developed facilities. No RV hookups. Pack out trash.
Primitive/ Environmental (Walk-in only)	Northeast section of Park	Limited Use Management Zone, Sensitive Resources Management Zone or preserve	Clearing for a tent and a picnic table. No water or other developed facilities. Pack out trash.

Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development. Project-level environmental evaluation would be required to find suitable locations for the proposed campsites. Campsites would only be considered in Sensitive Resource Management Zones and preserves if their placement avoids impacts to sensitive cultural and natural resources.

Camping Goal 1: State Parks will perpetuate the Ricardo Campground and provide dry primitive/environmental and equestrian camping opportunities within the Park consistent with protecting the Park's sensitive resources.

Camping Goal 1 Guidelines

Camping Guideline 1-1: Monitor and help reduce potential conflicts between campers, particularly loud music and noise during quiet hours.

Camping Guideline 1-2*:* Consider recruiting a camp host for the Ricardo Campground through the Volunteers in Parks Program.

Camping Guideline 1-3: Establish primitive/environmental camping areas. Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development.

Camping Guideline 1-4: Working with equestrian groups, other stakeholders, and the public, determine a suitable location for equestrian day-use parking/staging and camping area. Establish and utilize appropriate criteria such as proximity to existing road and trail network, number of campsites, and the potential for a shade structure for temperature moderation and corral. Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development.

Self-Guided, Street-Legal Vehicle Touring

Vehicle touring is a popular activity in the Park. Motorized vehicles are restricted to designated roads. State park roads are considered highways per CVC Sections 360 and 590. Therefore, vehicles that meet the requirements to operate on highways, including street-licensed OHVs, are allowed on designated primitive roads within the Park.

State Park and Recreation Commission Policy II.7 allows primitive roads to make natural or historical features accessible in park units where vehicles are not expressly prohibited. If further states that visitors "shall keep their vehicles on the designated route at all times, shall operate their vehicles so as to minimize the occurrence of both noise and dust, and shall use these primitive roads in ways that do not detract from the enjoyment of the natural or historical features by other visitors who may be in the area."(see ***Section 4.5.1 Laws, Regulation, Policies for Motorized Vehicles, Roads, and Trails***) Additionally, as described above under the Park Allowable Use and Intensity heading, vehicle use is appropriate only when it is directly related to enjoyment and inspiration of primary resource values and does not significantly impair or detract from the natural setting or quality of Park uses determined to be of primary importance. Vehicle recreation for the technical challenge and sport of driving in rough terrain and difficult-driving conditions is an inappropriate use in the Park.

Street-Legal Vehicle Touring Goal 1*:* State Parks will perpetuate self-guided street-licensed vehicle touring on designated primitive roads to enable people to reach the isolated scenic and natural areas of the Park while protecting sensitive resources.

Street-Legal Vehicle Touring Goal 1 Guidelines

Street-Legal Vehicle Touring Guideline 1-1 The use of vehicles on primitive roads will be monitored by State Parks staff. Access can be rerouted or halted, if necessary, to protect Park resources. State Parks will restore areas that are damaged from unauthorized use per natural and cultural resource management guidelines and policies.

Street-Legal Vehicle Touring Guideline 1-2: Provide clear regulatory signage for vehicles, and continually update park brochures, online information, and bulletin boards to inform visitors where they can legally operate their vehicles within the Park.

Non-Street Licensed Off-Highway Vehicle Use

This General Plan proposes to allow non-street licensed vehicles registered as OHVs on Red Rock Wash from the Ricardo Campground to the Dove Springs OHV Area for Park ingress and egress and on Sierra View Road connecting EP 465 to the Dove Springs OHV Area for BLM OHV Area and Onyx Ranch SVRA connectivity. The proposed route changes follow the statutory requirements, regulations, and policies described in ***Section 4.5 Road and Trail Network.***

OHV Use Goal 1: State Parks will allow non-street licensed OHVs to travel on designated connectivity roads (i.e., Red Rock Wash and Sierra View Road) if the use does not significantly impact sensitive natural and cultural resources.

OHV Use Goal 1 Guideline

OHV Use Guideline 1-1: The use of OHVs on designated connectivity roads will be monitored by State Parks staff. Access can be rerouted or halted, if necessary, to protect Park resources. State Parks will restore areas that are damaged from unauthorized use per natural and cultural resource management guidelines and policies.

OHV Use Guideline 1-2: Regulatory and wayfinding (orientation) signage at Park boundaries on Red Rock Wash and Sierra View Road will be provided to inform visitors where they can legally operate their non-street legal OHVs within the Park. Information will also be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground.

OHV Use Guideline 1-3: Develop a regional map of OHV recreation riding areas, facilities, and resources within a 50- to 100- mile radius of the Park for the OHV riding public.

OHV Use Guideline 1-4: Encourage OHV use in areas outside the Park and create an environment in the Park with reduced OHV usage. Park staff should have resources including up-to-date knowledge of regional OHV recreation riding area access outside the Park and a map illustrating access to these areas to disseminate to the OHV riding public.

An interpretation and education program will provide public outreach and messaging about where people can legally recreate in the Park (***See Section 4.6.1.15 Interpretation and Education*** goals and guidelines for more information)

Organized Events

State Parks hosts several organized events at the Park each year, including those sponsored by the Red Rock Canyon Interpretive Association, such as astronomy programs and guest speakers for science and history. Events like these bring needed

funds for Park interpretive programs, promote recreational use of the Park, foster stronger relationships among users, and promote greater stewardship, understanding, and appreciation of the Park. If organized events are well supervised and do not significantly impact resources, they can benefit both the Park and participants.

Organized Events Goal 1: Offer, encourage, and support organized events at the Park while continuing to protect and educate on the Park's resources.

Organized Events Goal 1 Guideline

Organized Events Guideline 1-1: Work with the Park's cooperative groups and other partners to stage events that benefit the Park and its users.

4.6.1.2 Other Visitor and Operations Facilities

Crucial Park facilities include roads and trails, day-use parking/staging and picnic areas, campground, visitor center, and other facilities that provide visitor amenities; State Parks staff offices and housing; and space to store materials and equipment. Park facilities can enhance staff efficiency and visitor enjoyment of a park by providing a basic level of support, information, service, or comfort. Park operations and visitor facilities also include implementing sustainable practices to reduce a park's contribution to climate change.

Park operations are an integral and important part of the Park. Park rangers are responsible for public safety and enforcing park regulations. Administrative staff and park aides handle public inquiries, collect fees, and take care of other park business. Maintenance staff provide cleaning services, make repairs and maintain park facilities and infrastructure. Further, implementing sustainability measures and reducing greenhouse gas emissions by park operations and visitors shall be consistent with state and federal requirements as they are developed.

Facilities Goal 1: State Parks will strive toward excellent facilities that represent the intrinsic qualities of the Park while protecting natural and cultural resources. Design and maintenance of Park facilities should embody State Parks mission while producing meaningful places and spaces worthy of preservation by future generations.

Facilities Goal 1 Guidelines

Facilities Guideline 1-1: Provide facilities that are clean and in good repair.

Facilities Guideline 1-2: Maintain facilities to minimize impacts on Park resources while sustaining the quality of the facilities.

Facilities Guideline 1-3: Provide visitor-use facilities (visitor center, picnic areas, campsites, non-motorized trails, etc.) that offer the opportunity for diverse

visitor experiences. New facilities will be designated and geographically placed to maximize visitor or staff use while minimizing negative effects on viewshed, night skies, and opportunities for solitude, and natural and cultural resources.

Facilities Guideline 1-4: Facility design should evolve from a collaborative and visual process led by a design professional and involving the users, State Parks staff, resource professionals, and other key stakeholders.

Facilities Guideline 1-5: Design decisions should be sensitive to the contextual nature of the site, including the area's cultural and natural environment.

Facilities Guideline 1-6: Promote and incorporate sustainable features and high-performance facility design to the maximum extent possible.

Facilities Guideline 1-7: Access and features of all facilities shall comply with American Disabilities Act requirements, state accessibility mandates, and State Park's guidelines for accessibility.

Facilities Guideline 1-8: Protect natural and cultural resource values when developing facilities.

Facilities Goal 2: Enhance existing facilities within the Ricardo Campground complex (campground, visitor center, Park operations facilities and maintenance yard) and consider future potential changes to improve staff efficiency and effectiveness and visitor experience.

Facilities Goal 2 Guidelines

Facilities Guideline 2-1: Enhance existing Park visitor and operations facilities to become a more efficient, supportive, and sustainable shared visitor and joint operations and maintenance facility to serve the Park and adjoining Onyx Ranch SVRA, adapt to changes in visitor use and population demographics, and increase visitation.

Facilities Guideline 2-2: Improve existing staff housing and other operational support facilities that aid in staff efficiency and effectiveness within the Park setting as needed.

Facilities Guideline 2-3: Improve office space, materials storage, and fleet storage for Park operations, maintenance and interpretation, and resource management programs.

Facilities Guideline 2-4: Develop innovative operation and facility strategies and staffing levels to address extreme seasonal fluctuations in visitation and visitor service needs.

Facilities Guideline 2-5: Consider expanding or developing additional office space, materials storage, fleet storage, and maintenance areas for Park operations,

maintenance, and interpretation, and resource management programs, as needed (may require additional environmental analysis).

Facilities Guideline 2-6: Consider developing additional staff housing and other operation support facilities that aid in staff efficiency and effectiveness within the Park setting, as needed (may require additional environmental analysis).

Facilities Guideline 2-7: Consider moving the Park visitor center closer to SR 14 for better visibility (may require additional environmental analysis).

Facilities Guideline 2-8: Whenever possible, use native vegetation for screening Park operations and maintenance facilities from public view.

Facilities Goal 3: Provide roads and trails that offer access and the opportunity for varied visitor experiences throughout the Park without compromising the integrity of the Park's natural, cultural, historical, and aesthetic resources.

Facilities Goal 3 Guidelines

Facilities Guideline 3-1: Roads and trails will exist to enable visitors to access and experience the diversity of the Park while minimizing negative effects on the resources.

Facilities Guideline 3-2: Develop a comprehensive Roads and Trails Management Plan (to include issues such as maintenance, assessment of roads and trails, restoration of eroding roads and trails, measures to reduce soil erosion, volunteer efforts, changes in recreation uses, etc.)

Facilities Guideline 3-3: Conduct new and existing trail and day-use parking/staging and picnic area assessments to determine if these facilities can be made ADA accessible.

Facilities Goal 4: Enhance day-use parking/staging areas at the Park.

Facilities Goal 4 Guidelines

Facilities Guideline 4-1: Provide information about the Park, including opportunities and resources, at the developed day-use parking area (see Section 4.6.1.15, Interpretation and Education goals and guidelines)

Facilities Guideline 4-2: Identify and develop suitable and appropriate picnic and primitive parking/staging areas at trailheads and scenic vistas and interpretive opportunity areas, as feasible and consistent with resource protection.

4.6.1.3 Utilities

No telephone service is provided by commercial communications providers. Telephone service uses microwave and satellite technology. Cell phone service is available in the

developed areas of the Park. Internet service for the Park operations facilities is provided by a relay system through California City. The California Aqueduct is the primary source of potable water. State Parks treats the water at the Ricardo Campground Complex, including staff residences. The Park also uses a septic system and leach lines. Solar panel systems and diesel generators provide all power. The solar arrays are in the Ricardo Campground Complex. Park staff collect trash in the Ricardo Campground Complex and Red Cliffs parking area. Trash service is collected and picked up by a commercial service

Utilities Goal 1: New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Goal 1 Guidelines

Utilities Guideline 1-1: Using state-of-the-art conservation measures will minimize water usage at any new Park facility. Primitive/environmental camping locations will be "dry" (e.g., no water or other developed facilities).

Utilities Guideline 1-2: Any new utility lines shall be buried. Siting of buried utility lines shall be done only with prior review by the State Park geologist, a State Park Archaeologist, and other departmental resource specialists.

Utilities Guideline 1-3: If new development is intended (e.g., development of a new visitor or operations facility), primary consideration should be given to the use of passive solar design, solar-assisted heating, and air conditioning, and other alternative energy sources, and the incorporation of passive cooling and heating techniques to reduce energy use including building orientation and insulation.

Utilities Guideline 1-4: Comply with the State Water Resources Control Board for clean, safe water**.** Compliance may include upgrading the existing water treatment plant.

Utilities Guideline 1-5: Comply with all CalRecycling goals and guidelines established by the Natural Resources Agency for trash storage and removal.

4.6.1.4 Sustainability and Greenhouse Gas Emissions

Sustainability principles seek to allow for human use within our environment over the long term by minimizing its adverse impact. Additionally, minimizing human-caused greenhouse gas (GHG) emissions is a crucial strategy for reducing the rate of climate change and its associated impacts. Reducing GHGs can include employing various principles, including, but not limited to, sustainable building, resource conservation, waste reduction, and pollution reduction.

Sustainability Goal 1: Reduce, reuse, and recycle waste produced by Park visitors and operations within the Park.

Sustainability Goal 1 Guidelines

Sustainability Guideline 1-1: Find new means to reduce, reuse, and recycle materials to conserve resources and reduce greenhouse gas emissions by reducing the need to acquire and process raw materials. Implement these techniques when they don't have adverse effects on Park resources.

Sustainability Guideline 1-2: Encourage resource efficiency by Park visitors through education about the importance of reducing, reusing, and recycling waste.

Sustainability Guideline 1-3: Where feasible, compost waste to reduce the amount of refuse transported to off-site landfills.

Greenhouse Gas Emissions Goal 1: Increase awareness of energy use, how it can be more efficient, and methods to reduce greenhouse gas emissions. Choose the appropriate energy type based on the action to be accomplished.

Greenhouse Gas Emissions Goal 1 Guideline

Greenhouse Gas Guideline 1-1: Provide an efficient means for Park staff and visitors to travel within the Park that minimizes and reduces carbon emissions that contribute to climate change.

Greenhouse Gas Guideline 1-2: Continue to provide a limited road network through the Park and place new parking/staging areas in locations that minimize driving distance, as feasible.

Greenhouse Gas Guideline 1-3: Provide current Park information to orient visitors, especially new visitors, to Park roads, major trailheads, picnic and parking/staging areas, and other points-of-interest so visitors can efficiently plan and minimize vehicle trips.

Greenhouse Gas Guideline 1-4: Promote the acquisition and use of low- or zero-emission vehicles for Park staff, as feasible, to meet the need of Park operations. Provide vehicle charging stations for State Parks operations and staff and visiting public, as feasible.

4.6.1.5 Staffing

With this General Plan, Red Rock Canyon State Park will become one of the largest parks to manage in the State Park System. It also contains significant unique resource values and provides outstanding natural, cultural, and wilderness experiences within the Mojave Desert region.

In addition to being one of the largest units in the system, Red Rock Canyon State Park is also one of the more remote units, and area patrols are limited. As a result, visitors rarely have contact with rangers or Park staff beyond the Ricardo Campground Complex area, and resource problems can go undetected for some time. Road maintenance, especially the primitive roads, is at a minimal level. Furthermore, the seasonal visitation to the Park fluctuations strains staff and duty requirements during peak times of visitor use.

Adequate operational staff and equipment must be provided to protect the many unique natural and cultural resources found throughout the Park. Increases in Park staffing levels are necessary for meeting many of the goals laid out in this General Plan. Furthermore, an increase in opportunities for visitor interaction with Park staff will help visitors enjoy their park experience more, enhance interpretive and educational efforts, address safety concerns, help keep road and trail access to the Park's key points of interest open, and improve the integrity of the Park's natural and cultural resources.

Staffing Goal 1: Develop a staffing plan and strategies that assure quality visitor experiences consistent with visitation levels.

Staffing Goal 1 Guidelines

Staffing Guideline 1-1: Strive to acquire the necessary staffing to operate the Park more effectively. Consider options that involve park volunteer organizations.

Staffing Guideline 1-2: Determine equipment needs for the Park's land management, facility and infrastructure maintenance, resource preservation, and visitor services staff based on visitation and staffing levels. Acquire and maintain appropriate equipment.

Staffing Guideline 1-3: Work to improve modes of communication for Park rangers and other staff. Seek equipment and methods that aid staff emergency-response abilities within the Park.

Staffing Guideline 1-4: Consider a residential facility for seasonal or intermittent staff and visiting researchers (particularly those under permit or contract to State Parks) at the Ricardo Campground complex (may require additional environmental analysis).

Staffing Guideline 1-5: Develop innovative strategies to address staffing needs associated with the seasonal flux in visitation.

4.6.1.6 Public Safety

The Park's desert environment and topography are full of potential dangers to visitors. These potential hazards include extreme heat and cold, flash floods, rocky cliffs, slot

canyons, seismic activity, landslides, venomous snakes, desert vegetation, and driving on primitive unpaved roads. The Park's remote location exacerbates these and other hazards.

Most of the soils throughout the Park are highly erosive, especially when located within a major watercourse or subject to flash flooding. Management plans and decisions concerning facilities placement and visitor access must recognize and avoid or mitigate these potential hazards. Furthermore, old mines, including underground tunnels and mining implements, are a part of the area's existing conditions. A key element to promoting visitor safety is the implementation of an effective education program (see ***Section 4.6.1.15 Interpretation and Education***)

Safety Goal 1: Promote visitor safety while recognizing that the desert's climate, geology, wildlife, and vegetation are inherently hazardous. Measures to promote visitor safety will be taken while considering the importance of maintaining the visitor's experiences of adventure, discovery, and wilderness.

Safety Goal 1 Guidelines

Safety Guideline 1-1: Continually evaluate, expand, and adapt the visitor safety program to increase safety throughout the Park (e.g., communicate extreme climate conditions to the public when they occur).

Safety Guideline 1-2: Do not promote unescorted visitation to old mining sites. Avoid advertising their location in Park literature and discourage private publications from doing the same. General safety warnings should be provided regarding the inherent dangers of mines without revealing their location.

Safety Guideline 1-3: State Parks will evaluate visitor and environmental hazards and, where appropriate, develop measures to ensure public safety.

Safety Guideline 1-4: State Parks will develop and keep current public safety messaging about where visitors can seek help in an emergency (e.g., Park contact information, locations with cell phone connectivity) and how to recreate in the desert safely. Public safety messaging will be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground and in day-use picnic and parking/staging areas.

Safety Goal 2: Plan for geological events (e.g., floods, earthquakes) to minimize dangers to lives and facilities. Comply with incident action plans for State Parks and the District.

Safety Goal 2 Guidelines

Safety Guideline 2-1: Rockfall areas or places of significant bluff undercutting shall be reported when observed by a State Parks employee and shall be investigated, evaluated, and recorded by the staff geologist or designee.

Safety Guideline 2-2: Facilities and activities that tend to concentrate visitors shall not be located in areas where rockfall hazards or cliff undercutting have been identified as problems.

Safety Guideline 2-3: Structures to be constructed or modified shall be designed to comply with the latest edition of the California Building Standards Code, CCR Title 24.

Safety Guideline 2-4: New buildings and other structures intended for human habitation (as defined in CGS Special Publication 42) shall not be placed within the 50 feet of the trace of an active fault.

Safety Goal 3: Develop a historic mine-safety evaluation program for the Park.

Safety Goal 3 Guidelines

Safety Guideline 3-1: Record and evaluate the historical significance of all mines identified as potential safety hazards or designated for possible closure. Mines determined to be significant may require additional data recovery efforts before closure.

Safety Guideline 3-2: Mines determined to be extremely hazardous to the safety of visitors may be modified by means that will cause the least amount of damage to the surrounding historic landscape.

Safety Guideline 3-3: Hazards caused by former mining activities shall be reviewed individually to determine the seriousness of the hazard as to the merits of the site for interpretive purposes.

Safety Goal 4: Ensure that all facilities and structures provide a safe environment for visitors.

Safety Goal 4 Guidelines

Safety Guideline 4-1: Recognize the potential for major flash flood events and ensure that Park facilities are sited to avoid flash flood damage.

Safety Guideline 4-2: Survey land acquisitions for mining hazards. Complete the actions necessary to ensure the safety of park visitors from such hazards. Survey for potential natural and cultural resources and include recommendations for monitoring, recordation, evaluation for significance, and data recovery.

Safety Guideline 4-3: Complete a site-specific geological investigation for major facility developments. Include an evaluation of the geologic hazards and soil properties to verify that the site is appropriate for development. Some of the concerns associated with soils and geologic hazards and development include

soil bearing capacity, the potential for erosion, surface fault rupture, strong seismic ground shaking, liquefaction, and landslides and rockfalls.

Safety Guideline 4-4: Work with Caltrans to develop safe pedestrian access across SR 14, particularly between Abbott Drive and the Red Cliffs day-use area.

4.6.1.7 Geology, Minerals, Soils, and Paleontological Resources

Geology

All who enter the Park are impressed by the colorful and majestic geologic formations. The maintenance or preservation of the geologic values inherent in the Park is of primary importance to current and future Park users. Alternating and sometimes contrasting layers of colorful sedimentary and volcanic deposits that have eroded to badlands topography form the Park's dramatic backdrop. Preservation of the fragile sedimentary cliffs, rock arches, and palisades is imperative to perpetuating park values and maintaining geologic integrity. The Park is a popular destination for educational geology and paleontology field trips.

Several types of geologic hazards in the Park can damage facilities or threaten human safety. The principal hazards are rockfalls from cliff faces due to natural erosion processes or accelerated by human impact and earthquake damage resulting from activity along nearby fault traces.

Geology Goal 1: Preserve and protect the unique scientific and scenic qualities of the geologic resources and features inherent within the Park.

Geology Goal 1 Guidelines

Geology Guideline 1-1: Support and foster efforts to geologically map the stratigraphy and lithologic formations and structural features found in the Park.

Geology Guideline 1-2: Specifically map significant Park features, such as rock arches, windows, and palisades, which capture the human imagination and monitor those processes or practices that might accelerate deterioration. Implement training and resource protection measures to ensure staff, visitors, and sites are protected from harm when necessary.

Geology Guideline 1-3: Identify and mitigate impacts on fragile or otherwise special geological features during the development of management plans.

Geology Guideline 1-4: Preserve the integrity of fragile sedimentary badlands. Badlands are particularly vulnerable to various destructive human and mechanical activities that promote excessive erosion.

Geology Guideline 1-5: Identify the understudied elements of the geological resources inherent within the Park and promote research to determine resource significance and enhance the development of interpretive themes. Targeted examples would be the presence of the potential Mesozoic/ Cenozoic boundary within the Goler Formation and the Pleistocene/Holocene evolution of the local landform.

Geology Guideline 1-6: Alter, curtail, or eliminate visitor activities that produce significant or recurrent impacts on the fragile geologic resources and their inherent values preserved in the Park.

Geology Guideline 1-7: Professionally manage and curate all geological collections. Comply with Department museum collections policies and the Park's Scope of Collections Statement.

Geology Goal 2: Promote a better understanding and a greater appreciation for the Park's geological resources.

Geology Goal 2 Guidelines

Geology Guideline 2-1: Review the Park's inherent geologic resources, including specialized data, to determine the best means of interpreting the Park's geologic history. Develop interpretive themes to enhance public enjoyment and appreciation.

Geology Guideline 2-2: Work with the educational institutions of higher learning documented as using the Park to assist and enhance educational opportunities while maintaining a non-destructive, non-impactive learning environment that sustains multi-generational opportunity.

Geology Guideline 2-3: Encourage or perform relevant scholarly publication of geologic research.

Minerals

Placer gold, pumice, and clay are the principal mineral products of the Red Rock Canyon area, with clay mining activities leaving the most obvious reminders. Manganese, uranium, perlite, molybdenum, and lead deposits have also been explored. The Park will be managed consistent with the PRC, the memorandum of understanding (MOU) with the Bureau of Land Management (BLM), and federal mining law [at the time of this writing, approximately 73 claims remain]. State Parks will continue to manage the entire area, at the minimum, consistent with the state park classification, regardless of ownership and "recognizing the legitimate rights of the mining claim holders". These rights include ingress and egress to unpatented claims as authorized by federal mining laws.

Minerals Goal 1: The fossil and mineral records and specimens of the Park shall be preserved.

Minerals Goal 1 Guidelines

Minerals Guideline 1-1: Scientific investigations and analysis from various universities and museums shall be encouraged on a permit basis to broaden the knowledge of Park resources.

Minerals Guideline 1-2: Private collection and willful disturbance or dislodgment of the geologic forms shall not be allowed.

Minerals Guideline 1-3: Specimen collection or minor surface disturbance for university or museum scientific research shall be allowed only by a special permit. Cultural and natural resources staff shall review these permits before they are approved.

Minerals Goal 2: Mining Interest Encroachment and Other Disturbed Areas— There is an increasing economic incentive for private individuals and companies holding claims within the Park to develop mineral and energy resources. These developments may directly impact the park's natural and cultural resources. Mining and indiscriminate vehicle use in the unit before acquisition by the state caused widespread damage and disturbance to desert soils. Additional impacts may occur to the Park resulting from increased traffic, noise, dust, lighting, vibration, deterioration of the viewshed, contamination, and erosion. These impacts would have detrimental effects on aesthetics and the visitor experience.

Minerals Goal 2 Guidelines

Minerals Guideline 2-1: The department shall work with Kern County and the Department of Conservation Division of Mine Reclamation and others to remediate the impacts of historic mining and limit any future mining activities within the Park.

Minerals Guideline 2-2: The department shall also seek, as feasible, to limit, rather than expand, access to mining inholdings that would involve widening of existing roads unless there are extenuating circumstances, or other access is unavailable, because such road improvements would cause additional impacts.

Minerals Guideline 2-3: Continue to minimize land disturbances resulting from previous uses. In disturbed areas showing little improvement over long periods, initiate efforts to actively restore habitat. When necessary, stimulate the recovery of natural processes through restoration and management actions.

Minerals Guideline 2-4: Foster beneficial relationships with other agencies and organizations for technical assistance and funding to support efforts to restore mined and degraded areas.

Minerals Guideline 2-5: The cultural significance of an abandoned mine site shall be considered before remediation or restoration activities. Efforts shall be undertaken to incorporate culturally significant mines into the restored natural landscape and add interpretive elements when appropriate.

Soils

Soil is a key component of terrestrial ecosystems and provides a base for many processes that support life. Incorporating an understanding of soil dynamics into management decisions is most important in the desert environment, where soil development is extremely slow, and climate extremes have placed pressures on life unparalleled in many other terrestrial environments.

Soils Goal 1: Protect sensitive soils and promote further understanding of the role of soils and soil biota in desert ecosystems.

Soils Goal 1 Guidelines

Soils Guideline 1-1: Update the inventory of soils throughout the Park. Identify specific soil types and living soil communities and understand how these soils support the region's biota.

Soils Guideline 1-2: Identify and minimize visitor activities and park operations that negatively impact sensitive soils. Develop an understanding of how this impact further affects erosion, water quality, plant communities, terrestrial invertebrates, birds, mammals, and other components of the region's ecosystems.

Soils Guideline 1-3: Incorporate an assessment of human effects on soil dynamics in future management plans.

Soils Goal 2: Restoration of slowly recovering disturbed areas shall be a high resource management priority. See also Mineral guidelines 2-1.

Soils Goal 2 Guidelines

Soils Guideline 2-1: Restore severely affected surface areas.

Soils Guideline 2-2: An ongoing occurrence is the disturbance of lands by unlawful vehicle operation in the Park. The extent and causes of such damage shall be documented, and appropriate preventative and restoration measures shall be undertaken.

Paleontology

The Park's paleontological resources and related fossiliferous formations are extremely significant. Fossil evidence of ancient camels, horses, mastodons, rhinoceroses, dogs, pronghorn antelope, deer, saber-tooth tigers, cats, weasels, and rabbits have been discovered in the unit and on nearby lands. The Goler Formation is California's only known terrestrial formation spanning the transition from the "Age of the Dinosaurs" to the "Age of Mammals." A complete fossil record of land animal life of the early Pliocene epoch has been found in the Ricardo Group in Red Rock and Last Chance Canyons. Furthermore, the fossil assemblages of the Dove Spring Formation in the Ricardo Group have been used as a standard to define the age interval represented by similar fossils occurring throughout North America.

The heritage encased in each fossil represents a non-renewable resource. If an organism has a fossil record, that record is represented by a finite number of specimens. That number decreases as they are destroyed by weathering, erosion, or the actions of humans. Documenting the geological and geographical distribution of fossiliferous deposits and evaluating the significance of these paleontological resources are prerequisites to responsible park stewardship. Concerning facility development and visitor recreation, management plans must adequately consider finite fossil resources. They must be developed and implemented in such a fashion as to prevent the degradation of significant paleontological treasures.

The Park's landscape is currently known to yield specimens from three distinct paleofaunas (those of the Miocene, the Pliocene, and the Pleistocene). Two other identifiable formations offer the potential of discovering new paleofaunas representative of other eras (the Paleocene and the Holocene). The significance of these undocumented yet potential paleofaunas must be assessed and appropriate management plans formulated. In addition, facilitating research and interpretation of the park's fossil remains will promote a greater understanding and appreciation for California's incredible prehistoric record at the Park.

Paleontology Goal 1: Protect and preserve the Park's paleontological resources in perpetuity for their inherent scientific and educational values.

<u>Paleontology Goal 1 Guidelines</u>

Paleontology Guideline 1-1: Determine the geologic, stratigraphic, and geographic distribution of fossiliferous deposits within the park, including those of potentially new paleofaunas.

Paleontology Guideline 1-2: Evaluate each paleontological period's significance and relative importance within the greater context of California and western North America.

Paleontology Guideline 1-3: Intensively survey paleontologically significant deposits.

Paleontology Guideline 1-4: Support efforts to develop cyclic surveys of paleontological resources.

Paleontology Guideline 1-5: Protect significant paleontological resources in place, or conserve them through recovery, such that their inherent scientific and interpretive value remains non-degraded.

Paleontology Guideline 1-6: Monitor sensitive paleontological sites for natural erosion and human-related impacts, including the theft of irreplaceable heritage.

Paleontology Guideline 1-7: Professionally manage and curate all paleontological collections. Enact a Memorandum of Understanding with the Los Angeles County Museum of Natural History formalizing and extending the current partnership, which is bound by an annual permit process involving collecting, preparing, and curating paleontological resources found at the Park. Develop and implement alternative short- and long-term strategies for recovering and managing paleontological collections if the County of Los Angeles does not desire a long-term partnership.

Paleontology Guideline 1-8: Ensure that any paleontological permits are clear about ownership and the location where the collection resides. Ensure all Department collections management forms are completed (e.g., loan documentation) where the Department is the lender, and the researcher is the borrower.

Paleontology Guideline 1-9: Utilizing professional methodologies, document the Park's fossil trackways and research methods for appropriate long-term preservation.

Paleontology Guideline 1-10: Utilize the research results to improve resource management procedures and methodologies. Promote cooperative studies and management partnerships with other concerned agencies or scientists.

Paleontology Guideline 1-11: Permits are required for paleontological research and collection. Cultural and natural resources staff shall review these permits before they are approved.

Paleontology Guideline 1-12: Develop a paleontological management plan for the park that summarizes previous studies, proposes specific areas for additional study, and proposes specific recommendations for preserving deposits. New buildings, roads, parking, and camping areas shall not be allowed in paleontologically sensitive rock formations until a site-specific paleontological

resources survey is conducted and any fossil specimens are recovered and curated.

Paleontology Guideline 1-13: If paleontological resources are discovered inadvertently during construction activities, cease construction activities within and in the vicinity of the fossil and consult a Department archaeologist or other qualified paleontological resource professional to determine the potential significance of the find. If the fossil is determined to be a unique paleontological resource, develop and implement a recovery plan consistent with Society of Vertebrate Paleontology (SVP 2010) criteria. The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, curation for any specimen recovered, and a report of findings.

Paleontology Goal 2: Provide an understanding and appreciation of paleontological resources and their contribution to the biological prehistory of the changing California landscape.

Paleontology Goal 2 Guidelines

Paleontology Guideline 2-1: Develop criteria that identify paleontological resources appropriate for public interpretation.

Paleontology Guideline 2-2: Analyze paleontological resources, museum collections, and published literature to identify and describe significant remains and interpretive themes.

Paleontology Guideline 2-3: Analyze paleontological and geological resources, including museum collections and available data, to identify changing paleo-landscape patterns through geologic time.

Paleontology Guideline 2-4: Evaluate previous research to determine avenues of future investigation that will foster increased understanding and foundation information for developing interpretive content of the Park's paleontological resources.

Paleontology Guideline 2-5: Encourage or perform relevant scholarly publication of paleontological research.

Paleontology Guideline 2-6: Use the General Plan goals and guidelines when evaluating research permit requests.

4.6.1.8 Hydrology Resources

The Red Rock Canyon area is subject to severe flash flooding because of rainfall events. Human and mechanical activities that have altered the watershed, such as OHV use or

wildfire, can increase the severity and effects of flashfloods. Flashfloods are a significant threat to facilities and human life.

Within the Park, sensitive wetland resources are limited in size and number. They are easily disturbed habitats upon which many plant and wildlife species directly depend. Commensurate with the degree to which society sought to protect California's remnant wetlands and surface water quality, should the sensitive wetland and hydrologic resources be recognized as requiring the highest level of protection.

Eight main watersheds within the Park extend into several jurisdictions beyond the unit property boundary. Within the Park, the most significant area where surface water flows are one small spring-fed area located in upper Last Chance Creek, where surface water can be seen down to Cudahy Camp near the middle of the creek/canyon. Although periodic flooding and stream channel scouring are identified constraints, they are also natural processes necessary to the long-term health of a riparian ecosystem. Facilities such as roads and trails can impact the water resources within the Park if not managed and used appropriately.

Hydrology Goal 1: Protect, enhance, and restore the Park's wetlands and hydrologic resources.

Hydrology Goal 1 Guidelines

Hydrology Guideline 1-1: Initiate regular monitoring programs, including detailed surveying of the riparian scrub in Last Chance and Cudahy Creeks and testing water quality. Programs may require cooperative work with neighboring landowners, especially the BLM.

Hydrology Guideline 1-2: Implement methods to deter concentrated vehicle, foot, and stock traffic within the riparian ecosystem in Last Chance Creek to prevent soil compaction, erosion, impacts on water quality, and trampling of sensitive species known to occur in the area. State Parks will also facilitate restoration programs of previously disturbed areas.

Hydrology Guideline 1-3: State Parks will conduct invasive species management and habitat restoration activities to support ecological balance. Strategies for stabilization and topographic restoration of eroded and compacted features and areas will also be addressed.

Hydrology Goal 2: Consider areas of flooding impacts when planning for visitor services or additional facilities within the Park.

Hydrology Goal 2 Guidelines

Hydrology Guideline 2-1: The potential for flooding shall be evaluated before developing facilities and public use areas. However, local flash flooding is possible in other areas in the unit.

Hydrology Guideline 2-2: New buildings and campgrounds shall not be placed in a FEMA 100-year flood hazard zone.

Hydrology Goal 3: Ensure that water resources within the Park are not negatively affected by adjacent land use, potentially existing water rights, or park operations.

Hydrology Goal 3 Guidelines

Hydrology Guideline 3-1: Review water rights information with the California State Water Resources Control Board. Assess all potential water diversions within the Park and the Park's shared hydrologic units. Work with adjacent landowners and water rights owners to ensure that the Park's aquatic resources and related ecosystems are not negatively affected by water usage or upstream discharge.

Hydrology Guideline 3-2: Ensure that Park operations and water use do not negatively affect water quantity or quality.

4.6.1.9 Aesthetic Resources

The unique multi-colored formations in Red Rock Canyon are the most popular scenic features in the unit. Formations in close view of SR 14 have a unique value since they are often the only features seen by motorists passing through or only briefly stopping in the unit. Most of the near viewshed is within the scenic easement established by Caltrans in 1969. Billboards, structures, dumping, and quarrying are prohibited along this corridor.

Aesthetic Goal 1: Protect scenic features from constructed and human intrusions and preserve the visitor's experience of the natural landscape and historical features by minimizing adverse impact on aesthetic resources.

Aesthetic Goal 1 Guidelines

Aesthetic Guideline 1-1: Design new site-specific and contextual facilities. Reinforce the colors, shapes, scale, and materials in the surrounding environment to integrate and complement the Park's natural setting. Preserve and showcase scenic views, use native (or replicated) building materials where appropriate, use muted colors that reflect the natural surroundings, and take advantage of (or screen) transient conditions (e.g., weather, wind, sunlight, etc.) as appropriate.

Aesthetic Guideline 1-2: New construction should be compatible with, but differentiated from, the historic Park rustic resources to avoid a false sense of history.

Aesthetic Guideline 1-3: Develop and implement design standards or guidelines for Park facilities and signage to share similarities in style or materials, create a sense of park identity and visual continuity, and reflect and preserve positive aesthetic values. Evaluate "first impressions" at Park entrances and access points and organize, consolidate, screen, or remove unnecessary repetitive or unsightly elements.

Aesthetic Guideline 1-4: Where appropriate, visually screen operations facilities (e.g., maintenance yard, storage areas) from primary public-use areas. Use methods that either use or mimic natural elements to minimize the negative visual impact of these facilities.

Aesthetic Guideline 1-5: Limit artificial lighting to avoid brightening the dark night sky. Restrict night lighting to the more developed areas of the Park (e.g., buildings and parking lots) and provide lighting fixtures that focus the light downward. Light levels should be as low as possible, consistent with public safety standards. Refer to State Parks Lightscape Protection Policy (DOM 2004, Chapter 0300).

Aesthetic Goal 2: The scenic integrity of the natural terrain within the viewshed of SR 14 shall be protected.

Aesthetic Goal 2 Guideline

Aesthetic Guideline 2-1: Land use or development that significantly impairs or detracts from motorists' views passing through the Park shall not be permitted.

4.6.1.10 Vegetation Resources

The numerous rare, endangered, and other special interest plant species occurring in the unit represent principal resource values of statewide significance. Park staff has recorded the locations of many of these species in recent years. These records have resulted in a better understanding of species distribution, including distribution changes from year to year, and this information is extremely valuable in planning new facilities and general visitor use management. The Park supports 16 vegetation types described in A Manual of California Vegetation, Second Edition (Sawyer, et al. 2009).

Native Plant Communities

Sixteen vegetation communities- including Joshua tree woodland, riparian scrub, creosote scrub, and others - characterize the Park. These vegetation communities

provide essential habitats for many plant and wildlife species. The natural distribution and density of plants in the unit are altered in many areas because of historical land use. Denuded areas on hillside slopes and across alluvial plains have been caused by vehicle use. Elsewhere, mining scars also occur, detracting from the Park's natural landscape. Livestock trespass has also affected plant life in the unit.

Native Plant Communities Goal 1: Promote and restore the sustainability of natural ecosystem processes by actively managing plant community health and development while protecting cultural landscapes and resources. Efforts also will address the conservation of sensitive and unique species and the control of invasive exotic species.

Native Plant Communities Goal 1 Guidelines

Native Plants Guideline 1-1: State Parks will develop scientifically based vegetation management objectives for habitat restoration and enhancement. Furthermore, California State Parks will develop management plans that avoid or minimize human impacts on the native plant communities within the Park. Tribes will be consulted in the development of such management plans so that consideration can be given to traditional gathering needs and integration of traditional knowledge.

Native Plants Guideline 1-2: When appropriate, State Parks will seek partnerships with neighboring landowners to implement a congruent plan for restoring and preserving desert plant community health on a landscape scale.

Sensitive Plant Species

Many plants in the Park are specifically adapted to the desert environment and the unique soils found here. Because of their limited distribution, environmental requirements, and often due to human impacts, these species become rare, threatened, or endangered.

Sensitive Plant Species Goal 1: Protect and conserve all sensitive plant species in the Park by protecting and stewarding the Park's natural ecosystems.

Sensitive Plant Species Goal 1 Guidelines

Sensitive Plants Guideline 1-1: State Parks will protect sensitive plant species, including those that are listed under Federal and State laws as rare, threatened, or endangered, candidates for listing, or that are species of concern. Protection methods may include habitat preservation, seed banking, restoration/enhancement, and visitor education.

Sensitive Plants Guideline 1-2: A scientifically sound protocol for sensitive plant surveys will be developed and implemented to locate and monitor known and

unknown sensitive plant populations. In addition, sensitive plant surveys will be conducted as part of the environmental review process for future projects. It will be a priority to avoid or minimize cumulative negative effects on sensitive plant populations and habitats.

Sensitive Plants Guideline 1-3: Regular monitoring of known populations of sensitive species will be conducted to track population trends and sustainability through time. Propagation and reintroduction programs may be considered with the consultation and assistance of research institutions and other government agencies. Projects may require inter-agency partnerships to plan and implement conservation actions.

Sensitive Plants Guideline 1-4: Sensitive species like Red Rock tarplant (*Dienandra arida*) that exhibit extreme rarity in the Park and region will be management priorities. State Parks will use scientific information to determine how sensitive species tolerate various disturbances and use this information to develop sensitive species management plans.

Sensitive Plants Guideline 1-5: State Parks will avoid or minimize human activities that cause imbalances in the natural ecological system. State Parks will conduct management activities, such as invasive exotic plant control and habitat restoration, that foster ecological balance.

Invasive Exotic Plants

Generally, an exotic plant is a species not known to have occurred previously in an area. Invasive exotic plants pose a threat to native species, out-competing native plants for scarce, valuable resources.

The Mojave Desert is known to harbor exotic plant taxa, and some have altered the ecological processes characteristic of the region, such as water availability and fire regimes. Approximately 36 species of exotic plants are reported at the Park, constituting approximately 8% of the flora. Locations of infestations are associated with the disturbance caused by previous settlements, mining, and off-road vehicle activity. The most widespread of these are non-native annual grasses, mustards, and tamarisk trees. Tamarisk (*Tamarix ramosissima*) spreads in wetland and riparian areas, competing for scarce moisture at the expense of native plant communities.

Non-native seeds can be spread via wind, vehicles, and equipment when carried in animals' fur and when animals eliminate seeds after ingesting them. There is ample evidence that pack animal solid waste contributes to introducing and spreading exotic plant species. Measures can help prevent or mitigate this, such as removing as much as possible of animals' solid waste along trails.

Invasive Exotic Plants Goal 1: Manage invasive exotic plants to minimize their negative impacts on native plant and animal species and other natural resources and natural processes.

Invasive Exotic Plants Goal 1 Guidelines

Invasive Plants Guideline 1-1: State Parks will develop an invasive exotic plant species management plan. The plan will identify, map, monitor, and control exotic plant infestations that threaten native habitats. Monitoring and control efforts may require cooperative work with neighboring landowners, including government agencies like the BLM, to be effective at a landscape scale.

Invasive Plants Guideline 1-2: The management plan will address the ability of horses and other pack animals to carry and spread exotic plant seeds throughout the Park. The Park will consider adopting a policy congruent with federal agencies, such as the National Park Service, to evaluate regulations to reduce exotic species introduction. Such a program may include the removal of solid waste by equestrians.

Invasive Plants Guideline 1-3: State Parks will develop interpretive content media about how exotics like tamarisk have altered the Mojave Desert landscape and natural processes.

4.6.1.11 Wildlife Resources

A dry and sometimes harsh desert environment characterizes the Park's 16 vegetation communities and desert canyon, cliff, and outcrop habitats. These varied native habitats support a wide diversity of wildlife species, including mammals, reptiles, birds, and invertebrates. Many species make their homes associated with particular vegetation communities, geology, or hydrological characteristics. The Park is known to support three listed species under the state or federal Endangered Species Acts (CESA, 1984; ESA 1973, as amended); Desert tortoise (*Gopherus agassizi*), Mohave ground squirrel (*Spermophilus mohavensis*), and Golden eagle (Aquila chrysaetos) (CDFG Endangered and Threatened Animals of California, 1995; CDFG List of Fully Protected Animals, California Fish and Game Code Section 3511, birds; Section 4700, mammals and Section 5050, reptiles and amphibians). The Park is also home to several other special status species or California Species of Concern, such as Townsend's big-eared bat. A major limiting factor in the survival of many animals in the desert is water availability. Therefore, springs and seeps are extremely important to desert wildlife.

Within native ecosystems, the presence of people and associated food, trash, and development can sustain and enhance populations of some species at the expense of others, thus upsetting the natural ecological balance. Within the Park, this is most likely to occur in areas visited frequently for camping and picnicking.

Wildlife Goal 1: Perpetuate wildlife assemblages by protecting, restoring, and interpreting the native terrestrial and aquatic animals within the Park.

Wildlife Goal 1 Guidelines

Wildlife Guideline 1-1: State Parks will avoid or minimize human activities that cause imbalances in natural ecological dynamics when possible. California State Parks will conduct management activities, such as refuse management, habitat restoration, and other actions that foster ecological balance.

Wildlife Guideline 1-2: Indicator species or ecosystem health will be monitored regularly to detect trends or problems at the earliest possible point.

Wildlife Guideline 1-3: State Parks will use sound resource management methods to evaluate the need for an individual animal or population regulation. The regulation process is necessary to develop specific management plans or programs incorporating habitat modification and visitor education as the first means of population regulation. Direct regulation will be carried out per the California State Parks Resource Management Directives and comply with the Department Operations Manual (DOM). Population regulation activities will be subject to environmental review, and disturbance to non-target native species and other features will be avoided or minimized.

Wildlife Goal 2: Springs and seeps shall be managed to protect and perpetuate their value to the wildlife.

Wildlife Goal 2 Guidelines

Wildlife Guideline 2-1: Preserve existing water sources for wildlife.

Wildlife Guideline 2-2: Natural water supplies that support wildlife shall not be used for domestic or Park purposes unless it can be shown that natural values would not be adversely affected.

Wildlife Guideline 2-3: No new facility or activity shall be permitted near a spring or seep that would significantly adversely affect its wildlife value.

Sensitive Animal Species

The Park's ecosystems support a suite of rare, threatened, and endangered species including desert tortoise, raptor nesting and rearing areas, spotted and Townsend's big-eared bat habitat, and the Mohave ground squirrel. Each of the sensitive species found within the Park has declined throughout their range; thus, managing this valuable habitat is essential for the long-term survival of these species in the Mojave Desert region.

Sensitive Animal Species Goal 1: Protect all sensitive wildlife species occurring in the Park by protecting and stewarding the Park's natural ecosystems. Sensitive wildlife

species include those listed under Federal and State law as threatened or endangered, species of concern, and those considered locally sensitive or endemic to the area.

Sensitive Animal Species Goal 1 Guidelines

Sensitive Species Guideline 1-1: Monitor sensitive species to track sensitive animal populations' presence, health, and sustainability in the Park. Projects may require interagency partnerships to plan and implement conservation actions.

Sensitive Species Guideline 1-2: State Parks will stress the protection of listed, special status, and sensitive species, including but not limited to the desert tortoise, Mohave ground squirrel, birds of prey, cliff or crevice dwelling species, and others and the conservation of their habitats. Focused surveys, reliable scientific methodologies, and interagency cooperation will be used as needed to develop appropriate long-term monitoring programs. This data will aid in developing management plans that define the requirements of and threats to these species. Regulation, interpretation, and California State Parks' visitor cooperative partnerships will manage human activities that threaten the fitness or health of these animals. As appropriate, the effects of visitor use will be redirected or eliminated.

Exotic Animals

Non-native animal species have been shown to exert pressure on native species through competition for resources. The non-native chukar competes with the native California quail for food and nesting resources. Non-native invertebrates can also disrupt the natural ecological balance. Although this is not currently a major issue at the Park, it may become more problematic as more of the Park's resources are made available for public use.

Exotic Animals Goal 1*:* California State Parks will work to manage exotic animals that upset the natural ecological dynamics of native species.

Exotic Animals Guideline 1-1: Regular monitoring of exotic species will be conducted to track the spread of ecologically damaging organisms. Monitoring may require cooperative work with neighboring landowners, including government agencies like the BLM.

Habitat Connectivity

Facilitating habitat connectivity for the movement of plants and animals within the Park and throughout the region outside the Park is imperative to preserving natural ecosystem dynamics and regional biodiversity. Landscape Linkages, also known as habitat corridors or bio corridors, are interconnected tracts of land characterized by significant natural resource value through which native species can disperse. The Park is

an integral component of valuable open space to link with other habitats and overcomes many connectivity constraints.

The Park is within the Mojave and Sonoran Desert Ecoregion, as identified in *Missing Linkages: Restoring Connectivity to the California Landscape*, a November 2000 assessment of California's habitat linkages. This publication identifies highways, military bases, urbanization, rural residential development, ranches, golf courses, resorts, extractive mining operations, grazing, agriculture, railroads and aqueducts, and the degradation of habitat due to off-road vehicles as components of habitat fragmentation and constraints to wildlife movement.

An additional pressure across the desert ecoregion on maintaining interconnected tracts of open land that native species can disperse through is renewable energy development. SR 14 provides the most obvious example of habitat fragmentation within the Park.

Habitat connectivity Goal 1: Maintain or enhance the opportunity for dispersal and movement of native plants and animals through the region.

Habitat connectivity Goal 1 Guidelines

Habitat connectivity Guideline 1-1: State Parks will maintain high standards for ecosystem health and biodiversity by protecting plant and animal habitats and dispersal corridors in the Park.

Habitat connectivity Guideline 1-2: State Parks will avoid or mitigate any degradation or fragmentation of habitat in all planning efforts and developments.

Habitat connectivity Guideline 1-3: State Parks will monitor regional planning efforts with Kern County and the BLM concerning renewable energy development projects on nearby lands to protect biodiversity and maintain habitat connectivity for species dispersal.

Habitat connectivity Guideline 1-4: State Parks will promote natural resource preservation by recognizing the importance of sustainable populations of native species and their genetic diversity. Inventory and monitoring of natural resources and human impacts will be carried out at regular intervals to assess and document the health of species that rely on large areas to live, hunt, and disperse. Furthermore, State Parks will participate with government agencies and research institutions in regional resource inventory and monitoring.

Habitat connectivity Guideline 1-5: The ecological significance of habitat connectivity, emphasizing the Park and the surrounding region, will be interpreted for park visitors.

Habitat connectivity Guideline 1-6: State Parks will work to restore the regional connectivity and wildlife movement that has been interrupted by SR 14.

4.6.1.12 Cultural Resources

Archaeological Sites (Precontact, Contact, and Post-contact)

The Park includes over 240 known archaeological properties. These areas include Native American habitation and campsites, procurement and manufacturing sites, ceremonial sites, and nineteenth- and twentieth-century archaeological sites including mining, homesteading, filming, transportation, early recreation sites, etc. The Last Chance Canyon Archaeological District is partially within the Park and is listed on the NRHP. Several other sites and areas within the Park are considered potentially eligible for inclusion on the NRHP or the CRHR, including an archaeological district of historic mining sites. The Kawaiisu and other local Native American groups consider various sites and areas sacred or highly sensitive. These may contain features such as burials, cremations, rock art, or ceremonial places. Some locations have been placed on the California Native American Heritage Commission's sacred sites list. Others were mentioned during consultation conducted as part of the general planning process.

Only about ten percent of the Park has been examined for cultural resources in the past 30 years, so the potential for additional cultural sites to be present within the Park is high. In addition, changing conditions, including erosion, flash floods, animal disturbance, visitor disturbance, unauthorized activities, vandalism, etc., can affect cultural resource sites and either expose or bury additional artifacts or features or cause damage or destruction.

Over 25 percent of the documented archaeological sites within the Park are from the nineteenth and twentieth centuries and represent European, American, and other people's presence and activities in the region.

Archaeological Sites Goal 1: Identify, document, record, and evaluate archaeological and cultural resources within the Park.

Archaeological Sites Goal 1 Guidelines

Archaeological Guideline 1-1: Develop an ongoing program for an archaeological survey, GPS mapping, site recordation and evaluation, and preparation and submission of records and reports for the cultural resources within the Park. Submit all new and updated site records to the California Historical Resources Information System (CHRIS) to ensure this information is available for future studies. Maintain a comprehensive, regularly updated Red Rock Canyon State Park sites list.

Archaeological Guideline 1-2: Work with local and neighboring tribes and individuals to identify and nominate those Native American archaeological and cultural resources eligible for inclusion in NRHP and CRHR either as individual sites, districts, or cultural landscape resources.

Archaeological Guideline 1-3: Work with historical data and descendants to identify and nominate those historic-period archaeological resources that may be eligible for inclusion in the NRHP and CRHR as individual sites, districts, or cultural landscape resources. Identify and locate descendants of families who lived or worked within the Park during the historical era. Include homesteaders, miners, construction and railroad workers, recreationalists, movie personnel, State Parks staff, etc. For those with memories of the Park, conduct oral history interviews and request access to photos or other documents that the individual or family may have of the time in the Park. The information gained from these interviews, photos, and documents will complement and expand upon existing historical data on early land use. It could help in locating, identifying, and evaluating historic archaeological sites.

Archaeological Guideline 1-4: Promote cooperative research ventures with local educational institutions and other governmental agencies to complement site documentation, evaluation, and analysis needs and encourage site protection and preservation.

Archaeological Sites Goal 2: Protect, stabilize, and preserve the archaeological resources within the Park.

Archaeological Sites Goal 2 Guidelines

Archaeological Guideline 2-1: Develop a management plan for cultural resources within the Park and implement the recommendations of such a plan.

Review and integrate recommendations from previous studies and assessments (e.g., Bandera et al. 2019; Mealey et al. 2014; Sampson 2006, 2009; etc.) into the management plan as appropriate.

Work with local Native American groups to develop appropriate protection and preservation plans for Native American archaeological sites and implement such plans.

Archaeological Guideline 2-2: Practice careful planning of all undertakings, including routine maintenance and new facility development, to avoid or minimize significant impacts on the park's cultural resources. As appropriate, planning should include archaeological and historical research and consultation with the Kawaiisu or other cultural groups.

Prior to any maintenance, construction, or other activities that have the potential to disturb an area of known or possible archaeological sites, or in areas that have not been inspected for archaeological resources within the past five years, archaeological survey and/or testing will be carried out to determine if significant cultural resources exist.

Any maintenance, construction, or other activities that have the potential to encounter cultural resources will be monitored by a qualified cultural resource specialist (archaeologist, historian, and/or Native American monitor). Monitor/s shall observe all project work at the discretion of the monitor/s. Monitors will document and record any identified cultural resources, including diagnostic isolates, and a report of findings will be prepared.

If anyone identifies previously undocumented cultural resources or suspected cultural resources during any maintenance, construction, or other activities – work will be temporarily halted in the area of the resource/suspected resource. Work will not resume in that area until a qualified archaeologist or cultural resource specialist inspects and records the resource, and determines and implements the appropriate avoidance, protection, or treatment in accordance with applicable laws and professional procedures.

In the event of an accidental discovery or recognition of human remains during any maintenance, construction, or other activities – all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Hold to the highest standards and requirements any archaeological investigation/collection permits. Such permits, especially those entailing archaeological excavations, should include comprehensive research designs that review existing literature and document existing collections and provide appropriate cataloging and curation of excavated materials. Excavation permits should also include Tribal review and approval and approval from senior State Parks archaeological staff. Archaeological excavations that have not been reviewed as part of an existing project require evaluation under State Parks'

environmental review process to avoid significant impacts on the environment and other State Parks' resources.

Archaeological Guideline 2-3: Develop an Emergency Preparedness Cultural Protection Plan containing measures to protect cultural resources during flash flood events, earthquakes, wildfires, or other natural disasters and procedures for assessing damages after a natural disaster event.

Archaeological sites most vulnerable to such damage, such as those located along drainages and washes, those with dense surface artifact distributions, those with brick or stacked-stone features, those with rock shelters or caves, those with adits or shafts, those with combustible materials, rock art sites, etc., will be identified for implementation of such protection measures.

Archaeological Guideline 2-4: Promote the protection of cultural resources through expanded education, public information, and regulatory efforts. Educate the Public and staff regarding protecting cultural resources and why they need to be protected.

Ensure that staff and visitors are made aware of applicable cultural resource protection laws such as Executive Order W-26-92; Public Resources Code Sections 5024.5, 5097.5, 5097.99, 5097.995, 21083.2, and 21084.3; Health and Safety Code Sections 7050.5 and 7052; Penal Code Sections 622½ and 623; Government Code Sections 6254 and 6254.10; etc. Use regulatory signs, informational messages, educational programs, online information, brochures, etc., to educate the public regarding these protections and why they are in place.

Provide focused cultural resource training to State Park rangers and make locations of previously recorded cultural sites known to them to help monitor site conditions and watch for deterioration or vandalism. Ensure rangers have the tools and resources they need to protect these sites. Increase awareness of these staff to current cultural resource protection laws.

Archaeological Guideline 2-5: Carry out regular condition monitoring and assessing of cultural sites and resources.

Establish a program for a periodic professional examination, assessment, and evaluation of the Park's cultural resources. Examinations should be conducted by a team of qualified California State Park archaeologists and should include documentation of sites and features through photographs, measurements, and GPS recordation. Condition monitoring/assessment records and updated site forms should be regularly prepared and submitted to the California Historical Resources Information System (CHRIS) to document observed changes.

Implementation of recommended protections identified through such work is necessary for site protection.

Assess the effects of visitor use (camping, hiking, mountain biking, horseback riding, vehicle use, etc., as well as unauthorized collecting, off-trail use, and vandalism) and natural processes (erosion, plants, animals, insects, wildfire, earthquake, flood, etc.) on archaeological sites. Several studies have already been undertaken and document vehicle and unauthorized-use damages to archaeological sites. Preventative/protection measures should be implemented where appreciable damage to sites is/has been identified. Such measures include site-specific closures, moving roads, trails, or other damaging activities away from archaeological sites, revegetation, sign placement, fencing, site burial, security monitoring, education, and other mitigation or avoidance measures.

Archaeological Guideline 2-6: Consider developing an archaeological site stewardship program where volunteers are trained to help protect archaeological sites through periodic visitation and recognition, recordation, and reporting vandalism and other threats.

Work with local Native American groups to assist with developing a site stewardship program.

Archaeological Guideline 2-7: Identify lands containing significant historical resources outside the Park for acquisition or joint protection efforts. Some archaeological sites, including CA-KER-148, CA-KER-246, CA-KER-1057, CA-KER-3050H, CAKER4385H, CA-KER-1070, CA-KER-5134, CA-KER-5135, CA-KER-5954/H, CA-KER-6236, and others are currently split by the Park boundaries with one portion inside the Park and additional portions outside. Aside from acquiring lands that contain portions of sites or cultural landscapes already partially within the Park, archaeological sites and historic properties should be specifically chosen to complement those already within the Park.

Develop a program for cultural resource protection in conjunction with agencies or companies with right-of-way access within or adjacent to the Park (e.g., BLM, Caltrans, utilities, mining companies, etc.). The program should include communication during planning phases of projects or work that may have the potential to affect cultural resources within Red Rock Canyon State Park.

Archaeological Guideline 2-8: Work with landowners of adjacent properties, inholdings, etc. to “elicit the cooperation of the owners of both identified and unidentified cultural resources, to encourage the owners to perceive these resources as assets rather than liabilities, and to encourage the support of the

general public for the preservation and enhancement of historical resources" including archaeological, historical, and Native American sites and places (PRC 5020.7).

Archaeological Sites Goal 3: Educate the public and interpret the archaeological resources within the Park.

Archaeological Sites Goal 3 Guidelines

Archaeological Guideline 3-1: Conduct site studies to determine if on-site interpretation programs (signs, tours, education programs, etc.) should be developed for those archaeological features that are currently in or adjacent to existing trails, proposed trails, or proposed facilities, such as day-use parking, trailheads, or campgrounds. Include Native American consultation as part of such studies.

Archaeological Guideline 3-2: Expand the education program about archaeological and cultural resource sensitivity for local schools, community groups, park neighbors, and regular visitors. The program should be developed and presented in conjunction with the Kawaiisu and other local Native American groups.

Archaeological Guideline 3-3: Incorporate information about the importance of archaeological and cultural resource protection into interpretation and education programs, websites, brochures, signage, and the Visitor Center at the Park.

Archaeological Guideline 3-4: Keep the Visitor Center's archaeological interpretive displays and content up to date and in line with current scholarship and respectful to the Kawaiisu and other local Native American groups. Some possible ideas for such facilities include:

Inviting local tribes to display archaeological collections or items from their groups on a seasonal or rotating basis.
If requested by Tribal Peoples, create a permanent traditional living environment for education, demonstrations, and related workshops. It can include the construction of traditional dwellings, bedrock grinding areas, brush ramadas, etc., to use for interpretive programming about traditional lifeways.

Archaeological Guideline 3-5: Continue ongoing consultation with Kawaiisu and other Native Americans. This consultation is a vital part of presenting their ancestors' stories. Per departmental policy (Department Notice [DN] 200705), ensure that regular consultation is held to obtain input on preserving and interpreting archaeological resources associated with their heritage.

Tribal Cultural Resources

From ancient times, people have lived in and visited the Park's area because of the variety and importance of its plant, animal, and mineral resources and the special character of the place. The Kawaiisu and other Native American groups recognize cultural and religious significance within the Park. Ethnographical accounts and ongoing Tribal consultations reveal that many places have special meanings to the Kawaiisu, including rock formations, burial areas, shrines, ceremonial spaces, and other places used by their ancestors.

The Kawaiisu consider the lands within the Park to be part of their ancestral homelands. The state parks system recognizes their long relationship with these lands and has established certain programs and procedures to enable them to continue this special relationship.

Tribal Cultural Resources Goal 1: Identify and interpret the tribal cultural resources, traditional cultural places, and past and present cultural uses in the Park and protect these culturally significant places.

Tribal Cultural Resources Goal 1 Guidelines

Tribal Cultural Resources Guideline 1-1: Work with local Native American groups and historical accounts and ethnographic records to identify tribal cultural resources, including special cultural and religious significance sites within the Park.

Tribal Cultural Resources Guideline 1-2: Record the tribal cultural resources within the Park through consultation with the Kawaiisu and other Native American groups.

Tribal Cultural Resources Guideline 1-3: Work with Native American groups to protect and preserve the tribal cultural resources, traditional cultural places, areas of significance, and sacred sites within the Park.

Any maintenance, construction, or other activities that have the potential to encounter or disturb tribal cultural resources will involve consultation and monitoring in accordance with state law and State Parks policies. Native American monitoring will be conducted by a representative/representatives of a local Tribe/local Tribes, as identified by the Native American Heritage Commission (NAHC).

If anyone identifies previously undocumented tribal cultural resources or suspected tribal cultural resources during any maintenance, construction, or other activities – work will be temporarily halted in the area of the resource/suspected resource. Work will not resume in that area until the

Native American monitor inspects the resource, and appropriate avoidance, protection, or treatment is implemented.

In the event of an accidental discovery or recognition of human remains during any maintenance, construction, or other activities – all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Hold to the highest standards and requirements any archaeological investigation/collection permits. Such permits, especially those entailing archaeological excavations, should include comprehensive research designs that review existing literature and document existing collections and provide appropriate cataloging and curation of excavated materials. Excavation permits should also include Tribal review and approval, and approval from senior State Parks archaeological staff. Archaeological excavations that have not been reviewed as part of an existing project require evaluation under State Parks' environmental review process to avoid significant impacts on the environment and other State Parks' resources.

Tribal Cultural Resources Guideline 1-4: Develop interpretation and education programs with local Native American groups to highlight their cultures, continuing presence, and long-time use of and association with Red Rock Canyon State Park and its resources.

Tribal Cultural Uses

Certain practices, such as traditional gatherings or ceremonies, may require a special event permit (State Parks, 246). Collecting plant and mineral materials for traditional use requires a Native American gathering permit (State Parks, 864). This permit facilitates access to, and collection of traditional materials, prevents significant inadvertent impacts on natural resources, and promotes adherence to regulations, policies, and procedures regarding natural and cultural resources. It enables State Parks rangers and other staff to be aware of and supportive of such practices. However, Parks has received negative feedback regarding the permitting process and is in the process of

developing Tribal Gathering Agreements and updating the DPR864 to make the process more transparent and accessible.

Tribal Cultural Uses Goal 2: Work with Native American groups to maintain their continued use of the Park for ceremonial and traditional practices, and streamline the permitting procedures for such practices at the Park.

Tribal Cultural Uses Goal 2 Guidelines

Tribal Cultural Uses Guideline 2-1: Encourage and facilitate Native American use of Traditional places for Tribal heritage and educational activities such as Tribal gatherings, storytelling, ceremonies, and other activities.

Tribal Cultural Uses Guideline 2-2: Develop protocols, agreements, or memorandums of understanding with local tribes to handle the administration of the permitting process. This protocol may include annual permitting by the Tribal unit/band for members with a Tribal ID card, a parking permit, or other letters of authorization for the use of the Park for traditional non-recreational activities without paying a day-use/parking fee.

Historical Resources

Over the years, various historical events, trends, individuals, and groups of people have shaped and modified the land now contained within the Park. The result is many potentially significant historical resources. These include roads, campsites, mines, and the remains of buildings, structures, sites, features, districts, and important motion picture filming locations. The Park's 18th, 19th, and 20th-century resources reflect over 250 years of written documentation of land use representing sixteen overlapping periods:

Post-Contact Exploration and Settlement

- European Exploration and Travel (ca. 1770-1849)
- Early U.S. Military Activities (1855-1867)
- Increase in Road Traffic and Rail Connections (1860-1894)
- Owens Valley Aqueduct Construction/Red Rock Railroad (1908-1910)
- Homesteading and Commercial Enterprise (1913-1940s)

Mining and Mineral Extraction

- The Advent of Gold Prospecting and Placer Mining (1851-1867)
- Early Transportation Linkages Established (1863-1890)
- 1890s Gold Rush (1892-1896)
- Commercial and Subsistence Mining (1902-1940)
- Semi-precious Mineral Mining and Collecting (1920s-1972)

- Industrial Mineral Mining and Extraction (1923-1978)

  Tourism and Conservation

- Aesthetic Appreciation, Conservation, and Recreation (1893-Present)
- Exploration and Scientific Study of Paleontological, Geological, and Natural Resources (1894-Present)
- Automobile-Oriented Tourist Destination (1905-1939)
- Hollywood's Back Lot (1912-Present)
- Modern Highway Improvements (1920s-Present)

Whether extant, in ruins, or at sites of significant events or activities, the resources associated with these historical periods offer tangible connections to the Park's historical development. The General Plan's Goals and Guidelines provide the basis for identifying and protecting the Park's unique historic resources. In addition, the Goals and Guidelines should guide the Park's utilization of these historical resources to expand State Parks' ability to provide high-quality outdoor recreational, educational, and inspirational experiences at the Park.

Historical Goal 1: Ensure the highest level of appropriate measures to identify and document the Park's historical resources.

Historical Goal 1 Guidelines

Historical Guideline 1-1: Maintain a current, updated inventory, geographic information system (GIS) mapping, and informational database for those historic resources within the Park listed or may be eligible for listing on the NRHP and CRHR.

Historical Guideline 1-2: *Locate* individuals or their descendants who worked, lived, or visited the Park in the 1800s or 1900s and conduct oral history interviews. The information gleaned from these individuals may be used to complement and expand upon existing historical data for planning and interpretive purposes.

Historical Guideline 1-3: Collect, store, preserve, and make available any original photographs, plans, documents, objects, transcribed oral histories, etc., associated with the Park's historical resources to qualified researchers and interpreters.

Historical Goal 2: Ensure the highest level of professional measures to protect the Park's historical resources.

Historical Goal 2 Guidelines

Historical Guideline 2-1: Actively designate eligible resources to NRHP and CRHR. Listing on the NRHP may qualify as a historical resource for federal emergency post-disaster restoration or reconstruction funding sources.

Historical Guideline 2-2: Complete Historic Structure Reports (HSRs) or Cultural Landscape Reports (CLRs) for extant historic structures, objects, sites, and landscapes. Each will provide physical, graphic, and photographic information about a resource's history and existing condition; recommend appropriate preservation treatments, managerial actions, and appropriate use; and outline recommendations for future work without compromising its character-defining features.

Historical Guideline 2-3: Base historical resource management decisions on a clear understanding of how they meet State Parks' mission to protect their most valuable cultural resources while still creating opportunities to inspire, educate, and provide high-quality outdoor recreational experiences for park visitors.

Historical Guideline 2-4: Develop managerial procedures for historical resources based on internal and external professional standards and guidelines such as State Parks' Cultural Resource Management Directives; California Public Resources Code sections 5020 et seq.; Executive Order W-26-92; and the United States Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties.

Historical Guideline 2-5: Employ applicable professional standards to determine appropriate use (stabilize, restore, reconstruct, or modify for adaptive reuse) for all historic properties to provide regular maintenance and long-term preservation in support of State Parks' overall Mission to protect its most valued cultural resources.

Historical Guideline 2-6: Conduct additional studies (i.e., archival research, detailed site, and structure recordation and GIS mapping, subsurface testing, etc.) for any proposed project or undertaking that has the potential to disturb any known or potentially eligible historical resource.

Historical Guideline 2-7: Consider acquiring additional land from willing sources containing historical resources linked to those already identified within the Park; or areas that do not contain such resources but may serve as buffers for their protection.

Historical Goal 3: Promote a better understanding and a greater appreciation for the Park's historical resources and cultural history.

Historical Goal 3 Guidelines

Historical Guideline 3-1: Undertake site-specific studies to determine which onsite interpretive programs (i.e., signs, brochures, educational programs, public tours, etc.) should be developed to educate the public about the cultural history and associated significant historical resources in public-use areas.

Historical Guideline 3-2: Initiate staff or docent-led indoor or outdoor activities introducing visitors to the Park's historic areas, resources, and cultural history.

Historical Guideline 3-3: Propose renaming certain geographical locations and trails with names that better represent and interpret the Park's historical landscape.

Historical Guideline 3-4: Propose utilizing Native American (Kawaiisu) and Spanish translations of English text, where appropriate, throughout the Park to broaden visitors' appreciation of the area's cultural heritage.

Cultural Landscape

Cultural landscape resources are historical properties made up of geographic areas containing various historical, natural, or ethnographical features. In contrast to more traditional historical resource properties such as individual buildings, structures, or sites, culturally significant landscape properties often encompass an area containing groupings of historical and natural resources organized in spatial patterns associated with a historic event, activity, or person. Cultural landscape resources can also be associated with other cultural or aesthetic values.

Typical character-defining feature types of cultural or historical landscape resource properties may include topography, vegetation, circulation, water features, structures, buildings, site furnishings, or objects. These features and elements that make up the individual components of these properties may therefore be natural or manufactured.

Cultural landscapes require multi-disciplinary management to preserve their integrity as eligible historical resources while recognizing the occasional conflicts that may arise with other natural or recreational resources.

The following goals and guidelines are prepared to ensure that input is gathered to provide the best approach for protecting the Park's cultural landscape resources prudently and feasibly with natural or other resource management goals.

Cultural Landscape Goal 1: Undertake comprehensive surveys, recordation, evaluation, and management studies, and plans for eligible cultural landscape resources within the Park.

Cultural Landscape Goal 1 Guidelines

Cultural Guideline 1-1: Identity, prioritize, record, and preserve cultural landscape resources following professional best practices as outlined in the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes. Cultural Landscape Reports and management plans should be completed for any identified cultural landscape property. District Staff shall consult with tribes to identify cultural landscapes within the Park.

Cultural Guideline 1-2: Utilize project teams that include the full spectrum of Park operations and natural and cultural specialists to obtain input and work cooperatively to manage the Park's cultural landscape resources prudently and feasibly to all park resources concerns.

Cultural Guideline 1-3: Provide interpretation of the Park's cultural landscapes that address the interrelationship between the natural environment and those people and cultures that created these properties.

Cultural Guideline 1-4: Avoid or minimize negative impacts on cultural resources during environmental regulatory procedures used to evaluate natural resource management techniques (e.g., prescribed fire) before program implementation.

Cultural Landscape Goal 2: Develop area-specific goals and guidelines for planning areas within the Park that contain Historic Cultural Landscapes. These areas contain unique combinations of historical and natural resources with the potential to provide unique visitor experiences tempered by physical, developmental, and managerial challenges.

Cultural Landscape Goal 2 Guideline

Cultural Guideline 2-1: Develop specific applications of the Park's broader Vision and Parkwide Goals and Guidelines. [See Area-Specific Goals and Guidelines for each area.]

4.6.1.13 Climate Change

After millennia of relative climatic stability, the atmosphere and oceans are warming, and scientists are observing a cascade of secondary and tertiary impacts predicted by modeling. According to the Intergovernmental Panel on Climate Change, these changes "may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use." The specific changes in atmospheric composition most concerning is the accumulation of greenhouse gasses such as carbon

dioxide, that can persist in the atmosphere for a century and continue to force temperature increases.

Since adopting landmark climate change law in 2006 to set limits on annual GHG emissions, California has adopted numerous laws and policies on this topic, including targeting the total elimination of all greenhouse gasses by 2045. In addition, because at least some impacts of climate change can no longer be avoided, California has undertaken numerous scientific studies and adopted a Climate Adaptation Plan that articulates anticipated impacts by region and identifies goals and objectives to forestall the worst outcomes and build adaptive capacity and resilience.

State Parks is working to reduce its greenhouse gas footprint, while making climate considerations explicit in its planning documents, prioritizing and carrying out management actions, and aligning our efforts with the overall statewide approaches. At Red Rock Canyon State Park, this requires continuing the investment in alternative energy sources to power the Park and serve visitors, while assessing emerging impacts and anticipating future impacts that can be addressed through tailored management activities that build the resilience of resources and facilities and adapt to shifting demands on park amenities. The Park's maintenance and visitor services buildings at the Ricardo Campground Complex are powered using solar panels. Maintaining and expanding solar and other forms of green energy at this and other locations will continue to reduce the Park's carbon footprint while powering necessary facilities.

In most cases, the Park is a single destination, further raising carbon emissions associated with a single visit. While State Parks does not include the carbon footprint of its visitors in its projections, incentive-based programs that encourage the use of hybrid vehicles as a mode of travel, development of electric vehicle charging stations, and establishing bus and shuttle routes to the Park are potential ways of reducing the carbon footprint associated with visiting the Park. Interpretation and public outreach will include climate change messaging, promote sustainable park use, and encourage people to reduce their carbon footprint in their daily lives.

Climate Change Goal 1: Understand the climate impacts felt to date and predicted impacts based on best available information.

Climate Change Goal 1 Guidelines

Climate Guideline 1-1: Collect local weather data and determine whether changes recorded in climate data correlate with trends observed in vegetation, wildlife, fire, and hydrology.

Climate Guideline 1-2: Evaluate statewide and regional summaries of anticipated climate change impacts and vulnerabilities. These include but are not limited to the regional summaries in California's Fourth Climate Change Assessment, the California

Climate Change Adaptation Plan, and California Department of Fish and Wildlife's Vulnerability Assessments for a range of fish, wildlife, and plants. Track these and other sources of climate science information and guidance as it continues to evolve.

Climate Change Goal 2: Develop a strategy to address potential climate impacts and sustain Park goals through management actions and other activities.

Climate Change Goal 2 Guidelines

Climate Guideline 2-1: Develop management plans and establish operational priorities based on the data and understanding of climate impacts identified in Goal 1 Guidelines 1.1 and 1.2. Management plans should prioritize protecting and restoring primary natural and cultural resource values, improving habitat linkages, and responding changed visitation patterns.

Climate Guideline 2-2: Improve collaboration with statewide and local partners to better understand and implement best practices for climate resilience in the Mojave Desert landscape. In addition to Bureau of Land Management and National Park Service partners, these may include researchers in the University of California Natural Reserve System and other allied agencies.

4.6.1.14 Land Acquisitions

Most of the parcels of land surrounding the Park are owned by Federal and State governments as well as private landowners. Past land acquisitions have added significant and valuable acreage to the Park. These acquisitions have improved public access and recreation, provided additional habitat linkages and open space, as well as protected additional sensitive resources.

Land Acquisitions Goal 1: State Parks will consider additional land acquisitions.

Land Acquisition Guidelines

Land Acquisition Guideline 1-1: State Parks will actively coordinate with property owners to acquire or secure state land acquisitions to ensure key landscape habitat linkages are preserved or enhanced.

Land Acquisition Guideline 1-2: The department shall seek to acquire private inholdings and both surface and subsurface mineral rights to the entire area to control the management of all resources consistent with State Park's mission.

Land Acquisition Guideline 1-3: When considering potential land acquisitions, determine the potential benefits to the Park, such as enhanced recreation opportunities, increased scenic viewsheds, protection of watersheds, additional habitat or trail linkages, incorporation of additional natural or cultural resources, and improved operations facilities. Only acquire properties

that will provide tangible benefits such as these. All other benefits being equal, first priority should be to acquire inholdings, second priority are parcels that are contiguous with Park boundaries, and third priority are parcels that are close to and have the potential to be joined with the Park boundary.

Land Acquisition Guideline 1-4: The Department shall seek to acquire inholdings within Park boundaries if/when they become available from willing sellers.

4.6.1.15 Interpretation and Education

A General Plan defines the broadest management framework possible for a unit's development, ongoing management, interpretive programming, and public use. It provides a clear purpose, vision, and guidance on long and short-term goals and guidelines. Moreover, an approved General Plan must be in place for interpretive facility development.

Interpretive Significance, Mission, and Vision

State Parks' primary opportunity for engaging the public in the benefits and value of preserving desert wilderness and related cultural resources lies within the unit's interpretive program offerings. Effective interpretive programs spark interest in the Park's cultural, natural, and recreational resources. Furthermore, interpretation programs support park management and resource conservation efforts and foster sustainability ethics and appropriate visitor behaviors. Also essential, interpretation can guide appropriate visitor access and resource usage within parks. The interpretive mission, vision, themes, periods, goals, and guidelines for interpretation and education are central to Red Rock Canyon State Park.

Draft Interpretive Mission

The interpretive mission of Red Rock Canyon State Park is to provide high-quality, enjoyable, and relevant interpretive programs and exhibits for visitors. These programs enhance visitors' recreational experience, create a deep and meaningful connection, and promote responsible recreation enjoyment of the resources.

Draft Interpretive Vision

High-quality interpretation will connect visitors to the cultural, natural, and recreational resources of Red Rock Canyon State Park and the surrounding Mojave Desert. By becoming more knowledgeable about the Park's resources, visitors will feel the pride of ownership and gain a deeper and more meaningful understanding of the resources where they recreate.

Primary Interpretive Themes

The following primary interpretive themes and subthemes were developed from the above topics. The General Plan recommends creating an interpretation master plan and interpretation action plan to expand the interpretive themes and programs.

Theme 1 Title: The People and the History of Red Rock Canyon State Park

The rugged landscape of the Mojave Desert and its stark beauty shaped people's lives and worldviews as much as people shaped the landscape.

Subthemes:

- Over time, Red Rock Canyon has been recognized as a spiritual place for many different people and communities.
- For thousands of years, the western edge of the El Paso mountain range was a trade route for Indigenous peoples.
- Indigenous peoples managed the land that encompasses Red Rock Canyon State Park, where their ancestors gathered and traded resources.
- In the 1850s, Red Rock was used by the footsore survivors of the famous Death Valley trek, including members of the Arcane and Bennett families and some Illinois Jayhawkers.
- Since the 1930s, Red Rock Canyon State Park has served as a backdrop for Hollywood, including motion pictures, television series, advertisements, and music videos.
- For park visitors, Red Rock Canyon State Park is a place to recreate, experience the majesty and vastness of the Mojave Desert, and share family traditions with a new generation.

Theme 2 Title: The Natural Community Around Us

Although the land seems desolate and unforgiving, Red Rock Canyon State Park is a rich environment that supports thriving plant and animal communities.

Subthemes:

- Over thousands of years, Red Rock has supported various animals and plants – from prehistoric camels and elephants to the Red Rock tarplant and Mojave ground squirrel here today.
- Desert wildflowers' brilliant oranges and purple colors may seem beautiful to us, but these plants adapted their shapes and colors to attract pollinators and maximize selective advantage.

- The presence or absence of water in the park supports a variety of habitats for plants, animals, and people.
- Riparian areas like Last Chance Canyon are critical habitats for native plants and animals; they are also an important water source for migrating birds.
- Many microclimates in the desert are threatened, like desert riparian areas, and many species depend on them.
- Plants and animals have adapted to survive in the desert environment – some have changed their behavior or used the environment to adapt, while others have evolved physically to survive.

Theme 3: Our Geological Past

- Earth building forces such as volcanoes and earthquakes formed and moved the landscape that created the colorful badlands, cliffs, and canyons. These forces continue to shape the landscape we see today.
- Powerful floods in the desert continually change the landscape, from carving Nightmare Gulch to ripping through artificial structures and freeways.
- Water, wind, erosion, and earthquakes have continuously shaped the Park's landforms – what you see today will be different in the future.

Theme 4: Paleontology Resources

Hidden behind the colorful badlands, cliffs, and canyons is a treasure trove of ancient plants and animals that once called Red Rock home.

Subthemes:

- Millions of years ago, camels, horses, dire wolves, and mammoths called Red Rock home. Understanding how these large mammals disappeared may help scientists' conservation efforts as the climate rapidly changes.
- Ancient animals left behind trace fossils, like camel tracks, as evidence of their activity and behavior long ago.
- Paleontologists at Red Rock often find fossilized evidence of prehistoric plants and animals never seen before – like a new species of fossil skunk.
- Geologic forces like floods and volcanic activity trapped many of the 88 species of plants and animals we find as fossils today.
- Fossils of plants, animals, and even pollen offer snapshots of climate and environmental conditions over millions of years. Ten million years ago, plants and

trees flourished at Red Rock – some of these fossilized trees stood out in the landscape as petrified forests.

Theme 6: Astronomy

- With wide-open and dark skies, Red Rock is one of the best places in Southern California to witness astronomical phenomena without the distraction of light pollution found in the cities and suburbs.
- The sun, moon, planets, stars, and the rest of the galaxy light up each night and inspire visitors to look up and experience the desert night sky.

Theme 7: Red Rock's climate change – past, present, and future

Red Rock's climate has changed dramatically over millions of years – from a vast oak savannah dotted with wetlands to today's arid desert environment.

Subthemes:

- Some plants and animals adapt to environmental fluctuations faster and more easily than others, even within the same habitat type.
- The Native peoples of the western Mojave Desert experienced and persevered despite significant climate change over the past 10,000 years.
- State Parks are taking active steps to ensure parks stay relevant after changes dues to climate change.

Theme 10: Park Resource Management and Public Stewardship

- State Park employees work hard to safeguard quality recreational opportunities while caring for the needs of the plants and animals that call Red Rock Canyon home and protecting the area's cultural heritage.

Subtheme:

- Informing the public of management practices and trail closures as they occur earns visitor support and adherence to changing Park conditions.
- Your actions at home and in your community can affect desert plants and wildlife miles away.
- Remember that everything in a state park is protected – from that pretty rock to desert wildflowers. Do your part to protect Red Rock's natural environment and leave the area better than you found it.
- Natural preserves help protect threatened plants and animals and identify areas easily impacted by human activity.

- Objects like rusted tin cans, weathered glass, and ancient human-made tools like chipped stone have their own stories to tell scientists about who used them – once you move them, their stories are lost forever.
- Sometimes seemingly innocuous items, like mylar balloons, can travel great distances and threaten wildlife when released into the air.

Theme 11: Recreating Safely in the Desert

Know before you go! Understanding how to safely recreate in the Mojave Desert makes for a fun experience and being prepared can save your life.

Theme 12: Mines, minerals, and related industries

Red Rock Canyon has a long and interesting history of resource use, from mining gold and gemstones to minerals used in household cleaners.

Subthemes:

- During the second gold rush in California in the 1870s, Red Rock Canyon enticed mining prospectors with the allure of gold. It later became an important source of minerals people use every day.
- Red Rock Canyon became an important travel route for shipments of provisions for regional mining districts and later for passengers.
- During the early 1870s, the colorful rock formations in the park served as landmarks for 20-mule team freight wagons that stopped for water at the Ricardo Station.

1982 General Plan Park Interpretive Themes

The *Red Rock Canyon State Park General Plan*, January 1982, identified the following themes/topics as the focus of interpretive content for the Park:

- Symphony in Stone (Geology of Red Rock Canyon)
    - Geologic History
    - Environmental Alterations
    - Artistic View of Red Rock Canyon
- The Thirsty Land
    - Why a Desert?
    - Strategies for Survival
    - The Desert's Effect on humans

Interpretation and Education Goals and Guidelines

Interpretation Goal 1: Expand interpretive themes from the General Plan. Provide relevant and thematic interpretive materials that address the Park's sense of place and history and meet the needs and interests of the visitors.

Interpretation Goal 1 Guidelines

***Interpretation Guideline 1-1*:** Develop content for historical resources that explores:

- Transforming the environment – the continuous interaction between people and the environment where they lived and worked (such as mining activities, homesteads, water diversion, road construction, and the introduction of exotic species).
- Developing the American economy – the ways people have engaged in economic activities in the area.
- Expressing cultural values – people's expressions of their culture, whether about themselves or the world they inhabit.

***Interpretation Guideline 1-2*:** Develop interpretation content of cultural resources that explores how and what we learn from consulting with Native Americans, material culture, cultural landscapes, traditional cultural sites, and cultural site management.

Interpretation Guideline 1-3: Develop content about geological resources at Red Rock Canyon State Park and the region. Include content that explores protecting fragile or otherwise special geological features such as the badlands.

Interpretation Guideline 1-4: Develop content about natural resources at Red Rock Canyon State Park and the region. Include content about conserving sensitive and unique species and controlling exotic invasive species, such as:

- rare, threatened, endangered, and sensitive species, such as the Red Rock tarplant, desert tortoise, Mohave ground squirrel, and golden eagles
- how exotic species have altered the Mojave Desert landscape and natural processes
- the intent of the California Desert Protection Act
- how recreational activities impact resources
- the ecological significance of habitat connectivity and habitat buffers

***Interpretation Guideline 1-5*:** Develop content about Red Rock Canyon State Park astronomy. Include content that makes the Park a recognized resource among those in the amateur astronomy and dark sky communities.

***Interpretation Guideline 1-6*:** Develop an effective and comprehensive education program to promote visitor safety that recognizes the inherent hazards of the desert's climate, geology, wildlife, and vegetation.

Interpretation Guideline 1-7: Educate the visitors to be responsible stewards by interpreting its resource management strategies, techniques, and practices.

Interpretation Guideline 1-8: Develop content about the effects of climate change on Red Rock Canyon State Park and the Mojave Desert ecosystem

Interpretation Guideline 1-9: Develop Science, Technology, Engineering, Art, and Math content. Include content about paleontology, archaeology, geology, and hydrology that relates to Red Rock's cultural and natural history.

Interpretation Goal 2: Interpretive planning. Create a comprehensive strategy for Park interpretation and educational programs that will help to establish a culture of sustainability in which practices that preserve the environment and enhance individuals' quality of life become part of everyday living.

Interpretation Goal 2 Guidelines:

Interpretation Guideline 2-1: Establish an interdisciplinary Interpretive Improvement Team to provide guidance and coordination and help assure continuous improvement for interpretation throughout the Park.

Interpretation Guideline 2-2: Conduct a visitor assessment survey to help assure effective interpretation.

Interpretation Guideline 2-3: Develop an Interpretation Master Plan for the Park.

Interpretation Guideline 2-4: Integrate interpretation of sustainable practices implemented in park programs and facilities.

***Interpretation Guideline 2-5*:** Organize unit research and reference system to retrieve information quickly.

Interpretation Guideline 2-6: Establish an oral history program. Keep an active list of people associated with Red Rock Canyon State Park. Obtain and preserve the oral histories of these people.

Interpretation Guideline 2-7: Develop and implement strategies to strengthen the volunteer program and cooperating associations.

Interpretation Goal 3: Increase Visitor knowledge and appreciation for Red Rock Canyon State Park. Use the most current interpretive techniques, philosophy, and subject matter research and studies to provide opportunities for increasing the visitors' knowledge and appreciation of the Park's significant natural, cultural, historical, and aesthetic resources. The use of non-intrusive techniques should be considered for the more sensitive and fragile resources. Expand their understanding

of ecological relationships and heighten their awareness and sensitivity to human impacts without compromising the integrity of the Park's exceptional resources.

Interpretation Goal 3 Guidelines:

Interpretation Guideline 3-1: Provide meaningful interpretive opportunities accessible to as many visitors as possible by offering a diverse selection of personal and non-personal services in various locations, languages, and settings throughout the Park.

Interpretation Guideline 3-2: State Parks shall strive to create innovative and accessible interpretive facilities, including educational kiosks and interpretive panels at key natural, historical and scenic resources (e.g., Last Chance Canyon, Cudahy Camp, Hagen Canyon, Red Cliffs, Red Rooster).

Interpretation Goal 4: Public Outreach and Partnerships. Include outreach efforts to develop partnerships with and support from the community for interpretive programming and environmental education. Current and potential partners include local resorts, chambers of commerce, organizations with similar or complementary goals, schools, colleges and universities, concessionaires, and government agencies.

Interpretation Goal 4 Guidelines:

Interpretation Guideline 4-1: Develop outreach and partnerships with area schools and youth groups. Create and present programs aligned with state educational content standards featuring Red Rock Canyon Parks' natural and cultural resources and the scientific processes associated with recording and understanding them.

Interpretation Guideline 4-2: Create high-quality educational, research, and interpretive opportunities for youth and adults. Develop an ongoing relationship with local school districts, colleges, and universities. Create a program that builds upon students' understanding and appreciation of park resources from year-to-year. These programs can include in-school, remote learning, in-person park programs, ranger ride-along, student internships, professional mentoring, and student service projects.

Interpretation Goal 5: Interpretation supports park management goals. Strive to achieve park management goals through interpretation whenever possible, including public safety, land-use, critical resources, human impacts, resource management strategies, and other issues.

Interpretation Goal 5 Guidelines:

Interpretation Guideline 5-1: Support staff and volunteers through training (both in content and method), materials, facilities, and evaluation to promote high-quality interpretive services.

Interpretation Guideline 5-2: Review visitor and management demand for interpretive programming. Determine the most effective way to meet that demand with available resources and staff.

Interpretation Guideline 5-3: Use informative, well-placed, and consistent signage and other media to explain impacts and help protect resources from visitors' damage.

Interpretation Goal 6: Expand Interpretive Technology and Techniques to reach diverse audiences. Traditional, new, and innovative technologies and techniques should be explored in developing interpretive and educational programs and facilities.

Interpretation Goal 6 Guidelines:

Interpretation Guideline 6-1: Develop guided and self-guided tours of the Park that enhance traditional and new recreational activities. Include updated park information, maps, and park conditions.

Interpretation Guideline 6-2: Use social media and other digital platforms to present interpretive content information.

Interpretive Planning and Studies

Additional studies and plans will be developed separately from the General Plan to determine the appropriate interpretive services, facilities, programs, partnerships, and media to effectively communicate the Park's purpose, significance, compelling stories, themes, and values while protecting and preserving the park resources. These planning efforts will identify key visitor experiences inside and outside the Park and recommend facilitating and enhancing them. They will be the roadmap describing what interpretive services will be offered to the public. Collectively they will establish a foundation for long-term direction, short-term problem solving, and annual program analysis.

Visitor Studies

The last Park visitor survey was conducted in 2013. Additional visitor studies are needed for Park managers to understand current visitor use, who is not using the Park and why, and barriers to access. Then, Park managers can develop specific goals and actions to improve access and increase visitor use.

A more comprehensive understanding of Park visitors should be developed to better serve the public through informed decisions about recreational opportunities, access, and educational programs. The proposed visitor studies will complement existing data on visitor demographics, favored activities, and visitor perceptions that Park staff has previously collected.

Interpretation Master Plan and Action Plan

The Interpretation Master Plan (IMP) provides the overall, unit-wide management direction for interpretation in the Park. It consists of two documents, the Unit-wide Interpretive Plan and Interpretation Action Plan. The IMP will provide a historical narrative and examine environmental influences and visitor expectations. It assesses existing conditions, current planning documents, interpretive objectives, areas of special concern, culturally sensitive subjects, accessibility, staffing, safety and security, and anticipated audiences. The Interpretive Plan identifies the goals and objectives, storylines, and expanded themes for interpretation unit wide. The Existing Conditions, Goals, Guidelines, and interpretive themes of this document should be considered the foundation for creating the Interpretive Master Plan.

Unit-wide Signage Plan

A plan should be developed to create a cohesive appearance for the park's regulatory, informational, and interpretive signage. In addition, it should also provide direction in the organization and placement of signs to enhance the visitor experience and minimize the visual impact on the landscape. Depending on the timeline for developing other plans, this document could be developed with the, Interpretive Master Plan.

4.6.1.16 Museum, Archaeological, and Interpretive Collections

Natural, cultural, and interpretive collections will have a specific connection to the Park's natural and cultural history. The collections support resource management, research, interpretive and educational activities, research, and study by the scientific and academic communities.

Some of the items at the visitor center have been identified and maintained as hands-on interpretive props, considered to be consumable or replaceable. No objects from the core collection should be used for hands-on interpretation. Secondary objects of lesser significance or quality, with no direct relationship to the site, may only be used for hands-on interpretation if an approved Authorization for Hands-On Use (State Parks, 934) form is on file. A few fossils that have not been formally cataloged are used as "show-and-tell" items for the many school groups that visit the Park. In addition, Dr. Whistler of the Natural History Museum of Los Angeles has set aside buckets of fossil bone chips that were salvaged after washing and screening fossiliferous sediments from throughout the Park. These bone chips can illustrate paleontological field and lab methods, the types of finds made during fieldwork, and allow school children or the public to handle actual fossils. Certain types of fossils recovered within the Park can be used to discuss climatic conditions and terrain of prehistoric times and demonstrate how climate has changed dramatically over time.

During recent archaeological surveys, certain items were collected from site surfaces, and a few have been placed in display cases at the Visitor Center. Other archaeological specimens were used in employee training courses at Mott Training Center, particularly the class on archaeological site recognition (a part of Basic Visitor Services Training for ranger and lifeguard cadets). These same specimens could be employed as props during visits from school groups on a limited basis.

Collections Goal 1: Museum objects are unique and often non-renewable representatives of the geology, extinct landscapes, modern biotic environments, and cultural landscapes of the Park. They support the Park's interpretive themes and are an essential element of research. The geological, biological, paleontological, archaeological, and historical collections will be conserved in perpetuity for their inherent scientific and educational value.

Collections Goal 1 Guidelines

Collections Guideline 1-1: Collections-based research should be supported and encouraged.

Collections Guideline 1-2: Collections will comply with the following:

- Departmental policies and procedures (e.g., Department Operations Manual-DOM)
- American Association of Museums
- Society of Vertebrate Paleontology
- California State Parks Museum Collections Facility Index
- California State Parks' Museum Collections Management Handbook (2002)
- Cultural Resource Management Handbook (2001)
- Other professional, legal, and ethical standards appropriate to this Park

Collections Goal 2: Conservation and curatorial practices for museum specimens will be maintained at the highest national museum community standards. The scientific and educational values of the collections are not compromised.

Collections Goal 2 Guidelines

Collections Guideline 2-1: All data associated with natural and cultural museum objects will be compiled, verified, archived, and made accessible to qualified, responsible persons.

Collections Goal 3: Records should be updated, objects should be photographed, and a unique number should be assigned and affixed to each object following Departmental guidelines.

Collections Goal 3 Guidelines

Collections Guideline 3-1: The historical images in the Park collection need to be cataloged and entered into the Department's museum collections database.

Collections Guideline 3-2: All other photographs and memorabilia need to be researched for inclusion in the museum collections or identified as interpretive props.

Collections Guideline 3-3: The hands-on objects will be assigned "Z numbers" as department collection policies require.

Collections Guideline 3-4: A Department of Fish and Wildlife permit for possessing specimens of endangered or threatened species is on file and will be kept current.

Collection Guideline 3-5: An approved Authorization for Hands-On Use (State Parks, 934) form will be on file for objects from the secondary object collection used for hands-on interpretation.

Collection Guideline 3-6: A Category G Maximo job plan should be completed to document ongoing collections care and preservation tasks for the collections.

Collections Guideline 3-7: The newspaper article and postcard collection should be scanned or copied onto archival paper for regular use, and the originals are appropriately conserved and stored.

Collections (Archaeological)

Archaeological collections are typically the results of archaeological excavations or surface collections within known sites. Some collections are made during archaeological evaluation testing for projects, while others are made for required Data Recovery mitigation to preserve scientific site data for future study. The Park also holds isolated artifacts (many without exact provenience), often resulting from visitors picking up artifacts that were either turned in or confiscated. Most of these collections are curated or stored at the Park or other State Parks facilities; however, some are at curation facilities outside State Parks, such as colleges, universities, or museums.

Collections Goal 4: Curate archaeological collections per state and departmental policies and professional standards.

Collections Goal 4 Guidelines

Collections Guideline 4-1: Preserve, catalog, stabilize, and maintain archaeological materials found within the Park, and curate these collections at a local curatorial facility or State Parks' State Archaeological Collections Research Facility (SACRF) if appropriate space is not available within State Parks' Great Basin District (see Collections 4-3 below). Ensure appropriate treatment,

preservation, and curation of collections through compliance with State Parks curation standards and state laws, including PRC §5097.991 and Health and Safety Code §8010 & 8011 ("CalNAGPRA").

Collections Guideline 4-2: Maintain archaeological collections to be accessible for research and comparisons with other collections from the Park and the Kern County region.

Collection Guideline 4-3: If desired to keep archaeological and historical collections at Red Rock Canyon State Park, establish an appropriate curation space for archaeological collections. Such a curation space should be large enough to store existing collections and contain enough space for future collections. The space must be climate-controlled and secure. Such a space could be created with the existing visitor center, cultural/archaeological interpretive center, or other construction, reconstruction, or rehabilitation facilities.

Collections Goal 5: Identify the locations of archaeological collections from within the Park and obtain transfer of collections held outside of State Parks.

Collections Goal 5 Guidelines

Collections Guideline 5-1: Determine how many archaeological collections should exist based on known archaeological excavation work. Using that information identify how many of the collections are not held by State Parks. If the locations of the collections are unknown, determine the affiliation of those involved in the excavation and contact the institution or agency to see if the collection location is known.

Collections Guideline 5-2: Contact outside curation facilities in the region and other locations with potential collections from Park and determine if they hold any collections from the Park. Work with the facility to obtain transfer of the collection to State Parks.

4.6.2 Management Zone Specific Goals and Guidelines

4.6.2.1 Cultural Preserves

Cultural preserves consist of distinct areas of outstanding cultural interest established within the boundaries of other state park system units to protect such features as sites, buildings, or zones that represent significant places or events in the flow of human experiences in California. Areas set aside as cultural preserves will be large enough to effectively manage and interpret the resources. Within cultural preserves, complete integrity of the cultural resources will be sought, and no structures or improvements that conflict with the integrity should be permitted (PRC Section 5019.74). Three new

cultural preserves are proposed under this General Plan: Nightmare Gulch, Last Chance Canyon, and Black Rock Canyon.

Cultural Preserve Zone Goal 1: Protect, stabilize, and preserve the archaeological and cultural sites and landscapes within the Park's cultural preserves.

Cultural Preserve Zone Goal 1 Guidelines

Cultural Preserve Guideline 1-1: Allow for appropriate Kawaiisu or other Native American groups' activities and ceremonies within the cultural preserves.

Cultural Preserve Guideline 1-2: Within cultural preserves PRC § 5001.8 prohibits motorized vehicles and CCR Title 14, Division 3, Chapter 2 § 4351 prohibits motorized vehicles, motorized equipment, motorboats, and other form of mechanical transport. Remove existing vehicle use within proposed cultural preserve boundaries. However, if existing vehicle through-routes are traversing the proposed cultural preserve boundaries and are not causing damage to cultural sites, they will be excluded from the preserve boundaries to allow continued vehicle use along these routes. An example of such a route to be excluded from the cultural preserve would be Upper Last Chance Canyon Road, which traverses the proposed Last Chance Canyon Cultural Preserve.

Cultural Preserve Guideline 1-3: Maintain the integrity of the archaeological sites and the traditional cultural landscape/viewshed within the preserves by disallowing, limiting, rerouting, or removing inappropriate, non-compatible facilities and developments, especially those that are not consistent with the character of the cultural landscape. These measures may include utility lines, antennas, buildings/structures, etc., limiting the number of signs within the preserves to those necessary for public safety, orientation, interpretation, and resource protection.

Cultural Preserve Guideline 1-4: Conduct comprehensive cultural resource surveys and evaluations to identify all the preserves' sites, cultural districts, and cultural landscapes. Determine which of these resources would be eligible for inclusion on state or federal registers and nominate eligible ones.

Cultural Preserve Guideline 1-5: Determine the appropriateness of interpretation and education measures within the preserves. Due to the sensitive nature of many of the sites within the preserves, it may be more appropriate to interpret the sites elsewhere in the Park, such as at a cultural interpretive center, archaeological interpretive center, trailhead kiosk, or visitor center.

Cultural Preserve Guideline 1-6: Protect, maintain, and restore the natural (plant, animal, mineral, etc.) and aesthetic resources within the cultural preserves as they are an important part of the cultural landscape and cultural use history.

See additional area-specific goals and guidelines for Last Chance Canyon, Nightmare Gulch, and Black Rock Canyon Preserves.

Area-Specific Goals and Guidelines

Last Chance Canyon Cultural Preserve

Last Chance Canyon contains a large concentration of Native American sites and a portion of the "Last Chance Canyon Archaeological District," which is listed on the National Register of Historic Places." Several rock art sites, tribal cultural resources, sacred and ceremonial areas, and other traditional cultural places are important to this area's Kawaiisu people and other Native American tribes. Additionally, many historic mining sites are part of the potentially NRHP- or CRHR-eligible Red Rock Canyon historic mining district.

Last Chance Canyon Cultural Preserve Goal 1: Formally establish the Last Chance Canyon Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Last Chance Canyon Cultural Preserve Goal 1 Guidelines

Last Chance Canyon Cultural Preserve Guideline 1-1: Create the Last Chance Canyon Cultural Preserve to protect and stabilize the important cultural sites and resources within the area.

- Proposed Size: 2,170 acres
- Location in Park: Encompasses the northeastern corner of the Park. See Figure 4-1 – General Plan Concept Map for specific location and shape of the Last Chance Canyon Cultural Preserve

Last Chance Canyon Cultural Preserve Guideline 1-2: Evaluate and determine the need for an update to the NRHP-listed Last Chance Canyon Archaeological District within Red Rock Canyon State Park. Only a small portion of this district is within the Park, and only three sites (CA-KER-190, CA-KER-252, and CA-KER-253) were originally included within that portion. However, additional sites have been identified in the area since the district was recorded and may need to be added to the district. Work with the Bureau of Land Management (the main landowner of Last Chance Canyon Archaeological District) and Native American Tribal groups on this update.

Last Chance Canyon Cultural Preserve Guideline 1-3: Nominate to the National Register of Historic Places other important sites within the Last Chance Canyon Cultural Preserve (e.g., petroglyph site CA-KER-432), sites that could be considered contributors to a Red Rock Canyon Historic Mining District, and other sites as appropriate.

Nightmare Gulch Cultural Preserve

The proposed 878-acre Nightmare Gulch Cultural Preserve contains a high concentration of Native American sites, including the oldest documented site in the Park, the only known geoglyph/ground figure (intaglio) in Kern County, and the largest single archaeological site recorded in the Park. It is also an important ceremonial location to local Native Americans.

Nightmare Gulch Cultural Preserve Goal 1: Formally establish the Nightmare Gulch Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Nightmare Gulch Cultural Preserve Goal 1 Guidelines

Nightmare Gulch Guideline 1-1: Create the Nightmare Gulch Cultural Preserve to protect and stabilize the important cultural sites and resources within the area.

- Proposed Size: 878 acres
- Location in Park: Encompasses northern and central portions of Nightmare Gulch, overlapping the Scenic Canyon-Nightmare Gulch Natural Preserve. See Figure 4-1 – General Plan Concept Map for specific location and shape of the Nightmare Gulch Cultural Preserve

Nightmare Gulch Guideline 1-2: Nominate important sites such as CA-KER-244 (geoglyph), CA-KER-874, CA-KER-5959/5960 (oldest documented site in the Park), and other sites as appropriate to the National Register of Historic Places.

Black Rock Canyon Cultural Preserve

The proposed 299-acre Black Rock Canyon Cultural Preserve will heighten the protection and interpretation of this distinct area of outstanding cultural interest. It includes an important rock art/cupule site, two large stone tool procurement and manufacturing sites (together encompassing nearly 100 acres), and a concentration of archaeological sites.

Black Rock Canyon Cultural Preserve Goal 1: Formally establish the Black Rock Canyon Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Black Rock Canyon Cultural Preserve Goal 1 Guidelines

Black Rock Canyon Guideline 1-1: Create the Black Rock Canyon Cultural Preserve to protect and stabilize the area's important cultural sites and resources.

- Proposed Size: 299 acres

- Location in Park: Encompasses an area between SR 14 and the southern end of Black Rock Canyon. See Figure 4-1 – General Plan Concept Map for specific location and shape of the Black Rock Canyon Cultural Preserve

Black Rock Canyon Guideline 1-2: Nominate important sites such as CA-KER-1079 and CA-KER-4380 (large area of stone tool manufacturing), CA-KER-5109 (petroglyphs), and other sites as appropriate to the National Register of Historic Places.

4.6.2.2 Natural Preserves

Natural Preserves consist of distinct nonmarine areas of outstanding natural or scientific significance established within the boundaries of other state park system units. Two new natural preserves are proposed under this General Plan: Last Chance Canyon and Scenic Canyon - Nightmare Gulch. The two existing natural preserves are Hagen Canyon and Red Cliffs.

Natural Preserve Zone Goal 1: Preserve such features as rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California before the impact of civilization, geological features illustrative of geological processes, significant fossil occurrences, or geological features of cultural or economic interest, or topographic features illustrative of representative or unique biogeographical types.

Natural Preserve Zone Goal 1 Guidelines

Natural Preserve Guideline 1-1: Protect, maintain, and restore the natural (plant, animal, mineral, geological, etc.) and aesthetic resources within the natural preserves.

Natural Preserve Guideline 1-2: Conduct inventory and monitoring activities to detect the presence and measure the health of plant and animal populations within the natural preserves.

Natural Preserve Guideline 1-3: Visitor use in the preserves shall be permitted only to ensure natural ecological and scenic values are not significantly altered or disturbed.

See other area-specific goals and guidelines for Last Chance Canyon, Scenic Canyon-Nightmare Gulch, Hagen Canyon and Red Cliffs Natural Preserves below.

Area-Specific Goals and Guidelines

Last Chance Canyon Natural Preserve

The drainage and riparian area in the Last Chance Canyon Natural Preserve comprise the most significant year-round stream riparian area within the Park, providing much-

needed surface water, habitat structure, and ecological processes for the desert ecosystem. This drainage is critical to the region's ecological health and is known to support many sensitive species.

The Red Rock tarplant (*Deinandra arida*), and the Red Rock poppy (*Eschscholzia minutiflora twisselmannii*) are found within this drainage. Charlotte's phacelia (*Phacelia nashiana*), Red Rock Canyon monkeyflower (*Erythranthe rhodopetra* Mojave fishhook cactus (*Sclerocactus polyancistrus*), Mojave spineflower (*Chorizanthe spinosa*), and other sensitive plants are known to occur in this drainage.

Sensitive wildlife within this area includes the Desert Tortoise (*Gopherus agassizi*), state and federally listed as "threatened." Birds of prey nesting have been documented in the area, and the riparian drainage supports a significant portion of raptor prey species. Other declared "Species of Concern" from the Last Chance Canyon include the spotted bat (*Euderma maculatum*), the ferruginous hawk (*Buteo regalus*), Le Conte's thrasher (*Toxostoma lecontei*), yellow warbler (*Dendroica petechia*), Cooper's hawk (*Accipiter cooperi*), and northern harrier (*Circus cyaneus*).

Last Chance Canyon is also the site of a recent discovery of a day-flying moth (*Heliothodes*) strictly associated with the Red Rock tarplant (*Deinandra arida*). Yet to be described scientifically, this moth is likely endemic to the park. The area also supports important paleontologic resources, including a fossil trackway.

Last Chance Canyon Natural Preserve Goal 1: Formally establish the Last Chance Canyon Natural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

<u>Last Chance Canyon Natural Preserve Goal 1 Guidelines</u>

Last Chance Canyon Natural Preserve Guideline 1-1: Create the Last Chance Canyon Natural Preserve to protect the important natural resources within the area.

- Proposed Size: 1,274-acres
- Location in Park: See Figure 4-1 – General Plan Concept Map for specific location and shape of the Last Chance Canyon Natural Preserve.

Last Chance Canyon Natural Preserve Goal 2: Manage the ecological health of this desert watershed and ensure that the essential natural processes of this drainage are protected such that they support the Park's native biodiversity and the greater Mojave Desert region.

<u>Last Chance Canyon Natural Preserve Goal 2 Guidelines</u>

Last Chance Canyon Natural Preserve Guideline 2-1: Manage the Last Chance Canyon drainage and riparian area with a holistic watershed approach. Ensure

that Last Chance Canyon's riparian habitat and associated wildlife are not negatively impacted by visitor uses, Park operations, invasive species, and to the extent possible, adjacent land uses.

Last Chance Canyon Natural Preserve Guideline 2-2: Investigate an environmentally acceptable alternative bypass route for the portion of the road that runs through Last Chance Canyon's springs and associated riparian habitat. If no environmentally acceptable alternative is feasible, access in this limited region of the park will be discontinued to protect this very sensitive natural resource.

Last Chance Canyon Natural Preserve Guideline 2-3: Research and identify state-of-the-art techniques for documenting and monitoring the health of desert riparian systems. Park staff will apply these techniques for protecting and enhancing the unique populations of sensitive desert riparian plants and animals in Last Chance Canyon.

Last Chance Canyon Natural Preserve Guideline 2-4: Assess the extent to which visitor uses may negatively affect the Last Chance Canyon drainage and riparian area and redirect those uses that are shown to affect the ecosystem adversely.

Last Chance Canyon Natural Preserve Guideline 2-5: Prevent any Park operations that are found to compromise the integrity of the Last Chance Canyon drainage and its unique riparian ecosystem.

Last Chance Canyon Natural Preserve Guideline 2-6: Work with adjacent landowners to promote a healthy riparian ecosystem and regional aquifer. Concentrate efforts on watershed integrity, with a focus on the elimination of upstream pollutants and exotic plant sources and the over-consumption of water.

Last Chance Canyon Natural Preserve Guideline 2-7: Develop programs that inventory, monitor, and, when necessary, restore the critical physical and biotic components of this drainage system.

Scenic Canyon-Nightmare Gulch Natural Preserve and Nightmare Gulch – Birds of Prey Closure

The intricately eroded, steep-walled canyons and cliffs of Red Rock Canyon provide excellent habitat for various nesting raptors. Both Golden Eagle and Prairie Falcon have been documented as utilizing ideal ledges high on the steep walls of Scenic Canyon as nesting habitats. Documentation of such utilization in 1985 and 1986 led to the federal government establishing a bird of prey closure annually from February 1 to July 1. Recent observations by Park staff indicate that raptors can begin nesting as early as the

end of December. This closure provides the solitude necessary for these two species to accomplish the highest degree of nesting success possible. When in effect, the closure prohibits all human entry.

Many other sensitive species have been documented in Nightmare Gulch, including but not limited to the Desert tortoise and Red Rock Canyon monkeyflower.

Scenic Canyon - Nightmare Gulch Natural Preserve Goal 1: Formally establish the Scenic Canyon - Nightmare Gulch Natural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Scenic Canyon – Nightmare Gulch Natural Preserve Goal 1 Guidelines

Scenic Canyon-Nightmare Gulch Guideline 1-1: Create the Scenic Canyon – Nightmare Gulch Natural Preserve to protect the important natural resources within these areas.

- Proposed Size: 1,155 acres in Natural Preserve
- Location in Park: Encompasses southern portions of Nightmare Gulch, overlapping the Nightmare Gulch Cultural Preserve. See Figure 4-1 – General Plan Concept Map for specific location and shape of the Last Chance Canyon Cultural Preserve

Scenic Canyon - Nightmare Gulch Natural Preserve Goal 2: Protect, maintain, and restore as appropriate the natural resources within the Natural Preserve.

Scenic Canyon – Nightmare Gulch Natural Preserve Goal 2 Guidelines

Scenic Canyon-Nightmare Gulch Guideline 2-1: Protect native species, habitats, natural features, and ecological processes within the Scenic Canyon - Nightmare Gulch Natural Preserve.

Scenic Canyon-Nightmare Gulch Guideline 2-2: Conduct inventory and monitoring activities to detect the presence and measure the health of plant and animal populations within the Preserve.

Nightmare Gulch Birds of Prey Closure Goal 1: The Birds of Prey Closure was established in 1986 by the federal government to protect the reproductive capabilities and the nesting grounds of the Golden Eagle (*Aquila chrysaetos*) and the Prairie Falcon (*Falco mexicanus*). This closure encompasses roughly 1,100 acres and is enacted annually from February 1st to July 1st. The Nightmare Gulch Birds of Prey Closure will be managed primarily for the health and success of the local golden eagle and prairie falcon populations and other birds of prey that depend on this habitat. Over 50% of Nightmare Gulch overlaps with the Birds of Prey Closure and will now be contained within the Scenic Canyon - Nightmare Gulch Natural Preserve.

Nightmare Gulch Birds of Prey Closure Goal 1 Guideline

Birds of Prey Closure Guideline 1-1: Golden eagle, prairie falcon, and other raptor nest sites shall be protected from visitor uses.

Hagen Canyon Natural Preserve

Hagen Canyon Natural Preserve is a 1,314-acre subunit of the Park located west of SR 14 and Abbott Drive. It was classified as a natural preserve in 1974.

Hagen Canyon Natural Preserve Goal 1: Provide for the protection in an unspoiled condition forever of the natural, scenic, ecological and cultural values which occur in the vicinity of Hagen Canyon, extending from SR 14 west to the western park boundary and extending from the southwest boundary road north to the Cross Cliffs Road west of Ricardo. Excluded from the area is the land entity occupied by the Ricardo Campground extending from that campground east to SR 14.

Hagen Canyon Natural Preserve Goal 1 Guidelines

Hagen Canyon Guideline 1-1: Visitor activities within the Natural Preserve will be limited to day-use recreation, which can be accommodated without impairing the natural, scenic, and cultural values of the area. Overnight uses may not be permitted, and vehicular access is prohibited.

Hagen Canyon Guideline 1-2: Particular care will be taken to avoid damage to the habitat of the Red Rock Canyon tarplant (*Hemizonia arida*).

Red Cliffs Natural Preserve

Red Cliffs Natural Preserve is a 468-acre subunit of the Park. The Red Cliffs landform includes spectacular cliffs and lands at the mouth of Iron Canyon and is one of the most dramatic scenic features viewed by motorists traveling through the unit on SR 14. It was classified as a preserve in 1974.

Red Cliffs Natural Preserve Goal 1: Provide special protection and management of the outstanding geologic features and other natural resource values in the central portion of Red Rock Canyon State Park.

Red Cliffs Natural Preserve Goal 1 Guidelines

Red Cliffs Guideline 1-1: Facility development and public use in or adjacent to the preserve that impairs the scenic quality of the preserve as viewed from the highway or other popular vantage points shall not be permitted.

Red Cliffs Guideline 1-2: Visitor use in the preserve shall be permitted so that natural ecological and scenic values are not significantly altered or disturbed (CDPR, 2005, p. 327).

4.6.2.3 Other Management Areas

Cudahy Camp

Cudahy Camp was the "Company Town" associated with mining operations at the Old Dutch Cleanser Mine from 1923 to 1947. Remnants of the buildings and other features of the site still exist in the area. The cultural condition assessment work in 2014 identified several goals and guidelines here.

Cudahy Camp Goal 1: Research and acquire additional information regarding the history and use of this area that can be used for interpretation, education, cultural documentation, and site protection.

Cudahy Camp Goal 1 Guidelines

Cudahy Camp Guideline 1-1: There may be additional inhabitants, their family members, or visitors who still retain information about Cudahy Camp's history and use. Conduct interviews or obtain copies of photographs or documents from previous visitors or inhabitants.

Cudahy Camp Guideline 1-2: Work with surviving inhabitants, family members, visitors, etc., and existing documentation to develop interpretation of the history and use of the site.

Cudahy Camp Guideline 1-3: Develop a cultural resources management plan for this site.

Cudahy Camp Goal 2: The inventory of fossils, fossil-bearing deposits, and potential new fossils within the middle of Last Chance Canyon are unique and scientifically important. Apply state-of-the-art research techniques in their investigation, preservation, and interpretation.

Cudahy Camp Goal 2 Guidelines

Cudahy Camp Guideline 2-1: Support efforts to develop cyclic surveys by professional paleontologists and their associates.

Cudahy Camp Guideline 2-2: Monitor sensitive fossil localities for evidence of natural degradation localities within geologic strata most prone to erosion and those locations in potential flood zones. Take protective measures where necessary and feasible; protective measures may include recovering endangered fossil deposits.

Petrified Forest

The Petrified Forest, situated within Last Chance Canyon, is an area containing a unique assemblage of fossil deposits and prehistoric and historic archaeological sites. This park area was first investigated by the famous UC Berkeley paleontologist Dr. J.C. Merriam

and his associates in the 1920s. The Petrified Forest area of the park is most famous for its fossil wood deposits that include specimens representing at least five separate species of trees. Collectors removed the large and unique fossil tree stumps formerly present here in the 1940s and 1950s. Dr. David Whistler, a long-time paleontology researcher in the park, identified the Petrified Forest area as "highly sensitive" for potential fossil finds in a 1995 report on paleontological resources.

Petrified Forest Goal 1: Preserve, protect, investigate, and interpret the fossil deposits of the Petrified Forest area.

Petrified Forest Goal 1 Guidelines

Petrified Forest Guideline 1-1: Support efforts to develop cyclic surveys of paleontological resources within the Petrified Forest Area.

Petrified Forest Guideline 1-2: Protect significant fossil deposits in place, or conserve them through recovery (as necessary), such that their inherent scientific and interpretive values are not diminished.

Petrified Forest Guideline 1-3: Evaluate previous research and determine avenues of investigation needed to understand and interpret the fossils. This review of new work options might include developing means to encourage and support research by paleontologists from outside educational institutions, such as the Natural History Museum of Los Angeles County, within the Petrified Forest area. Existing fossil collections from this area should be analyzed for their interpretive and research values.

Petrified Forest Guideline 1-4: Consider using the story of the loss of the unique fossil tree stumps as an interpretive lesson on resource conservation or a similar theme.

4.7 Future Park Planning

4.7.1 Roads and Trails Management Plan

The Park acknowledges the wide range of values that roads and trails hold for park visitors and the various types of recreation uses available for visitors. Thus, the Park should consider developing a road and trail management plan once the revision of the general plan is approved. The Roads and Trails Management Plan is a long-range document that builds on the general plan and serves as a decision-making tool for Park management. It will be balanced to meet the needs of the park visitor, maintain public safety, protect the park resources, and maintain the quality of the visitor experience. State Parks will consult with BLM and Kern County regarding roads that connect with Park roads. The plan will:

- further analyze the road and trail network and study the appropriate type and level of recreational access.
- analyze unmapped primitive roads, ingress and egress points, and volunteer routes.
- may include recommendations for additional trails and use types based on stakeholder and public input.
- may recommend realignment or closure of selected roads and trails, or segments of them, for the protection of sensitive resources and to reduce redundant (parallel) travel routes.
- may include recommendations for public outreach and education, and wayfinding signage.

The management zones designated by the General Plan will provide the Roads and Trails Management Plan application regulations.

4.7.2 Cultural Resources Management Plan

Develop a management plan for cultural resources, including archaeological, ethnographical, and historical resources, and implement the recommendations of such a plan. This plan should include consultation with Native Americans, descendants of early residents, and other ethnic or historic user groups. Site condition monitoring, evaluation, protection, and treatment plans for archaeological sites, historic-period archaeological sites, historic buildings and structures, traditional cultural places, cultural landscapes, and other areas of cultural significance should be included. It also should include plans for site survey, recordation, and nomination of cultural resources to CRHR or NRHP.

4.7.3 Natural Resources Management Plan

A Natural Resources Management Plan will be developed for the Park. The major goal of this plan will be to identify and prioritize key measures for achieving natural resources sustainability within the Park. These measures could include focused inventories, proposed acquisitions, habitat restoration, ongoing maintenance, research to study ecological relationships, monitoring and assessment of status, proposed park policy, and subclassifications of additional areas as Natural Preserves. This plan may also strive to refine the natural resources inventory further, determine gaps in natural resources inventory and monitoring activities, identify priorities for ongoing maintenance, projects, park planning, and acquisition in relation to natural resources and assess the integrity of sensitive habitats, geologic formations, and sensitive species/populations throughout the Park. An invasive exotic species management plan will also be developed.

4.7.4 Facilities Plan

The purpose of park infrastructure is to support and enhance the visitor experience and the public's enjoyment of the Park. Through appropriate design and implementation, facilities will allow the visitor experience to prosper while safeguarding from undesirable impacts those resources and values for which the Park was founded.

After completing the General Plan, the development of a Facilities Plan will establish parameters to enable the most appropriate design and scope of park infrastructure intended to meet current and future park visitation needs. To make informed decisions regarding the needs for park infrastructure, a more comprehensive understanding of the park visitor is desirable. Formal, statistically valid visitor surveys and data gathering is a desirable supplement to current and continued formal and informal channels of input involving both individual and collective park stakeholders. These surveys and communications should strive to discern present-day park users, prospective park users, general park use trends, and the envisioned park experience.

The Park, at present, contains a limited amount of existing infrastructure and facilities, mostly centered at or near Ricardo and the southern segment of the SR 14 corridor. With the addition of nearly 17,000 acres to the Park, coupled with an anticipated increasing societal demand for public recreational activities and related relaxation experiences, the need and desirability of additional appropriate park infrastructure appears imminent. Various management zones have been identified within the General Plan to guide prudent and appropriate facilities development. These management zones consider currently identified visitor needs, the ease and availability of visitor access, the sustainability of various maintenance and operational functions (including support services), and compatibility with scenic park values and sensitive resources. The management zones designated by the General Plan will provide the antecedent guidelines that govern the application of the facilities plan.

The development of park facilities should occur in a fashion and manner consistent with serving public and visitor needs while preserving those resources and values that visitors seek to enjoy. Facilities should blend in harmony with their surrounding environs to the greatest degree possible and not degrade from the visitor experience. Compatibility and long-term sustainability of infrastructure should be given priority in facilities development.

As a tool for park management, the facilities plan should contain sufficient flexibility to enable park managers to adjust appropriately to the challenge of changing visitor expectations, demographics, needs, and desires. To the furthest extent feasible, facilities should welcome and serve all customers, including those facing additional challenges in enjoying the park experience.

Chapter 5. ENVIRONMENTAL IMPACT REPORT

5.1 INTRODUCTION

5.1.1 Purpose

This environmental analysis has been prepared in conformance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines to analyze and disclose the potential environmental effects that may result from implementation of the Red Rock Canyon State Park Preliminary General Plan Revision (General Plan). This General Plan/Draft Environmental Impact Report (EIR) for the General Plan constitutes an EIR, as required by the Public Resources Code (PRC) (§§ 5002.2 and 21000 et seq.). The General Plan/Draft EIR is subject to approval by the California State Park and Recreation Commission (Commission). The Commission has sole authority for the plan's approval and adoption. Following certification of the EIR and approval of the General Plan by the Commission, and as staff and funding become available, California Department of Parks and Recreation (CDPR) may prepare specific management plans and development plans, as called for in this General Plan. Future projects within the Park, based on the proposals in this General Plan, are subject to further environmental review, permitting requirements, and approval by other agencies such as the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB).

5.1.2 Focus of the EIR

The Notice of Preparation (NOP) for the General Plan was circulated to the appropriate federal, state, and local planning agencies on October 9, 2018. Based on known issues affecting the long-term management of the Park and on comments received during the planning process, this General Plan/EIR was prepared to address potential environmental impacts that may result from the implementation of the Plan's management goals and guidelines. Emphasis is given to potentially significant environmental impacts that may result from future park management, development, and uses within Red Rock Canyon State Park that are consistent with these goals and guidelines.

5.1.3 Subsequent Environmental Review Process

The "tiering process" of environmental review used for this EIR allows agencies to consider broad environmental issues at the General Plan preparation stage, followed by more detailed examination of actual development projects in subsequent environmental documents. These later documents may incorporate, by reference, the general discussions from the broader General Plan EIR and concentrate solely on the issues specific to the projects (PRC § 21093; CEQA Guidelines § 15152). This document

represents the first tier of environmental review, while future environmental documents would present the second tier.

As a first tier of planning, this General Plan provides Parkwide, Management-Zone-Specific, and Area-Specific goals and guidelines. Future second tier review will provide more detailed information and environmental analysis on specific projects that may be planned within the Park. At each planning level, specific projects will be subject to further environmental review to determine if they are consistent with the General Plan and to identify any potentially significant environmental impacts, mitigation measures, and/or monitoring that would be required for the project. More comprehensive environmental review will be possible at the specific levels of planning, when facility size, location, and capacity can be explicitly determined, rather than at the General Plan level. Additional potentially significant environmental impacts and mitigation measures specific to the project will be identified at that time.

5.1.4 Contents of the EIR

This EIR includes the following sections:

- ***Introduction:*** This section includes a brief overview of the environmental review process, and approach to the environmental analysis.
- ***EIR Summary:*** This section represents a summary of potential environmental impacts associated with the General Plan, an overview of the environmental effects of alternatives considered, and a description of any areas of controversy and/or issues that need to be resolved.
- ***Project Description:*** This section provides an overview of the proposed General Plan, which is the focus of the EIR.
- ***Environmental Effects Eliminated from Further Analysis:*** This section describes those environmental topics that did not warrant detailed environmental analysis in the EIR and the supporting rationale for their elimination.
- ***Environmental Impacts:*** This section analyzes potential environmental impacts associated with implementation of the proposed General Plan.
- ***Other CEQA Considerations:*** This section contains information on other CEQA-mandated topics, including significant and unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts.
- ***Alternatives to the Proposed Project:*** This section describes the alternatives to the proposed General Plan (including the No Project Alterative) that are considered in this EIR and the associated environmental effects of these alternatives relative to the proposed project.

5.2 Environmental Impact Report Summary

5.2.1 Summary of Impacts and Mitigation

This General Plan is conceptual in identifying new facilities, and is focused primarily on the desired zones, programs and actions to protect Park resources and improve visitor experiences. The General Plan describes a park vision, management goals, planning guidelines, and desired outcomes. However, State Parks can only speculate on the appropriate types, locations, and potential impacts of new facilities to meet these goals and accommodate future visitor needs. The General Plan includes a variety of new operations facilities, primitive camping sites, equestrian camping and facilities, reserves, etc. and proposed conceptual new trailheads, interpretive opportunities, picnic areas, and parking as shown in ***Chapter 4 - The Plan***. Implementation of projects envisioned in the General Plan may require additional studies at the project level and may be subject to further environmental review. Implementation of the goals and guidelines contained in ***Chapter 4 - The Plan***, along with compliance with applicable federal and state laws and regulations, avoids potential significant effects or maintains them at a 'less than significant' level, as described in the specific resource topics of this EIR. Additional mitigation measures are, therefore, not necessary.

5.2.2 Summary of Alternatives Considered

The EIR found that no significant environmental impacts would occur with implementation of the General Plan. However, a variety of user groups may perceive some of the changes that would be implemented with the General Plan as significant. Therefore, Parks described three alternatives to address different potential uses including, Alternative 1 – Allow OHV and Rock Hounding Throughout the Park, Alternative 2 – No OHV Access to Areas Outside Park, and No Alternative.

Descriptions of the alternatives including a brief comparison of impacts that may result from implementation of these alternatives, compared to the General Plan, are provided in ***Section 5.23 Alternatives to the Proposed Plan***.

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5.3 PROJECT DESCRIPTION

In ***Chapter 4 – The Plan***, the project description establishes the overall long-range purpose and vision for the Park. Management goals and supporting guidelines in Chapter 4 are designed to address the currently identified critical planning issues (see ***Chapter 3 – Issues and Analysis***) and to prevent, minimize or mitigate any adverse environmental effects of uses that would be permitted in the Park.

The environmental analysis found within this chapter focuses on the environmental effects resulting from General Plan implementation, and is based on conceptual scoping of new facilities within the Park. See ***Chapter 4, Figure 4-1 – General Plan Concept Map for Red Rock Canyon State Park*** for the location of the management zones that have been designated in the Park and ***Section 4.4 Red Rock Canyon State Park Management Zones*** for descriptions about how the zones will be managed and/or developed. The General Plan proposes to improve and expand existing resource protection and provide Park improvements enhancing current and future Park visitor use. The following is a summary of the General Plan's land use and development proposals.

5.3.1 Recreational Uses

Red Rock Canyon State Park was initially classified as a State Recreation Area (SRA) in 1973. This action was taken by the State Park and Recreation Commission primarily because of off-highway vehicle (OHV) recreation uses historically occurring in the area. In 1980, State Parks recommended the Park be reclassified from an SRA to a State Park in recognition of the statewide significance of resource values in the unit. The State Park and Recreation Commission approved the reclassification on February 8, 1980. A General Plan was subsequently developed with public input and adopted in 1982 to provide management guidelines for the Park.

In 1994, the 103rd Congress of the United States enacted the California Desert Protection Act, which contained a provision transferring federal Last Chance Canyon lands to State Parks as an addition to Red Rock Canyon State Park. Before the transfer, the federal Bureau of Land Management (BLM) managed the Last Chance Canyon lands. Under BLM management, the area was open to recreation activities not allowed under State Park classification management directives, including rock-hounding, vehicle recreation (for the sport and challenge of driving in rough terrain and under difficult-driving conditions), unrestricted OHV use, and the commercial exploitation of natural resources such as mineral commodities. However, State Parks did adopt a system of primitive (native dirt substrate) roads to reduce impacts and allow vehicle use in the Park that would enable people to reach the Park's isolated scenic or natural areas.

The Last Chance Canyon area lands transferred to the Park approximately 68 miles of non-maintained dirt roads and trails. Changes to motorized roads and non-motorized

trails occurred in 2006 following a sustainability survey. More recent changes to routes were implemented as a result of resource management closures. The existing Park route network is shown in ***Chapter 4 – The Plan, Figure 4-5 – Existing Route Network at the Park***.

Under the State Park classification, vehicle use is appropriate only when it is directly related to the enjoyment and inspiration of primary resource values and does not significantly impair or detract from its natural setting or quality determined to be of primary importance. The Park's system of primitive roads may be traveled by motorized vehicles that are highway licensed (street legal), including street-legal vehicles registered as OHVs (***see Chapter 4 – The Plan, Section 4.5.1 – Laws, Regulations, and Policies for Motorized Vehicles, Roads, and Trails***). While inconsistent with State Parks policies and the classification of the Park, there is evidence that primitive roads have been continuously used by non-street legal OHV enthusiasts for trail riding and to access BLM lands to the north and west of the Park.

Under the General Plan, current recreational activities that are allowed under the State Park classification will continue, including street-legal vehicle touring on designated primitive roads, camping, hiking, and horseback riding. Except on two connectivity roads to BLM lands (see ***Section 5.3.2 Roads and Trails*** below), non-street legal OHV use is not allowed in the Park. Goals and guidelines to be implemented under the General Plan, providing additional recreational opportunities, can be found within ***Chapter 4 – The Plan, Section 4.6.1.1 – Visitor Experience and Recreation Opportunities.***

5.3.2 Roads and Trails

State Park roads are considered highways per California Vehicle Code (CVC) Sections 360 and 590. Vehicles that meet the requirements to operate on highways are allowed on primitive roads within the Park. However, the General Plan proposes to authorize non-street legal vehicles registered as OHVs per the CVC on Sierra View Road, connecting EP 465 to the Dove Springs BLM OHV area, and Red Rock Wash from the Ricardo Campground loop trail to Dove Springs BLM OHV area per Section 38026 – Designating Highways: Combined Use (see ***Chapter 4 – The Plan, Section 4.5.1.1 Off-Highway Vehicle Definitions and Allowable Uses in Red Rock Canyon State Park***). These designations provide OHV recreationalists with access from the Ricardo Campground and connectivity between adjoining BLM OHV area lands and the adjacent Onyx Ranch State Vehicular Recreation Area (SVRA) managed by State Parks. Additionally, the General Plan will officially incorporate segments of the Last Chance Canyon addition's primitive road system into the Park's overall designated primitive road system through inclusion of the Last Chance Canyon lands in the General Plan.

During the General Plan planning process, State Parks staff evaluated all potential changes to roads, including location, closure, and conversion to trails or non-system

(non-public) roads to ensure the retained roads were consistent with the State Park classification and the Park's declaration of purpose. Roads and trails proposed for retention were found to be necessary for Park operations and circulation and lead to key destinations, which relate directly to access and the enjoyment and inspiration of the Park's primary resource values (see ***Chapter 4 – The Plan, Figure 4.1***). As described in ***Chapter 4 – The Plan, Section 4.5.3 General Plan Preferred Concept Route Changes***, the General Plan proposes to convert some primitive roads into non-motorized trails: 1) Black Rock Canyon 2) El Paseo spur road, 3) a half-mile section of Last Chance Canyon, and 4) Nightmare Gulch. Additionally, the General Plan proposes new non-motorized trails in the Hagen Canyon Natural Preserve and the Red Cliffs Natural Preserve, and a potential hiking trail at the Donley day-use area. A spur route off Roaring Ridge Road and several short "cherry-stem" or redundant routes will also be decommissioned or designated non-system roads.

5.3.3 Recreational Facilities

Additional proposed recreational facilities are described in ***Chapter 4 – The Plan*** and shown in ***Figure 4.1***. These facilities include: 1) a "dry" (no water or other developed facilities) primitive equestrian camping and day-use staging area in the northwest corner of the Park. This would include up to two campsites or one small group camping area with space for tents, recreational vehicle (RV)s, picnic tables, a primitive equestrian parking/staging area for horse trailers, and possible shade ramada for temperature moderation and corral; 2) a primitive equestrian day-use parking/staging area near Last Chance Canyon Road and the Park's southern boundary; 3) dry primitive/ environmental wayside campsites located in the northeast section of the Park; 4) Last Chance Canyon interpretive opportunity and vista point, located in the northeast section of the Park, which would include a primitive parking area and picnic tables; 5) Cudahy Camp interpretive opportunity in the eastern portion of the Park (accessible via a non-motorized trail), which would include picnic tables and potential trailhead parking to the north and south; 6) trailhead parking area and picnic tables at the northern access point of Nightmare Gulch; and 7) Red Cliffs, Hagen Canyon, Donley, and Red Rooster day-use areas interpretive opportunities.

5.3.4 Cultural Preserves

The Park contains numerous known prehistoric and historic archaeological sites. Prehistoric and historic resources in the Park include pre-European-contact Native American sites, districts, landscapes, and resources and nineteenth- and twentieth-century buildings, structures, objects, districts, landscapes, and resources. Traditional Native American use of the area continues today. The federal Last Chance Canyon Archaeological District extends into the northeast corner of the Park from adjacent BLM lands. Please refer to ***Chapter 2 – Existing Conditions, Section 2.6.4 Cultural*** for more information regarding existing cultural resources.

Based on the location and significance of cultural resources in the Park, the General Plan would establish three cultural preserve subunits in three areas of the Park: Last Chance Canyon, Black Rock Canyon, and Nightmare Gulch (see ***Chapter 4 – The Plan, Figure 4-1***). The cultural preserve classification for the subunits provide additional protection and focused management for significant cultural resource areas of the Park. ***Chapter 4 – the Plan, Section 4.4.4.1 Cultural Preserves in Red Rock Canyon State Park*** describes the new preserves. Additionally, goals and guidelines would be implemented, protecting cultural resources Parkwide (see ***Chapter 4 – The Plan, Section 4.6.1.12 Cultural Resources***) and in the three cultural preserves (see ***Chapter 4 – The Plan, Section 4.6.2.1 Cultural Preserves***).

5.3.5 Natural Preserves

Two areas in the Park are designated as Natural Preserves: Red Cliffs and Hagen Canyon, as well as the Birds of Prey Closure. The Birds of Prey Closure was established in 1986 by the federal government to protect the reproductive capabilities and the nesting grounds of the Golden Eagle (*Aquila chrysaetos*) and the Prairie Falcon (*Falco mexicanus*). The closure includes parts of the Red Cliffs Natural Preserve, Scenic Canyon, and Nightmare Gulch (see ***Chapter 2 – Existing Conditions, Section 2.3.1 Natural Preserves and Protected Areas***, for more information).

As part of the planning process and based on the significance of the natural resources in the Last Chance Canyon and Scenic Canyon-Nightmare Gulch areas, the subunit classification of a natural preserve is being proposed in these two locations. Over 50 percent of Nightmare Gulch overlaps with the Birds of Prey Closure and is now contained within the Scenic Canyon-Nightmare Gulch Natural Preserve. The Scenic Canyon-Nightmare Gulch Natural Preserve also partially overlaps the Nightmare Gulch Cultural Preserve. Additionally, the Red Cliffs Natural Preserve and Hagen Canyon Natural Preserve are being expanded. The natural preserve land designation protects native plant communities, including rare and endangered plant and animal species, and the supporting ecosystems. More information on natural resources in the Park can be found in ***Chapter 2 – Existing Conditions*** and ***Appendix B – Biological Resources Report***. Furthermore, the General Plan implements goals and guidelines that protect natural resources both Parkwide (see ***Chapter 4 – The Plan, Section 4.6.1.10 Vegetation Resources and Section 4.6.1.11 Wildlife Resources***) and in the natural preserves (see ***Chapter 4 – The Plan, Section 4.6.2.2 Natural Preserves***).

5.3.6 Interpretation and Educational Resources

Interpretation is an important communication tool that inspires emotional and intellectual connections between visitors and a park's significant resources. The Park provides a variety of programs and media. For example, signage and facilities provide information about the protected resources and campfire center programs occur in the

Park where State Parks staff discuss the natural and cultural resources and Park stewardship.

The General Plan proposes creating an interpretation master plan and interpretation action plan to expand the interpretive themes and programs. The addition of interpretive programs would result in limited physical changes to the Park. Changes may include, but are not limited to, new or refurbished interpretive displays or signage and the modification or construction of new interpretive trails (see ***Sections 5.3.2*** *and* ***5.3.3*** above).

As discussed in ***Section 5.3.3***, additional interpretive opportunities are proposed in the Last Chance Canyon in the northeast area of the Park and would include the location of the vista point to look at geologic formations and interpretive signage to learn about natural and cultural history, and other interpretive opportunities in Cudahy Camp in the eastern area of the Park, which includes a nexus of the most significant natural and historical features in the Park. Additionally, interpretive opportunities, such as new exhibits in the Ricardo Visitor Center and signage at Red Cliffs, Hagen Canyon, Red Rooster, and Donley day-use areas near SR 14, would be implemented.

5.3.7 Operational Facilities

Most Park operations facilities are located at the Ricardo Campground Complex (see ***Chapter 4 – The Plan, Figure 4-1***) and consists of administrative, public safety, maintenance offices, and a maintenance yard. The Park also has several manufactured homes used for employee housing adjacent to the maintenance yard. The Park shares its operations facilities with Onyx Ranch SVRA, located directly west of the Park.

The General Plan implements goals and guidelines for high-quality facilities, which represent the intrinsic values of the Park while protecting natural and cultural resources. Goals and guidelines that more specifically address operational facilities within the Ricardo Campground Complex include guidelines to improve staff efficiencies and effectiveness, and visitor experience through enhancements to the visitor and joint operations and maintenance facilities. Improvements and enhancements are aimed to make Park operation more efficient, supportive, and sustainable by improving existing staff housing and other existing office space, materials storage, and fleet storage. This may include minor updates and reorganization of existing space, and improving storage capacity within the existing developed footprint. These actions are covered by the General Plan. Any consideration for expanding or developing additional administrative or maintenance space, adding staff housing, or potentially moving the visitor center closer to SR 14 for better visibility would likely require additional environmental analysis.

5.3.8 Land Acquisitions

Most of the land surrounding the Park is owned by federal and state government, and some private landowners. Past land acquisitions have added significant and valuable acreage to the Park. These acquisitions have improved public access and recreation, provided additional habitat linkages and open space, and protected additional sensitive resources.

State Parks will continue to seek to acquire private Park inholdings and surface and subsurface mineral rights to the entire area to control the management of all resources consistent with State Parks' mission and to acquire public and private lands adjacent to the Park and Park inholdings if/when they become available from willing sellers and a significant benefit to the Park can be realized.

5.4 ENVIRONMENTAL SETTING

Existing conditions at Red Rock Canyon State Park, including descriptions of the important resources within the Park and the regional planning context, are described in ***Chapter 2 – Existing Conditions***. Subject areas that are not thoroughly discussed in Chapter 2, such as air quality, energy, greenhouse gases, and noise include an "Existing Conditions" section in the relevant chapters of this EIR. Existing conditions information is provided in sufficient detail to allow for an analysis of impacts on the specific subject area of the EIR.

The General Plan has been developed to be consistent with all applicable laws and regulations. While local plans and regulations do not apply to lands owned and managed by State Parks, State Parks aims to be consistent with these laws and regulations. Where applicable, limited information on these regulations is provided in the relevant subject chapters of this EIR.

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5.5 Environmental Effects Eliminated from Further Analysis

The following topics were eliminated from further analysis in the EIR because there is no potential for significant environmental effects resulting from implementation of the General Plan. Reasoning for their elimination is provided below.

Agriculture and Forestry Resources: There are no agriculture or forestry resources near Red Rock Canyon State Park.

Land Use and Planning: This General Plan is being updated to include the new properties added since 1982, which include 24,000 acres to the existing approximately 3,000 acres. The General Plan serves as a blue print for future decisions about land use in the Park. Land use and planning analysis uses criteria from the CEQA Guidelines and because implementation of the General Plan will not physically divide an established community, or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, Land Use and Planning has been eliminated from further analysis in this EIR.

Population and Housing: Red Rock Canyon State Park is located in a rural area and the General Plan Revision would not induce substantial unplanned population growth in an area, either directly or indirectly, or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, as described in the criteria from the CEQA Guidelines.

Public Services: The General Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services including fire protection, police protection, schools, parks, or other public facilities.

Fire protection resources will continue to provide sufficient protection to existing as well as future proposed facilities. CAL FIRE contracts with local government and there are three Kern County Fire Stations located within 15 miles of the Park. Kern County Fire Station 85 is located approximately 14 miles south of Red Rock Canyon State Park in California City, Station 73 is located approximately 15 miles north in Inyokern, and Station 75 is located approximately 15 miles east in Randsburg.

Public safety will continue to be managed by State Park Peace Officers and will be adjusted as necessary to accommodate a limited change in facilities as directed by the General Plan.

Neither schools or nearby parks would be affected by the General Plan's implementation.

The existing public services currently provide adequate levels of service, response times, and other performance objectives. Therefore, no further environmental analysis is necessary on how the General Plan's implementation would affect public services.

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5.6 Environmental Impact Analysis

5.6.1 Analysis Methodology

This chapter provides an analysis of the potential environmental impacts of implementing the General Plan.

In evaluating the General Plan's potential impacts on the physical environment, State Parks employed the following analytical methodology:

Step 1: Compliance with Applicable Laws, Ordinances, Statutes, and Regulations. The EIR presumes, unless specifically noted, that General Plan management programs and development projects have been and continue to be designed, constructed, operated, and maintained in accordance with the applicable requirements described in the regulatory setting discussion of the respective resource sections. The regulatory setting is not intended to be exhaustive; rather, it is intended to provide a summary of key regulatory requirements that materially affect the relationship between the General Plan and the implementation of any projects and management actions environsed in the plan and the resulting potential environmental impacts. ***Appendix A*** also includes existing laws, codes, and policies that Parks implements for management and operations of the Park.

Step 2: Identification of Existing Physical Conditions. The EIR identifies the existing physical environmental conditions that exist in the General Plan planning area that could change as a result of the General Plan implementation. For additional resource settings (such as biological and cultural resources, recreation, etc.) ***Chapter 2 – Existing Conditions*** provides extensive information on the Park. The environmental setting generally reflects the physical environmental conditions of the General Plan planning area as they existed at the time of publication of the NOP. Existing park operations are part of the environmental setting, including visitor use, visitor services, park operations and maintenance, and cultural and natural resource management. Any environmental impacts that may be associated with current park operations are part of the existing environmental setting and are therefore considered part of the baseline against which changes from General Plan implementation are measured. In accordance with CEQA Guidelines section 15125(a), the environmental setting describes only those physical environmental conditions necessary to understand the significant effects of the proposed General Plan and its alternatives.

Step 3: Identification of EIR Scope. The EIR impact analysis includes the full range of environmental resource topics from Appendix G of the State CEQA Guidelines. Existing park operations are part of the existing physical setting of the General Plan planning area and are baseline conditions for evaluating the proposed General Plan and do not need to be authorized. The General Plan identifies both immediate and potential future

management programs and projects that would modify park operations and cause a physical change to the environment (such as construction of new facilities envisioned in the General Plan). The impacts associated with future activities are also assessed in the cumulative impacts to the degree that detail is known.

Step 4: Collection and Use of Data. The EIR analysis is based on the best available science and field survey data. State Parks has collected extensive data on park resources and performed individual specialized studies, assisted by qualified professionals both in the public and private sector. These data have also been used for the environmental review contained in this General Plan EIR, as applicable. Additional studies recently conducted in the Park have also been used in support of the General Plan and EIR. This includes site specific surveys for natural and cultural resources.

Step 5: Analysis of Project Impacts. The EIR evaluates the significance of the General Plan's potential impacts, (the change to the physical environmental conditions that could result from implementation of the General Plan) on the full range of resources identified in Appendix G to the CEQA guidelines. Pursuant to CEQA Guidelines section 15126, this EIR analyzes the potential environmental impacts stemming from all aspects of General Plan implementation including management programs and actions, and facilities as described in ***Chapter 4 – The Plan***. This examination is based on the incremental change to the existing physical conditions that would result from the implementation of the General Plan and considers the public comments submitted by agencies and interested individuals during the 30-day public review period for the 2018 NOP (see ***Appendix E*** of this EIR for the Scoping Summary, including the NOP). The EIR's impact analyses consider the direct and indirect impacts of the implementation of the General Plan, and enable State Parks to determine if the General Plan would have a beneficial impact, no impact, a less-than-significant impact, a potentially significant impact, or a significant and unavoidable impact to the environment.

Step 6: Inclusion of Parkwide Goals and Guidelines. This EIR describes the Parkwide Goals and Guidelines proposed to avoid or minimize impacts resulting from implementation of the General Plan (see ***Chapter 4 – The Plan, Section 4.6 Goals and Guidelines***). As individual projects are implemented and undergo any necessary additional environmental review (CEQA), more specific measures would be considered that are relevant to the specific area that will be affected. Project-specific mitigation measures would be in addition to the standard and specific resource protection measures (e.g. goals and guidelines) incorporated into the General Plan as part of implementing State Park management programs, and generally require State Parks to avoid, prevent, or minimize impacts to resources, or – if impacts do occur – to rehabilitate, restore, or compensate for the impact in a manner that is proportional to the impact.

5.6.2 Impacts Found Not to be Significant

Section 5.5 describes the topics that were eliminated from further analysis in the EIR because there are no potential for significant environmental effects from implementation of the General Plan. These include agriculture and forestry resources, land use and planning, population and housing, and public services.

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5.7 AESTHETICS

This section analyzes impacts related to aesthetic resources that could result from implementation of the General Plan. A summary of aesthetic resources that exist within the Park can be found in ***Chapter 1 - Introduction***, ***Section 1.3 Character and Spirit***, and ***Chapter 2 - Existing Conditions***, ***Section 2.6 Significant Resources,*** and ***Section 2.6.5 Aesthetic Resources***. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.7.1 Regulatory Setting

No federal or state plans, policies, regulations, or laws related to aesthetics are applicable to the General Plan planning area.

5.7.2 Environmental Setting

A description of Red Rock Canyon State Park, including its scenic characteristics, can be found in ***Chapter 1 - Introduction***, ***Section 1.3 Character and Spirit***, and ***Chapter 2 - Existing Conditions***, ***Section 2.6 Significant Resources, and Section 2.6.5 Aesthetic Resources***.

5.7.3 Project Impacts

5.7.3.1 Threshold of Significance

Based on Appendix G of the state CEQA Guidelines, implementation of the General Plan would result in a potentially significant impact related to aesthetics if it would:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.7.4 Impact Analysis

Any changes that substantially degrade visual experiences for visitors to the Park have the potential to cause significant impacts. If appropriate aesthetic features are not adequately integrated into the design and location of new Park facilities and programs,

adverse visual impacts may occur to scenic and public use area, historic sites, and cultural landscapes.

The significance of visual impacts is dependent upon expectations and perceptions. For example, the presence of recreation facilities would generally be more visually impacting to visitors in a backcountry or wilderness area than an area where existing facilities already exist. This historic setting and sense of place in the Park area could be degraded if facility improvements are not made compatible with the existing facilities present in this area, such as historic mining infrastructure. Potential impacts because of implementation of the General Plan are discussed below as well as how those impacts can be reduced to a less-than-significant level.

The Park is mostly undeveloped backcountry, with primitive/dirt non-motorized trails, roads, and trailhead parking areas and wayfinding and interpretive/educational signage (see ***Chapter 2 – Existing Conditions, Figure 2-1***). The General Plan includes minimal improvements to Park facilities, such as new or modified non-motorized dirt trails, roads and trailheads or equestrian parking areas; environmental/primitive backcountry camping areas, and new or improved interpretive/educational and wayfinding signage that educate and orient visitors to, and at scenic vista points and natural and historical features.

Additionally, improvements and development in the focused use management zones, including in the Ricardo Campground Complex (campground, day-use parking, visitor center, operations buildings and maintenance yard, etc.) to enhance the Park operations and visitor experience would be minimal. Improvements in the focused use management zones are primarily upgrades to operations facilities (e.g., additional materials and equipment storage) and improved interpretive/educational opportunities including hiking trails and signage.

Impact 5.7-1 Have a substantial adverse effect on a scenic vista

Topographically, Red Rock Canyon State Park is a complex landscape. It consists of tilted sedimentary and volcanic rocks forming ridges and terraces encompassing the two principal canyons, Red Rock Canyon and Last Chance Canyon. The highly varied topography provides many lookout points from trails and rock outcroppings. Even small modifications to facilities could result in impacts to these viewsheds.

Scenic vistas are diverse and plentiful throughout Park. Enjoying vistas, discovering special places, and exploring unique environments in the Park can be achieved through vehicle and non-vehicular modes of travel, such as hiking and horseback riding. For example, Opal Peak is a popular vista point with 360-degree views of the Park and region. Park facilities in the mostly remote areas of the Park have very basic elements. The General Plan includes additional or modified non-motorized dirt trails, roads and

trailhead/equestrian parking areas, designated environmental/primitive backcountry camping areas, new or improved interpretive/educational and wayfinding signage and picnic tables at interpretive opportunity sites (e.g., Last Chance Canyon, Cudahy Camp). The following goal and guideline found in ***Chapter 4 - The Plan, Section 4.6.1.9 Aesthetic Resources*** of the in the General Plan relate to aesthetics and scenic resources.

Aesthetic Goal 1: Protect scenic features from constructed and human intrusions and preserve the visitor's experience of the natural landscape and historical features by minimizing adverse impact on aesthetic resources.

Aesthetic Guideline 1-1: Design new site-specific and contextual facilities. Reinforce the colors, shapes, scale, and materials in the surrounding environment to integrate and complement the Park's natural setting. Preserve and showcase scenic views, use native (or replicated) building materials where appropriate, use muted colors that reflect the natural surroundings, and take advantage of (or screen) transient conditions (e.g., weather, wind, sunlight, etc.) as appropriate.

With implementation of this goal and guideline for new or modified facilities, the impact to scenic vistas and sensitive viewsheds would be minimized. Therefore, impacts to scenic vistas with implementation of the General Plan would be **less than significant**.

Impact 5.7-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

A glimpse of the Park's aesthetic resources can be viewed while driving along State Route (SR) 14. Established in 1969 by the State Public Works Board and granted to the Department of Public Works, Division of Highways (now known as Caltrans), much of the land along SR 14 that traverses through the Park was designated a scenic easement to recognize the framed view from the road, and as you enter and exit the road. The purpose of this easement was to set specific land-use restrictions to preserve, protect, and improve where necessary, for scenic purposes, the spectacular scenic views along the highway in the Park. SR 14 through the Park is eligible for designation as a state scenic highway but has not been officially designated (Caltrans 2022).

A small fraction of Park area allows for more significant Park facilities and building development, the focused use management zones, which includes the Ricardo Campground Complex and the visitor center and operations buildings. These existing single-story, muted color facilities are located ¼-mile west of SR 14 and are largely hidden from view. Improvements in the focused use management zones are primarily upgrades to operations facilities (e.g., additional materials and equipment storage) and improved interpretive/educational opportunities including hiking trails and signage. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.9 Aesthetic***

Resources of the in the General Plan relate to aesthetics and scenic resources, as well as ***Aesthetic Goal 1*** and ***Aesthetic Guideline 1-1*** described above.

Aesthetic Goal 2: The scenic integrity of the natural terrain within the viewshed of SR 14 shall be protected.

Aesthetic Guideline 2-1: Land use or development that significantly impairs or detracts from motorists' views passing through the Park shall not be permitted

The following goal and guidelines will further protect scenic resources from being significantly impaired by constructed and human intrusions:

Aesthetic Goal 1: Protect scenic features from constructed and human intrusions and preserve the visitor's experience of the natural landscape and historical features by minimizing adverse impact on aesthetic resources.

Aesthetic Guideline 1-2: New construction should be compatible with, but differentiated from, the historic Park rustic resources to avoid a false sense of history.

Aesthetic Guideline 1-3: Develop and implement design standards or guidelines for Park facilities and signage to share similarities in style or materials, create a sense of park identity and visual continuity, and reflect and preserve positive aesthetic values. Evaluate "first impressions" at Park entrances and access points and organize, consolidate, screen, or remove unnecessary repetitive or unsightly elements.

Aesthetic Guideline 1-4: Where appropriate, visually screen operations facilities (e.g., maintenance yard, storage areas) from primary public-use areas. Use methods that either use or mimic natural elements to minimize the negative visual impact of these facilities.

With implementation of these goals and guidelines, scenic resources and the viewshed from motorists' views passing through the Park via SR 14 would be protected. Therefore, impacts to scenic resources and the viewshed with implementation of the General Plan would be **less than significant**.

Impact 5.7-3 In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?

As its name suggests, Red Rock Canyon State Park presents a stunning landscape created by eons of erosion and geologic uplift at the intersection of the Mohave desert and the Sierra Nevada and El Paso mountains. The Park's colorful collage of cliffs, the drainage of Last Chance Canyon, the sheer precipices of Hagen Canyon, and the narrow washes of Scenic Canyon and Nightmare Gulch create a unique desert environment.

As described in the General Plan, most of the Park would include management zones that restrict development to elements such as primitive dirt roads, parking and equestrian staging areas, primitive/environmental camping areas, non-motorized dirt trails, interpretive and wayfinding signage, and picnic tables. Only a small fraction of the Park is in the focused use management zone, which allows for development of Park operations and visitor services buildings, including the campground. The goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.9 Aesthetic Resources*** of the in the General Plan relate to aesthetics and scenic resources, and include ***Aesthetic Goal 1*** and ***Aesthetic Guidelines 1-1 through 1-4*** described above. With implementation of these goals and guidelines, the existing visual character and quality of public views of the site and its surroundings would not be degraded. Therefore, impacts to these visual resources with implementation of the General Plan would be **less than significant**.

Impact 5.7-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

Because of its remote location, Red Rock Canyon State Park is one of the best locations to stargaze in Southern California. The dark night sky is a valuable aesthetic resource of the Park, so it is important to limit and contain artificial lighting at new development. The following goal and guideline found in ***Chapter 4 - The Plan, Section 4.6.1.9 Aesthetic Resources*** of the in the General Plan relate to aesthetics and scenic resources.

Aesthetic Goal 1: Protect scenic features from constructed and human intrusions and preserve the visitor's experience of the natural landscape and historical features by minimizing adverse impact on aesthetic resources.

Aesthetic Guideline 1-5: Limit artificial lighting to avoid brightening the dark night sky. Restrict night lighting to the more developed areas of the Park (e.g., buildings and parking lots) and provide lighting fixtures that focus the light downward. Light levels should be as low as possible, consistent with public safety standards. Refer to State Parks Lightscape Protection Policy (DOM 2004, Chapter 0300).

With implementation of this goal and guideline, nighttime views in the area views would not be impacted. Therefore, impacts to nighttime views with implementation of the General Plan would be **less than significant**.

Sources of potential glare within the park include vehicle windows and mirrors. Implementation of the General Plan is not expected to increase the number of vehicles significantly. Therefore, the impact due to glare would be **less than significant**.

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5.8 AIR QUALITY

This section analyzes air quality impacts that could result from implementation of the General Plan. The General Plan does not address existing conditions of air quality; therefore, it is discussed here in the EIR. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines,*** and below.

5.8.1 Regulatory Setting

The U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and Eastern Kern Air Pollution Control District (EKAPCD) are responsible for regulating air quality in the vicinity of the project site. Each agency develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, in general, both state and local regulations may be more stringent. The regulatory frameworks for criteria air pollutants, toxic air contaminants (TACs), and other emissions are described below (EKAPCD 2022a).

5.8.1.1 Federal

The primary legislation that governs federal air quality regulations is the Clean Air Act (CAA), enacted in 1970 and amended by Congress most recently in 1990. The CAA delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. The CAA requires each state to prepare an air quality control plan, referred to as a state implementation plan (SIP). The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

Criteria Air Pollutants

Under the CAA, EPA has established the national ambient air quality standards (NAAQS) for seven criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$, respectively), and lead. The purpose of the NAAQS is two-tiered: primarily to protect public health, and secondarily to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property). The current primary and

secondary NAAQS are shown in Table 5.8-1[1]. These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised as warranted by new data on health and welfare effects. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based on protection from short-term, high-dosage effects or longer term, low-dosage effects.

The CAA requires EPA to determine if areas of the country meet the NAAQS for each criteria air pollutant. Areas are designated according to the following basic designation categories:

Attainment: This designation signifies that pollutant concentrations in the area do not exceed the established standard. In most cases, a maintenance plan is required for a region after it has attained an air quality standard and is designated as an attainment or maintenance area after previously being designated as nonattainment. Maintenance plans are designed to ensure continued compliance with the standard.

Nonattainment: This designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Unclassified: This designation indicates that insufficient data exist to determine attainment or nonattainment. For regulatory purposes, an unclassified area is generally treated the same as an attainment area.

[1] Table 5.8-1 also includes the California Ambient Air Quality Standards, described further below.

Table 5.8-1. Ambient Air Quality Standards

Pollutant Averaging Time	California Standards [a] Concentration [c]	National Standards[b] Primary [c,d]	National Standards[b] Secondary [c,e]
Ozone [f] – 1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
Ozone [f] – 8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as primary standard
Respirable particulate matter—10 micrometers or less [g] – 24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
Respirable particulate matter—10 micrometers or less [g] – Annual arithmetic mean	20 µg/m^3	–	Same as primary standard
Fine particulate matter— 2.5 micrometers or less [g] – 24 hours	–	35 µg/m^3	Same as primary standard
Fine particulate matter— 2.5 micrometers or less [g] – Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide – 8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
Carbon monoxide – 1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
Carbon monoxide – 8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide [h] – Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Nitrogen dioxide [h] – 1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide [i] – Annual arithmetic Mean	–	0.030 ppm (for certain areas) [i]	–
Sulfur dioxide [i] – 24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [i]	–
Sulfur dioxide [i] – 3 hours	–	–	0.5 ppm (1,300 µg/m^3)
Sulfur dioxide [i] – 1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead [j] – 30-day average	1.5 µg/m^3	–	–
Lead [j] – Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
Lead [j] – Rolling 3-month average	–	0.15 µg/m^3	Same as primary standard
Visibility-reducing particles [k] – 8 hours	See footnote k	No national standards	No national standards
Sulfates – 24 hours	25 µg/m^3	No national standards	No national standards
Hydrogen sulfide – 1 hour	0.03 ppm (42 µg/m^3)	No national standards	No national standards
Vinyl chloride [j] – 24 hours	0.01 ppm (26 µg/m^3)	No national standards	No national standards

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; CARB = California Air Resources Board; EPA = U.S. Environmental Protection Agency; SO_2 = sulfur dioxide.

a. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

c. Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d. *National Primary Standards:* The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

e. *National Secondary Standards:* Levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

f. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

g. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

h. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from 100 ppb to 0.100 ppm.

i. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

j. CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

k. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 5.8-2 shows the EKAPCD attainment status for federal and state ambient air quality standards (EKAPCD 2018).

Table 5.8-2. Eastern Kern APCD Attainment Status for Federal and State Ambient Air Quality Standards

Pollutant	Designation/Classification			
	National Ambient Air Quality Standards (NAAQS)			State Ambient Air Quality Standards
	EKAPCD	Kern River /Cummings Valleys[1,2]	Indian Wells Valley[3,4,5]	
Ozone - 1 Hour	Attainment[6,7]	Part of EKAPCD Area	Part of EKAPCD Area	Nonattainment
Ozone - 8 Hour[8]	Serious Nonattainment	Part of EKAPCD Area	Unclassifiable/Attainment	Nonattainment
PM_{10}	Unclassifiable/Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
$PM_{2.5}$	Unclassifiable/Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Carbon Monoxide	Unclassifiable/Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Nitrogen Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Sulfur Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Lead Particulates	Unclassifiable/Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Attainment

Notes: EKAPCD = Eastern Kern Air Pollution Control District; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ppm = parts per million;

1 Kern River Valley, Bear Valley, and Cummings Valley were previously included in the federally designated San Joaquin Valley PM10 Serious Nonattainment Area, but were made a separate nonattainment area in 2008.

2 Kern River Valley, Bear Valley, and Cummings Valley are included in EKAPCD for all NAAQS other than PM_{10}.

3 Indian Wells Valley is a separate planning area from the rest of EKAPCD for PM_{10} NAAQS.

4 Indian Wells Valley is a separate area for the 1997 and 2008 8-hour ozone NAAQS (0.08 & 0.075 ppm).

5 Indian Wells Valley is included in EKAPCD for all NAAQS other than PM_{10} and 8-hour ozone.

6 1-hour ozone NAAQS was revoked effective June 15, 2004.

7 EKAPCD was in attainment for 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date was June 21, 2004, therefore it did not become effective.

8 Attainment for 1997 8-hour Ozone NAAQS (0.08 ppm), Serious Nonattainment for 2008 NAAQS (0.075 ppm) expected to attain in 2020, and Nonattainment State 8-hour standard (0.070 ppm).

Hazardous Air Pollutants / Toxic Air Contaminants

Air quality regulations also focus on hazardous air pollutants (HAPs), referred to at the state regulation level as TACs. These are a set of airborne pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. HAPs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

Common stationary sources of HAPs include but are not limited to gasoline stations, dry cleaners, and diesel backup generators, among which are subject to permit

requirements. On-road motor vehicles and off-road sources, such as construction equipment and trains, are also common sources of HAPs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several HAPs, including benzene, toluene, and xylenes. Public exposure to HAPs can result from emissions from normal operations, as well as accidental releases.

HAPs can be separated into carcinogens (cancer-causing) and non-carcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Non-carcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. EPA regulates HAPs through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (MACT and BACT) to limit emissions.

The CAA requires EPA to identify and set national emissions standards for HAPs to protect public health and welfare. Emissions standards are set for what are called "major sources" and "area sources." Major sources are defined as stationary sources with potential to emit more than 10 tons per year of any HAP or more than 25 tons per year of any combination of HAPs; all other sources are considered area sources. There are two types of emissions standards: those that require application of MACT and BACT, and those that are health-risk based and deemed necessary to address the risks that remain after implementation of MACT or BACT. For area sources, the MACT or BACT standards may be different because of differences in generally available control technology. The CAA also requires EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics.

5.8.1.2 State

CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA).

Criteria Air Pollutants

The CCAA, adopted in 1988, required CARB to establish California Ambient Air Quality Standard (CAAQS) (as shown above in Table 5.8-1). CARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter, in addition to the above-mentioned criteria air pollutants regulated by EPA. The CCAA requires that all air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practicable date. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide

emission sources and provides districts with the authority to regulate indirect sources. CARB also maintains air quality monitoring stations throughout the state in conjunction with air districts. CARB uses the data collected at these stations to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

CARB is the lead agency for developing the SIPs in California. SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register. Most recently, in March 2017, CARB adopted the *2016 State Strategy for the State Implementation Plan* (State SIP Strategy), and in October 2018, adopted the *2018 Updates to the California State Implementation Plan* (2018 SIP Updates), describing the proposed commitment to achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and $PM_{2.5}$ standards over the next 15 years.

CARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies, which have imposed numerous requirements on the production and sale of gasoline in California during the past 30 years. In December 2004, CARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA earlier that year. The standards required engine manufacturers to meet after-treatment–based exhaust standards for nitrogen oxides (NO_X) and PM, starting in 2011, that were more than 90 percent lower than then-current levels. CARB has also adopted control measures for DPM and more stringent emissions standards for various diesel-powered on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators).

In 2017, Senate Bill (SB) 1 (the Road Repair and Accountability Act of 2017) was passed, which, in addition to funding transportation-related projects, requires the Department of Motor Vehicles to refuse registration or renewal or transfer of registration for certain diesel-fueled vehicles, based on weight and model year, that are subject to specified provisions relating to the reduction of emissions of diesel particulate matter, oxides of nitrogen, and other criteria pollutants from in-use diesel-fueled vehicles. As of January 1, 2020, compliance with the CARB Truck and Bus regulation is now automatically verified by the California DMV as part of the vehicle registration process.

In June 2020, CARB approved the Advanced Clean Trucks regulation, requiring truck manufacturers to transition from diesel-powered trucks and vans to electric zero-

emission trucks beginning in 2024 with phasing in of increasingly stringent requirements through 2045. By 2045, under the Advanced Clean Trucks regulation, every new truck sold in California will be zero-emission. This is a key element of CARB's strategy to achieve a transition in California's last mile delivery and local trucks from the use of conventional combustion technologies to zero emission everywhere feasible and near-zero emission powered by clean, low-carbon renewable fuels everywhere else. Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, SB 350, and Assembly Bill (AB) 32.

Toxic Air Contaminants

As described under the federal regulations above, CARB regulates TACs, of which a subset of the identified substances are the federally identified and regulated HAPs, through statutes and regulations that generally require the use of MACT and BACT.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Assembly Bill 2588; Chapter 1252, Statutes of 1987). The Air Toxics Hot Spots Information and Assessment Act seeks to identify and evaluate risks from air toxics sources, but does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities must perform a health risk assessment and, if specific thresholds are violated, must communicate the results to the public in the form of notices and public meetings. TACs are generally regulated through statutes and rules that require the use of MACT or BACT to limit TAC emissions.

According to the *California Almanac of Emissions and Air Quality* (CARB 2013), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being DPM. In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. Additional regulations apply to new trucks and diesel fuel. Subsequent CARB regulations on diesel emissions include the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-road Diesel Vehicle Regulation, and the New Off-road Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment.

The *Air Quality and Land Use Handbook: A Community Health Perspective*, published by CARB, provides guidance on land use compatibility with sources of TACs (CARB 2005). The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities.

Since the 2005 publication of the Handbook, CARB also published a Technical Advisory as a supplement to the Handbook to provide information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways in order to protect public health (CARB 2017). This Technical Advisory demonstrates that reduced exposure to traffic-related pollution can also be achieved while pursuing infill development that independently provides public health benefits, such as reduce vehicle miles travelled and increased physical activity. Strategies identified to reduce air pollution exposure near roadways in the Technical Advisory include those to reduce traffic emissions, such as incorporation of roundabouts for speed reduction, traffic signal management, and speed limit reductions on high-speed roadways (those greater than 55 miles per hour); strategies that reduce the concentrations of traffic pollution, such as urban design to promote air flow, solid barriers to pollution, and vegetation to reduce pollutant concentrations; and strategies that remove pollution from indoor air such as through high efficiency filtration. This Technical Advisory does not negate the CARB Handbook, but offers multiple variables for consideration when planning development and proximity of receptors.

The State of California has also implemented regulations to reduce DPM emissions. Two such regulations applicable to the proposed project include Title 13, Sections 2485 and 2449 of the CCR, which limit idling time to a maximum of 5 minutes for heavy-duty commercial diesel vehicles (defined as diesel vehicles heavier than 10,000 pounds gross vehicle rated weight) and off-road diesel-fueled construction vehicles, respectively. These regulatory measures are driven by the CARB Airborne Toxic Control Measure and subsequent amendments.

5.8.1.3 Local

<u>Eastern Kern Air Pollution Control District</u>

Eastern Kern APCD attains and maintains air quality conditions in Eastern Kern County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. Eastern Kern APCD inspects stationary sources of air pollution, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, federal Clean Air Act Amendments (CAAA), and CCAA. The clean-air strategy of EKAPCD includes preparing plans and programs for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. The rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

5.8.2 Environmental Setting

Ambient concentrations of air pollutants are determined by the amount of emissions released by air pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately in ***Chapter 2 - Existing Conditions, Section 2.6.1.1 Topography, Section 2.6.1.4 Meteorology, and Section 2.6.1.5 Local Climate Conditions***.

There are many pollutants present in the atmosphere, although most are not a significant public health concern in the project region. Criteria air pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. However, for the purposes of this analysis, criteria air pollutants of primary concern due to the regional nonattainment status (as shown in Table 5.8-2) include ozone (and ozone precursors) and PM. These criteria air pollutants, their sources, and potential health effects from exposure are summarized below.

Ozone. Ozone is the most common component of smog and is the principal pollutant that causes adverse health effects. Ozone is toxic and colorless, and has a pungent odor. In high concentrations, ozone and other photochemical oxidants are directly detrimental to humans by causing respiratory irritation and possible alterations in the functioning of the lungs. Ozone and other oxidants can also enter the leaves of plants and reduce photosynthesis, which is the process that plants use to convert sunlight to energy to live and grow.

Ozone is not emitted directly into the air but is formed through a series of reactions involving ROG and NO_X in the presence of sunlight. These chemicals are considered to be precursors of ozone, as their reaction leads to its formation. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide, NO_2, and others, typically resulting from the combustion of fuels.

Emissions of both ROG and NO_X are considered critical to ozone formation; therefore, either ROG or NO_X can limit the rate of ozone production. When the production rate of NO_X is lower, indicating that NO_X is scarce, the rate of ozone production is NO_X-limited. Under these circumstances, ozone levels could be most effectively reduced by lowering current and future NO_X emissions (from fuel combustion), rather than by lowering ROG emissions. Rural areas tend to be NO_X-limited, while areas with dense urban populations tend to be ROG-limited.

Ozone concentrations reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry. Meteorology and terrain play a major role in

ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. A correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2021a). An increased risk of asthma has been found in children who participate in multiple sports and live within communities with high ozone levels.

Particulate Matter. Particulate matter refers to a complex mixture of small solid matter and fine droplets (aerosols) made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The major area-wide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions. However, they are a major source of ROG and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the “piggybacking effect”), or with fine dust particles of silica or asbestos. Effects from short- and long-term exposure to elevated concentrations of PM_{10} include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (World Health Organization 2018). $PM_{2.5}$ poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health.

The Park is located within the Eastern Kern APCD. The closest air monitoring station is located in Mojave, approximately 26 miles south of the Park (EKAPCD 2022b). The two major pollutant issues for this region are ozone and particulate matter. State non-attainment levels are reported for "Ozone one-hour" and "Ozone eight-hour" as well as particulate matter that measure within the "PM_{10}" category. The category for "$PM_{2.5}$" is unclassified. Particulate matter trends have been going down; however, during the months of August through October in 2020 there were exceedances due to wildfire smoke impacting Kern County. Ozone trends have been going down as well, with days over the state one-hour ozone standard seeing a significant decrease compared to previous years (e.g. around 48 days in 2001 vs. around 11 days in 2020) (EKAPCD 2022a).

On May 11, 2017, the District adopted a Reasonably Available Control Technology (RACT) SIP pursuant to the 2008 O_3 NAAQS of 0.075 parts per million (ppm), and two months later on July 27, 2017, adopted the attainment plan. A RACT SIP pursuant to the 2015 O_3 NAAQS of 0.070 ppm was adopted September 3, 2020. The District is currently drafting the 0.070 ppm attainment plan (EKAPCD 2022a).

5.8.2.1 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, because of the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or others who engage in frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to the pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

The Park is in a rural area surrounded by public lands located 80 miles east of Bakersfield in Kern County. The City of Ridgecrest is located 35 miles northeast, and the City of Lancaster is approximately 50 miles to the south. The small, widespread community of Cantil is closest to the Park, approximately six miles to the south, and California City lies 17 miles to the southeast. There are no nearby sensitive receptors other than the staff housing within the Park which is located immediately adjacent to the visitor center.

5.8.3 Project Impacts

5.8.3.1 Threshold of Significance

Based on Appendix G of state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

5.8.4 Impact Analysis

Impact 5.8-1 Conflict with or obstruct implementation of the applicable air quality plan

The most recently completed air quality plan prepared by the local air quality management district, the EKAPCD, is the RACT SIP adopted in 2020. The General Plan changes that would be under consideration at Park would not affect the implementation of this air quality plan or the one currently being drafted for 0.070 ppm attainment. Implementation of the General Plan would occur over time with the development of small-scale facilities and improvement projects. Projects would require minor construction activity, such as trail construction and maintenance, picnic table installation, informational kiosks, vegetation management, and maintenance and improvements of existing facilities and structures. All of these improvements would be relatively minor. Sources of criteria air pollutant emissions could include off-road construction equipment, maintenance vehicles, landscaping equipment, soil disturbance (e.g., fugitive dust) from trail maintenance, and natural gas and propane combustion. The proposed changes to the Park would not generate sufficient traffic to alter general traffic patterns on SR 14 such that mobile-source emissions would contribute to a violation of an ambient air quality standard or air quality management plan. The enforcement of unrestricted OHV recreational use in the Park would also benefit air quality. Therefore, the General Plan implementation would not result in a significant increase in pollutant emissions related to automobile use. For the operations of facilities and any projects that include earthwork, Parks will implement guidelines related to roads, soils, hydrology, and dust control.

Construction of new and improved facilities envirioned in the General Plan would be limited to minor, short-term activities, such as picnic table and kiosk installation, vegetation management, etc. (add details of types of projects); thus, construction activities would not involve unusual characteristics that would necessitate the use of extensive off-road equipment usage and implementation of the General Plan would not increase the assumptions for off-road equipment use in the RACT SIP. Construction activities would also comply with the applicable EKAPCD rules and regulations, including Rule 401 (Visible Emissions), Rule 402 (Fugitive Dust), and Rule 410.1A (Architectural Coating Controls), which are developed to implement air quality plan control measures. Furthermore, construction would be temporary and spread out over time.

Specifically, the following goals and guidelines found in ***Chapter 4 - the Plan, Section 4.6.1.3 Utilities, Section 4.6.1.7 Geology, Minerals, Soils, and Paleontological Resources, Section 4.7.1 Roads and Trails, and Section 4.7.4 Facilities Plan*** are listed below.

Utilities Goal 1: New facilities within the Park will be designed to maximize efficiency, energy conservation, and resources conservation efforts.

Utilities Guideline 1-3: If new development is intended (e.g., development of a new visitor amenity or operations facility), primary consideration should be given to the use of passive solar design, solar-assisted heating, and air conditioning, and other alternative energy sources, and the incorporation of passive cooling and heating techniques to reduce energy use including building orientation and insulation.

Soils Goal 1: Protect sensitive soils and promote further understanding of the role of soils and soil biota in desert ecosystems.

Soils Guideline 1-1: Update the inventory of soils throughout the Park. Identify specific soil types and living soil communities and understand how these soils support the region's biota.

Soils Guideline 1-2: Identify and minimize visitor activities and park operations that negatively impact sensitive soils. Develop an understanding of how this impact further affects erosion, water quality, plant communities, terrestrial invertebrates, birds, mammals, and other components of the region's ecosystems.

Soils Guideline 1-3: Incorporate an assessment of human effects on soil dynamics in future management plans.

Soils Goal 2: Restoration of slowly recovering disturbed areas shall be a high resource management priority. See also Mineral guidelines 2-1.

Soils Guideline 2-1: Restore severely affected surface areas.

Soils Guideline 2-2: An ongoing occurrence is the disturbance of lands by unlawful vehicle operation in the Park. The extent and causes of such damage shall be documented, and appropriate preventative and restoration measures shall be undertaken.

Roads & Trails Management Plan (Section 4.7.1)

The Park acknowledges the wide range of values that roads and trails hold for park visitors and the various types of recreation uses available for visitors. Thus, the Park should consider developing a road and trail management plan once the revision of the general plan is approved. The RTMP is a long-range document that builds on the general plan and serves as a decision-making tool for Park management. It will be balanced to meet the needs of the park visitor, maintain public safety, protect the park resources, and maintain the quality of the visitor experience. State Parks will consult with BLM and Kern County regarding roads that connect with Park roads. The plan will:

- further analyze the road and trail network and study the appropriate type and level of recreational access.
- analyze unmapped primitive roads, ingress and egress points, and volunteer routes.
- may include recommendations for additional trails and use types based on stakeholder and public input.
- may recommend realignment or closure of selected roads and trails, or segments of them, for the protection of sensitive resources and to reduce redundant (parallel) travel routes.
- may include recommendations for public outreach and education, and wayfinding signage.

The management zones designated by the General Plan will provide the Roads and Trails Management Plan application regulations.

Facilities Plan (Section 4.7.4)

The purpose of park infrastructure is to support and enhance the visitor experience and the public's enjoyment of the park. Through appropriate design and implementation, facilities will allow the visitor experience to prosper while safeguarding from undesirable impacts those resources and values for which the park was founded.

After the completion of the General Plan Amendment, the development of a Facilities Plan will establish parameters to enable the most appropriate design and scope of park infrastructure intended to meet current and future park visitation needs. To make

informed decisions regarding the needs for park infrastructure, a more comprehensive understanding of the park visitor is desirable. Formal, statistically valid visitor surveys and data gathering is a desirable supplement to current and continued formal and informal channels of input involving both individual and collective park stakeholders. These surveys and communications should strive to discern present-day park users, prospective park users, general park use trends, and the envisioned park experience.

The Park, at present, contains a limited amount of existing infrastructure and facilities, mostly centered at or near Ricardo and the southern segment of the SR 14 corridor. With the addition of nearly 17,000 acres to the park, coupled with an anticipated increasing societal demand for public recreational activities and related relaxation experiences, the need and desirability of additional appropriate park infrastructure appears imminent. Various management zones have been identified within the General Plan Amendment to guide prudent and appropriate facilities development. These management zones consider currently identified visitor needs, the ease and availability of visitor access, the sustainability of various maintenance and operational functions (including support services), and compatibility with scenic park values and sensitive resources. The management zones designated by the General Plan Amendment will provide the antecedent guidelines that govern the application of the facilities plan.

The development of park facilities should occur in a fashion and manner consistent with serving public and visitor needs while preserving those resources and values that visitors seek to enjoy. Facilities should blend in harmony with their surrounding environs to the greatest degree possible and not degrade from the visitor experience. Compatibility and long-term sustainability of infrastructure should be given priority in facilities development.

As a tool for park management, the facilities plan should contain sufficient flexibility to enable park managers to adjust appropriately to the challenge of changing visitor expectations, demographics, needs, and desires. To the furthest extent feasible, facilities should welcome and serve all customers, including those facing additional challenges in enjoying the park experience.

Implementation of the General Plan would not conflict with or obstruct implementation of the applicable air quality plan for the region. Parks will continue to follow all federal and state regulations related to air quality and have included goals and guidelines in the General Plan to improve roads, protect soils (e.g., dust and erosion controls, enforce non-street legal OHV use), and utilize renewable energy in facilities improvements. Therefore, this impact is **less than significant**.

Impact 5.8-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

The EKAPCD is currently in non-attainment status under State Ambient Air Quality Standards for ozone (1 hour and 8 hour), and PM_{10}, and it is unclassified for $PM_{2.5}$ and carbon monoxide (see Table 5.8-2). However, the trends for these pollutants are improving. Minimal development is proposed in the General Plan and would not result in a cumulatively considerable net increase of any criteria pollutant for which Kern County is in non-attainment under federal or state ambient air quality standards including emissions of ozone precursors. The General Plan includes additional or modified non-motorized dirt trails, roads and trailhead/equestrian parking areas, designated environmental/primitive backcountry camping areas, new or improved interpretive/educational and wayfinding signage and picnic tables at interpretive opportunity sites (e.g., Last Chance Canyon, Cudahy Camp). Construction activities related to these actions would be spread out over several years and would individually be temporary and occur over a short duration. Emissions associated with construction equipment, vehicles, or earth work would be minimal and not result in a cumulatively considerable net increase of any criteria air pollutant for which the region is designated as non-attainment. In addition, development within the Park will implement a number of measures intended to minimize the long-term emissions of criteria pollutants. These goals and guidelines are discussed above and are also included in ***Chapter 4 - The Plan, Section 4.6.1.2 Other Visitor and Operations Facilities, Section 4.6.1.3 Utilities, Section 4.6.1.7 Geology, Minerals, Soils, and Paleontological Resources, Section 4.7.1 Roads and Trails, and Section 4.7.4 Facilities Plan***.

Additionally, non-street legal OHV use on trails and roads used in the past will no longer be allowed, which will reduce fugitive dust, and vehicle emissions.

Another opportunity to reduce emissions of criteria pollutants comes from the introduction of low- or zero-emission vehicles for use in conducting park operations and travel for staff and visitors within the Park, as well as providing charging stations for staff and public vehicles at the Park. Specifically, the following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.4 Sustainability and Greenhouse Gas Emissions*** of the General Plan are listed below:

Greenhouse Gas Emission Goal 1: Increase awareness of energy use, how it can be more efficient, and methods to reduce greenhouse gas emissions. Choose the appropriate energy type based on the action to be accomplished.

Greenhouse Gas Guideline 1-1: Provide an efficient means for Park staff and visitors to travel within the Park that minimizes and reduces carbon emissions that contribute to climate change.

Greenhouse Gas Guideline 1-2: Continue to provide a limited road network through the Park and place new parking/staging areas in locations that minimize driving distance, as feasible.

Greenhouse Gas Guideline 1-3: Provide current Park information to orient visitors, especially new visitors, to Park roads, major trailheads, picnic and parking/staging areas, and other points-of-interest so visitors can efficiently plan and minimize vehicle trips.

Greenhouse Gas Guideline 1-4: Promote the acquisition and use of low- or zero-emission vehicles for Park staff, as feasible, to meet the need of Park operations. Provide charging stations for Park operations and staff, and visiting public vehicles, as feasible.

As noted above, the General Plan would include minor construction-related activities and includes long-term goals and guidelines to reduce criteria pollutant emissions. In addition, long-term operations under the General Plan are not anticipated to substantially change vehicle miles traveled or result in population growth. Therefore, implementation of the General Plan would not result in a cumulatively considerable new increase of any criteria pollutant for which the EKAPCD is in non-attainment under federal or state ambient air quality standards including emissions of ozone precursors. Minimal development is included in the General Plan and Parks will follow all federal and state regulations related to air quality as well as implement the goals and guidelines discussed above. Therefore, this impact is a **less than significant** cumulative impact.

Impact 5.8-3 Expose sensitive receptors to substantial pollutant concentrations

No substantial pollutant concentrations would occur due to ongoing management, operations, and the General Plan implementation at the Park. Also, the area is very rural with no nearby sensitive receptors, such as non-park residences, schools, churches, etc., and implementation of the General Plan would not result in additional new sensitive receptors; therefore, the impact is **less than significant**.

Impact 5.8-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Continuation of park management, operations, and visitor use would not create new sources of odors, and implementation of the General Plan would result in minimal additional facilities. Planned facilities would be similar to existing structures and uses in the park, such as picnic tables, informational kiosks, and the improvements of existing facilities. Operational stationary sources of odors would continue to be minimal and not include new substantial sources.

Minor construction activities under the proposed General Plan would generate temporary odors associated with diesel exhaust from diesel-powered equipment and could generate ROG emissions associated with the application of asphalt and architectural coatings, as applicable. However, odors associated with diesel fumes, asphalt paving, and architectural coatings would be temporary and would disperse rapidly with distance from the source. Any potentially noxious odors would be generally confined to the immediate vicinity of the site; by the time such emissions reach any sensitive receptor sites, of which the only near receptors are on-site staff housing and park visitors, they would be diluted to well below any level that would adversely affect a substantial number of people. Therefore, this impact would be **less than significant.**

5.9 Biological Resources

This section analyzes impacts on biological resources that could result from implementation of the General Plan. Red Rock Canyon State Park contains significant botanical diversity with 19 main vegetative communities and land cover types including a variety of desert shrublands, Joshua tree woodland, and riparian habitats. A total of 19 sensitive plants, 9 sensitive birds, 1 sensitive reptile, and 9 sensitive mammals have been documented to occur within the Park. Many more sensitive species have been documented in the surrounding area and have the potential to occur within the Park. Additional park-wide biological surveys will be needed to confirm the presence of these and numerous other species. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.9.1 Regulatory Setting

5.9.1.1 Federal

Endangered Species Act, 16 U.S.C. Section 1531 et seq

Pursuant to the ESA (16 United States Code [U.S.C.] Section 1531 et seq.), U.S. Fish and Wildlife Service (USFWS) has regulatory authority over species listed or proposed for listing as endangered or threatened. USFWS and the National Marine Fisheries Service have authority over projects that may result in take of a species listed as threatened or endangered under ESA (i.e., a federally listed species). In general, persons subject to ESA (including private parties) are prohibited from “taking” endangered or threatened fish and wildlife species on private property, and from “taking” endangered or threatened plants in areas under federal jurisdiction or in violation of state law.

Under Section 9 of the ESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS has also interpreted the definition of “harm” to include significant habitat modification that could result in take.

The take prohibition of ESA Section 9 applies only to listed species of fish and wildlife. Section 9(a)(2)(B) describes federal protection for endangered plants. In general, ESA does not protect listed plants located on nonfederal land (i.e., areas not under federal jurisdiction), unless such species are already protected by state law.

Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species. Section 7(a)(2) requires federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroying or adversely modifying designated critical habitat.

For projects where federal action is not involved and take of a listed species may occur, a project proponent may seek an incidental take permit under section 10(a) of the ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan that ensures minimization and mitigation of impacts associated with the take.

Clean Water Act, 33 U.S.C. Section 1251 et seq.

Section 404 Permit Program

Section 404 of the Federal Clean Water Act (CWA) requires a project applicant to obtain a permit from the U.S. Army Corps of Engineers (USACE) before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE and U.S. Environmental Protection Agency (EPA) review.

As part of the review of a project, USACE must ensure compliance with applicable federal laws, including EPA's Section 404(b)(1) Guidelines. USACE regulations require that impacts to waters of the United States are avoided and minimized to the maximum extent practicable, and that unavoidable impacts are compensated (33 Code of Federal Regulations [CFR] 320.4[r]).

In 2008, USACE and EPA issued regulations governing compensatory mitigation for activities authorized by permits issued by USACE (33 CFR 332). The rule establishes a preference for the use of mitigation banks because they provide established wetland habitats that have already met success criteria thereby reducing some of the risks and uncertainties associated with compensatory mitigation involving creation of new wetlands that cannot yet demonstrate functionality at the time of project implementation. The rule also establishes a preference for providing compensatory mitigation within the affected watershed. Ideally, compensatory mitigation would take place at a mitigation bank or in-lieu fee program within the same watershed as the

waters to be replaced. If mitigation banks and in-lieu fee programs are not available within the affected watershed, then permittee-responsible compensatory mitigation involving creation or restoration within the affected watershed may be preferable to using a mitigation bank or in-lieu fee program outside the affected watershed.

Section 401 Water Quality Certification

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine Regional Water Quality Control Boards (RWQCBs).

Migratory Bird Treaty Act, 16 U.S.C. Section 703, et seq.

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in Title 50 of the CFR, Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The BGEPA provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle … [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or

bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

5.9.1.2 State

California Endangered Species Act, California Fish and Game Code Section 2050, et seq.

California Endangered Species Act (CESA) directs state agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that reasonable and prudent alternatives shall be developed by the California Department of Fish and Wildlife (CDFW), together with the project proponent and any state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible. Under CESA, project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding to implement those mitigation measures and monitor compliance with and the effectiveness of the measures must be ensured. Standard CESA issuance requirements can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

A “take” of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include “harm” or “harass” as is included in the federal act. As a result, the threshold for a take under CESA may be higher than under ESA because habitat modification is not necessarily considered take under CESA. The take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The State has the authority to issue an incidental take permit under California Fish and Game Code Section 2081, or to coordinate with USFWS during the Section 10(a) process to make the federal permit consistent with CESA.

As under federal law, listed plants have considerably less protection than fish and wildlife under California State law. The California Native Plant Protection Act (California Fish and Game Code Section 19000 et seq.) allows landowners to take listed plant species from, among other places, a canal, lateral ditch, building site, or road, or other right-of-way, provided that the owner first notifies CDFW and gives the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under

Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity.

"Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Porter-Cologne Water Quality Control Act, California Water Code Section 13000, et seq.

The Porter-Cologne Act (California Water Code Section 13000, *et seq.*) requires that each of the state's nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes federally protected waters, as well as areas that meet the definition of "waters of the state." Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally regulated under Section 401 provided they meet the definition of waters of the state. Mitigation requiring no net loss of wetlands functions and values of waters of the state is typically required by the RWQCB.

Fully Protected Species, California Fish and Game Code Sections 3511, 4700, 5050, and 5515

Four sections of the California Fish and Game Code (Fish and Game Code Sections 3511, 4700, 5050, and 5515) list 37 fully protected species. These statutes prohibit take or possession at any time of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

Protection of Bird Nests and Raptors, California Fish and Game Code Section 3503

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs.

Typical violations include destruction of active nests because of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young. These violations can be caused by disturbance of nesting pairs by nearby human activity.

5.9.2 Existing Setting

A thorough description of biological resources, including wetlands and hydrology, plant life, animal life, and management issues related to non-native species, may be found in ***Chapter 2 - Existing Conditions, Section 2.6 Significant Resources*****.** Additionally, a biological resources report for Red Rock Canyon State Park can be found in Appendix B.

5.9.3 Project Impacts

5.9.3.1 Threshold of Significance

Based on Appendix G of CEQA Guidelines, implementation of the General Plan would result in a potentially significant impact related to biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.9.3.2 Issues Not Discussed Further in This EIR

Because the General Plan is on state lands, it would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e); therefore, this issue is not discussed further in this EIR.

Also, there is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan in the General Plan area (f); therefore, this issue is not discussed further in this EIR.

5.9.4 Impact Analysis

Impact 6.9-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Implementation of the General Plan, particularly designation of two new Natural Preserves, will afford greater protection to native species, including special-status species. Any impacts to species will be avoided or minimized to the fullest extent possible. Surveys for sensitive species as well as best management practices, such as scheduling of construction activities outside of periods when species are breeding or more likely to be impacted, will be implemented. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.10 Vegetation Resources*** and ***Section 6.1.11 Wildlife Resources*** have been developed to provide protection and avoid or minimize impacts to sensitive plant species, wildlife, and sensitive animal species.

Sensitive Plant Species Goal 1: Protect and conserve all sensitive plant species in the Park by protecting and stewarding the Park's natural ecosystems.

Sensitive Plants Guideline 1-1: State Parks will protect sensitive plant species, including those that are listed under Federal and State laws as rare, threatened, or endangered, candidates for listing, or that are species of concern. Protection methods may include habitat preservation, seed banking, restoration/enhancement, and visitor education.

Sensitive Plants Guideline 1-2: A scientifically sound protocol for sensitive plant surveys will be developed and implemented to locate and monitor known and unknown sensitive plant populations. In addition, sensitive plant surveys will be conducted as part of the environmental review process for future projects. It will be a priority to avoid or minimize cumulative negative effects on sensitive plant populations and habitats.

Sensitive Plants Guideline 1-3: Regular monitoring of known populations of sensitive species will be conducted to track population trends and sustainability through time. Propagation and reintroduction programs may be considered with the consultation and assistance of research institutions and other government agencies. Projects may require inter-agency partnerships to plan and implement conservation actions.

Sensitive Plants Guideline 1-4: Sensitive species like Red Rock tarplant (*Dienandra arida*) that exhibit extreme rarity in the Park and region will be management priorities. State Parks will use scientific information to determine how sensitive species tolerate various disturbances and use this information to develop sensitive species management plans.

Sensitive Plants Guideline 1-5: State Parks will avoid or minimize human activities that cause imbalances in the natural ecological system. State Parks will conduct management activities, such as invasive exotic plant control and habitat restoration, that foster ecological balance.

Invasive Exotic Plants Goal 1: Manage invasive exotic plants to minimize their negative impacts on native plant and animal species and other natural resources and natural processes.

Invasive Plants Guideline 1-1: State Parks will develop an invasive exotic plant species management plan. The plan will identify, map, monitor, and control exotic plant infestations that threaten native habitats. Monitoring and control efforts may require cooperative work with neighboring landowners, including government agencies like the BLM, to be effective at a landscape scale.

Invasive Plants Guideline 1-2: The management plan will address the ability of horses and other pack animals to carry and spread exotic plant seeds throughout the Park. The Park will consider adopting a policy congruent with federal agencies, such as the National Park Service, to evaluate regulations to reduce exotic species introduction. Such a program may include the removal of solid waste by equestrians.

Invasive Plants Guideline 1-3: State Parks will develop interpretive content media about how exotics like tamarisk have altered the Mojave Desert landscape and natural processes.

Wildlife Goal 1: Perpetuate wildlife assemblages by protecting, restoring, and interpreting the native terrestrial and aquatic animals within the Park.

Wildlife Guideline 1-1: State Parks will avoid or minimize human activities that cause imbalances in natural ecological dynamics when possible. California State Parks will conduct management activities, such as refuse management, habitat restoration, and other actions that foster ecological balance.

Wildlife Guideline 1-2: Indicator species or ecosystem health will be monitored regularly to detect trends or problems at the earliest possible point.

Wildlife Guideline 1-3: State Parks will use sound resource management methods to evaluate the need for an individual animal or population regulation. The regulation process is necessary to develop specific management plans or

programs incorporating habitat modification and visitor education as the first means of population regulation. Direct regulation will be carried out per the California State Parks Resource Management Directives and comply with the Department Operations Manual (DOM). Population regulation activities will be subject to environmental review, and disturbance to non-target native species and other features will be avoided or minimized.

Sensitive Animal Species Goal 1: Protect all sensitive wildlife species occurring in the Park by protecting and stewarding the Park's natural ecosystems. Sensitive wildlife species include those legally listed under Federal and State law as threatened or endangered, species of concern, and those considered locally sensitive or endemic to the area.

Sensitive Species Guideline 1-1: Monitor sensitive species to track sensitive animal populations' presence, health, and sustainability in the Park. Projects may require interagency partnerships to plan and implement conservation actions.

Sensitive Species Guideline 1-2: State Parks will stress the protection of listed, special status, and sensitive species, including but not limited to the desert tortoise, Mohave ground squirrel, birds of prey, cliff or crevice dwelling species, and others and the conservation of their habitats. Focused surveys, reliable scientific methodologies, and interagency cooperation will be used as needed to develop appropriate long-term monitoring programs. This data will aid in developing management plans that define the requirements of and threats to these species. Regulation, interpretation, and California State Parks' visitor cooperative partnerships will manage human activities that threaten the fitness or health of these animals. As appropriate, the effects of visitor use will be redirected or eliminated.

Exotic Animals Goal 1*:* California State Parks will work to manage exotic animals that upset the natural ecological dynamics of native species.

Exotic Animals Guideline 1-1: Regular monitoring of exotic species will be conducted to track the spread of ecologically damaging organisms. Monitoring may require cooperative work with neighboring landowners, including government agencies like the BLM.

With implementation of these goals and guidelines, impacts on specials-status species with implementation of the General Plan would be **less than significant**.

Impact 6.9-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans,

policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Best management practices and specific goals and guidelines will be implemented to protect all habitats within the Park, including those that are considered sensitive natural communities by the resources agencies. The management of the new Natural Preserves, as described in ***Section 4.4.3 Sensitive Resource Management Zone***, and ***Section 4.4.4 Cultural and Natural Preserves***, will further increase protection of sensitive natural resources in these areas. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.10 Vegetation Resources*** have been developed to protect habitats and avoid or minimize impacts on native plant communities. Additionally, ***Sensitive Plant Species Goal 1, Sensitive Plants Guideline 1-1 through 1-5,*** and ***Invasive Exotic Plants Goal 1, Invasive Plants Guideline 1-1 through 1-3,*** as detailed above, will also protect sensitive natural communities.

Native Plant Communities Goal 1: Promote and restore the sustainability of natural ecosystem processes by actively managing plant community health and development while protecting cultural landscapes and resources. Efforts also will address the conservation of sensitive and unique species and the control of invasive exotic species.

Native Plants Guideline 1-1: State Parks will develop scientifically based vegetation management objectives for habitat restoration and enhancement. Furthermore, California State Parks will develop management plans that avoid or minimize human impacts on the native plant communities within the Park. Tribes will be consulted in the development of such management plans so that consideration can be given to traditional gathering needs and integration of traditional knowledge.

Native Plants Guideline 1-2: When appropriate, State Parks will seek partnerships with neighboring landowners to implement a congruent plan for restoring and preserving desert plant community health on a landscape scale.

With implementation of these goals and guidelines, impacts on sensitive natural communities would be minimized. Therefore, impacts on sensitive natural communities with implementation of the General Plan would be **less than significant**.

Impact 6.9-3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

Wetlands are a vital resource within the Park and their protection is vitally important. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.8***

Hydrology Resources, and ***Section 4.6.1.11 Wildlife Resources*** have been developed to provide protection and avoid or minimize impacts to wetlands. The creation of the Last Chance Canyon Natural Preserve, with its riparian habitat along Last Chance Creek, will also protect important desert riparian and wetland areas.

Hydrology Goal 1: Protect, enhance, and restore the Park's wetlands and hydrologic resources.

Hydrology Guideline 1-1: Initiate regular monitoring programs, including detailed surveying of the riparian scrub in Last Chance and Cudahy Creeks and testing water quality. Programs may require cooperative work with neighboring landowners, especially the BLM.

Hydrology Guideline 1-2: Implement methods to deter concentrated vehicle, foot, and stock traffic within the riparian ecosystem in Last Chance Creek to prevent soil compaction, erosion, impacts on water quality, and trampling of sensitive species known to occur in the area. State Parks will also facilitate restoration programs of previously disturbed areas.

Hydrology Guideline 1-3: State Parks will conduct invasive species management and habitat restoration activities to support ecological balance. Strategies for stabilization and topographic restoration of eroded and compacted features and areas will also be addressed.

Wildlife Goal 2: Springs and seeps shall be managed to protect and perpetuate their value to the wildlife.

Wildlife Guideline 2-1: Water resources will be preserved to benefit wildlife.

Wildlife Guideline 2-2: Natural water supplies that support wildlife shall not be used for domestic purposes unless it can be shown that natural values would not be adversely affected.

Wildlife Guideline 2-3: No new facility or activity shall be permitted near a spring or seep that would significantly adversely affect its wildlife value.

With implementation of these goals and guidelines, impacts on wetlands with implementation of the General Plan would be **less than significant**.

Impact 6.9-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites

The movement of native fish or wildlife shall remain effective through the protection of habitat connectivity within the Park and the greater region. The following goals and

guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.11 Wildlife Resources*** have been developed to provide protection and avoid or minimize impacts to habitat connectivity.

Habitat connectivity Goal 1: Maintain or enhance the opportunity for dispersal and movement of native plants and animals through the region.

Habitat connectivity Guideline 1-1: State Parks will maintain high standards for ecosystem health and biodiversity by protecting plant and animal habitats and dispersal corridors in the Park.

Habitat connectivity Guideline 1-2: State Parks will avoid or mitigate any degradation or fragmentation of habitat in all planning efforts and developments.

Habitat connectivity Guideline 1-3: State Parks will monitor regional planning efforts with Kern County and the BLM concerning renewable energy development projects on nearby lands to protect biodiversity and maintain habitat connectivity for species dispersal.

Habitat connectivity Guideline 1-4: State Parks will promote natural resource preservation by recognizing the importance of sustainable populations of native species and their genetic diversity. Inventory and monitoring of the natural resources and human impacts will be carried out at regular intervals to assess and document the health of species that rely on large areas to live, hunt, and disperse. Furthermore, State Parks will participate with government agencies and research institutions in regional resource inventory and monitoring.

Habitat connectivity Guideline 1-5: The ecological significance of habitat connectivity, emphasizing the Park and the surrounding region, will be interpreted for park visitors.

Habitat connectivity Guideline 1-6: State Parks will work to restore the regional connectivity and wildlife movement that has been interrupted by SR 14.

With implementation of these goals and guidelines, impacts on wildlife movement with implementation of the General Plan would be **less than significant**.

5.10 Cultural Resources

This section analyzes the potential impacts on cultural resources resulting from implementation of the General Plan. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.10.1 Regulatory Setting

5.10.1.1 Federal

Federal regulations may be required for Federal permits or funding, or other programs or actions that include Federal involvement. Summaries of some of the Federal regulations are presented below.

- *National Historic Preservation Act, Section 106*

  The purpose of the National Historic Preservation Act (NHPA) (Title 16, Section 470 et seq. of the U.S. Code) is to protect sites, buildings, structures and objects significant in American architecture, history, archaeology, and culture. Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties. Section 106 applies to actions initiated, licensed or permitted by the federal government which have the potential to affect properties listed or eligible for listing on the National Register of Historic Places. Under Section 106, the responsible Federal agency must:

  - Identify "historic properties" (cultural resources) which may be affected by project;
  - Determine the effects of the project on the subject properties;
  - Consult with appropriate state and local officials, Native American tribes, and members of the public regarding potential effects on cultural resources and consider their views and concerns when making project decisions.

  Pursuant to Section 106, the importance of the cultural resource and the severity of the impact are both evaluated in terms of significance. Mitigation is required for actions that result in significant impacts to significant resources.

- *National Register of Historic Places*

  The National Register of Historic Places (NRHP) was developed pursuant to Title 36 Code of Federal Regulations (CFR) Section 60 to identify the nation's cultural resources and indicate which properties should be considered for protection. The criteria used to evaluate properties for nomination to the NRHP are as follows:

- Districts, sites, buildings, structures, or objects that possess integrity of location, design, setting, materials, workmanship, feeling and association; and
- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That have yielded, or may be likely to yield, information important in prehistory or history.

In California, applications for properties to be nominated to the National Register are submitted to the State Office of Historic Preservation for initial consideration; if deemed suitable, the State Historic Preservation Officer (SHPO) is responsible for formally submitting the nomination. While listing on the National Register does not automatically ensure protection of the resource, it establishes additional levels of review and consideration before approval of potentially harmful actions.

5.10.1.2 State

State law and regulations apply to the lands and activities of State Parks. Summaries of some of the applicable State laws, regulations, and State Parks policies are presented below.

- *California Code of Regulations (CCR), Section 15064.5*

  Determining the Significance of Impacts to Archaeological and Historical Resources.

  A historical resource is one that is listed in, or determined to be eligible for listing in the California Register of Historical Resources; a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (meets the criteria for listing on the California Register of Historical Resources).

  These criteria include:

  - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  - Is associated with the lives of persons important in our past;

- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

A project with an effect that may cause a substantial adverse change in the significance of an historical resource (physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings) is a project that may have a significant effect on the environment.

If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment.

- *Public Resources Code (PRC), Section 5024 and Section 5024.5*

  Each state agency is required by this code to formulate policies to preserve and maintain, when prudent and feasible, state-owned historical resources that are (1) listed in or eligible for inclusion in the National Register of Historic Places, or (2) registered or eligible for registration as a state historical Landmark according to Section 5021.

- *Public Resources Code (PRC), Section 5024.1*

  Established the California Register of Historical Resources and defined the criteria for listing on the Register, including California properties formally determined eligible for or listed in the National Register of Historic Places, State Historical Landmark No. 770 and all consecutively numbered state historical landmarks following No. 770, and Points of historical interest which have been reviewed by the office and recommended for listing in the California Register.

  In addition, a resource may be listed as an historical resource in the California Register if it meets any of the following criteria:

  - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
  - Is associated with the lives of persons important in our past.
  - Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

- Has yielded, or may be likely to yield, information important in prehistory or history.

- *Public Resources Code, Section 5097.991.*

  It is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.

- *Public Resources Code, Section 21080.3.1.*

  Consultation with Native Americans is conducted for any project that would result in the undertaking of a negative declaration, mitigated negative declaration, or environmental impact report.

- *Public Resources Code, Section 21083.2.*

  The lead agency shall determine if a project will have significant effect on Archaeological Resources. If the project is determined to have a significant effect on unique archaeological resources, an Environmental Impact Report is needed to address the significant effect to the resources.

- *Public Resources Code, Section 21084.1.*

  A project that may cause substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.

- *Public Resources Code, Section 21084.3.*

  Public agencies shall, when feasible, avoid damaging effects to any Tribal Cultural Resources.

- *Government Code*

  Confidentiality of archaeological resource records and Native American consultation information. Government Code §6254 (r) states that records of Native American graves, cemeteries, sacred places, places, features, objects in the possession of a state agency are not required to be disclosed. Government Code §6254.10 states that archaeological site information and information from Native American consultation maintained by Department of Parks and Recreation is not required to be disclosed.

- *Health and Safety Code, Section 7050.5*

  Lays out procedures to follow for the treatment of human remains. No removal of any human remains in or from any location other than a dedicated cemetery without authority of law. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further

excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has been contacted and determined the appropriate course of action. If the coroner determines that the remains are those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact the Native American Heritage Commission.

- *Executive Order W-26-92*

  All state agencies shall recognize and, to the extent prudent and feasible within existing budget and personnel resources, preserve and maintain the significant heritage resources of the State. Each state agency is directed to administer the cultural and historic properties under its control in a spirit of stewardship and trusteeship for future generations; to initiate measures necessary to direct its policies, plans, and programs in such a way that state-owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and to ensure that the protection of significant heritage resources are given full consideration in all of its land use and capital outlay decisions

- *Executive Order B-10-11*

  Every state agency and department shall encourage communication and consultation with Native American Tribes.

- *California State Parks Department Operations Manual and Resource Management Policies and Directives*

  The Department Operations Manual (DOM) is the guiding policy manual for California State Parks. Included within the DOM is a volume of resource management policies and directives. These policies and directives provide guidance toward the preservation of natural and cultural resources and on the uses that may impact those resources, as well as to amplify the legal codes contained in the Public Resources Code, the California Code of Regulations, and the California State Park and Recreation Commission's Statement of Policy and Rules of Order.

  The Resource Management Directives include policies on archaeological, historical, and cultural resource preservation, protection, consultation, research, and professional procedures and practices.

- *State Parks Cultural Resource Review and Related Procedures (Departmental Notice 2004-02)*

  The Department's procedures for protecting historical resources in conformance with PRC sections 5024 and 5024.5 and Executive Order W-26-92.

- *State Parks Consultation Policy (Departmental Notice 2007-05)*

  The Department recognizes its special responsibility as the steward of many sites of cultural and spiritual significance to living Native peoples of California. Therefore, it is the policy of California State Parks to engage in open, respectful, ongoing consultation with appropriate Native California Indian tribes or groups in the proper management of areas, places, objects or burials associated with their heritage, sacred sites, and traditional cultural properties or cultural traditions in the State Park System.

  Prior to implementing projects or policies that may have impacts to Native California Indian sites within the State Park System, the Department will actively consult with local Native California Indian tribes regarding the protection, preservation and/or mitigation of cultural sites and sacred sites in the State Park System.

- *State Parks Confidential Cultural Resource Data Governance (Departmental Notice 2021-09)*

  Established protocol to manage confidential cultural resources information that is critical for effective environmental compliance, risk management, and stewardship for California State Parks. Access to, and use of, the information is constrained by governance to restrict access, define allowable uses, and defend against misuse or inadvertent disclosure.

5.10.2 Environmental Setting

Precontact archaeological resources reflecting the past life patterns of Native Americans indigenous to the region, are known to occur in the Park, and are detailed within *Archaeological Survey and Condition Assessment for Portions of Red Rock Canyon State Park, Kern County, California* (Bandera et al. 2019) and the confidential *Red Rock Canyon State Park Supplementary Archaeological Resources In*ventory (Mealey et al. 2022). These reports update and draw on extensive research and previous resource inventory work of retired State Parks Archaeologist M. Sampson and others.

Also present at the Park are numerous historical sites and features that represent the history leading up to the acquisition of Red Rock Canyon State Park by State Parks and the Park's development into the present. The historical background data and documentation in this General Plan and EIR are based on resource inventory work and research by retired State Parks Historian A. Bevil from various notes and draft documents on file at State Parks. ***Chapter 2 – Existing Conditions, Section 2.7.4 – Cultural*** provides a summary of archaeology, ethnography, and history of the Park.

5.10.3 Project Impacts

5.10.3.1 Threshold of Significance

Based on Appendix G of the state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

c) Disturb any human remains, including those interred outside of dedicated cemeteries.

5.10.4 Impact Analysis

Impact 5.10-1 Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5

The Park contains potentially significant historical resources (as defined in 14 CCR § 15064.5 [a]) that could be disturbed, destroyed, or degraded by new development and facility improvements proposed in the General Plan. These resources include both documented and unknown pre-European-contact Native American sites, districts, landscapes, and resources and nineteenth- and twentieth-century buildings, structures, objects, sites, features, landscapes, districts, and resources. Extensive research and inventory of the Park's cultural resources has occurred over the years, but is not considered complete; therefore, the potential exists for the discovery of previously unknown precontact Native American sites and historic-era sites and potential impacts on these resources from facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations.

Goals and guidelines in this General Plan provide guidance for the management and protection of cultural resources and also provide for the avoidance and minimization of impacts to archaeological and historic resources during future development. Specifically, the following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.12 – Cultural Resources*** of the General Plan protect historic resources:

Archaeological Sites Goal 1: Identify, document, record, and evaluate archaeological and cultural resources within the Park.

Archaeological Guideline 1-1: Develop an ongoing program for an archaeological survey, GPS mapping, site recordation and evaluation, and preparation and submission of records and reports for the cultural resources within the Park. Submit all new and updated site records to the California Historical Resources

Information System (CHRIS) to ensure this information is available for future studies. Maintain a comprehensive, regularly updated Red Rock Canyon State Park sites list.

Archaeological Guideline 1-2: Work with local and neighboring tribes and individuals to identify and nominate those Native American archaeological and cultural resources eligible for inclusion in NRHP and CRHR either as individual sites, districts, or cultural landscape resources.

Archaeological Guideline 1-3: Work with historical data and descendants to identify and nominate those historic-period archaeological resources that may be eligible for inclusion in the NRHP and CRHR as individual sites, districts, or cultural landscape resources. Identify and locate descendants of families who lived or worked within the Park during the historical era. Include homesteaders, miners, construction and railroad workers, recreationalists, movie personnel, State Parks staff, etc. For those with memories of the Park, conduct oral history interviews and request access to photos or other documents that the individual or family may have of the time in the Park. The information gained from these interviews, photos, and documents will complement and expand upon existing historical data on early land use. It could help in locating, identifying, and evaluating historic archaeological sites.

Archaeological Guideline 1-4: Promote cooperative research ventures with local educational institutions and other governmental agencies to complement site documentation, evaluation, and analysis needs and encourage site protection and preservation.

Archaeological Sites Goal 2: Protect, stabilize, and preserve the archaeological resources within the Park.

Archaeological Guideline 2-1: Develop a management plan for cultural resources within the Park and implement the recommendations of such a plan.

Review and integrate recommendations from previous studies and assessments (e.g., Bandera et al. 2019; Mealey et al. 2014; Sampson 2006, 2009; etc.) into the management plan as appropriate.

Work with local Native American groups to develop appropriate protection and preservation plans for Native American archaeological sites and implement such plans.

Archaeological Guideline 2-2: Practice careful planning of all undertakings, including routine maintenance and new facility development, to avoid or minimize significant impacts on the park's cultural resources. As appropriate, planning should include archaeological and historical research and consultation with the Kawaiisu or other cultural groups.

Prior to any maintenance, construction, or other activities that have the potential to disturb an area of known or possible archaeological sites, or in areas that have not been inspected for archaeological resources within the past five years, archaeological survey and/or testing will be carried out to determine if significant cultural resources exist.

Any maintenance, construction, or other activities that have the potential to encounter cultural resources will be monitored by a qualified cultural resource specialist (archaeologist, historian, and/or Native American monitor). Monitor/s shall observe all project work at the discretion of the monitor/s. Monitors will document and record any identified cultural resources, including diagnostic isolates, and a report of findings will be prepared.

If anyone identifies previously undocumented cultural resources or suspected cultural resources during any maintenance, construction, or other activities – work will be temporarily halted in the area of the resource/suspected resource. Work will not resume in that area until a qualified archaeologist or cultural resource specialist inspects and records the resource, and determines and implements the appropriate avoidance, protection, or treatment in accordance with applicable laws and professional procedures.

In the event of an accidental discovery or recognition of human remains during any maintenance, construction, or other activities – all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Hold to the highest standards and requirements any archaeological investigation/ collection permits. Such permits, especially those entailing archaeological excavations, should include comprehensive research designs that review existing literature and document existing collections and provide appropriate cataloging and curation of excavated materials. Excavation permits should also include Tribal review and approval and approval from senior State Parks archaeological staff. Archaeological excavations that have not been reviewed as part of an existing project require evaluation under State Parks'

environmental review process to avoid significant impacts on the environment and other State Parks' resources.

Archaeological Guideline 2-3: Develop an Emergency Preparedness Cultural Protection Plan containing measures to protect cultural resources during flash flood events, earthquakes, wildfires, or other natural disasters and procedures for assessing damages after a natural disaster event.

Archaeological sites most vulnerable to such damage, such as those located along drainages and washes, those with dense surface artifact distributions, those with brick or stacked-stone features, those with rock shelters or caves, those with adits or shafts, those with combustible materials, rock art sites, etc., will be identified for implementation of such protection measures.

Archaeological Guideline 2-4: Promote the protection of cultural resources through expanded education, public information, and regulatory efforts. Educate the Public and staff regarding protecting cultural resources and why they need to be protected.

Ensure that staff and visitors are made aware of applicable cultural resource protection laws such as Executive Order W-26-92; Public Resources Code Sections 5024.5, 5097.5, 5097.99, 5097.995, 21083.2, and 21084.3; Health and Safety Code Sections 7050.5 and 7052; Penal Code Sections 622½ and 623; Government Code Sections 6254 and 6254.10; etc. Use regulatory signs, informational messages, educational programs, online information, brochures, etc., to educate the public regarding these protections and why they are in place.

Provide focused cultural resource training to State Park rangers and make locations of previously recorded cultural sites known to them to help monitor site conditions and watch for deterioration or vandalism. Ensure rangers have the tools and resources they need to protect these sites. Increase awareness of these staff to current cultural resource protection laws.

Archaeological Guideline 2-5: Carry out regular condition monitoring and assessing of cultural sites and resources.

Establish a program for a periodic professional examination, assessment, and evaluation of the Park's cultural resources. Examinations should be conducted by a team of qualified California State Park archaeologists and should include documentation of sites and features through photographs, measurements, and GPS recordation. Condition monitoring/assessment records and updated site forms should be regularly prepared and submitted to the California Historical Resources Information System (CHRIS) to document observed changes.

Implementation of recommended protections identified through such work is necessary for site protection.

Assess the effects of visitor use (camping, hiking, mountain biking, horseback riding, vehicle use, etc., as well as unauthorized collecting, off-trail use, and vandalism) and natural processes (erosion, plants, animals, insects, wildfire, earthquake, flood, etc.) on archaeological sites. Several studies have already been undertaken and document vehicle and unauthorized-use damages to archaeological sites. Preventative/ protection measures should be implemented where appreciable damage to sites is/has been identified. Such measures include site-specific closures, moving roads, trails, or other damaging activities away from archaeological sites, revegetation, sign placement, fencing, site burial, security monitoring, education, and other mitigation or avoidance measures.

Archaeological Guideline 2-6: Consider developing an archaeological site stewardship program where volunteers are trained to help protect archaeological sites through periodic visitation and recognition, recordation, and reporting vandalism and other threats.

Work with local Native American groups to assist with developing a site stewardship program.

Archaeological Guideline 2-7: Identify lands containing significant historical resources outside the Park for acquisition or joint protection efforts. Some archaeological sites, including CA-KER-148, CA-KER-246, CA-KER-1057, CA-KER-3050H, CAKER4385H, CA-KER-1070, CA-KER-5134, CA-KER-5135, CA-KER-5954/H, CA-KER-6236, and others are currently split by the Park boundaries with one portion inside the Park and additional portions outside. Aside from acquiring lands that contain portions of sites or cultural landscapes already partially within the Park, archaeological sites and historic properties should be specifically chosen to complement those already within the Park.

Develop a program for cultural resource protection in conjunction with agencies or companies with right-of-way access within or adjacent to the Park (e.g., BLM, Caltrans, utilities, mining companies, etc.). The program should include communication during planning phases of projects or work that may have the potential to affect cultural resources within Red Rock Canyon State Park.

Archaeological Guideline 2-8: Work with landowners of adjacent properties, inholdings, etc. to “elicit the cooperation of the owners of both identified and unidentified cultural resources, to encourage the owners to perceive these resources as assets rather than liabilities, and to encourage the support of the

general public for the preservation and enhancement of historical resources" including archaeological, historical, and Native American sites and places (PRC 5020.7).

Tribal Cultural Resources Goal 1: Identify and interpret the tribal cultural resources, traditional cultural places, and past and present cultural uses in the Park and protect these culturally significant places.

Tribal Cultural Resources Guideline 1-1: Work with local Native American groups and historical accounts and ethnographic records to identify tribal cultural resources, including special cultural and religious significance sites within the Park.

Tribal Cultural Resources Guideline 1-2: Record the tribal cultural resources within the Park through consultation with the Kawaiisu and other Native American groups.

Tribal Cultural Resources Guideline 1-3: Work with Native American groups to protect and preserve the tribal cultural resources, traditional cultural places, and sacred sites within the Park.

Any maintenance, construction, or other activities that have the potential to encounter or disturb tribal cultural resources will involve consultation and monitoring in accordance with state law and State Parks policies. Native American monitoring will be conducted by a representative/representatives of a local Tribe/local Tribes, as identified by the Native American Heritage Commission (NAHC).

If anyone identifies previously undocumented tribal cultural resources or suspected tribal cultural resources during any maintenance, construction, or other activities – work will be temporarily halted in the area of the resource/suspected resource. Work will not resume in that area until the Native American monitor inspects the resource, and appropriate avoidance, protection, or treatment is implemented.

In the event of an accidental discovery or recognition of human remains during any maintenance, construction, or other activities – all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains. Work will not

resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Hold to the highest standards and requirements any archaeological investigation/ collection permits. Such permits, especially those entailing archaeological excavations, should include comprehensive research designs that review existing literature and document existing collections and provide appropriate cataloging and curation of excavated materials. Excavation permits should also include Tribal review and approval, and approval from senior State Parks archaeological staff. Archaeological excavations that have not been reviewed as part of an existing project require evaluation under State Parks' environmental review process to avoid significant impacts on the environment and other State Parks' resources.

Tribal Cultural Resources Guideline 1-4: Develop interpretation and education programs with local Native American groups to highlight their cultures, continuing presence, and long-time use of and association with Red Rock Canyon State Park and its resources.

Historical Goal 1: Ensure the highest level of appropriate measures to identify and document the Park's historical resources.

Historical Guideline 1-1: Maintain a current, updated inventory, geographic information system (GIS) mapping, and informational database for those historic resources within the Park listed or may be eligible for listing on the NRHP and CRHR.

Historical Guideline 1-2: *Locate* individuals or their descendants who worked, lived, or visited the Park in the 1800s or 1900s and conduct oral history interviews. The information gleaned from these individuals may be used to complement and expand upon existing historical data for planning and interpretive purposes.

Historical Guideline 1-3: Collect, store, preserve, and make available any original photographs, plans, documents, objects, transcribed oral histories, etc., associated with the Park's historical resources to qualified researchers and interpreters.

Historical Goal 2: Ensure the highest level of professional measures to protect the Park's historical resources.

Historical Guideline 2-1: Actively designate eligible resources to NRHP and CRHR. Listing on the NRHP may qualify as a historical resource for federal emergency post-disaster restoration or reconstruction funding sources.

Historical Guideline 2-2: Complete Historic Structure Reports (HSRs) or Cultural Landscape Reports (CLRs) for extant historic structures, objects, sites, and landscapes. Each will provide physical, graphic, and photographic information about a resource's history and existing condition; recommend appropriate preservation treatments, managerial actions, and appropriate use; and outline recommendations for future work without compromising its character-defining features.

Historical Guideline 2-3: Base historical resource management decisions on a clear understanding of how they meet State Parks' mission to protect their most valuable cultural resources while still creating opportunities to inspire, educate, and provide high-quality outdoor recreational experiences for park visitors.

Historical Guideline 2-4: Develop managerial procedures for historical resources based on internal and external professional standards and guidelines such as State Parks' Cultural Resource Management Directives; California Public Resources Code sections 5020 et seq.; Executive Order W-26-92; and the United States Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties.

Historical Guideline 2-5: Employ applicable professional standards to determine appropriate use (stabilize, restore, reconstruct, or modify for adaptive reuse) for all historic properties to provide regular maintenance and long-term preservation in support of State Parks' overall Mission to protect its most valued cultural resources.

Historical Guideline 2-6: Conduct additional studies (i.e., archival research, detailed site, and structure recordation and GIS mapping, subsurface testing, etc.) for any proposed project or undertaking that has the potential to disturb any known or potentially eligible historical resource.

Cultural Landscape Goal 1: Undertake comprehensive surveys, recordation, evaluation, and management studies, and plans for eligible cultural landscape resources within the Park.

Cultural Guideline 1-1: Identity, prioritize, record, and preserve cultural landscape resources following professional best practices as outlined in the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes. Cultural Landscape Reports and management plans should be completed for any identified cultural landscape property. District Staff shall consult with tribes to identify cultural landscapes within the Park.

Cultural Guideline 1-2: Utilize project teams that include the full spectrum of Park operations and natural and cultural specialists to obtain input and work

cooperatively to manage the Park's cultural landscape resources prudently and feasibly to all park resources concerns.

Cultural Guideline 1-3: Provide interpretation of the Park's cultural landscapes that address the interrelationship between the natural environment and those people and cultures that created these properties.

Cultural Guideline 1-4: Avoid or minimize negative impacts on cultural resources during environmental regulatory procedures used to evaluate natural resource management techniques (e.g., prescribed fire) before program implementation.

Consultation with state historians will occur when developing plans for projects affecting historic buildings, structures, objects, and landscapes. Careful planning will be necessary in specific areas of the Park where a range of different types of resources coexist. A notable example of such an area is the Last Chance Canyon area where pre-contact Native American sites and historic mining sites and landscapes overlap. Goals and guidelines will direct both the protection and interpretation of a diversity of historic and archaeological resources. Nominations of resources to the NRHP or CRHR are possible due to the significance of resources in these areas of the Park.

Cultural Landscape goals that ensure the perpetuation of these valuable resources are also included in the General Plan as detailed above and include ***Cultural Landscape Goal 1, Cultural Landscape Guidelines 1-1 through 1-4***, as well as the goal and guidelines below:

Cultural Landscape Goal 2: Develop area-specific goals and guidelines for planning areas within the Park that contain Historic Cultural Landscapes. These areas contain unique combinations of historical and natural resources with the potential to provide unique visitor experiences tempered by physical, developmental, and managerial challenges.

Cultural Guideline 2-1: Develop specific applications of the Park's broader Vision and Parkwide Goals and Guidelines. [See Area-Specific Goals and Guidelines for each area.]

All construction, maintenance, or improvements of historic structures, objects, and features will be in conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* as outlined in ***Historical Goal 2 and Historical Guideline 2-4*** detailed above.

A project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties and its guidelines for preserving, rehabilitating, restoring, and reconstructing historic buildings is considered mitigated to a less than a significant level. Thus, with implementation of the above references goals and guidelines, which have

been developed to follow the Secretary of the Interior's Standards for the Treatment of Historic Properties, impacts on cultural resources resulting from implementation of the General Plan will be **less than significant**.

Impact 5.10-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

The Park contains a wide range of archaeological properties (as defined by 14 CCR § 15064.5 and PRC 21083.2 [g]) that have the potential to be damaged from vandalism or inappropriate recreational use. Additionally, adverse impacts on these resources could result from the development of new facilities or modification of existing facilities on or within the vicinity of archaeological resources. Extensive research and inventory of the Park's cultural resources has occurred over the years, but is not considered complete; therefore, the potential exists for previously unknown precontact Native American archaeological sites and historic-era archaeological sites to be encountered during facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations. Prior to development or modification of facilities, the Area of Potential Effect (APE) for facility development would be surveyed and/or tested and any identified archaeological artifacts, features, and/or sites recorded and assessed, as defined more specifically in these goals and guidelines contained in ***Chapter 4 - The Plan, Section 4.6.1.12 – Cultural Resources*** of the General Plan protect historic resources and included above, particularly ***Archaeological Goal 2 and Archaeological Guidelines 2-2 and 2-5***.

Impacts to resources can be further avoided and/or recognized through a range of cultural resource planning methods that include continually surveying and recording resources within the Park, nominating eligible resources for the NRHP and CRHR in order for decision makers to be further aware of the value of eligible resources, developing measures to protect resources from natural processes that may affect archaeological resources, using non-invasive research and investigative methods, and other planning methods as documented in the goals and guidelines in the General Plan and included above, particularly ***Archaeological Guidelines 1-1 through 1-4, and 2-3***:

Archaeological sites most vulnerable to such damage, such as those located along drainages and washes, those with dense surface artifact distributions, those with brick or stacked-stone features, those with rock shelters or caves, those with adits or shafts, those with combustible materials, rock art sites, etc., will be identified for implementation of such protection measures as described in ***Archaeological Guideline 2-5*** above.

In addition to the parkwide goals and guidelines, the following management zone specific goals and guidelines found in ***Chapter 4, Section 4.6.2.1 – Cultural Preserve*** also apply to the protection of archeological resources in cultural preserve zones in the Park:

Cultural Preserve Zone Goal 1: Protect, stabilize, and preserve the archaeological and cultural sites and landscapes within the Park's cultural preserves.

Cultural Preserve Guideline 1-1: Allow for appropriate Kawaiisu or other Native American groups' activities and ceremonies within the cultural preserves.

Cultural Preserve Guideline 1-2: Within cultural preserves PRC § 5001.8 prohibits motorized vehicles and CCR Title 14, Division 3, Chapter 2 § 4351 prohibits motorized vehicles, motorized equipment, motorboats, and other form of mechanical transport. Remove existing vehicle use within proposed cultural preserve boundaries. However, if existing vehicle through-routes are traversing the proposed cultural preserve boundaries and are not causing damage to cultural sites, they will be excluded from the preserve boundaries to allow continued vehicle use along these routes. An example of such a route to be excluded from the cultural preserve would be Upper Last Chance Canyon Road, which traverses the proposed Last Chance Canyon Cultural Preserve.

Cultural Preserve Guideline 1-3: Maintain the integrity of the archaeological sites and the traditional cultural landscape/viewshed within the preserves by disallowing, limiting, rerouting, or removing inappropriate, non-compatible facilities and developments, especially those that are not consistent with the character of the cultural landscape. These measures may include utility lines, antennas, buildings/structures, etc., limiting the number of signs within the preserves to those necessary for public safety, orientation, interpretation, and resource protection.

Cultural Preserve Guideline 1-4: Conduct comprehensive cultural resource surveys and evaluations to identify all the preserves' sites, cultural districts, and cultural landscapes. Determine which of these resources would be eligible for inclusion on state or federal registers and nominate eligible ones.

Cultural Preserve Guideline 1-5: Determine the appropriateness of interpretation and education measures within the preserves. Due to the sensitive nature of many of the sites within the preserves, it may be more appropriate to interpret the sites elsewhere in the Park, such as at a cultural interpretive center, archaeological interpretive center, trailhead kiosk, or visitor center.

Cultural Preserve Guideline 1-6: Protect, maintain, and restore the natural (plant, animal, mineral, etc.) and aesthetic resources within the cultural preserves as they are an important part of the cultural landscape and cultural use history.

<u>Area-Specific Goals and Guidelines</u>

Last Chance Canyon Cultural Preserve Goal 1: Formally establish the Last Chance Canyon Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Last Chance Canyon Cultural Preserve Guideline 1-1: Create the Last Chance Canyon Cultural Preserve to protect and stabilize the important cultural sites and resources within the area.

- Proposed Size: 2,396 acres
- Location in Park: Encompasses the northeastern corner of the Park. See **Error! Reference source not found.**– Revised Concept map for specific location and shape of the Last Chance Canyon Cultural Preserve

Last Chance Canyon Cultural Preserve Guideline 1-2: Evaluate and determine the need for an update to the NRHP-listed Last Chance Canyon Archaeological District within Red Rock Canyon State Park. Only a small portion of this district is within the park, and only three park sites (CA-KER-190, CA-KER-252, and CA-KER-253) were originally included within that portion. However, additional sites have been identified in the area since the district was recorded and may need to be added to the district. Work with the Bureau of Land Management (the main landowner of Last Chance Canyon Archaeological District) and Native American Tribal groups on this update.

Last Chance Canyon Cultural Preserve Guideline 1-3: Nominate to the National Register of Historic Places other important sites within the Last Chance Canyon Cultural Preserve (e.g., petroglyph site CA-KER-432), sites that could be considered contributors to a Red Rock Canyon Historic Mining District, and other sites as appropriate.

Nightmare Gulch Cultural Preserve Goal 1: Formally establish the Nightmare Gulch Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Nightmare Gulch Guideline 1-1: Create the Nightmare Gulch Cultural Preserve to protect and stabilize the important cultural sites and resources within the area.

- Proposed Size: 820 acres
- Location in Park: Encompasses northern and central portions of Nightmare Gulch, overlapping the Scenic Canyon-Nightmare Gulch Natural Preserve. See **Error! Reference source not found.** – Revised Concept map for specific location and shape of the Nightmare Gulch Cultural Preserve

Nightmare Gulch Guideline 1-2: Nominate important sites such as CA-KER-244 (geoglyph), CA-KER-874, CA-KER-5959/5960 (oldest documented site in the Park), and other sites as appropriate to the National Register of Historic Places.

Black Rock Canyon Cultural Preserve Goal 1: Formally establish the Black Rock Canyon Cultural Preserve by presenting it to the State Park and Recreation Commission for their approval and classification.

Black Rock Canyon Guideline 1-1: Create the Black Rock Canyon Cultural Preserve to protect and stabilize the area's important cultural sites and resources.

- Proposed Size: 276 acres
- Location in Park: Encompasses an area between SR 14 and the southern end of Black Rock Canyon. See **Error! Reference source not found.** – Revised Concept map for specific location and shape of the Black Rock Canyon Cultural Preserve

Black Rock Canyon Guideline 1-2: Nominate important sites such as CA-KER-1079 and CA-KER-4380 (large area of stone tool manufacturing), CA-KER-5109 (petroglyphs), and other sites as appropriate to the National Register of Historic Places.

Consultation with State Archaeologists will occur when developing plans for projects potentially affecting archaeological resources. With implementation of these goals and guidelines and consultation with the State Archeologist during future planning efforts, as well as following federal and state regulations, impacts on archeological resources resulting from implementation of the General Plan are **less than significant.**

Impact 5.10-3 Disturb any human remains, including those interred outside of dedicated cemeteries.

State Parks' standard project requirements and contract specifications, guided by the regulatory setting outlined above, address the unexpected/accidental discovery of human remains during project work. According to these requirements, in the event of an accidental discovery or recognition of any human remains during any project work, all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The project manager/site supervisor will notify the appropriate State Parks personnel. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains.

Work will not resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Therefore, with implementation of State Parks' standard project requirement and contract specifications, that apply to any project developed under the General Plan, impacts related to the inadvertent discovery of human remains are **less than significant.**

5.11 Energy and Greenhouse Gas

This section provides an overview of the primary energy requirement of, and generation by the proposed project, as well as the benefit of existing regulations that require energy-efficient construction and operation, and the potential for the proposed project to result in wasteful, inefficient, and unnecessary consumption of energy. It also analyzes the greenhouse gas (GHG) emissions that are generated within Red Rock Canyon State Park and their impact on the Park and cumulative impacts on the atmosphere resulting in warming of the planet and climate change effects. This warming has been shown to result in more frequent and extreme weather events. The construction and operation of future facilities within the Park will have an impact on future GHG emissions that may exacerbate the adverse effects of climate change. Further description of the issue of energy use, climate change, and greenhouse gases can be found below. Actions that the Park will incorporate into future facilities as well as operation of Red Rock Canyon State Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.11.1 Regulatory Setting

5.11.1.1 Energy

Federal

National Energy Act of 1978

The National Energy Act of 1978, including the Public Utility Regulatory Policies Act (Public Law 95-617), Energy Tax Act (Public Law 95-318), National Energy Conservation Policy Act (Public Law 95-619), Power Plant and Industrial Fuel Use Act (Public Law 95-620), and the Natural Gas Policy Act (Public Law 95-621), is a broadscale, national energy conservation and renewable energy initiative.

The intent of the National Energy Act was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency. The Public Utility Regulatory Policies Act created a market for nonutility electric power producers to permit independent power producers to connect to their lines and to pay for the electricity that was delivered.

The Energy Tax Act promoted fuel efficiency and renewable energy through taxes and tax credits. The National Energy Conservation Policy Act required utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

Energy Policy Act

The Energy Policy Act of 1992 was developed to reduce dependence on imported petroleum and improve air quality by addressing all aspects of energy supply and demand, including alternative fuels, renewable energy, and energy efficiency. The Energy Policy Act of 1992 requires certain federal, state, and local government and private fleets to purchase alternative fuel vehicles. The act also includes definitions for "alternative fuels," and includes fuels such as ethanol, natural gas, propane, hydrogen, electricity, and biodiesel.

The Energy Policy Act of 2005 set federal energy management requirements for energy-efficient product procurement, energy savings performance contracts, building performance standards, renewable energy requirements, and alternative fuel use. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The Energy Independence and Security Act included the first increase in fuel economy standards for passenger cars since 1975. The act also included a new energy grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CEC is the state's primary energy policy and planning agency to regulate energy efficiency standards, tasked with reducing energy costs and environmental impacts of energy use, while ensuring a safe, resilient, and reliable supply of energy. The CEC conducts collection and analysis of energy-related data, including production, transportation, delivery, and distribution, in order to provide both historical information and forecast data on energy usage. It also develops energy policy recommendations and plans for the state and is also in charge of energy

efficiency programs and the enforcement of appliance and building energy efficiency standards.

Senate Bill 1389 (2002) – Integrated Energy Report

Senate Bill (SB) 1389 (Bowen, Chapter 568, Statutes of 2002) requires the Energy Commission to prepare a biennial integrated energy report. In accordance, the CEC prepares the Integrated Energy Policy Report, which provides a cohesive approach to identifying and addressing the state's energy requirements and challenges. The report develops and implements energy plans and policies. The report contains an integrated assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety.

Senate Bill 1078 (2002), Senate Bill 100 (2021) – California Renewable Portfolio Standard

Established in 2002 by SB 1078, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to provide a specified minimum portion of their electricity supply from eligible renewable resources by milestone target years. Since 2002, state legislative actions have modified and accelerated the RPS several times, resulting in one of the most ambitious renewable energy standards in the country. As of December 2021, per SB 100, the RPS requires retail sellers of electricity to serve 60 percent of their electric load with renewable energy by 2030 with new interim targets of 44 percent by 2024 and 52 percent by 2027, as well as requiring that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

California Code of Regulations, Title 20 and Title 24

New buildings constructed in California must comply with the standards contained in CCR Title 20, Appliance Efficiency Regulations, and Title 24, California Building Standards Code.

Title 20 standards range from power plant procedures and siting to energy efficiency standards for appliances, ensuring reliable energy sources are provided and diversified through energy efficiency and renewable energy resources. California's 2009 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the CEC on December 3, 2008, and approved by the California Office of Administrative Law on July 10, 2009. The regulations include standards for both federally regulated appliances and non-federally regulated appliances.

Title 24 of the California Code of Regulations contains regulations governing the design and construction of buildings in California. These standards were established in 1978 in

response to a legislative mandate to reduce California's energy consumption and have been updated periodically to include new energy efficiency technologies and methods. The current Building Standards were most recently revised in 2019, effective January 1, 2020. Additional revisions were adopted in August 2021 and will become effective January 1, 2023. Part 6, Title 24, provides energy efficiency standards for both residential and nonresidential buildings. Part 11, Title 24, is the California Green Building Code (also known as CALGreen) was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. In addition, Chapter 5, Section 5.408, of the 2019 CALGreen Code requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, the 2019 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

Local

Parks is not required to implement local policies on state lands; however, Parks reviews county policies and strives to be consistent with them. The following information is provided for informational purposes only.

Kern County General Plan – Energy Element

General Goal: To assert Kern County's position as California's leading energy producer, to encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decisions and actions of other agencies as they affect energy development in Kern County (Kern County 2009).

General Policies

1. Kern County should assert and promote its role as the State's leading energy County.
2. The County should actively monitor the actions of local, State, and federal agencies relating to energy development in Kern County, and lobby and present its position on such matters as needed to protect the County interests and avoid unnecessary impediments to energy development.
3. The County shall continue to streamline energy permitting regulations.

4. The County should actively seek State and federal energy grants and projects to assist in energy planning and development.
5. The County shall work with other agencies to define regulatory responsibility concerning energy-related issues, and shall seek to eliminate, insofar as possible, duplicative regulations.
6. The County should encourage discussion and mutual cooperation of various energy industries within the County to establish mutual understanding of common needs and issues.
7. The processing of all discretionary energy project proposals shall comply with California Environmental Quality Act (CEQA) Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.
8. The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
9. The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.
10. The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

5.11.1.2 Greenhouse Gases (GHG)

Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.,* 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that EPA had the authority to regulate GHGs.

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (House of Representatives Bill 2764; Public Law 110-161), which required EPA to develop "…mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy…." The Reporting Rule applies to most entities that emit 25,000 metric tons of carbon dioxide equivalents (MT CO_2e) or more per year. Since 2010, facility owners have been required to submit an annual GHG emissions report with detailed calculations of the facility's GHG emissions. The Reporting Rule also mandates compliance with recordkeeping and administrative requirements to enable EPA to verify annual GHG emissions reports.

State

The legal framework for GHG emission reductions has come about through Executive Orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

Executive Order S-3-05

Executive Order S-3-05, issued in recognition of California's vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the State Climate Change Scoping Plan

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions below 1990 levels by 2020. AB 32 also identifies CARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, CARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (CARB 2008). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of California's GHG inventory. CARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan details the regulations, alternative compliance mechanisms, voluntary actions and incentives, etc. proposed to meet the target emission reduction levels.

The Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade Program, discussed further below. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade Program will help ensure that the emission targets in AB 32 are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Uncapped strategies that will not be subject to the Cap-and-Trade Program are provided as a margin of safety by accounting for additional GHG emission reductions (CARB 2008).

CARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. CARB approved the first update to the Climate Change Scoping Plan: Building on the Framework in June 2014 (CARB 2014). The Scoping Plan Update includes a status of the 2008 Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020. The Scoping Plan Update determined that the State was on schedule to achieve the 2020 target (i.e., 1990 levels by 2020). However, an accelerated reduction in GHG emissions is required to achieve the S-3-05 2050 reduction target of 80 percent below 1990 levels by 2050.

The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan, would reduce GHG emissions associated with existing development, as well as new development. CARB has released the 2030 Target Scoping Plan Update Concept Paper to initiate a discussion regarding how to most effectively achieve a 40 percent reduction in GHG emissions by 2030 as compared to 1990 statewide GHG emissions (consistent with SB 32 and Executive Order B-30-15, outlined below) (CARB 2016). This Concept Paper was followed by the release of the 2017 Scoping Plan Update: *California's 2017 Climate Change Scoping Plan*, which establishes a proposed framework of action for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (CARB 2017).

The Draft 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by

assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's Executive Order S-3-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Senate Bill 32

Approval of SB 32 in September 2016 extended the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, adds two non-voting members to the CARB, creates the Joint Legislative Committee on Climate Change Policies consisting of at least three Senators and three Assembly members, requires additional annual reporting of emissions, and requires Scoping Plan updates to include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

Senate Bill 1078 (2002), Senate Bill 100 (2021) – California Renewable Portfolio Standard

Established in 2002 by SB 1078, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to provide a specified minimum portion of their electricity supply from eligible renewable resources by milestone target years. Since 2002, state legislative actions have modified and accelerated the RPS several times, resulting in one of the most ambitious renewable energy standards in the country. As of December 2021, per SB 100, the RPS requires retail sellers of electricity to serve 60 percent of their electric load with renewable energy by 2030 with new interim targets of 44 percent by 2024 and 52 percent by 2027, as well as requiring that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

Mandatory Reporting of Greenhouse Gas Emissions (17 CCR §95100 to 95158)

This rule applies to entities of certain sources categories, including suppliers of transportation fuels and generators of electricity. However, no specific reporting requirements apply to electric power generation from solar resources.

Local

Eastern Kern Air Pollution Control District

The Eastern Kern APCD collects GHG emissions data from large GHG sources annually. This data is then used by businesses, states and cities to identify opportunities to cut pollution and develop common-sense climate policies. Based on 2018 data, the largest source of CO_2 emissions is the transportation industry, accounting for 34% of all CO_2 emissions. The District encourages the reduction of CO_2 emissions from the transportation industry in part through grant programs (EKAPCD 2022).

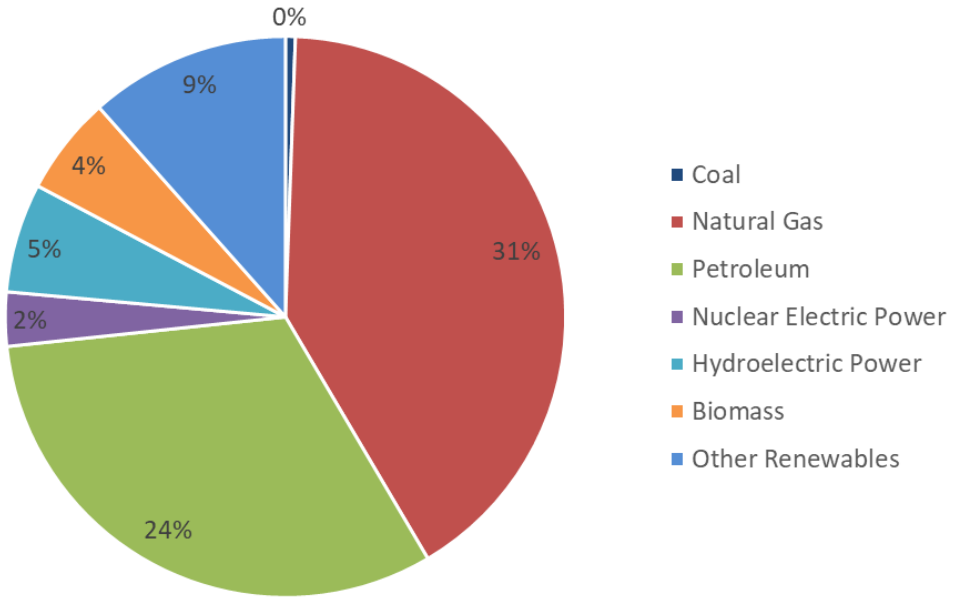
5.11.2 Environmental Setting

5.11.2.1 Energy

State Energy Resources

In 2018, California's total energy consumption is the second highest in the nation, but the state's per-capita energy consumption was the fourth-lowest, due in part to its mild climate and its energy efficiency programs (EIA 2022).

Figure 5.11-1 shows the relative end-use consumption of energy resources in California by source in 2019, as reported by U.S. Energy Information Administration (EIA) (2022). Total consumption was approximately 7,107 trillion British thermal units (Btus), primarily in the form of natural gas (31 percent) and petroleum (24 percent). California is the second-largest consumer of petroleum products in the nation and the largest consumer of motor gasoline and jet fuel. Almost nine-tenths of the petroleum consumed in the state is used in the transportation sector.



Source: EIA 2021.

Figure 5.11-1. California Energy Consumption by Source (2019)

Electricity

Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico.

In 2019, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and second in the nation in conventional hydroelectric power generation (EIA 2022). California is the fourth-largest electricity producer in the nation, with renewable resources, including hydropower and small-scale (less than 1-megawatt), customer-sited solar photovoltaic (PV) systems, having supplied more than half of California's in-state electricity generation, natural gas-fired power plants having provided two-fifths, and less than one-tenth coming from nuclear power in 2019; about 0.1 percent of the state's net utility-scale generation was fueled by coal, and it is all from industrial cogeneration units (EIA 2022).

Of the renewable resources, in 2019, 19 percent was provided by the state's electricity net generation, and solar, wind, geothermal and biomass energy resources accounted for approximately 30 percent; however, this fluctuates substantial based on hydrological conditions and in 2015 only seven percent of the state's utility-scale net generation was supplied by hydropower. In 2019, solar supplied 14 percent of the state's utility-scale electricity net generation and, when accounting for small-scale solar generation, solar energy provided one-fifth of the state's total net generation. In 2019, California produced two-fifths of the total solar PV electricity generation and seven-tenths of the utility-scale solar thermal electricity generation in the nation.

California was also the country's largest net importer of electricity, receiving about 28 percent of its electricity supply from out of state in 2019. More than 70 percent of the out-of-state supply delivered to California in 2019 was from renewable energy resources. Approximately 10 percent of the out-of-state supply was from coal-fired power plants (for a total contribution of coal to the state's electricity supply from imports and in-state generation of less than three percent); the percent of imported electricity supply from coal-fired generation are anticipated to go to zero by the year 2026 due to the California Emissions Performance Standards established in 2006 by SB 268 limiting California utilities' new long-term financial investments in baseload generation with high-carbon dioxide emissions (e.g., coal-fired generation) (EIA 2022, EIA 2018).

Petroleum

California ranks third in petroleum refining capacity, with refining centers processing crude oil from within the state and offshore waters, as well as processing imported crude oil (EIA 2022). To meet state environmental regulations, California refineries are configured to produce cleaner fuels. Refineries in the state often operate at or near

maximum capacity because of the high demand for those petroleum products and the lack of interstate pipelines that can deliver them into the state.

California is the second-largest consumer of petroleum products and accounts for 10 percent of the nation's total petroleum consumption. Of the petroleum consumed in California, 85 percent is used in the transportation sector, which itself accounts for the largest share – approximately 40 percent - of the state's end-use energy consumption. California requires that all motorists use, at a minimum, a specific blend of motor gasoline called CaRFG (California Reformulated Gasoline) as part of an overall program to reduce emissions from motor vehicles (CaRFG regulations, California Code of Regulations, Title 23, Sections 2250-2273.5).

Natural Gas

California accounts for less than 1 percent of total U.S. natural gas reserves and production. The state is second in natural gas end-use consumption in the country, approximately 37 percent of which serves the state's industrial sector and 28 percent of which serves the state's electric power sector (EIA 2022).

Regional Energy Resources

Renewable energy projects, including wind farms and photovoltaic solar energy generating plants have been operating in Eastern Kern County for several years. The early wind energy generating projects can be over 30 years old. The older developments in Tehachapi, Cameron Canyon, and Oak Creek Pass can be recognized by the much smaller turbines. This is also the approximate useful lifespan of the projects. At the Eastern edge of the Tehachapi Valley and the Cameron Canyon the older, smaller, turbines are being replaced by the newer, much larger, turbines. In this century however, new wind and solar energy generating facilities have witnessed explosive growth. The newer wind farms now range from the Eastern edge of the Tehachapi Valley, Cameron Canyon and Oak Creek Pass to Mojave, and Rosamond. It is quite a red blinking sight, at night. This area is also designated as the Tehachapi Wind Resource Area (TWRA), producing approximately 3,500 Megawatts (MW) of renewable electricity (EKAPCD 2022).

The Park has neither telephone (landline or wireless) nor transmitted electricity. A diesel generator and photo-voltaic system provide electricity and propane is used at the Park residences.

5.11.2.2 Greenhouse Gas (GHG)

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space through the

atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Anthropogenic (e.g., human caused) emissions of GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2021).

Global surface temperature has increased by approximately 1.96 degrees Fahrenheit (°F) over the last 140 years (IPCC 2021); the likely total human-caused global surface temperature increase is 1.93°F. The rate of increase in global average surface temperature has not been consistent; the last four decades have warmed at a much faster rate per decade (IPCC 2021).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2021).

Principal Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The

following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- Carbon Dioxide (CO_2): Natural sources of CO_2 include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.
- Methane (CH_4): CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.
- Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:
- Chlorofluorocarbons (CFCs): These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
- Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.
- Sulfur hexafluoride (SF_6): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.
- Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.
- Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

Global Warming Potential

GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (its "atmospheric lifetime"). The GWP of each gas is measured relative to CO_2. Therefore, CO_2 has a GWP of 1. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). For example, SF_6, while comprising a relatively small fraction of the total GHGs emitted annually worldwide, has a GWP of 22,800, meaning that 1 ton of SF_6 has the same contribution to the greenhouse effect as approximately 22,800 tons of CO_2. The concept of CO_2 equivalence (CO_2e) is used to account for the different GWP potentials of GHGs. GHG emissions are typically measured in terms of pounds or tons of CO_2e, and are often expressed in MT CO_2e.

Climate change is a global issue because GHGs can have global effects, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern (see Section 3.3 "Air Quality"). Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years), or long enough to be dispersed around the globe.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The IPCC's 2021 Synthesis Report indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2021). Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California.

Agriculture. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events; significant shifts in water availability and water quality; changes in pollinator lifecycles; temperature fluctuations; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.

Biodiversity and Habitat. Specific climate change challenges to biodiversity and habitat include species migration, range shift, and novel combinations of species; pathogens,

parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss occurs).

Energy. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea level rise. Increasing temperatures and reduced snowpack negatively affect the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events.

Forestry. The most significant climate change–related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption.

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions, and other climate change stressors are likely to exacerbate longstanding challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities.

Public Health. Climate change can affect public health through various environmental changes and is the largest threat to human health in the 21st century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat-related illness, as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively affect air quality and increase or intensify respiratory illness such as asthma and allergies.

Transportation. The transportation industry is vulnerable to climate change risks, including sea level rise and erosion, which threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. Other forms of extreme weather events, such as extreme storm events, can negatively affect infrastructure, which can impair movement of people and goods, or potentially block evacuation routes and emergency

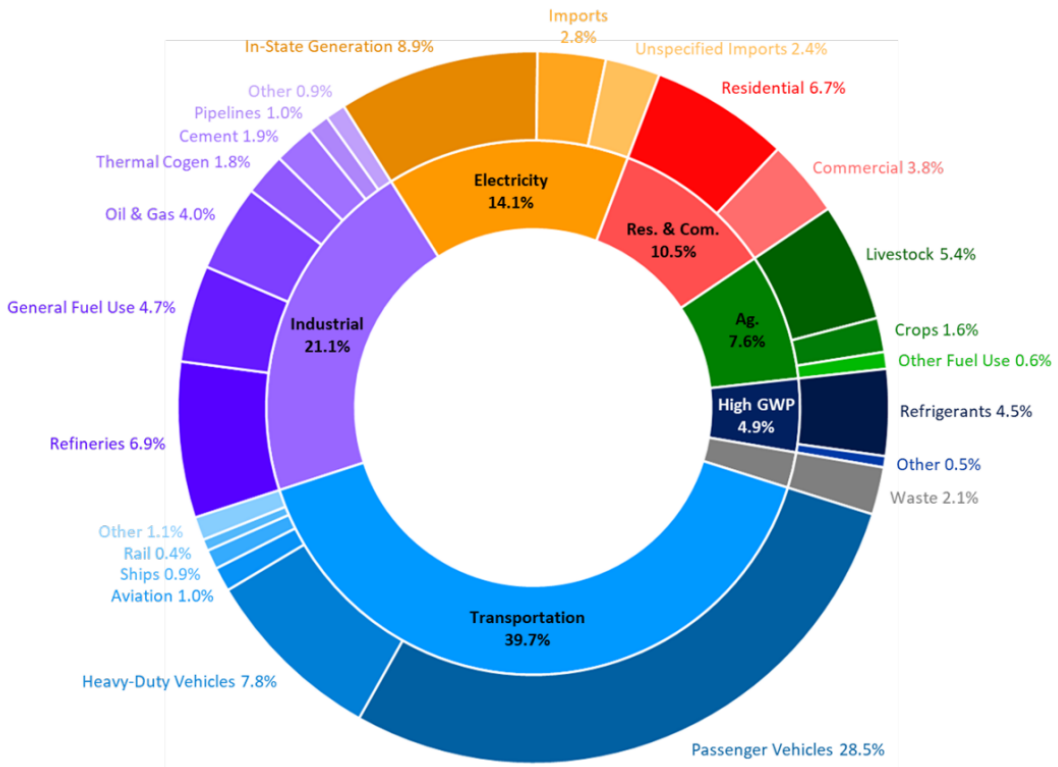
access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly affect the transportation system and pose a serious risk to public safety.

Water. Climate change could seriously affect the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can affect water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the wintertime. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence.

State Greenhouse Gas Emissions Inventory and Trends

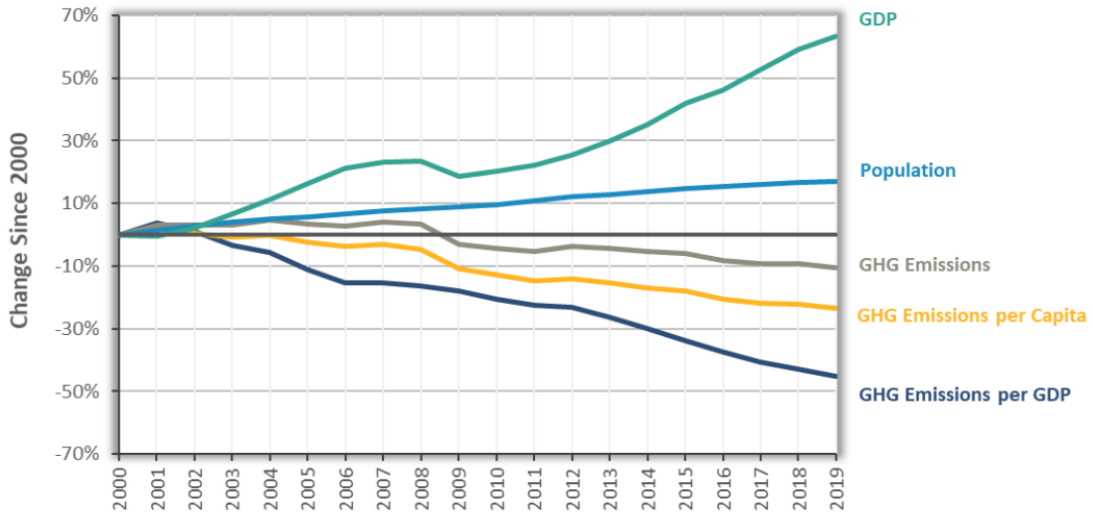
The CARB prepares an annual inventory of statewide GHG emissions. GHGs are typically analyzed by sector, a term that refers to the type of activity. As shown in Figure 5.11-2, 418.2 million MT CO_2e in 2019. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for 40 percent of total GHG emissions. Transportation was followed by industry, which accounted for 21 percent, and then the electric power sector (including in-state and out-of-state sources), which accounted for 14 percent of total GHG emissions (CARB 2021).

California has implemented several programs and regulatory measures to reduce GHG emissions. Figure 5.11-3 demonstrates California's progress in reducing statewide GHG emissions. Since 2007, California's GHG emissions have been declining, even as population and gross domestic product have increased. Per-capita GHG emissions in 2019 were 25 percent lower than the peak per-capita GHG emissions recorded in 2001. Similarly, GHG emissions per million dollars of gross domestic product have decreased by 47 percent since the peak in 2001.



Source: CARB 2021

Figure 5.11-2. 2019 California Greenhouse Gas Emissions Inventory by Sector



Metric	Associated 2019 Value
GDP	2.7 Trillion (2012 $)
Population	39.8 Million
GHG Emissions	418.1 Million Tonnes CO_2e
GHG Emissions per Capita	10.5 Tonnes CO_2e per Capita
GHG Emissions per GDP	150 Tonnes CO_2e per Million $

Source: CARB 2021

Figure 5.11-3. Trends in California Greenhouse Gas Emissions (Years 2000 to 2019)

5.11.3 Project Impacts

5.11.3.1 Threshold of Significance

Based on Appendix G of state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan Revision would result in a potentially significant impact related to energy and greenhouse gases if it would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

c) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

d) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.11.4 Impact Analysis

Impact 5.11-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation

Implementation of the General Plan would not result in a net increase in energy demand or any conflict with a plan for renewable energy or energy efficiency. Minor activities associated with the construction of small scale facilities and improvement projects and operation and maintenance activities would likely require energy consumption through the use of transportation fuel used by construction equipment, trucks, and worker commute vehicles, but that these projects would be minor and temporary in nature, therefore these activities would not include unusual characteristics that would involve long-term energy consumption that is less energy efficient than existing conditions. Construction equipment and trucks would be operated in accordance with the CARB Airborne Toxic Control Measure for Diesel-Fueled Commercial Motor Vehicle Idling, which would require minimizing idling time of construction equipment by shutting equipment off when not in use or reducing the time of idling to 5 minutes. These required practices limit wasteful and unnecessary energy consumption. Therefore, it is expected that fuel consumption associated with construction of the proposed project would not be inefficient, wasteful, or unnecessary. Furthermore, the changes that would be under consideration at the Park would occur over time with the development of small-scale facilities, improvement projects, and operations and maintenance. Projects would require minor construction activity, such as trail construction and maintenance, picnic table installation, informational kiosks, vegetation management,

and maintenance and improvements of existing facilities and structures. Improvements to existing facilities would promote the use of renewable energy and conservation. Over time, Parks plans to replace vehicles and equipment with more efficient energy saving types, such as electric. Parks will implement the following goals and guidelines related to energy found in ***Chapter 4 - The Plan, Section 4.6.1.3 Utilities***, and below.

Utilities Goal 1: New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Guideline 1-1: Using state-of-the-art conservation measures will minimize water usage at any new Park facility. Primitive/environmental campsites and equestrian camping area will be "dry" (no water or other developed facilities).

Utilities Guideline 1-2: Any new utility lines shall be buried. Siting of buried utility lines shall be done only with prior review by the State Park geologist, a State Park Archaeologist, and other departmental resource specialists.

Utilities Guideline 1-3: If new development is intended (e.g., development of a new visitor or operations facility), primary consideration should be given to the use of passive solar design, solar-assisted heating, and air conditioning, and other alternative energy sources, and the incorporation of passive cooling and heating techniques to reduce energy use including building orientation and insulation.

Utilities Guideline 1-4: Comply with the State Water Resources Control Board for clean, safe water**.** Compliance may include upgrading the existing water treatment plant.

Utilities Guideline 1-5: Comply with all Cal-Recycling goals and guidelines established by Resources Agency for trash storage and removal.

With the incorporation of federal and state regulations and the goals and guidelines listed above, implementation of the General Plan will not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. Therefore, this impact is **less than significant**.

Impact 5.11-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

Implementation of the General Plan would not conflict or obstruct a state or local plan for renewable energy or energy efficiency. The state of California and Kern County are leading the nation in renewable energy development. However, no large-scale renewable energy projects would be proposed to be built on Parks lands. Parks will continue to invest in renewable energy for the operation of their facilities as discussed

in ***Chapter 4 – The Plan, Section 4.6.1.3 Utilities***, and above. Therefore, there is **no impact**.

Impact 5.11-3 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

GHG emissions at the Park result from numerous activities taking place within the Park. First, is the transportation of visitors and staff throughout the Park. Most of this movement consumes unleaded fuel and diesel gasoline in automobiles and other combustion engine vehicles. Fuel is also consumed for the operation of maintenance equipment. An additional fuel source releasing CO_2 and other greenhouse gas emissions is liquid propane which is used at the staff residences. As a stable fuel that is easily transportable, it has numerous uses within the Park including water heating, space heating, and cooking. No electricity is provided to the Park at this time. Additionally, the enforcement of non-street legal OHV recreational use in the Park would also reduce greenhouse gas emissions.

Due to Park's rural environment with limited development, emissions generated are relatively minor compared to urban industrial or commercial land uses and will remain similar with implementation of the General Plan. On their own, these emissions cannot be determined to result in a significant impact on the environment.

At Red Rock Canyon State Park, this requires continuing the investment in alternative energy sources to power the park and serve visitors, while assessing emerging impacts and anticipating future impacts that can be addressed through tailored management activities that build the resilience of resources and facilities and adapt to shifting demands on park amenities. Parks will implement goals and guidelines related to sustainability, greenhouse gas emissions and climate change as discussed in ***Chapter 4 - The Plan, Section 4.6.1.4 Sustainability and Greenhouse Gas Emissions, Section 4.6.1.13 Climate Change;*** also listed below.

Sustainability Goal 1: Reduce, reuse, and recycle waste produced by Park visitors and operations within the Park.

Sustainability Guideline 1-1: Find new means to reduce, reuse, and recycle materials to conserve resources and reduce greenhouse gas emissions by reducing the need to acquire and process raw materials. Implement these techniques when they don't have adverse effects on Park resources.

Sustainability Guideline 1-2: Encourage resource efficiency by Park visitors through education about the importance of reducing, reusing, and recycling waste.

Sustainability Guideline 1-3: Where feasible, compost waste to reduce the amount of refuse being transported to off-site landfills.

Greenhouse Gas Emissions Goal 1: Increase awareness of energy use, how it can be more efficient, and methods to reduce greenhouse gas emissions. Choose the appropriate energy type based on the action to be accomplished.

Greenhouse Gas Guideline 1-1: Provide an efficient means for Park staff and visitors to travel within the Park that minimizes and reduces carbon emissions that contribute to climate change.

Greenhouse Gas Guideline 1-2: Continue to provide a limited road network through the Park and place new parking/staging areas in locations that minimize driving distance, as feasible.

Greenhouse Gas Guideline 1-3: Provide current Park information to orient visitors, especially new visitors, to Park roads, major trailheads, picnic and parking/staging areas, and other points-of-interest so visitors can efficiently plan and minimize vehicle trips.

Greenhouse Gas Guideline 1-4: Promote the acquisition and use of low- or zero-emission vehicles for Park staff, as feasible, to meet the need of Park operations. Provide charging stations for Park operations and staff, and visiting public vehicles, as feasible.

Climate Change Goal 1: Understand the climate impacts felt to date and predicted impacts based on best available information.

Climate Guideline 1.1: Collect local weather data and determine whether changes recorded in climate data correlate with trends observed in vegetation, wildlife, fire, and hydrology.

Climate Guideline 1.2: Evaluate statewide and regional summaries of anticipated climate change impacts and vulnerabilities. These include but are not limited to the regional summaries in California's Fourth Climate Change Assessment, the California Climate Change Adaptation Plan, and California Department of Fish and Wildlife's Vulnerability Assessments for a range of fish, wildlife, and plants. Track these and other sources of climate science information and guidance as it continues to evolve.

Climate Change Goal 2: Develop a strategy to address potential climate impacts and sustain Park goals through management actions and other activities.

Climate Guideline 2.1: Develop management plans and establish operational priorities based on the data and understanding of climate impacts identified in Goal 1 Guidelines 1.1 and 1.2. Management plans should prioritize protecting and restoring primary natural and cultural resource values, improving habitat linkages, and responding changed visitation patterns.

Climate Guideline 2.2: Improve collaboration with statewide and local partners to better understand and implement best practices for climate resilience in the Mojave Desert landscape. In addition to Bureau of Land Management and National Park Service partners, these may include researchers in the University of California Natural Reserve System and other allied agencies.

Implementation of the General Plan would not generate new greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Existing regulations would continue to reduce emissions associated with energy and mobile activity resulting from the proposed General Plan and Park operations. In addition, implementation of the goals and guidelines described above would achieve GHG emissions reductions of future Park operations, such as through the increased use of low- to zero-emissions equipment and vehicles and improved building energy efficiency. Therefore, this impact is **less than cumulatively considerable**.

Impact 5.11-4 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The changes that would be under consideration at the Red Rock Canyon State Park would not affect the implementation of an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Implementation of the General Plan would occur over time with the development of small-scale facilities and improvement projects. Projects would require minor construction activity, such as trail construction and maintenance, picnic table installation, informational kiosks, vegetation management, and maintenance and improvements of existing facilities and structures. Sources of emissions could include maintenance vehicles, landscaping equipment, and indirect energy-related sources associated natural gas combustion. The proposed changes to the Park would not generate sufficient traffic to alter general traffic patterns on SR 14 such that mobile-source emissions would contribute to a violation of an ambient air quality standard or air quality management plan. Therefore, as further explained above in the discussion of Impact 5.11-3 under “Air Quality”, the General Plan implementation would not result in a cumulative considerable increase in pollutant emissions related to automobile use.

A number of government directives have been passed that include benchmarks for reduction of emissions that are to be met. Several of these include:

- State of California Assembly Bill (AB) 32 and Executive Orders S-3-05 and B-30-15 – The Global Warming Solutions Act of 2006, provides a statewide directive to achieve 1990 GHG emissions levels by 2020, equivalent to a 15% reduction below baseline 2005-2008 emissions levels, and achieve 80% reduction below 1990 GHG emission levels by 2050.

- Executive Order B-55-18 (2018) - Executive Order B-55-18 acknowledges the environmental, community, and public health risks posed by future climate change. It further recognizes the climate stabilization goal adopted by 194 states and the European Union under the Paris Agreement. Based on the worldwide scientific agreement that carbon neutrality must be achieved by midcentury, EO B-55-18 establishes a new State goal to achieve carbon neutrality as soon as possible and no later than 2045, and to achieve and maintain net negative emissions thereafter. The EO charges CARB with developing a framework for implementing and tracking progress towards these goals.
- CDPR also has an initiative known as "Cool Parks" that will respond to the pressing challenges of climate change. The program will identify and address emerging environmental threats to the resources of the State Park System. It includes a three-pronged strategy including:
    - Adaptation, which involves protecting open spaces to sustain biodiversity, ensuring wildlife have corridors to promote optimal movement, adapting park facilities to climate change, reducing greenhouse gas emissions, and energy efficiency.
    - Understanding and implementing carbon sequestration.
    - Educating visitors about the implications of climate change, and how they can make choices that will minimize the impacts of climate change.

Implementation of the General Plan will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. By following federal and state laws and implementing the goals and guidelines described above, greenhouse gas emissions of future Park operations should be reduced over time due to the use of low- to zero-emissions electric equipment and vehicles and renewable energy. Therefore, this impact is **less than significant**.

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5.12 Geology, Soils, and Paleontological Resources

This section analyzes impacts related to geology, soils, seismicity, and paleontological resources that could result from the implementation of the General Plan. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 -The Plan, Section 4.6 – Goals and Guidelines***, and below.

5.12.1 Regulatory Setting

The following laws and regulations related to geology, soils, seismicity, and paleontological resources apply to the proposed project. Also, refer to General Plan ***Chapter 2 - Section 2.9 "Planning Influences,"*** and ***Appendix A***.

5.12.1.1 Federal

- Earthquake Hazards Reduction Act, Public Law 95–124

  In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives.

  The mission of the National Earthquake Hazards Reduction Program includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The National Earthquake Hazards Reduction Program Act designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other National Earthquake Hazards Reduction Program Act agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

5.12.1.2 State

- Alquist-Priolo Earthquake Fault Zoning Act, California Public Resources Code Sections 2621–2630

  The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code Sections 2621–2630) was passed in 1972 to reduce the hazard of surface faulting on structures designed for human occupancy. The main purpose of

the law is to prevent the construction of structures used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. Earthquake Fault Zones are generally one-quarter mile wide or less (i.e., approximately 650 feet on both sides of the actual fault trace). The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed structures would not be constructed across active faults.

- Seismic Hazards Mapping Act, California Public Resources Code Sections 2690–2699.6

  The Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that respective cities or counties with jurisdiction over a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

- Public Resources Code Section 5097.5 – Paleontological Resources

  California Public Resources Code (PRC) Section 5097.5 prohibits excavation or removal of any "…vertebrate paleontological site, including fossilized footprints…or any other archaeological, paleontological, or historical feature situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." Section 5097.5 also states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor. Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof.

5.12.2 Environmental Setting

Chapter 2 – Existing Conditions, Section 4.6.1.7 – Physical Resources provides a summary of the geology, soils, and known geologic hazards, along with paleontological resources and unique geologic features at the Park.

5.12.3 Project Impacts

5.12.3.1 Threshold of Significance

Geology, Soils, and Seismicity

Based on Appendix G of CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to geology, soils, and seismicity if it would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
   ii) Strong seismic ground shaking?
   iii) Seismic-related ground failure, including liquefaction?
   iv) Landslides?
b) Result in substantial soil erosion or the loss of topsoil?
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
f) Directly or indirectly destroy a unique geologic feature?

Paleontological Resources

Based on Appendix G of the CEQA Guidelines, , implementation of the Red Rock Canyon State Park General Plan would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. A "unique paleontological resource or site" is one that is considered significant under the following professional paleontological standards.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);

- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies, depending on several factors: the age and depositional environment of the rock unit that contains the fossils; their rarity; the extent to which they have already been identified and documented; and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates generally are common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils generally are considered scientifically important because they are relatively rare.

5.12.3.2 Issues Not Discussed Further in This EIR

Expansive Soils—Soil at the Ricardo Campground Complex focused use management zone where the Joint Operations Center (and potentially other future improvements) is located consists of the Koehn sand (2 to 4 percent slopes, frequently flooded) soil type. Based on a review of Natural Resources Conservation Service (NRCS 2021) soil survey data, this soil type is not expansive. NRCS soil survey data is not available for the Red Cliffs focused use management zone. However, a review of relevant geologic mapping (Jennings et al. 1962) indicates that the Red Cliffs focused use management zone is comprised of the same geologic formation (Holocene alluvium) derived from similar parent material as the Ricardo Campground Complex. Therefore, soil at the Red Cliffs focused use management zone is also considered to have a high percentage of sand, and therefore would not be expansive. Because there are no other areas where buildings, paved roads, or paved parking areas are proposed, soil expansion is not relevant in other areas of the Park. Thus, there would be no impact from construction in expansive soils, and this topic is not evaluated further in this EIR.

Soil Suitability for Septic Systems—State Parks has one existing septic system, which would continue to be used, within the Park at the existing Richard Campground Complex operations center; operation of the existing septic system would not change with implementation of the improvements to the operations center contemplated under the General Plan. New visitor facilities contemplated in the General Plan could include developed campgrounds in the focused use management zones with primitive campsites, a picnic table and fire ring, and pit/vault toilets. No new septic systems are

anticipated. Thus, there would be no impact related to soil suitability for septic systems, and this topic is not evaluated further in this EIR.

5.12.4 Impact Analysis

Impact 5.12-1a. Seismic Impacts – Surface Fault Rupture

Geologists have determined that the greatest potential for surface fault rupture and strong seismic ground shaking is from active faults, that is, faults with evidence of activity during the Holocene epoch (the last 11,700 years). Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures and underground pipelines that are built over a fault can be torn apart if surface ground rupture occurs. Faults that are the most likely to result in surface rupture are classified under the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act).

The El Paso fault runs along the base of the El Paso Mountains and is exposed at the mouth of Red Rock Canyon within the Park. The El Paso fault parallels, and may be a branch of, the Garlock Fault, marking the structural boundary between the Mojave Desert and the Basin and Range geomorphic provinces. The Garlock Fault, which includes several parallel east-west strands, lies parallel to the Red Rock-Randsburg Road south of the Park. A small northward extension of the Garlock Fault lies within the extreme southwestern end of the Park, on the west side of SR 14. The Garlock Fault is active and is designated under the Alquist-Priolo Act (CGS 2022a).

The focused use management zones at Ricardo Campground Complex and Red Cliffs, where buildings and campgrounds may be constructed, are not located within or adjacent to the traces of any known fault (Jennings and Bryant 2010). A portion of the existing unpaved primitive road in the southwestern portion of the park (Red Rooster), existing Red Rooster trailhead parking, proposed interpretive signage, and a small portion of the proposed non-motorized trail from the Red Rooster trailhead would be located within the fault trace of the potentially active El Paso Fault. However, no buildings, campgrounds, or structures are proposed in this area. Therefore, no buildings or other structures intended for human occupancy would be placed within 50 feet of the trace of any known fault.[1] Furthermore, all proposed buildings, pavements, bridges, and other structures in the Park, regardless of location, must be designed according to the requirements of Title 24 of the California Building Standards Code (CBC). The CBC requires site-specific geotechnical investigations for individual projects, the results of which must be factored into site-specific design. The CBC contains engineering criteria

[1] The Alquist-Priolo Act prohibits the construction of structures intended for human occupancy within 50 feet of the trace of any fault classified by the California Geological Survey as “active” (CGS 2018).

that are specifically designed to reduce structural damage and personal injury from seismic hazards, including surface fault rupture, to the maximum extent practicable.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.6 – Public Safety and Section 4.6.1.15 Interpretation and Education*** of the in the General Plan are designed to promote visitor, staff, and facility safety as related to seismic hazards, including surface fault rupture.

Safety Goal 1: Promote visitor safety while recognizing that the desert's climate, geology, wildlife, and vegetation are inherently hazardous. Measures to promote visitor safety will be taken while considering the importance of maintaining the visitor's experiences of adventure, discovery, and wilderness.

Safety Guideline 1-1: Continually evaluate, expand, and adapt the visitor safety program to increase safety throughout the Park (e.g., communicate extreme climate conditions to the public when they occur).

Safety Guideline 1-3: State Parks will evaluate visitor and environmental hazards and, where appropriate, develop measures to ensure public safety.

Safety Guideline 1-4: States Parks will develop and keep current public safety messaging about where visitors can seek help in an emergency (e.g., Park contact information, locations with cell phone connectivity) and how to recreate in the desert safely. Public safety messaging will be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground and in day-use picnic and parking/staging areas.

Safety Goal 2: Plan for geological events (e.g., floods, earthquakes) to minimize dangers to lives and facilities. Comply with incident action plans for State Parks and the District.

Safety Guideline 2-3: Structures to be constructed or modified shall be designed to comply with the latest edition of the California Building Standards Code, CCR Title 24.

Safety Guideline 2-4: New buildings and other structures intended for human habitation (as defined in CGS Special Publication 42) shall not be placed within the 50 feet of the trace of an active fault.

Safety Goal 4: Ensure that all facilities and structures provide a safe environment for visitors.

Safety Guideline 4-3: Complete a site-specific geological investigation for major facility developments. Include an evaluation of the geologic hazards and soil properties to verify that the site is appropriate for development. Some of the concerns associated with soils and geologic hazards and development include

soil bearing capacity, the potential for erosion, surface fault rupture, strong seismic ground shaking, liquefaction, and landslides and rockfalls.

Interpretation Goal 1: Expand interpretive themes from the General Plan. Provide relevant and thematic interpretive materials that address the Park's sense of place and history and meet the needs and interests of the visitors.

Interpretation Guideline 1-6: Develop an effective and comprehensive education program to promote visitor safety that recognizes the inherent hazards of the desert's climate, geology, wildlife, and vegetation.

Although surface fault rupture represents a hazard at the southern end of the Park along the El Paso and Garlock Faults, this part of the Park does not include any focused use management zones; no buildings and other structures that are intended for human habitation are proposed in this area. Furthermore, implementation of the General Plan guidelines listed above, along with compliance with the requirements of the CBC (which is required by law for all buildings and structures regardless of location), would ensure that impacts from surface fault rupture would be **less than significant**.

Impact 5.12-1b. Seismic Impacts – Strong Seismic Ground Shaking

The Park is located in a seismically active area. Portions of both the El Paso and Garlock Faults lie within the Park. In 1992, a magnitude 5.7 earthquake occurred along the Garlock Fault approximately 8 miles southwest of the southern edge of the park (CGS 2022b). The Garlock Fault is considered active by CGS. The El Paso Fault is considered potentially active, with the age of last known activity during the last 700,000 years (i.e., Late Quaternary). A portion of the Sierra Nevada Fault Zone is approximately 1 mile west of the western Park boundary, with the age of last known activity occurring sometime during the Quaternary (age undifferentiated – not an active or potentially active fault). Recorded earthquake shaking occurred in 1982 and 1995 on fault traces within the Little Lakes Fault Zone, approximately 15 miles northeast of the project site (Jennings and Bryant 2010). On July 4 and July 6, 2019, magnitude 6.1 and 7.4 earthquakes, respectively, occurred northeast of Ridgecrest, approximately 20 miles northeast of the Park, which resulted in widespread seismic shaking throughout California and as far east as Phoenix, Arizona (Wald and Collett 2021).

Ground shaking—motion that occurs as a result of energy released during faulting—could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the distance to the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock and, where structures exist, the building materials used and the workmanship of the structures.

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, and site soil conditions. Calculations of earthquake shaking hazard for California are part of a cooperative project between the USGS and CGS, and are part of the National Seismic Hazard Mapping program. Earthquake shaking hazards are calculated by projecting earthquake rates based on earthquake history and fault slip rates, the same data used for calculating earthquake probabilities. Fault parameters are developed for these calculations by the Working Group on California Earthquake Probabilities. A probabilistic seismic hazard map is a map that shows the hazard from earthquakes that geologists and seismologists agree could occur in California. It is "probabilistic" in the sense that the analysis takes into consideration the uncertainties in the size and location of earthquakes and the resulting ground motions that can affect a particular site. The 2016 map showing the probabilistic *Earthquake Shaking Potential for California* (digitized by the California Department of Conservation) indicates that the project area is within moderate potential shaking hazard intensities, near major, active faults and will on average experience stronger earthquake shaking more frequently (Branum, et al. 2016).

The focused use management zones at Ricardo Campground Complex and Red Cliffs, where buildings and campgrounds may be constructed, could be subject to strong seismic ground shaking in the future. The existing Park operations, maintenance, housing, and visitor center is presently located in the Richard Campground Complex. As described above, buildings, paved roads and paved parking areas, and other structures must be designed according to the requirements of the CBC, which requires site-specific geotechnical investigations for individual projects, the results of which must be factored into site-specific design. Although the CBC does not apply to state buildings, it is used as a guide. The CBC contains engineering criteria that are specifically designed to reduce structural damage and personal injury from seismic hazards, including strong seismic ground shaking, to the maximum extent practicable. Although the other proposed facilities throughout the Park—including the proposed trailhead parking areas, trails, and interpretive signage displays; primitive backcountry camping areas; and the proposed Last Chance Canyon, Nightmare Gulch, and Black Rock Canyon Cultural Preserves—as described in the General Plan may also be subject to strong seismic ground shaking, no buildings or other structures that would be used for human occupancy would be constructed.

The goals and guidelines in the General Plan are designed to promote visitor, staff, and facility safety as related to seismic hazards, including strong seismic ground shaking. These goals and guidelines are detailed above and include ***Safety Goal 1, Safety Guidelines 1-1, 1-3, and 1-4; Safety Goal 2, Safety Guidelines 2-3 and 2-4; Safety Goal 4, Safety Guideline 4-3;*** and ***Interpretation Goal 1, Interpretation Guideline 1-5***.

Strong seismic ground shaking could represent a hazard at either or both of the focused use management zones (Ricardo Campground Complex and Red Cliffs) where buildings and other facilities intended for human habitation may be constructed. Although other facilities throughout the Park such as primitive backcountry camping, primitive roads, trails, and parking areas could also be subject to strong seismic ground shaking, these facilities would not include buildings or other structures intended for human habitation, or bridges or underground pipelines. Implementation of the General Plan guidelines listed above, along with compliance with the requirements of the CBC (which is required by law for all buildings and structures regardless of location), would ensure that impacts from strong seismic ground shaking would be **less than significant**.

Impact 5.12-1c. Seismic Impacts – Liquefaction

Liquefaction is a phenomenon where saturated sands lose their strength during an earthquake and become fluid-like and mobile. Factors determining liquefaction potential are soil type, level and duration of ground motions, and depth to groundwater. Liquefaction is most likely to occur in low-lying areas where the substrate consists of poorly consolidated to unconsolidated water-saturated sediments, recent Holocene-age sediments, or deposits of artificial fill. As a result of liquefaction, the ground may undergo large permanent displacements that can damage building and other structural foundations, as well as underground utilities.

The Park area has not been evaluated by CGS in terms of liquefaction hazard zones under the Seismic Hazards Mapping Act. Most of the Park, including the two focused use management areas at Ricardo and Red Cliffs, overlie the southwestern portion of the Indian Wells Valley Groundwater Basin (IWVGB). The *Sustainable Groundwater Management Plan for the Indian Wells Valley Groundwater Basin* (Indian Wells Valley Groundwater Authority [IWVGA] 2020) states that the current overdraft conditions in the IWVGB, which result in lowering of groundwater levels, also contribute to land subsidence conditions. Additionally, due to the high potential for seismic activity, the IWVGB is also subject to direct tectonic changes in ground elevation, as well as soft sediment deformation and compaction of fine-grained units (e.g., liquefaction) due to seismic activity (IWVGA 2020:4-14). Therefore, liquefaction could represent a hazard, particularly for new buildings, in the flat, alluvial valley areas of the Park.

As described above, buildings and other structures, along with paved roads and paved parking areas, must be designed according to the requirements of the CBC, which requires site-specific geotechnical investigations for individual projects, the results of which must be factored into site-specific design. The CBC contains engineering criteria that are specifically designed to reduce structural damage and personal injury from seismic hazards, including liquefaction, to the maximum extent practicable. While the CBC does not apply to state buildings and structures, it is used as a guide.

The goals and guidelines in the General Plan are designed to promote visitor, staff, and facility safety as related to seismic hazards, including liquefaction. These goals and guidelines are detailed above and include ***Safety Goal 1, Safety Guidelines 1-1, 1-3, and 1-4; Safety Goal 2, Safety Guideline 2-3; Safety Goal 4,*** and ***Safety Guideline 4-3***.

Liquefaction could represent a hazard at the focused use management zones at the Ricardo Campground Complex and Red Cliffs because these areas are comprised of softer, younger, sandy alluvial deposits overlying groundwater and because buildings and other facilities intended for human habitation may be constructed in these areas. Although other Park facilities such as primitive roads and camping areas, trails, and parking areas in flat alluvial valleys could also be subject to liquefaction, these facilities would not include buildings or other structures intended for human habitation, or bridges or underground pipelines. Implementation of the General Plan guidelines listed above, along with compliance with the requirements of the CBC (which is required by law for all buildings and structures regardless of location), would ensure that impacts from liquefaction would be **less than significant**.

Impact 5.12-1d. Seismic Impacts – Landslides

The Park topography is mostly steep to very steep, with level areas limited to the broad desert valleys between buttes and ridges. Slopes vary from flat to slight (0–10%) to very steep (greater than 40%). It is estimated that at least 999 acres of the Park have slopes that exceed 40%. In contrast, only 6,820 acres are estimated to be less than 10% slopes. The highest elevation in the Park is 3,708 feet, and the lowest point is approximately 1,990 feet.

The Park area has not been evaluated by CGS in terms of landslide hazard zones under the Seismic Hazards Mapping Act. However, CGS Map Sheet 58 (CGS 2022a) shows the relative likelihood of deep-seated landsliding based on regional estimates of rock strength and steepness of slopes. On the most basic level, weak rocks and steep slopes are most likely to generate landslides. The map uses detailed information on the location of past landslides, the location and relative strength of rock units, and steepness of slope to estimate susceptibility to deep-seated landsliding based on classes of landslide susceptibility ranked from 0 to 10 (low to high). Ridgelines throughout the Park are fairly evenly divided between low, moderate, and high landslide susceptibility (CGS 2022a). Most areas of high landslide susceptible generally bisect the Park in a broad belt from northeast to southwest in the El Paso Mountains.

Rockfall is the free or bounding fall of rock debris down steep slopes under the influence of gravity. Rockfalls result from the weathering of bedrock outcrops on steep slopes, the ultimate detachment of the weathering products, and their removal downslope. Geomorphologists divide rockfalls into two basic types: (1) primary rockfalls occur where downslope removal immediately follows detachment of the rock from the host

bedrock; and (2) secondary rockfalls are those that move previously detached materials downslope. The main triggering processes for both types of rockfall are similar (e.g., freeze-thaw activity, precipitation events, or earthquakes), although secondary rockfalls may be triggered by a wider range of additional processes on the slope such as snow avalanches, animals, or anthropogenic (human-caused) activity. Rockfalls vary in size from single pebbles to catastrophic failures of several million cubic yards. They occur at sites ranging in size from large rockwalls to single bedrock outcrops or road cuts and can result in considerable damage to buildings, transportation infrastructure, and related losses of human life. Rockfall events are generally infrequent, discontinuous, and unpredictable.

Where Park facilities would be located within or across steep slopes, including buildings, trails, access roads, parking areas, primitive camping areas, and interpretive signage, they could be subject to hazards from landslides and/or rockfall.

As described above, buildings and other structures, along with paved roads and paved parking areas, must be designed according to the requirements of the CBC, which requires site-specific geotechnical investigations for individual projects, the results of which must be factored into site-specific design. The CBC contains engineering criteria that are specifically designed to reduce structural damage and personal injury from seismic hazards, including seismically-induced landslides, to the maximum extent practicable.

Finally, Department of Parks and Recreation Operations Manual Section 0307.3.1.1 states that State Parks will strive to site facilities where they will not be damaged or destroyed by natural physical processes (California State Parks 2004).

The goals and guidelines in the General Plan are designed to promote visitor, staff, and facility safety as related to landslides and rockfall. These goals and guidelines are detailed above include ***Safety Goal 1, Safety Guidelines 1-1, 1-3, and 1-4; Safety Goal 2, Safety Guidelines 2-1 and 2-2*** (detailed below)***, and 2-3; Safety Goal 4, Safety Guideline 4-3;*** and ***Interpretation Goal 1, Interpretation Guideline 1-5,*** as well as the additional guidelines below.

> ***Safety Guideline 2-2:*** Facilities and activities that tend to concentrate visitors shall not be located in areas where rockfall hazards or cliff undercutting have been identified as problems.
>
> ***Safety Guideline 2-3:*** Structures to be constructed or modified shall be designed to comply with the latest edition of the California Building Standards Code, CCR Title 24.

Roads and Trails Management Plan. The Park acknowledges the wide range of values that roads and trails hold for park visitors and the various types of recreation uses

available for visitors. Thus, the Park should consider developing a road and trail management plan once the revision of the general plan is approved. The RTMP is a long-range document that builds on the general plan and serves as a decision-making tool for Park management. It will be balanced to meet the needs of the park visitor, maintain public safety, protect the park resources, and maintain the quality of the visitor experience. The plan will further analyze the road and trail network and study the appropriate type and level of recreational access. It may include recommendations for additional trails and use types based on stakeholder and public input. Additionally, the plan may recommend realignment or closure of selected roads and trails, or segments of them, for the protection of sensitive resources and to reduce redundant (parallel) travel routes. The management zones designated by the General Plan will provide the Roads and Trails Management Plan application regulations.

The Ricardo Campground Complex and Red Cliffs focused use management zones, where buildings and primitive campgrounds may be constructed, are located in nearly flat, alluvial valleys and therefore are not subject to ground slippage from landslides or rockfalls. Most of the dirt roads in the General Plan are existing, and therefore exposure to landslides and rockfall hazards along these roads would not change. All of the proposed Park facilities that are located within, across, or at the base of steep slopes—including primitive camping, interpretive signage, roads, trails, and parking areas—could be subject to landslide and/or rockfall hazards. However, implementation of the General Plan guidelines listed above, along with compliance with the requirements of the CBC (which is required by law for all buildings and structures regardless of location), would ensure that impacts from landslides and rockfall would be **less than significant**.

Impact 5.12-2 Soil Erosion

The soil erosion hazard in the Park is generally high but can vary widely from one location to the next. The dark basaltic flows that lie atop the ridges in the canyons are relatively resistant to water erosion; however, the various types of sedimentary beds that underlie the harder material are easily eroded. This erosion has contributed to creating the spectacular multi-colored canyon walls and cliffs for which the Park is famous. However, human activities, including historic mining, road construction, and OHV recreation, have resulted in negative erosion impacts. Soils in the Park are generally comprised of gravelly loamy sand, gravelly sandy loam, or loamy sands. Soils with a high percentage of sand are easy transported by the erosive forces of wind and water.

Construction activities associated with proposed recreation facilities may include, but are not limited to vegetation clearing, excavation, and grading associated with buildings, paved roads, and paved parking lots; improvements to existing roads or trails, or installation of new roads or trails; and the installation of vehicle barriers, interpretive

signage, fencing, and drainage features. Construction-related earthmoving activities would expose soils to potential erosion from wind and water. Earthmoving activities during the winter months would expose soils to rain events, which could mobilize loose soil and result soil erosion. Subsequent soil transport during storm events could result in sedimentation within and downstream of the project site. Furthermore, earthmoving activities during the summer months could result in wind erosion.

State Parks is required by law to comply with the provisions of the SWRCB's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities* (Order 2009-009-DWQ as amended by Order 2012-0006-DWQ) (Construction General Permit). The Construction General Permit regulates stormwater discharges for construction activities under the federal Clean Water Act, and applies to all land-disturbing construction activities that would disturb one (1) acre or more. State Parks must submit a notice of intent to discharge to the Lahontan RWQCB, and must prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that includes site-specific Best Management Practices (BMPs) to minimize construction-related soil erosion. Construction techniques that could be implemented to reduce the potential for stormwater runoff and sediment transport may include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. BMPs that could be implemented to reduce erosion may include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers and re-seeding and mulching to revegetate disturbed areas. All NPDES permits also have inspection, monitoring, and reporting requirements.

The Park would also be operated in accordance with CDPR Natural Resources Operations Manual Section 0308, which applies to the management of soil resources, and includes minimizing human-caused erosion and minimizing soil excavation during construction of new facilities. (California State Parks 2004).

The following goals and guidelines in the General Plan ***Chapter 4 - The Plan, Section 4.6.1.7 Physical Resources*** *and* ***Section 4.6.1.8 Hydrology Resources,*** are designed to reduce erosion from the use and construction of Park facilities, as well as ***Safety Goal 4*** and ***Safety Guideline 4-3 and Roads and Trails Management Plan*** as detailed above.

Soils Goal 1: Protect sensitive soils and promote further understanding of the role of soils and soil biota in desert ecosystems.

Soils Guideline 1-1: Update the inventory of soils throughout the Park. Identify specific soil types and living soil communities and understand how these soils support the region's biota.

Soils Guideline 1-2: Identify and minimize visitor activities and park operations that negatively impact sensitive soils. Develop an understanding of how this impact further affects erosion, water quality, plant communities, terrestrial invertebrates, birds, mammals, and other components of the region's ecosystems.

Soils Guideline 1-3: Incorporate an assessment of human effects on soil dynamics in future management plans.

Soils Goal 2: Restoration of slowly recovering disturbed areas shall be a high resource management priority. See also ***Mineral Guideline 2-1***.

Soils Guideline 2-1: Restore severely affected surface areas.

Soils Guideline 2-2: An ongoing occurrence is the disturbance of lands by unlawful vehicle operation in the Park. The extent and causes of such damage shall be documented, and appropriate preventative and restoration measures shall be undertaken.

Hydrology Goal 1: Protect, enhance, and restore the Park's wetlands and hydrologic resources.

Hydrology Guideline 1-2: Implement methods to deter concentrated vehicle, foot, and stock traffic within the riparian ecosystem in Last Chance Creek to prevent soil compaction, erosion, impacts on water quality, and trampling of sensitive species known to occur in the area. State Parks will also facilitate restoration programs of previously disturbed areas.

Hydrology Guideline 1-3: State Parks will conduct invasive species management and habitat restoration activities to support ecological balance. Strategies for stabilization and topographic restoration of eroded and compacted features and areas will also be addressed.

Geology Goal 1: Preserve and protect the unique scientific and scenic qualities of the geologic resources and features inherent within the Park.

Geology Guideline 1-4: Preserve the integrity of fragile sedimentary badlands. Badlands are particularly vulnerable to various destructive human and mechanical activities that promote excessive erosion.

State Parks would prepare and implement a SWPPP with associated BMPs specifically designed to reduce erosion for any project that involves disturbance of one (1) acre or more of land, to comply with the requirements of the SRWCB's Construction General Permit. Most of the dirt roads in the General Plan are existing, and continued use of these roads for visitor and Park staff access would not change the existing conditions. The Park would continue to be operated in accordance with CDPR Natural Resources Operations Manual Section 0308 to manage soil resources, which includes minimizing

human-caused erosion and minimizing soil excavation during construction of new facilities. The proposed Roads and Trails Management Plan will include measures to reduce soil erosion, including wet-weather closures or closures in heavily used areas, where necessary. Implementation of the General Plan guidelines listed above, along with compliance with the SWRCB's Construction General Permit, and the Natural Resources Operations Manual, would ensure that impacts from soil erosion would be **less than significant**.

Impact 5.12-3 Soil Instability

As evaluated above in Impacts 5.12-1c and 5.12-1d, portions of the Park are vulnerable to liquefaction and landslide hazards. Furthermore, flat areas of the park are comprised of sandy, alluvial soils. Soils that contain a high percentage of sand are unstable, and require special engineering considerations for the design of building foundations, and paved roads and parking areas.

As described above, buildings and other structures, along with paved roads and paved parking areas, must be designed according to the requirements of the CBC, which requires site-specific geotechnical investigations for individual projects, the results of which must be factored into site-specific design. The CBC contains engineering criteria that are specifically designed to reduce structural damage and personal injury from unstable soils to the maximum extent practicable.

The goals and guidelines in the General Plan are designed to promote visitor and staff safety and ensure the stability of facilities as related to unstable soils. These goals and guidelines are detailed above and include ***Safety Goal 2, Safety Guidelines 2-1, 2-2, and 2-3;*** and ***Safety Goal 4, Safety Guideline 4-3***.

Most of the proposed new facilities—including the Ricardo Campground Complex and Red Cliffs focused use management zones; the Red Rooster primitive road, trailhead parking, proposed interpretive signage, and most of the proposed non-motorized trails to the north; and the Donley proposed trailhead parking, interpretive signage, and hiking trail—would be located in areas comprised of sandy alluvial soils (NRCS 2021, Jennings et al. 1962), which are unstable. Furthermore, roads, trails, and primitive backcountry camping areas could be subject to hazards from landslides, rockfall, and liquefaction. However, implementation of the General Plan guidelines listed above, along with compliance with the requirements of the CBC (which is required by law for all buildings and structures regardless of location), would ensure that impacts from unstable soils would be **less than significant**.

Impact 5.12-4 Unique Geologic Features

The geologic features of most general public interest are the spectacular cliffs of the Ricardo Group. It comprises terrestrial deposits of sandstone, silt, clay, gravel,

fragmental volcanic debris, and several olivine basalts flows, all of which were laid down in the early to mid-Cenozoic Era, 2 to 60 million years ago. In Red Rock Canyon proper, the soft, water-deposited sediments have been exposed through relative down cutting of the canyon and elevation of the El Paso Mountains. The caprock of basalt has acted as an erosion register and has contributed to the resulting vertical cliffs and castellated forms, spires, alcoves, and niches in the area.

The maintenance or preservation of the geologic values inherent in the Park is of primary importance to current and future Park users. Alternating and sometimes contrasting layers of colorful sedimentary and volcanic deposits that have eroded to badlands topography form the backdrop of the Park. Preservation of the fragile sedimentary cliffs, rock arches, and palisades is imperative to perpetuating park values and maintaining geologic integrity.

The following goals and guidelines in the General Plan ***Chapter 4 - The Plan, Section 4.6.1.7 Physical Resources and Section 4.6.1.15 Interpretation and Education*** are designed to promote preservation, study, and education regarding the Park's unique geologic features, as well as ***Geology Goal 1*** and ***Geology Guideline 1-4*** as detailed above.

Geology Goal 1: Preserve and protect the unique scientific and scenic qualities of the geologic resources and features inherent within the Park.

Geology Guideline 1-1: Support and foster efforts to geologically map the stratigraphy and lithologic formations and structural features found in the Park.

Geology Guideline 1-2: Specifically map significant Park features, such as rock arches, windows, and palisades, which capture the human imagination and monitor those processes or practices that might accelerate deterioration. Implement training and resource protection measures to ensure staff, visitors, and sites are protected from harm when necessary.

Geology Guideline 1-3: Identify and mitigate impacts on fragile or otherwise special geological features during the development of management plans.

Geology Guideline 1-5: Identify the understudied elements of the geological resources inherent within the Park and promote research to determine resource significance and enhance the development of interpretive themes. Targeted examples would be the presence of the potential Mesozoic/ Cenozoic boundary within the Goler Formation and the Pleistocene/Holocene evolution of the local landform.

Geology Guideline 1-6: Alter, curtail, or eliminate visitor activities that produce significant or recurrent impacts on the fragile geologic resources and their inherent values preserved in the Park.

Geology Guideline 1-7: Professionally manage and curate all geological collections. Comply with Department museum collections policies and the Park's Scope of Collections Statement.

Geology Goal 2: Promote a better understanding and a greater appreciation for the Park's geological resources.

Geology Guideline 2-1: Review the Park's inherent geologic resources, including specialized data, to determine the best means of interpreting the Park's geologic history. Develop interpretive themes to enhance public enjoyment and appreciation.

Geology Guideline 2-2: Work with the educational institutions of higher learning documented as using the Park to assist and enhance educational opportunities while maintaining a non-destructive, non-impactive learning environment that sustains multi-generational opportunity.

Geology Guideline 2-3: Encourage or perform relevant scholarly publication of geologic research.

Minerals Goal 1: The fossil and mineral records and specimens of the Park shall be preserved.

Minerals Guideline 1-1: Scientific investigations and analysis from various universities and museums shall be encouraged on a permit basis to broaden the knowledge of Park resources.

Minerals Guideline 1-2: Private collection and willful disturbance or dislodgment of the geologic forms shall not be allowed.

Minerals Guideline 1-3: Specimen collection or minor surface disturbance for university or museum scientific research shall be allowed only by a special permit. Cultural and natural resources staff shall review these permits before they are approved.

Interpretation Goal 1: Expand interpretive themes from the General Plan. Provide relevant and thematic interpretive materials that address the Park's sense of place and history and meet the needs and interests of the visitors.

Interpretation Guideline 1-3: Develop content about geological resources at Red Rock Canyon State Park and the region. Include content that explores protecting fragile or otherwise special geological features such as the badlands.

Interpretation Guideline 1-9: Develop Science, Technology, Engineering, Art, and Math content. Include content about paleontology, archaeology, geology, and hydrology that relates to Red Rock's cultural and natural history.

Red Cliffs Natural Preserve

Red Cliffs Natural Preserve is a 365-acre subunit of the Park. The Red Cliffs landform includes spectacular cliffs and lands at the mouth of Iron Canyon and is one of the most dramatic scenic features viewed by motorists traveling through the unit on State Highway 14. It was classified as a preserve in 1974.

Red Cliffs Natural Preserve Goal 1: Provide special protection and management of the outstanding geologic features and other natural resource values in the central portion of Red Rock Canyon State Park.

Red Cliffs Guideline 1-1: Facility development and public use in or adjacent to the preserve that impairs the scenic quality of the preserve as viewed from the highway or other popular vantage points shall not be permitted.

Red Cliffs Guideline 1-2: Visitor use in the preserve shall be permitted so that natural ecological and scenic values are not significantly altered or disturbed.

The Ricardo Campground Complex and Red Cliffs focused use management zones; the Red Rooster primitive road, trailhead parking, proposed interpretive signage, and most of the proposed non-motorized trails to the north; and the Donley proposed trailhead parking, interpretive signage, and hiking trail are located in flat areas comprised of alluvial deposits. Therefore, implementation of the proposed facilities in these areas would have **no impact** on unique geologic features.

The proposed interpretive signage throughout the Park would help to educate visitors regarding the necessity for protection of unique geologic features and the fact that unauthorized collection of geologic materials and minerals are prohibited. The proposed guidelines General Plan would also promote and support continued scientific research and academic field studies regarding the Park's geologic formations. Therefore, implementation of the General Plan guidelines listed above would ensure that impacts from damage to or destruction of unique geologic features would be **less than significant**.

Impact 5.12-5 Unique Paleontological Resources

A paleontologically sensitive geologic formation is one that is rated high for potential paleontological productivity (i.e., the recorded abundance and types of fossil specimens, and the number of previously recorded fossil sites) and is known to have produced unique, scientifically important fossils. Exposures of a specific geologic formation at any given project site are most likely to yield fossil remains representing particular species

or quantities similar to those previously recorded from that geologic formation in other locations. Therefore, the paleontological sensitivity determination of a rock formation is based primarily on the types and numbers of fossils that have been previously recorded from that formation.

In its *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, the Society of Vertebrate Paleontology (SVP 2010) established four categories of sensitivity for paleontological resources: high, low, no, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas consisting of high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) are considered to have no sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys are performed. After reconnaissance surveys, a qualified paleontologist can determine whether the area of undetermined sensitivity should be categorized as having high, low, or no sensitivity.

Under the direction of Dr. David Whistler, field research teams from the Natural History Museum of Los Angeles have systematically collected from the fossiliferous exposures in the Red Rock Canyon area for the past 25 years. The Great Basin District's Senior Environmental Scientist oversees the natural resource management program. Staff includes several environmental scientists who work within the District. The Cultural Resource Supervisor oversees the District-wide cultural resource program, and a Museum Curator cares for the District's museum collections, including archaeological and paleontological objects. There is a draft Scope of Collections for the park. Recordation has started but is not complete. Collections in storage include paleontological specimens that are not yet cataloged. The objects in the visitor center exhibits include 11 geological specimens and 36 paleontological specimens. Fifteen paleontological specimens are on loan from the Natural History Museum of Los Angeles County. Several thousand objects have been collected and are under review and cataloging at California State University Bakersfield. The Park also includes a visitor program entitled "A Walk Through Time," where park docents discuss geology, paleontology, extinct and present wildlife, and Native American uses of plants. The Park also offers publications for visitors related to paleontology. Volunteers from the Los Angeles Natural History Museum present various interpretive programs related to the geology and paleontology of Red Rock Canyon at the Ricardo Visitor Center.

The project area is underlain by a diversity of geologic formations ranging in age from Precambrian (approximately 600 million years Before Present [B.P.]) to late Holocene (less than 10,000 years B.P.). Geologic formations in the Park contain fossils ranging

from plants and small invertebrates to large vertebrates and human remains. Most of the Park's fossils have been recovered from the Dove Springs Formation. Fossil remains recovered from the Park include species of camel, horse, mastodon, rhinoceros, dog, pronghorn antelope, deer, saber-toothed cat, weasel, and rabbit. Fossil evidence of plant life indicates that the region supported woodland-savanna, chaparral, and arid scrub vegetation with possibly 15 inches of yearly summer rainfall. Due to the extensive number and importance of paleontological resources found within the Park, the following geologic formations are considered to be of high paleontological sensitivity:

- Goler Formation—Late Cretaceous to Early Eocene (65 to 55 million years B.P.)
- Ricardo Group (Whistler et al. 2009):
    - Cudahy Camp Formation—Miocene (18 to 15 million years B.P.)
    - Dove Springs Formation (formerly the Ricardo Formation)—Miocene (12.5 to 8 million years B.P.)
- Unnamed Formations of the Ice Age—Pleistocene (2.6 million to 11,700 years B.P.)

State Parks Resource Management Directives amplify the legal codes contained in the Public Resources Code, the California Code of Regulations, and the California State Park and Recreation Commission's Statement of Policy and Rules of Order. Management Directive #41, Protection of Paleontological Resources, applies to the protection and collection of fossil resources throughout the Park.

Documenting the geological and geographical distribution of fossiliferous deposits and evaluating the significance of these paleontological resources are prerequisites to responsible park stewardship. Concerning facility development and visitor recreation, management plans must adequately consider finite fossil resources. They must be developed and implemented in such a fashion as to prevent the degradation of significant paleontological resources. In addition, facilitating research and interpretation of the park's fossil remains will promote a greater understanding and appreciation for California's incredible prehistoric record at the Park. Ongoing compliance with CDPR Natural Resources Operations Manual Section 0309.2 requires the Department to protect known fossil localities and prevent damage to and unauthorized collection of fossils, and encourages academic field research and study. Section 0309.1 requires that sites proposed for development be evaluated for paleontological resources in the preliminary planning stage. Stabilization of paleontological resources may be required to prevent loss, but will be done in ways that protect the integrity of the sites.

The Goler Formation, Ricardo Group (including the Dove Springs and Cudahy Camp Formations), and the unnamed formations of the Ice Age within the Park are considered paleontologically sensitive. Therefore, earthmoving activities in these formations

associated with construction activities could result in accidental damage to or destruction of unique paleontological resources.

The following goals and guidelines in the General Plan ***Chapter 4 - The Plan, Section 4.6.1.7 Physical Resources and Section 4.6.1.16 Museum, Archaeological, and Interpretive Collections*** are designed to promote preservation, study, and education regarding the Park's unique paleontological resources, as well as ***Interpretation Goal 1*** and ***Guideline 1-8*** as detailed above.

Paleontology Goal 1: Protect and preserve the Park's paleontological resources in perpetuity for their inherent scientific and educational values.

Paleontology Guideline 1-1: Determine the geologic, stratigraphic, and geographic distribution of fossiliferous deposits within the park, including those of potentially new paleofaunas.

Paleontology Guideline 1-2: Evaluate each paleontological period's significance and relative importance within the greater context of California and western North America.

Paleontology Guideline 1-3: Intensively survey paleontologically significant deposits.

Paleontology Guideline 1-4: Support efforts to develop cyclic surveys of paleontological resources.

Paleontology Guideline 1-5: Protect significant paleontological resources in place, or conserve them through recovery, such that their inherent scientific and interpretive value remains non-degraded.

Paleontology Guideline 1-6: Monitor sensitive paleontological sites for natural erosion and human-related impacts, including the theft of irreplaceable heritage.

Paleontology Guideline 1-7: Professionally manage and curate all paleontological collections. Enact a Memorandum of Understanding with the Los Angeles County Museum of Natural History formalizing and extending the current partnership, which is bound by an annual permit process involving collecting, preparing, and curating paleontological resources found at the Park. Develop and implement alternative short- and long-term strategies for recovering and managing paleontological collections if the County of Los Angeles does not desire a long-term partnership.

Paleontology Guideline 1-8: Ensure that any paleontological permits are clear about ownership and the location where the collection resides. Ensure all Department collections management forms are completed (e.g., loan

documentation) where the Department is the lender, and the researcher is the borrower.

Paleontology Guideline 1-9: Utilizing professional methodologies, document the Park's fossil trackways and research methods for appropriate long-term preservation.

Paleontology Guideline 1-10: Utilize the research results to improve resource management procedures and methodologies. Promote cooperative studies and management partnerships with other concerned agencies or scientists.

Paleontology Guideline 1-11: Permits are required for paleontological research and collection. Cultural and natural resources staff shall review these permits before they are approved.

Paleontology Guideline 1-12: Develop a paleontological management plan for the park that would summarize previous studies, propose specific areas for additional study, and propose specific recommendations for preservation of deposits. New buildings, roads, parking, and camping areas shall not be allowed in paleontologically sensitive rock formations until a site-specific paleontological resources survey is conducted and any fossil specimens are recovered and curated.

Paleontology Guideline 1-13: If paleontological resources are discovered inadvertently during construction activities, cease construction activities within and in the vicinity of the fossil and consult a Department archaeologist or other qualified paleontological resource professional to determine the potential significance of the find. If the fossil is determined to be a unique paleontological resource, develop and implement a recovery plan consistent with Society of Vertebrate Paleontology (SVP 2010) criteria. The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, curation for any specimen recovered, and a report of findings.

Paleontology Goal 2: Provide an understanding and appreciation of paleontological resources and their contribution to the biological prehistory of the changing California landscape.

Paleontology Guideline 2-1: Develop criteria that identify paleontological resources appropriate for public interpretation.

Paleontology Guideline 2-2: Analyze paleontological resources, museum collections, and published literature to identify and describe significant remains and interpretive themes.

Paleontology Guideline 2-3: Analyze paleontological and geological resources, including museum collections and available data, to identify changing paleo-landscape patterns through geologic time.

Paleontology Guideline 2-4: Evaluate previous research to determine avenues of future investigation that will foster increased understanding and foundation information for developing interpretive content of the Park's paleontological resources.

Paleontology Guideline 2-5: Encourage or perform relevant scholarly publication of paleontological research.

Paleontology Guideline 2-6: Use the General Plan goals and guidelines when evaluating research permit requests.

Collections Goal 1: Museum objects are unique and often non-renewable representatives of the geology, extinct landscapes, modern biotic environments, and cultural landscapes of the Park. They support the Park's interpretive themes and are an essential element of research. The geological, biological, paleontological, archaeological, and historical collections will be conserved in perpetuity for their inherent scientific and educational value.

Collections Guideline 1-1: Collections-based research should be supported and encouraged.

Collections Guideline 1-2: Collections will comply with the following:

- Departmental policies and procedures (e.g., Department Operations Manual-DOM)
- American Association of Museums
- Society of Vertebrate Paleontology
- California State Parks Museum Collections Facility Index
- California State Parks' Museum Collections Management Handbook (2002)
- Cultural Resource Management Handbook (2001)
- Other professional, legal, and ethical standards appropriate to this Park

Collections Goal 2: Conservation and curatorial practices for museum specimens will be maintained at the highest national museum community standards. The scientific and educational values of the collections are not compromised.

Collections Guideline 2-1: All data associated with natural and cultural museum objects will be compiled, verified, archived, and made accessible to qualified, responsible persons.

Cudahy Camp

Cudahy Camp was the "Company Town" associated with mining operations at the Old Dutch Cleanser Mine from 1923 to 1947. Remnants of the buildings and other features of the site still exist in the area. In addition, paleontological resources are known to be present in this area.

Cudahy Camp Goal 2: The inventory of fossils, fossil-bearing deposits, and potential new fossils within the middle of Last Chance Canyon are unique and scientifically important. Apply state-of-the-art research techniques in their investigation, preservation, and interpretation.

Cudahy Camp Guideline 2-1: Support efforts to develop cyclic surveys by professional paleontologists and their associates.

Cudahy Camp Guideline 2-2: Monitor sensitive fossil localities for evidence of natural degradation localities within geologic strata most prone to erosion and those locations in potential flood zones. Take protective measures where necessary and feasible; protective measures may include recovering endangered fossil deposits.

Petrified Forest

The Petrified Forest, situated within Last Chance Canyon, is an area containing a unique assemblage of fossil deposits and prehistoric and historic archaeological sites. This park area was first investigated by the famous UC Berkeley paleontologist Dr. J.C. Merriam and his associates in the 1920s. The Petrified Forest area of the park is most famous for its fossil wood deposits that include specimens representing at least five separate species of trees. Collectors removed the large and unique fossil tree stumps formerly present here in the 1940s and 1950s. Dr. David Whistler, a long-time paleontology researcher in the park, identified the Petrified Forest area as "highly sensitive" for potential fossil finds in a 1995 report on paleontological resources.

Petrified Forest Goal 1: Preserve, protect, investigate, and interpret the fossil deposits of the Petrified Forest area.

Petrified Forest Guideline 1-1: Support efforts to develop cyclic surveys of paleontological resources within the Petrified Forest Area.

Petrified Forest Guideline 1-2: Protect significant fossil deposits in place, or conserve them through recovery (as necessary), such that their inherent scientific and interpretive values are not diminished.

Petrified Forest Guideline 1-3: Evaluate previous research and determine avenues of investigation needed to understand and interpret the fossils. This review of new work options might include developing means to encourage and support

research by paleontologists from outside educational institutions, such as the Natural History Museum of Los Angeles County, within the Petrified Forest area. Existing fossil collections from this area should be analyzed for their interpretive and research values.

Petrified Forest Guideline 1-4: Consider using the story of the loss of the unique fossil tree stumps as an interpretive lesson on resource conservation or a similar theme.

The Ricardo Campground Complex and Red Cliffs focused use management zones; the Red Rooster primitive road, trailhead parking, proposed interpretive signage, and most of the proposed non-motorized trails to the north; and the Donley proposed trailhead parking, interpretive signage, and hiking trail are located in Holocene-age (i.e., 11,700 years B.P. to Present Day) alluvial deposits (Dibblee 1952, Jennings et al. 1962). Unique paleontological resources are more than 11,700 years old. Holocene deposits contain only the remains of extant, modern taxa (if any resources are present), which are not considered "unique" paleontological resources under CEQA. Therefore, earthmoving activities associated with proposed facilities in these areas would have **no impact** on unique paleontological resources.

Overnight use in the proposed Preserves would only be allowed in designated primitive and environmental camping areas, which would be situated in areas that have been surveyed and either found not to contain paleontological resources, or would not impact paleontological subsurface resources, or where all paleontological materials have been recovered and curated. The proposed interpretive signage throughout the Park would help to educate visitors regarding the necessity for protection of paleontological resources and the fact that unauthorized collection of paleontological materials is prohibited. The proposed guidelines General Plan would also promote and support continued scientific research and academic field studies regarding the Park's geologic formations and paleontological resources. Therefore, implementation of the General Plan guidelines listed above would ensure that impacts from damage to or destruction of unique paleontological resources would be **less than significant**.

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5.13 Hazards and Hazardous Materials

This section evaluates the risk of upset associated with the routine use, storage, and transport of hazardous materials and the potential health consequences that could occur with implementation of the General Plan. The following discussion addresses potential impacts posed by these hazards to the environment, as well as to workers and visitors within the Park; and workers, visitors, and residents adjacent to the Park. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines,*** and below.

5.13.1 Regulatory Setting

5.13.1.1 Federal

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, and require implementation of cleanup measures if such materials are accidentally released. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcing and implementing federal laws and regulations regarding hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained mainly in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws, among others:

- The Toxic Substances Control Act of 1976 (Title 15, Section 2601 and following sections of the U.S. Code [15 USC 2601 et seq.]) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) established an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. Under the Resource Conservation and Recovery Act, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances.
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) created a trust fund to provide broad federal authority for releases or threatened release of hazardous substance that could endanger public health or the environment.
- The Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499; 42 USC 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), establishes requirements for federal, state, and local governments, Indian Tribes, and industry regarding

emergency planning and Community Right-to-Know reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of Extremely Hazardous Substances (40 CFR Appendix B). The Community Right-to-Know provisions help increase the public's knowledge of and access to information on chemicals at individual facilities, their uses, and their release into the environment.

Transport of Hazardous Materials

The U.S. Department of Transportation regulates transport of hazardous materials between states. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act, 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. The Federal Highway Administration, U.S. Coast Guard, Federal Railroad Administration, and Federal Aviation Administration (FAA) enforce hazardous materials transport regulations.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 29 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards for handling hazardous materials and for excavation and trenching.

5.13.1.2 State

Emergency Planning and Community Right-to-Know Act

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. Included under the SARA, the federal law is commonly referred to as SARA Title III. SARA Title III supports emergency planning efforts at the state and local levels and enables information sharing with local governments and the public regarding potential chemical hazards in individual communities. Under community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials exceeding certain quantities and is made available to the public. The provisions of EPCRA apply to the following major categories:

- Emergency planning
- Emergency release notification
- Reporting of hazardous chemical storage
- Inventory of toxic chemical releases

Hazardous Materials Business Plan

The California Health and Safety Code Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory) requires qualifying businesses to prepare a hazardous materials business plan. The plan must include procedures for managing hazardous materials and hazardous waste. In addition, the plan must describe emergency response procedures and include a list of emergency spill cleanup supplies and equipment. Before an applicant may use hazardous materials at certain defined federal and/or state thresholds, the applicant must submit a Hazardous Material Business Plan to the administering agency.

California Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. Since August 1, 1992, DTSC has been authorized to implement the state's hazardous waste management program for California Environmental Protection Agency (CalEPA).

State Water Resources Control Board

The SWRCB was established in 1967. The Central Valley RWQCB is authorized by the SWRCB to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the Central Valley RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened and to require remediation of the site, if necessary.

Cortese List, California Government Code Section 65962.5

The provisions of Section 65962.5 of the California Government Code are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by state and local agencies to comply with CEQA's requirement to provide information about the location of hazardous-materials release sites. Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List at least annually. DTSC is responsible for a portion of the information contained on the Cortese List. Other state and local government agencies, including the SWRCB and RWQCBs, are required to provide additional information for the Cortese List about releases of hazardous materials.

In addition, Section 65962.5 requires all project applicants to consult the Cortese List and determine whether any site-specific project is within a hazardous materials site on the list. If so, the project applicant is required to notify the lead agency in writing prior to the issuance of a building permit, so the lead agency can determine the appropriate

course of action (which generally would include preparation of Phase I and (if necessary) Phase II environmental site assessment, along with site-specific remediation).

California Department of Conservation, Geologic Energy Management Division

The California Department of Conservation, Geologic Energy Management Division (CalGEM) Division of Oil, Gas, and Geothermal Resources, oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. The regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices intended to protect the environment, prevent pollution, and ensure public safety.

Wildland Fire Hazard Mapping

The California Department of Forestry and Fire Protection (CAL FIRE) maintains maps of fire hazard severity zones for local and state responsibility areas. These areas are mapped based on fuels, terrain, weather, and other relevant factors. These hazard zones are rated based on their potential to expose structures to wildfire. A discussion related to wildland fire hazards is contained in EIR Section 3.20, "Wildfire."

Transport of Hazardous Materials

The State of California has adopted U.S. Department of Transportation regulations for the movement of hazardous materials originating within and passing through the state. State regulations are contained in Division 26, Title 13 of the CCR. The California Highway Patrol and Caltrans have primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies. Together, these agencies determine the container types used and issue licenses to hazardous waste haulers to transport hazardous waste on public roads.

Hazardous Materials Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by the federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies in the project area.

Worker Safety

The California Division of Occupational Safety and Health (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace in California. Cal/OSHA standards are typically more stringent than federal OSHA regulations. Under Cal/OSHA rules, an employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (CCR Title 8, Sections 337–340). The regulations specify requirements for employee training,

availability of safety equipment, accident-prevention programs, and warnings regarding exposure to hazardous substances.

California State Parks Standard Projects Requirements

State Parks has developed a list of Standard Project Requirements (SPR) that are used to avoid significant project-related impacts to the environment. SPR are assigned, as appropriate to all projects. State Parks also makes use of SPR to address project impacts for projects that have unique issues.

5.13.1.3 Local

Although State Parks is not subject to Kern County jurisdiction on state lands, Kern County Office of Emergency Services is an extension of the State of California Emergency Plan and Parks would coordinate with Kern County in the case of an emergency. Additionally, Kern Multi-Jurisdiction Hazard Mitigation Plan involves water and wastewater. The Park obtains most of its water from the California aqueduct and also may have wastewater hauled off every once in a while from pit toilets being pumped. Therefore, a discussion of these plans are included here.

Kern County Emergency Operations Plan

This plan was written by the Kern County Office of Emergency Services and is an extension of the State of California Emergency Plan. It establishes the emergency organization, assigns responsibilities, establishes policies, and provides for coordination among staff. This Emergency Operations Plan (EOP) will be reviewed and tested regularly and revised when necessary to meet changing conditions and needs. The Director of Emergency Services is empowered to update existing plans and agreements and approve the addition of contingency plans to the Basic Plan, subject to review by the Emergency Council.

Kern Multi-Jurisdiction Hazard Mitigation Plan

Kern County prepared this plan to guide County and City officials, Special District Managers, School District Administrators, and Water and Wastewater District Managers in mitigation strategies for common hazards within the area. The Hazard Mitigation Plan provides an explanation of prevalent hazards within the County and how hazards may affect the County and participating cities and special districts differently based upon proximities to natural hazards.

5.13.2 Environmental Setting

5.13.2.1 Definition of Terms

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. The Code of Federal Regulations defines a

"hazardous material" as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). Section 25501 of the California Health and Safety Code defines a hazardous material as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Section 25141(b) of the California Health and Safety Code defines "hazardous wastes" as wastes that:

… because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Known Hazardous Materials Sites

Several publicly available databases maintained under Public Resources Code Section 65962.5 (i.e., the "Cortese List") were reviewed to determine whether any known hazardous materials release sites are present either at or within 0.5 mile of the project site. The Hazardous Waste and Substances Site List (the "EnviroStor" database) is maintained by DTSC. The SWRCB maintains the GeoTracker database, an information management system for groundwater. In addition, AECOM performed a search of the USEPA's National Priorities List (Superfund) database.

There are no hazardous materials sites within 0.5 miles of the project site (DTSC 2022a, SWRCB 2022). The nearest potentially hazardous site is the Mojave Gunnery Range, approximately 9 miles west of the Park. The status of this site is inactive and needs evaluation.

Schools

There are no K–12 schools within 0.25 mile of the project site. The nearest school is located at 33293 Norton Road in Cantil, approximately 1.4 miles south of the southern boundary of the Park.

Airports

There are no airports within 2 miles of the Park. The nearest airport is the Kelso Valley Airport, a private airport located approximately 13 miles west of the Park.

Wildfire

Please see Section 5.21., "Wildfire," of this EIR for a discussion of wildland fire hazards.

Naturally Occurring Asbestos (NOA)

There have been no identified areas containing naturally occurring asbestos within the Park. There is an area with naturally occurring asbestos (NOA) approximately 7 miles west of the Park that was once evaluated for possible commercial use but was not further developed (Van Gosen and Clinkenbeard 2011). This known area containing NOA is not within or near the Park, thus, ground disturbance activities associated with implementation of the General Plan would not cause NOA to be released into the air, resulting in health risks.

Mine Safety

Although not included in the CEQA checklist, Parks has included mine safety in the General Plan. There are old mining claims and abandoned mines within the Park (see ***Chapter 2 - Existing Conditions, Section 2.1.5 Minerals and Mining Rights*** for more information). There are also three private properties (inholdings) within the Park that are patented mining claims. The largest of these properties encompasses approximately 288 acres (117 hectares) and is located in the northeast portion of the Park. This property is more commonly referred to as the Old Dutch Cleanser Mine. From 1923 to 1947, this property was mined for volcanic pumice (ash), which was utilized as the abrasive in Old Dutch Cleanser. The current property owners completed the requisite environmental documents to mine up to 20 acres (8 hectares) of this site. Recent communications indicate that campaign mining is currently occurring, which will potentially increase intensity in the future. The other mining properties within and adjacent to the Park are not reported as maintaining a valid Kern County mining permit. The following goal and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.6 Safety*** will be implemented to avoid any risks associated with mining hazards.

Safety Goal 3: Develop a historic mine-safety evaluation program for the Park.

Safety Guideline 3-1: Record and evaluate the historical significance of all mines identified as potential safety hazards, or designated for possible closure. Mines determined to be significant may require additional data recovery efforts before closure.

Safety Guideline 3-2: Mines determined to be extremely hazardous to the safety of visitors may be modified by means that will cause the least amount of damage to the surrounding historic landscape.

Safety Guideline 3-3: Hazards caused by former mining activities shall be reviewed individually to determine the seriousness of the hazard as to the merits of the site for interpretive purposes.

5.13.3 Project Impacts

5.13.3.1 Threshold of Significance

Based on Appendix G of CEQA Guidelines, implementation of the RRCSP General Plan Revision would result in a potentially significant impact related to hazards and hazardous materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

5.13.3.2 Issues Not Discussed Further in This EIR

Hazardous Materials Near Sensitive Sites Such as Schools or Airports (c, e, and f)

There are no schools located within 0.25 mile of Red Rock Canyon State Park. The nearest school is located at 33293 Norton Road in Cantil, approximately 1.4 miles south

of the southern boundary of the Park. No schools are proposed within 0.25 miles of the Park. Thus, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

The project is not located within an airport land use plan. Additionally, there are no airports within 2 miles of the Park. The nearest airport is the Kelso Valley Airport, a private airport located approximately 13 miles west of the Park. No isolated air strips were identified within 2 miles of the Park. The project area is not in close proximity to an airport, and would not result in a safety hazard or excessive noise for people residing or working in the project area.

Hazardous Material Lists (d)

Review of the list of hazardous materials sites compiled pursuant to Government Code § 65962.5 was conducted through the Department of Toxic Substances Control EnviroStor database which tracks cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities. The database search showed that there are no hazardous sites located within the Red Rock Canyon State Park boundaries. The nearest potentially hazardous site is the Mojave Gunnery Range, approximately 9 miles west of the Park. The status of this site is inactive and needs evaluation.

Expose people or structures to a significant risk of loss, injury or death involving wildland fires (h)

Implementation of the General Plan would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Issues related to wildland fire hazards are addressed in ***Section 5.21 Wildfire***.

5.13.4 Impact Analysis

Impact 5.13-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Hazardous materials, such as fossil fuel derivatives are present in small amounts in a number of products, including lubricants; oils; paint; herbicides; and transportation, energy, and heating fuels for the operation of the Park. Implementation of the General Plan would involve varying levels of storage, use, and transport of hazardous materials and could result in accidental release of hazardous materials during the operation of the Park and construction of new recreational facilities or infrastructure. Spills during on-site fueling of equipment could result in a release of hazardous materials into the environment. Storage of large quantities of these materials during operation and/or construction is not anticipated. However, accidental release of these materials could result in an adverse effect on the environment.

All materials must be used and stored in compliance with federal and state laws, regulations and policies related to hazardous materials. None of the substances would be acutely hazardous. Implementation of the General Plan would not include any unusual conditions related to use, storage, or transport of minor amounts of hazardous materials such that an increased likelihood for accidental spills would occur. Handlers of hazardous materials are required by law to follow manufacturers' use, storage, and disposal instructions printed on the label which would ensure safe applications that would not cause a hazard to the public. As briefly described in ***Section 5.13.1 Regulatory Setting***, there is an established, comprehensive framework independent of the CEQA process that is intended to reduce the risks associated with the use, transport, and disposal of hazardous materials. The use, transportation, and disposal of hazardous materials is heavily regulated at both the federal and state level; these regulations are promulgated and enforced by agencies such as USEPA, and SWRCB and DTSC. The policies in DOM Chapter 0800, Hazardous Materials, would also be implemented. These policies would apply to construction activities and operations at the Park and focus on safe and healthy working conditions for employees, address hazardous spills, and require employee training on hazardous materials handling, spill prevention, and release reporting.

Given that the use of hazardous materials in Park operation and/or construction would be typical for recreation land uses; and because future projects would be required to implement and comply with existing federal and state hazardous materials regulations, State Parks SPRs, and State Parks' policies related to hazardous materials, implementation of the General Plan would not create significant hazards to the public or environment through the routine transport, use, and disposal of hazardous materials, and therefore, this impact is **less than significant**.

Impact 5.13-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Implementation of the General Plan would involve the storage, transport, and handling of hazardous materials. As discussed above, operation and construction of new or improved facilities would use small quantities of various hazardous materials (e.g., diesel fuel, oil, paint). None of the substances used at the project site would be acutely hazardous. The potential for accidental releases of hazardous materials, primarily fuel and lubricants, could result from operation and construction activities including equipment fuel leaks, fuel spills, and other events. An accidental release of a hazardous material could have a significant impact on the environment, particularly to riparian areas and intermittent drainages that are present throughout the surrounding area.

As discussed in more detail in ***Section 5.14 Hydrology and Water Quality***, coverage under the SWRCB's Construction General Permit would be obtained for construction

activities, which would require preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) if ground disturbance is more than one acre. The SWPPP would include best management practices, and is required by SWRCB to include measures to minimize the risk of accidental spills of hazardous materials during construction. These measures would include: proper maintenance of vehicles and equipment; refueling and equipment washing only in designated areas where a spill would not flow into drainages; and prompt cleanup and disposal at a licensed facility if any spills do occur. Additionally, oil-absorbent material, tarps, and storage drums will be present on-site to contain and control any minor releases.

Hazardous waste would be properly stored and disposed of in accordance with federal, state, and local regulations. All hazardous wastes would be transported offsite in accordance with the Department of Transportation, CFR Title 49, Subtitle B, Chapter I and CCR, Title 13, Division 2.

State Parks and its construction contractors would be required to comply with the California EPA's Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous materials management plans and inventories). The federal and state Department of Transportation (through the Hazardous Materials Transportation Act) and other regulatory agencies provide standards designed to avoid releases, including provisions regarding securing materials and container design.

Compliance with State, federal, and regional/local regulations, which are presented in detail in ***Section 3.13.1 Regulatory Setting***, would reduce the risk or severity of an accident from implementation of the General Plan. These include federal regulations such as RCRA, CERCLA, the Clean Air Act, SARA Title III, and OSHA; and State regulations enforced by CalEPA, CalOSHA, Department of Pesticide Regulation (DPR), SB 1082, and State and Local Hazard Mitigation Plans, which are all designed to reduce the risk of hazardous materials release from upset and accident conditions. Compliance with these regulations would reduce the potential for accidental release of hazardous materials during operation and future construction and to minimize both the frequency and the magnitude if such a release occurs. Therefore, this impact is **less than significant**.

Impact 5.13-3 Impair implementation of or physically interfere with an adopted emergency response plan of emergency evacuation plan

State Parks does not currently maintain an emergency access plan specific to Red Rocks Canyon State Park. Emergency access and evacuation in the event of a wildfire at Red Rocks Canyon State Park is coordinated through Kern County's Office of Emergency Services. State Route (SR) 14 is a significant state highway transportation artery that generally runs north-south through the western portion of the Park. Two Kern County roads, Red Rock-Inyokern Road and Red Rock-Randsburg Road intersect the Park's

northern and southern boundaries, respectively. Red Rock-Randsburg Road generally proceeds northeast along the park's southern edge, while Red Rock-Inyokern Road runs through a portion of the Park's northwest corner. These roads would help meet evacuation needs from the Park. Therefore, implementation of the General Plan would not impede emergency vehicles or adopted emergency evacuation plans, and this impact would be **less than significant.**

5.14 Hydrology and Water Quality

This section analyzes the impacts related to hydrology and water quality that could result from implementation of the General Plan. Impacts related to potable water supply are addressed in ***Section 5.20 Utilities and Service Systems.*** Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines***, and below.

5.14.1 Regulatory Setting

5.14.1.1 Federal

Clean Water Act

The Clean Water Act of 1972 (CWA) (33 U.S.C. Section 1251 et seq.) is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (EPA), the lead federal agency responsible for water quality management. By employing a variety of regulatory and non-regulatory tools, including establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff, the CWA seeks to restore and maintain the chemical, physical, and biological integrity of surface waters to support the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.

Water Quality Criteria and Standards

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Section 303(d) requires states to develop lists of the water bodies and associated pollutants that exceed water quality criteria.

National Pollutant Discharge Elimination System Permit Program, Section 402

The National Pollutant Discharge Elimination System (NPDES) permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Federal NPDES permit regulations have been established for broad categories of discharges, including point source municipal waste discharges and nonpoint source stormwater runoff. NPDES permits generally identify limits on the concentrations and/or mass emissions of pollutants in effluent discharged into receiving waters; prohibitions on discharges not specifically allowed under the permit; and provisions that

describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons.[1] Phase II of the NPDES stormwater permit regulations became effective in March 2003 and required NPDES permits be issued for construction activity for projects that disturb between one and five acres. Phase II of the municipal permit system (i.e., known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [Small MS4s], Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipality areas of less than 100,000 persons (hereinafter called Phase II communities) to develop stormwater management programs.

California's RWQCBs are responsible for implementing the NPDES permit system (refer to additional details in the subsection "State Regulations," below).

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily loads (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The goal of the TMDL program is that, after implementation of a TMDL for a given pollutant on the 303(d) list, the causes that led to the pollutant's placement on the list would be remediated.

Federal Antidegradation Policy

The federal antidegradation policy (40 CFR 131.12) is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy to protect and maintain water quality for existing in-stream uses and waters of exceptional recreational or ecological significance.

Federal Emergency Management Agency National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP, 42 U.S.C. 4016[a]) to provide flood insurance to individuals

[1] Phase I also applies to storm water discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres.

within communities that adopt and enforce NFIP regulations that limit development in floodplains. Federally-backed flood insurance is only available within NFIP communities. FEMA also develops and issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. Flood hazard zones in the community are identified within the FIRMs for the 1-in-100 annual exceedance probability flood event and sometimes other flood events. The design standard for flood protection covered by the FIRMs is established by FEMA with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) (i.e., the 100-year flood event).

5.14.1.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update water quality control plans (basin plans). The Lahontan RWQCB regulates water quality in eastern Kern County, including the Park.

Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of such activities through the filing of Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, CWA Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

State Water Resources Control Board

SWRCB and its nine RWQCBs administer water rights and enforce pollution control standards throughout the state. SWRCB is responsible for granting of water right permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, SWRCB must consider all beneficial uses, including water for

downstream human and environmental needs. In addition to granting the water right permits needed to operate new water supply projects, SWRCB also issues water quality-related certifications to developers of water projects under Section 401 of the CWA.

Water Quality Control Plan for the Lahontan Basins (Basin Plan)

The *Water Quality Control Plan for the Lahontan Basins* (Lahontan RWQCB 2021) (Basin Plan) identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Lahontan hydrologic region. State and federal laws mandate protecting designated "beneficial uses" of water bodies (Water Code Section 13050[f]). The Basin Plan describes a set of designated beneficial uses for each water body. Beneficial uses help to define the resources, services, and qualities of the aquatic systems. Beneficial uses also serve as a basis for establishing water quality objectives and discharge prohibitions. The Basin Plan contains specific numeric water quality objectives that are applicable to each water body or portions of water bodies. Objectives have been established for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements. Numerous narrative water quality objectives have also been established. Finally, the Basin Plan contains a set of implementation plans, which represent the Lohantan RWQCB's programs and specific plans of action for meeting water quality objectives and protecting beneficial uses.

National Pollutant Discharge Elimination System

Waste Discharge Requirements for Construction

The SWRCB's statewide stormwater general permit for construction activity (Order 2009-009-DWQ as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) is applicable to all construction activities that would disturb 1 acre of land or more (SWRCB 2012). Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions at a project site do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the Construction General Permit, project applicants must file a notice of intent with the SWRCB to obtain coverage under the permit; prepare a SWPPP; and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. Dischargers are required to eliminate

or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Sustainable Groundwater Management Act

In 2014, the California Legislature enacted a three-bill law (Assembly Bill-1739, Senate Bill [SB]-1168, and SB-1319), known as the Sustainable Groundwater Management Act (SGMA). The SGMA was created to provide a framework for the sustainable management of groundwater supplies, and to strengthen local control and management of groundwater basins throughout the state with little state intervention. The SGMA is intended to empower local agencies to adopt groundwater sustainability plans that are tailored to the resources and needs of their communities, such that sustainable management would provide a buffer against drought and climate change, and ensure reliable water supplies regardless of weather patterns. The SGMA and corresponding regulations require that each high and medium priority groundwater basin is operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use to ensure undesirable results such as chronic lowering of groundwater levels, loss of storage, water quality impacts, land subsidence, and impacts to hydraulically connected streams do not occur. The SGMA is considered part of the statewide, comprehensive California Water Action Plan that includes water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. The SGMA protects existing surface water and groundwater rights and does not affect current drought response measures.

California's 515 groundwater basins are classified into one of four categories; high-, medium-, low-, or very low-priority based on components identified in the California Water Code Section 10933(b). Basin priority determines which provisions of California Statewide Groundwater Elevation Monitoring (CASGEM) and the SGMA apply in a basin. In 2019, DWR completed its prioritization of the groundwater basins.

The SGMA requires that local agencies form one or more groundwater sustainability agencies (GSAs) within 2 years (i.e., by June 30, 2017). Agencies located within high- or medium-priority basins must adopt groundwater sustainability plans (GSP) by January 31, 2020 or January 31, 2022.[2] The time frame for basins determined by DWR to be in a condition of "critical overdraft" is by January 31, 2020, all other high and medium priority basin have until January 31, 2022. Local agencies will have 20 years to fully implement

[2] Unless the local agency has submitted an Alternative as defined in the SGMA which has been approved by DWR.

GSPs after the plans have been adopted. Intervention by the SWRCB would occur if a GSA is not formed by the local agencies, and/or if a GSP is not adopted or implemented.

The SGMA requires local agencies to develop and implement groundwater sustainability plans in high and medium priority groundwater basins throughout the State of California. Groundwater sustainability plans are not required for low or very low priority basins.

Also, refer to ***Chapter 2 - Existing Conditions, Section 2.8 Planning Influences****, and* ***Appendix A****.*

5.14.2 Environmental Setting

Information about the hydrology of the Park and how it contributes to the ecology and function of the Park ecosystems can be found in ***Chapter 2 - Existing Conditions, Section 2.6.1.6 Hydrology.***

5.14.3 Project Impacts

5.14.3.1 Thresholds of Significance

Based on Appendix G of the state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to hydrology and water quality if it would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i) result in a substantial erosion or siltation on- or off-site;

   ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

   iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

   iv) impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

5.14.4 Impact Analysis

Impact 5.14-1 Violate Water Quality Standards or Substantial Alteration of Drainages Resulting in Substantial Erosion or Siltation

The Park is located within the Indian Wells and Fremont hydrologic unit of the South Lahontan Hydrologic Basin. There are eight main watersheds within Park, which extend into several jurisdictions beyond the Park property boundary. The watershed names and total drainage areas are provided in the ***Chapter 2 - Existing Conditions, Section 2.6.1 Physical Resources***.

Surface water flows in two small spring fed areas. One is located in upper Last Chance Creek and surface water can be seen down to Cudahy Camp near the middle of the creek/canyon. The other is located at the confluence of Tarweed Canyon and Red Rock Canyon during most of the year. Additionally, Nightmare Gulch is mapped as a blue-line stream course and included in the USFWS' National Wetlands Inventory database. In addition to the streams and springs of Red Rock Canyon, Last Chance Canyon, and Nightmare Gulch, several unnamed streams and secondary drainages also occur within the unit. During normal years these streams are ephemeral in nature and for most months of the year contain no surface flows. Little information is available concerning their sporadic surface flows, intermittent flood flows, water temperatures, or water quality. None of the surface waters within the Park are listed as impaired on the State Water Resources Control Board's (SWRCB) Section 303(d) list of impaired waters (SWRCB 2021).

Current and potential beneficial uses of surface freshwater resources in the Park include non-contact recreation (picnicking, hiking, aesthetic or scenic enjoyment, camping), fresh-water habitat, riparian-associated habitats, wildlife corridors, wildlife water supply, and possible groundwater recharge (Lahontan Regional Water Quality Control Board [RWQCB] 2021]).

With regards to groundwater quality, as noted in the Indian Wells Valley Groundwater Basin (IWVGB) Groundwater Sustainability Plan (GSP) (Indian Wells Valley Groundwater Authority (IWVGA] 2020), much of the groundwater in the IWVGB is of good quality; the predominant water quality concern is total dissolved solids (TDS). Increased groundwater pumping that is beyond sustainable levels can result in degradation of water quality by increasing the amount of TDS. Sulfate is also a concern in some domestic wells requiring well head treatment. Groundwater quality data in the IWVGB is limited.

Human development of a watershed affects surface runoff quality by increasing the intensity of peak discharges, the volume of runoff per storm, the velocity of runoff during the storm, and the frequency and severity of flooding. These changes can lead to increases in stream bedload sediment transport and streambank erosion, and to consequent degradation of aquatic habitat. Stormwater constituents of concern include sediment (from construction sites and unstabilized areas); nutrients (from sediment, fertilizer, and animal wastes); and petroleum products, solvents, wood preservatives, paints, and heavy metals from wear and tear on roads, buildings, and vehicle parts. Even in desert areas, infrequent flood events may flush pollutants from urban surfaces and lead to surface water quality degradation from overland flow and to groundwater contamination from percolation of surface water.

Past human activities in the Park, including historic mining, road construction, and OHV recreation, have resulted in erosion, sediment transport, and degradation of water quality in surface waters (particularly where OHV users were operating vehicles across/through streams).

Construction activities associated with proposed recreation facilities may include, but are not limited to vegetation clearing, excavation, and grading associated with buildings, paved roads, and paved parking lots; improvements to existing or installation of new dirt roads, trails, and parking areas; and the installation of vehicle barriers, interpretive signage, fencing, and drainage features. Construction-related earthmoving activities would expose soils to potential erosion from wind and water. Earthmoving activities during the winter months would expose soils to rain events, which could mobilize loose soil and result soil erosion. Subsequent soil transport during storm events could result in sedimentation within and downstream of the project site. Furthermore, earthmoving activities during the summer months could result in wind erosion. Accidental spills of construction-related fuels, oils, hydraulic fluid, and other hazardous substances could contaminate stormwater flows, resulting in the potential degradation of surface water quality downstream of the disturbance area.

State Parks is required by law to comply with the provisions of the SWRCB's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities* (Order 2009-009-DWQ as amended by Order 2012-0006-DWQ) (Construction General Permit). The Construction General Permit regulates stormwater discharges for construction activities under the federal Clean Water Act, and applies to all land-disturbing construction activities that would disturb one acre or more. State Parks must submit a notice of intent to discharge to the Lahontan RWQCB, and must prepare and implement a SWPPP that includes site-specific BMPs to minimize construction-related soil erosion. Construction techniques that could be implemented to reduce the potential for stormwater runoff and

sediment transport may include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. BMPs that could be implemented to reduce erosion may include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers and re-seeding and mulching to revegetate disturbed areas. All NPDES permits also have inspection, monitoring, and reporting requirements.

Land use controls can also function as operational stormwater source controls. Protection and restoration of natural vegetation, soils and the duff layer, particularly in steep headwater areas, and in wetlands, floodplains, and riparian areas, preserves natural infiltration and nutrient uptake capabilities, as does limitation of impervious surface coverage. Land use controls have been incorporated into the General Plan, particularly in regards to discontinuing and enforcing non-street legal OHV use in the Park, which would substantially reduce operational erosion, sedimentation, spills of fuels and oils, and direct and indirect degradation of water quality.

The Park would also be operated in accordance with California Department of Parks and Recreation (CDPR) Natural Resources Handbook Section 0308, which applies to the management of soil resources, and includes minimizing human-caused erosion and minimizing soil excavation during construction of new facilities. Furthermore, section 0306 directs State Parks to avoid establishment of improper use patterns that may be damaging to the quality, quantity, or biological integrity of water features, or their interrelationship with other park system values. State Park's policy (Section 0306.2) is to minimize human disturbance to the natural upland processes that deliver water, sediment, nutrients, and natural debris to streams. State Parks' Water Quality and Quantity Policy (Section 0306.9.1) states that the Department will protect both surface water and groundwater quality and quantity by:

a. Maintaining sufficient knowledge of park water resources values so as to be aware of potential impact, degradation, or other change from natural conditions;

b. Working collaboratively with others to achieve Department water management goals;

c. Avoiding or eliminating unnatural degradation of waters in the State Park System, and complying with laws pertaining to clean water and other water quality parameter regulations;

d. Allowing no diversion of water from a park system stream, spring, or lake or the alteration of a natural stream regime without a thorough evaluation of the known or possible effects of such diversion on park system values and water rights review; and

e. Taking appropriate actions to maintain, conserve, and restore the natural quality and quantity of surface water and groundwater.

Finally, although the prohibited use of non-street legal OHVs within the Park would be enforced, two roads would allow non-street legal OHVs and continue to be available to provide connectivity to and between federal Bureau of Land Management (BLM) OHV areas and to Onyx Ranch SVRA.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.7 Geology, Minerals, Soils, and Paleontological Resources, Section 4.6.1.8 Hydrology Resources,*** and ***Section 4.6.1.6 Public Safety*** of the General Plan are designed to reduce erosion, protect watershed ecology, and reduce degradation of water quality from the construction and use of Park facilities.

Soils Goal 1: Protect sensitive soils and promote further understanding of the role of soils and soil biota in desert ecosystems.

Soils Guideline 1-1: Update the inventory of soils throughout the Park. Identify specific soil types and living soil communities and understand how these soils support the region's biota.

Soils Guideline 1-2: Identify and minimize visitor activities and park operations that negatively impact sensitive soils. Develop an understanding of how this impact further affects erosion, water quality, plant communities, terrestrial invertebrates, birds, mammals, and other components of the region's ecosystems.

Soils Guideline 1-3: Incorporate an assessment of human effects on soil dynamics in future management plans.

Soils Goal 2: Restoration of slowly recovering disturbed areas shall be a high resource management priority. See also Mineral Guideline 2-1.

Soils Guideline 2-1: Restore severely affected surface areas.

Soils Guideline 2-2: An ongoing occurrence is the disturbance of lands by unlawful vehicle operation in the Park. The extent and causes of such damage shall be documented, and appropriate preventative and restoration measures shall be undertaken.

Hydrology Goal 1: Protect, enhance, and restore the Park's wetlands and hydrologic resources.

Hydrology Guideline 1-1: Initiate regular monitoring programs, including detailed surveying of the riparian scrub in Last Chance and Cudahy Creeks and testing

water quality. Programs may require cooperative work with neighboring landowners, especially the BLM.

Hydrology Guideline 1-2: Implement methods to deter concentrated vehicle, foot, and stock traffic within the riparian ecosystem in Last Chance Creek to prevent soil compaction, erosion, impacts on water quality, and trampling of sensitive species known to occur in the area. State Parks will also facilitate restoration programs of previously disturbed areas.

Hydrology Guideline 1-3: State Parks will conduct invasive species management and habitat restoration activities to support ecological balance. Strategies for stabilization and topographic restoration of eroded and compacted features and areas will also be addressed.

Hydrology Goal 3: Ensure that water resources within the Park are not negatively affected by adjacent land use, potentially existing water rights, or park operations.

Hydrology Guideline 3-1: Review water rights information with the California State Water Resources Control Board. Assess all potential water diversions within the Park and the Park's shared hydrologic units. Work with adjacent landowners and water rights owners to ensure that the Park's aquatic resources and related ecosystems are not negatively affected by water usage or upstream discharge.

Hydrology Guideline 3-2: Ensure that Park operations and water use do not negatively affect water quantity or quality.

Geology Goal 1: Preserve and protect the unique scientific and scenic qualities of the geologic resources and features inherent within the Park.

Geology Guideline 1-4: Preserve the integrity of fragile sedimentary badlands. Badlands are particularly vulnerable to various destructive human and mechanical activities that promote excessive erosion.

Safety Goal 4: Ensure that all facilities and structures provide a safe environment for visitors.

Safety Guideline 4-3: Complete a site-specific geological investigation for major facility developments. Include an evaluation of the geologic hazards and soil properties to verify that the site is appropriate for development. Some of the concerns associated with soils and geologic hazards and development include soil bearing capacity, the potential for erosion, surface fault rupture, strong seismic ground shaking, liquefaction, and landslides and rockfalls.

Roads and Trails Management Plan.

The Park acknowledges the wide range of values that roads and trails hold for park visitors and the various types of recreation uses available for visitors. Thus, the Park

should consider developing a road and trail management plan once the revision of the general plan is approved. The RTMP is a long-range document that builds on the general plan and serves as a decision-making tool for Park management. It will be balanced to meet the needs of the park visitor, maintain public safety, protect the park resources, and maintain the quality of the visitor experience. State Parks will consult with BLM and Kern County regarding roads that connect with Park roads. The plan will:

- further analyze the road and trail network and study the appropriate type and level of recreational access.
- analyze unmapped primitive roads, ingress and egress points, and volunteer routes.
- may include recommendations for additional trails and use types based on stakeholder and public input.
- may recommend realignment or closure of selected roads and trails, or segments of them, for the protection of sensitive resources and to reduce redundant (parallel) travel routes.
- may include recommendations for public outreach and education, and wayfinding signage.

The management zones designated by the General Plan will provide the Roads and Trails Management Plan application regulations.

State Parks would prepare and implement at SWPPP with associated BMPs specifically designed to reduce erosion and the transport of other construction-related pollutants such as equipment fuel and oil (and subsequent downstream water quality degradation) for any project that involves disturbance of one acre or more of land, to comply with the requirements of the SRWCB's Construction General Permit. Most of the Park visitor, operations, and maintenance facilities are located at the Ricardo Campground Complex and consist of a campground; visitor center; administrative, public safety, and maintenance offices; and a maintenance yard. The Park also has several manufactured homes used for employee housing that are adjacent to the maintenance yard. The proposed enhancements to the joint operations and maintenance facilities that serve the Park and adjoing Onyx Ranch SVRA and visitor facilities would not introduce new land uses that would change the types of pollutants or introduce substantial new sources of pollutants, because it would simply make modest efficiency, supportive, and sustainability improvements to existing facilities and land uses. Therefore, it would not result in an increase in the types or amounts of operational pollutants as compared to existing conditions.

Several of the existing roads in the Park would be decommissioned, reclassified as a non-system roads or converted to non-motorized trails under the General Plan, which would

reduce the potential for operational erosion and subsequent surface water and groundwater quality degradation in those areas. Most of the dirt roads in the General Plan are existing, and continued use of these roads for visitor and Park staff access would not change the existing conditions as related to water quality. The Park would continue to be operated in accordance with CDPR Natural Resources Handbook Section 0308 to manage soil resources, which includes minimizing human-caused erosion and minimizing soil excavation during construction of new facilities. The Park would be operated in accordance with Section 0306.9.1, to protect both surface water and groundwater quality and quantity by taking appropriate actions to maintain, conserve, and restore the natural quality and quantity of surface water and groundwater. The proposed Roads and Trails Management Plan would include measures to reduce soil erosion and protect water quality, including wet-weather closures or closures in heavily used areas, where necessary. Implementation of the General Plan goals and guidelines listed above, along with compliance with the SWRCB's Construction General Permit, OHV Soil Standard and Guidelines, and the DPR Natural Resources Handbook, would ensure that impacts from violation of water quality standards or substantial alteration of drainages resulting in substantial erosion or siltation during construction and operation would be **less than significant**.

Impact 5.14-2 Sustainable Groundwater Management

Most of the Park overlies the IWVGB (DWR Basin ID 6-054). This groundwater basin was identified by DWR as a high-priority basin in a condition of critical overdraft (DWR 2019). As required by the Sustainable Groundwater Management Act, the *Sustainable Groundwater Management Plan for the Indian Wells Groundwater Basin* was prepared by IWVGA and submitted to DWR for approval in 2020 (IWVGA 2020). The Indian Wells Valley GSP is being litigated.

The southern portion of the Park (from the northern boundary of the Garlock Fault to the Park's southern boundary) overlies the Fremont Valley Groundwater Basin (DWR Basin ID 6-046). The Fremont Valley Groundwater Basin is not in a condition of critical overdraft and has been designated by DWR as a low priority basin (DWR 2019); thus, a groundwater sustainability plan is not required. The most recent data available for this basin is contained in the *Fremont Valley Basin Groundwater Management Plan*) (Woodard & Curran 2018). The General Plan does not include any existing or proposed groundwater use within the Fremont Valley Groundwater Basin.

Potable water for Park facilities is comprised of surface water obtained from the from the California aqueduct. Furthermore, the enhancements to the operations and maintenance facilities would not require an increase in potable water supply and proposed new primitive/environmental and equestrian camping areas contemplated under the General Plan would not include potable water. Small amounts of groundwater have been used in

the past and may continue to be used in the future for habitat restoration and natural resource protection. However, there is no proposed change in the minimal historic groundwater use within the Park.

The proposed enhancements to operations and maintenance facilities would not result in a substantial net increase in impervious surfaces that could in turn reduce groundwater recharge, because it would be similar in size to the buildings in the current operations, maintenance, staff housing, and visitor center area.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.3 Utilities*** in the General Plan and ***Hydrology Goal 3, Hydrology Guidelines 3-1 and 3-2*** (listed above) are designed to promote groundwater conservation and ensure appropriate groundwater quality treatment.

Utilities Goal 1: New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Guideline 1-1: Using state-of-the-art conservation measures will minimize water usage at any new Park facility. Primitive/environmental campsites and equestrian camping area will be "dry" (e.g., no water or other developed facilities).

Implementation of the General Plan would not result in a substantial increase in impervious surfaces and therefore would not decrease the potential for groundwater recharge. Because potable water at the Park is imported via the California aqueduct, because no changes to potable water use are proposed, and because no changes are proposed to the Park's minimal use of groundwater for small areas of habitat restoration and natural resource protection, the General Plan would not substantially decrease groundwater supplies. Furthermore, implementation of the goals and guidelines in the General Plan listed above would ensure that Park operations and water use do not negatively affect water quantity. Therefore, implementation of the General Plan would not adversely affect groundwater sustainability and would not impede sustainable groundwater management of the basin. This impact would be **less than significant**.

Impact 5.14-3 Exceedance of Stormwater Drainage Systems, Flooding, and Pollutant Release in Flood Hazard Zones (CEQA checklist c and d)

The proposed enhancements to operations and maintenance facilities would not result in a substantial net increase in impervious surfaces that could in turn create localized increases in stormwater runoff, because it would be similar in size to the buildings in the current operations, maintenance, staff housing, and visitor center area. There is an existing stormwater drainage diversion ditch at the Ricardo Campground Complex which carries stormwater flow around and away from the park compound, and deposits the

water on the downstream side. This ditch follows the natural terrain to a low point where the storm flow would naturally drain; this stormwater then percolates into the ground via overland flow. Stormwater from the joint operations center would continue to flow into this diversion ditch, as it does now. There are no other stormwater drainage systems within the Park; stormwater runoff is directed to vacant areas for overland flow and groundwater recharge. Other new park facilities could include non-motorized trails, dirt parking areas, and unimproved primitive backcountry camping areas, which would not be paved; although these areas would become less permeable with use over time through soil compaction, stormwater percolation would still occur. Furthermore, these areas would be few in number and small in size, and therefore would not result in the creation of substantial new impervious surfaces that could result in enough stormwater runoff to create flooding.

There are several 100-year flood hazard zones (Zone A) as designated by the Federal Emergency Management Agency (FEMA) in the Park. These zones generally follow several large drainages (i.e., dry washes) that run in a north/south direction through the El Paso Mountains (Figure 5.14-1). The Park is not subject to tsunami or seiche hazards.

As described in ***Chapter 2 - Existing Conditions***, the average precipitation at Red Rock Canyon State Park, as recorded at the Ricardo Visitor Center, is 6.55 inches, most of which occurs from November through April. However, summer thunderstorms with local cloudbursts can cause flash floods. The September 1997 flood at the Ricardo Visitor Center lasted only a few hours but resulted in an estimated 10–15 inches of rain and damaged Park facilities; this flood represented a 300- to 500-year event. Flash flooding begins within only a few hours of extremely heavy rainfall from storm events. The intensity of the rainfall, the location and distribution of the rainfall, the land use and topography, vegetation types and growth/density, soil types, and soil water-content all determine how quickly the flash flooding may occur, and influence where it may occur. The Red Rock Canyon area is subject to severe flash flooding from rainfall events. Human and mechanical activities that have altered the watershed, such as OHV use or wildfire, can increase the severity and effects of flash floods. Flash floods can represent a substantial threat to facilities and human life, depending on the location of facilities, roads, and trails in relationship to known flood hazard areas.

Most of SR 14 through the Park lies within a FEMA 100-year flood hazard zone, as does the existing Park access road from SR 14 to the Ricardo Campground Complex focused use management zone (i.e., Abbott Drive), and the southern portion of Water Plant Road (see Figure 5.14-1). However, the Ricardo Campground Complex itself, and the existing water treatment plant, are not within a FEMA flood hazard zone. The Red Cliffs day-use parking and picnic area also is not within a FEMA flood hazard zone. Several other existing primitive (dirt) access roads and trails within the Park are located within or cross

over FEMA 100-year flood hazard zones, including Red Rock Wash Road, Iron Canyon Road, the southern end of Nightmare Gulch, Last Chance Canyon Road and potential parking areas, Last Chance Canyon trail and interpretive opportunity area, the northern portion of Cudahy Creek Road and proposed parking area, and the western end of Tufa Point Road.

The Park would be operated in accordance with CDPR Natural Resources Handbook Section 0306.3, which states that the Department will manage streams to protect stream processes that create beneficial natural habitat features such as floodplains. Section 0306.4 states that Department will achieve the protection of watershed and stream features primarily by avoiding adverse impacts to streambank and bed morphology, to floodplain features, and to watershed and riparian vegetation, by correcting upland hydrologic disruptions and by allowing natural fluvial processes to proceed unimpeded. When conflicts between infrastructure (such as bridges and pipeline crossings) and stream processes are unavoidable, it is the policy of the Department to first consider relocating or redesigning facilities, rather than modifying fluvial processes and manipulating streams. Where stream manipulation is unavoidable, the policy is to use techniques that are visually non-obtrusive and that protect natural processes to the greatest extent practicable. State Parks' Floodplain Management Policy (DPR Natural Resources Handbook Section 0306.6) notes that naturally functioning floodplains support and maintain desirable ecosystems and processes, such as water retention, recharge, and habitat, and states that the policy of the Department is to manage for the preservation of floodplain values and minimize potentially hazardous conditions associated with flooding by:

a. Protecting, restoring, and maintaining the natural resources and functions of floodplains;

b. Avoiding the long- and short-term environmental effects associated with the occupancy and modification of floodplains; and

c. Avoiding direct and indirect development and actions in floodplains that could adversely affect the natural resources and functions of floodplains or increase flood risks.

When it is not practicable to locate or relocate development or inappropriate human activities to a site outside and not affecting the floodplain, the policy is to use non-structural measures, such as temporary closures during periods of potential flooding, as much as practicable to reduce hazards to human life and property, while minimizing the impact to the natural resources and functions of floodplains. Finally, Section 0307.3.1.1 states that the Department will strive to site facilities where they will not be damaged or destroyed by natural physical processes and where they will not alter natural processes.

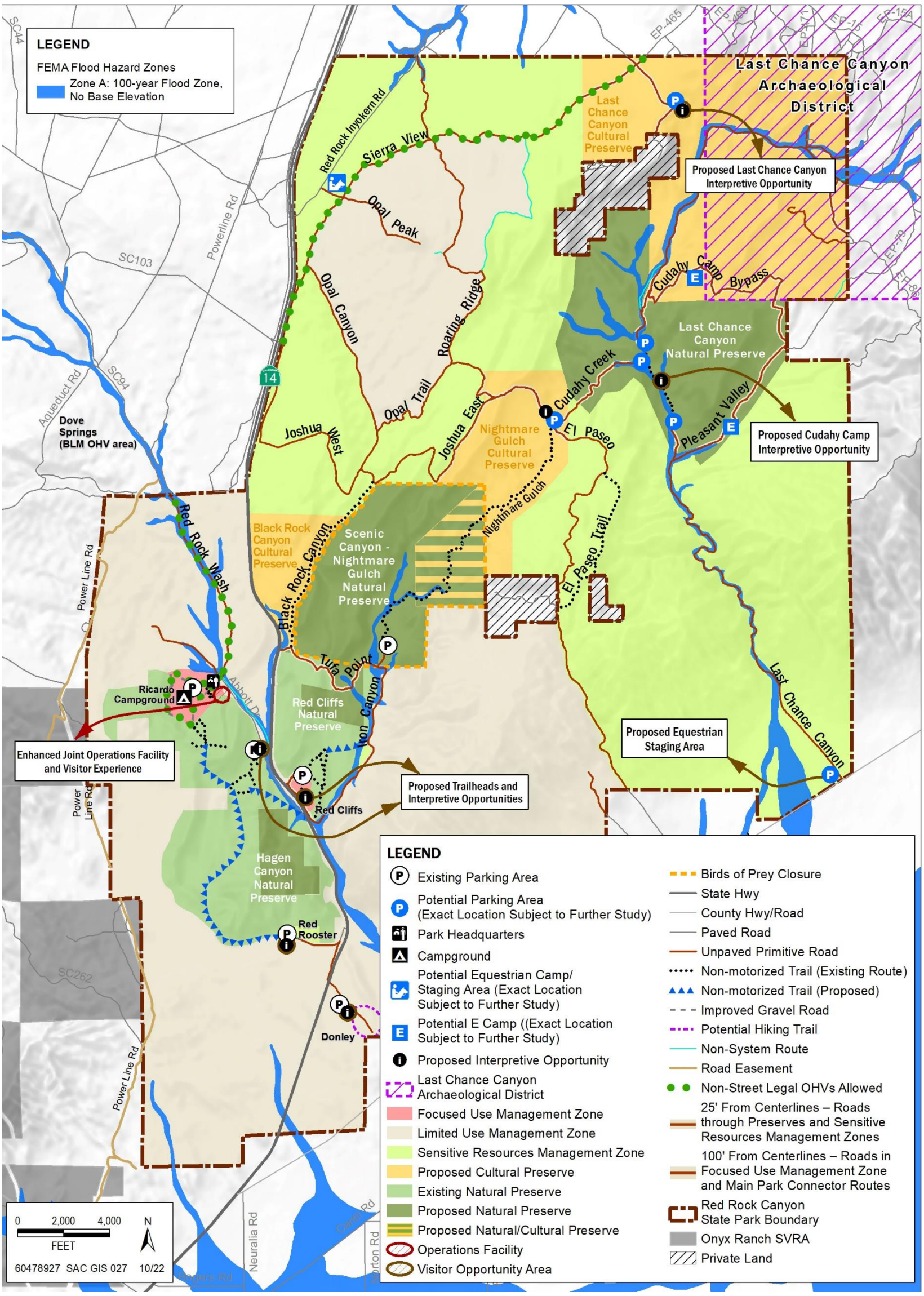

Figure 5.14-1. FEMA Flood Hazard Zones.

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The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.6 Public Safety*** and ***Section 4.6.1.8 Hydrology Resources*** of the General Plan are designed to promote visitor and Park staff safety through appropriate planning for flood hazards.

Safety Goal 1: Promote visitor safety while recognizing that the desert's climate, geology, wildlife, and vegetation are inherently hazardous. Measures to promote visitor safety will be taken while considering the importance of maintaining the visitor's experiences of adventure, discovery, and wilderness.

Safety Guideline 1-1: Continually evaluate, expand, and adapt the visitor safety program to increase safety throughout the Park (e.g., communicate extreme climate conditions to the public when they occur).

Safety Guideline 1-3: State Parks will evaluate visitor and environmental hazards and, where appropriate, develop measures to ensure public safety.

Safety Guideline 1-4: States Parks will develop and keep current public safety messaging about where visitors can seek help in an emergency (e.g., Park contact information, locations with cell phone connectivity) and how to recreate in the desert safely. Public safety messaging will be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground and in day-use picnic and parking/staging areas.

Safety Goal 2: Plan for geological events (e.g., floods and earthquakes) to minimize dangers to lives and facilities. Comply with Incident action plans for State Parks and the District.

Safety Guideline 2-3: Structures to be constructed or modified shall be designed to comply with the latest edition of the California Building Standards Code, CCR Title 24.

Safety Goal 4: Ensure that all facilities and structures provide a safe environment for visitors.

Safety Guideline 4-1: Recognize the potential for major flash flood events and ensure that Park facilities are sited to avoid flash flood damage.

Hydrology Goal 2: Consider areas of flooding impacts when planning for visitor services or additional facilities within the Park.

Hydrology Guideline 2-1: The potential for flooding shall be evaluated before developing facilities and public use areas. However, local flash flooding is possible in other areas in the unit.

Hydrology Guideline 2-2: New buildings and campgrounds shall not be placed in a FEMA 100-year flood hazard zone.

The Ricardo Campground Complex and Red Cliffs day-use parking and picnic area focused use management zones, where proposed enhancements to existing operations, maintenance and visitor facilities and consideration of future structures (e.g., additional operations and maintenance facilities) are not located in a FEMA 100-year flood zone. Future site-specific design and engineering would be necessary for facility development and construction. If determined to be necessary during future site-specific studies, measures to protect the operations, maintenance, and visitor facilities from flash flooding would be implemented, such as elevated berms and/or detention basins that would be designed to channel and contain flash flood flows, and then release the water slowly over a period of time after the flood event. Such measures would also protect water quality in the event of a pollutant release from the operations, maintenance, and visitor facilities during flooding. The primitive road to Red Rooster, trailhead parking, proposed interpretive signage, and the proposed non-motorized trails to the north; and the Donley primitive road, proposed trailhead parking and interpretive signage, and potential hiking trail, would also not be located within FEMA 100-year flood hazard zones. Per ***Hydrology Guideline 2-2***, new primitive backcountry camping areas would not be sited within FEMA 100-year flood hazard zones. Some of the proposed parking areas and trails could be located within a FEMA 100-year flood hazard zone. However, per ***Safety Guideline 4-1***, Park facilities would be sited to avoid flash flood hazard areas where feasible. The Park would be operated in compliance with DPR Natural Resources Handbook Sections 0306.3 0306.4, 0306.6, which contain policies designed to protect natural floodplains and avoid the siting of new facilities in flood-prone areas. With implementation of the General Plan goals and guidelines listed above, and compliance with the requirements of the DPR Natural Resources Handbook and implementation of future site-specific design measures to protect the Ricardo Campground Complex facilities from flash flooding (if determined to be necessary), impacts from flooding would be **less than significant**.

Impact 5.14-4 Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan

For the reasons described in Impacts 5.14-1 and 5.14-2 above, implementation of the General Plan would not conflict with the *Water Quality Control Plan for the Lahontan Region* (Lahontan RWQCB 2021), or the *Sustainable Groundwater Management Plan for the Indian Wells Groundwater Basin* (IWVGA 2020). Therefore, this impact would be **less than significant.**

5.15 Mineral Resources

This section analyzes impacts related to the potential loss of regionally or locally important mineral resources that would result from the implementation of the General Plan.

5.15.1 Regulatory Setting

Refer to General Plan **Chapter 2 - Section 2.9 "Planning Influences,"** and Appendix A.

5.15.2 Environmental Setting

Chapter 2 - Existing Conditions, Section 2.1.5 Minerals and Mining Rights, and ***Section 2.6.1 Physical Resources*** provides a summary of the known mineral resources at Red Rock Canyon State Park.

5.15.3 Project Impacts

5.15.3.1 Threshold of Significance

Based on Appendix G of CEQA Guidelines, implementation of the RRCSP General Plan Revision would result in a potentially significant impact related to mineral resources if it would:

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.15.4 Impact Analysis

Impact 5.15-1. Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state; or,

Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

Under the Surface Mining and Reclamation Act (SMARA), the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The Board's decision to designate an area is based on a classification report prepared by the California Geological Survey (CGS) and on input from agencies and the public. The Park lies within the boundaries of the *Mineral Land Classification of Southeastern Kern County, California* (Koehler 1999). However, no areas of known or potential deposits of regionally significant mineral resources—including gold, borates, limestone, dimension stone, silica, or pozzolan (volcanic ash)—were identified within or

adjacent to the Park boundary. There are no areas within the Park designated by Kern County for mineral or petroleum exploration or extraction (County of Kern 2009).

The Park has a long history of mining activities (see ***Chapter 2, Section 2.6 Significant Resources***). By the early 1860s, gold miners had established the "El Paso Mining District" in the mountain range extending northeastward from Red Rock Canyon to the El Paso Peaks. In 1893 prospectors filed as many as 300 claims in Iron Canyon alone. The principal gold-bearing areas, however, were the tributary canyons on the east side of Red Rock Canyon, and between Holloway Camp and the mouth of Bonanza Gulch in Last Chance Canyon. Between 1902 and 1904 the Red Rock Gravel Mining Company owned at least 39 claims in Iron Canyon. By the mid-1920s, several tourist-oriented gem and rock shops and opal mines sprang up in the area. In addition to semi-precious stones and minerals, the stores sold fossilized wood specimens obtained from Last Chance Canyon. During the 1930s, small-time independent prospecting returned to the Red Rock area with a revival of dry placer mining at the old diggings, as well as hard-rock shaft mines. The "Old Dutch Cleanser" mine (which operated from 1923 to 1947) and the "Holy Cleanser" mine, in the Last Chance Canyon area, yielded approximately 150,000 tons of material, which amounted to nearly all the pumice and pumicite mined and used in the country for over 40 years. On the northern shore of Koehn Dry Lake (east of Cantil), clay mineral development occurred near Gypsite and Gypsy (Kane) Springs. In Saltdale (northeast of Cantil), mineralized salt was extracted from the brine pumped from beneath the dry lakebed. These clay and salt operations ceased production before the mid-1960s and have remained inactive since. The Los Angeles Clay Company operated the "Snow White Mine" in an elevated ridgeline exposed between the Nightmare Gulch and Last Chance Canyon drainages, and a smaller operation in Iron Canyon. The All Mineral Corporation and the American Colloid Company mined low-grade bentonite out in Scenic Canyon from the leased Three Bears placer claim in the late 1970s.

Twenty-eight historic mining sites and camps are part of the potentially National- or California-Register-eligible Red Rock Canyon historic mining district, included as part of the Last Chance Canyon Cultural Preserve. This Cultural Preserve includes Cudahy Camp, a large area that represents the remains of a historic work camp associated with the Old Dutch Cleanser Mine. The alluvial terrace on the east side of the canyon holds the remains of the main residential area and the company offices.

Some lands within the Natural and Cultural Preserve Park boundaries remain encumbered by mining claims, which are administered by the BLM under a Memorandum of Understanding with State Parks. There are at least 73 existing active mining claims, all of which are identified as "casual." Casual mining generally includes the collection of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, or non-motorized sluicing, and it may include use of small portable suction

dredges. It also generally includes use of metal detectors, gold spears, and other battery-operated devices for sensing the presence of minerals, and hand- and battery-operated drywashers. Casual mining does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, chemicals, or explosives (43 CFR Section 3809.5). To activate their claims beyond the status of "casual" mining, the claimants must follow the applicable mining laws as they exist and proceed through the necessary permits and paperwork required by the BLM, the County of Kern, and the State. If a claimant initiated progressing a claim beyond casual status, State Parks would be involved in this process only as a comment provider to ensure that proper mitigation measures are considered and implemented. State Parks recognizes that the General Plan will in no way impair the legitimate rights of individuals who hold title to specific federal mining claims.

State Parks will be responsible for managing the surface of the entire Park lands. At the minimum, as consistent with State Park classification, regardless of ownership and recognizing the legitimate rights of the mining claim holders, including ingress and egress to unpatented claims, insofar as authorized by federal mining laws. In the case of the natural and cultural preserves, those lands encumbered by mining claims will automatically become a part of the designated preserve upon abandonment or retirement of the claim, reclamation, removal of encumbrances, and transfer of ownership to State Parks.

Informal rock and mineral collecting by Park visitors has occurred in the past. Some of these activities resulted in the loss of valuable natural resources, such as the "petrified forest" that previously existed in Last Chance Canyon until the late 1950s when it was stripped of its petrified wood specimens by collectors and rockhounds. Mineral collecting and rockhounding are only allowed in State Recreation Areas units per the CCR (Title 14, Division 3, Chapter 1, Section 4611). Proposed changes in visitor use for this general plan revision will follow the Department's mineral collecting policies within Red Rock Canyon State Park, which require a special permit from the District Superintendent.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.7 – Geology, Minerals, Soils, and Paleontological Resources*** are designed to promote State Parks' acquisition of mineral rights inholdings, minimize the potential for mining-associated disturbance to the natural environment, and protect valuable mineral resource deposits.

Minerals Goal 1: The fossil and mineral records and specimens of the Park shall be preserved.

Minerals Guideline 1-1: Scientific investigations and analysis from various universities and museums shall be encouraged on a permit basis to broaden the knowledge of Park resources.

Minerals Guideline 1-2: Private collection and willful disturbance or dislodgment of the geologic forms shall not be allowed.

Minerals Guideline 1-3: Specimen collection or minor surface disturbance for university or museum scientific research shall be allowed only by a special permit. Cultural and natural resources staff shall review these permits before they are approved.

Minerals Goal 2: Mining Interest Encroachment and Other Disturbed Areas— There is an increasing economic incentive for private individuals and companies holding claims within the Park to develop mineral and energy resources. These developments may directly impact the Park's natural and cultural resources. Mining and indiscriminate vehicle use in the unit before acquisition by the state caused widespread damage and disturbance to desert soils. Additional impacts may occur to the Park resulting from increased traffic, noise, dust, lighting, vibration, deterioration of the viewshed, contamination, and erosion. These impacts would have detrimental effects on aesthetics and the visitor experience.

Minerals Guideline 2-1: The department shall work with Kern County and the Department of Conservation Division of Mine Reclamation and others to remediate the impacts of historic mining and limit any future mining activities within the Park.

Minerals Guideline 2-2: The department shall also seek, as feasible, to limit, rather than expand, access to mining inholdings that would involve widening of existing roads, because such road improvements would cause additional impacts.

Minerals Guideline 2-3: Continue to minimize land disturbances resulting from previous uses. In disturbed areas showing little improvement over long periods, initiate efforts to actively restore habitat. When necessary, stimulate the recovery of natural processes through restoration and management actions.

Minerals Guideline 2-4: Foster beneficial relationships with other agencies and organizations for technical assistance and funding to support efforts to restore mined and degraded areas.

Minerals Guideline 2-5: The cultural significance of an abandoned mine site shall be considered before remediation or restoration activities. Efforts shall be undertaken to incorporate culturally significant mines into the restored natural landscape and add interpretive elements when appropriate.

Although mining activities formerly took place on lands that are now within the Park, such activities ended in the late 1970s. The Park is not classified by CGS as an area that contains known or potential regionally important mineral deposits. Likewise, the Kern County General Plan does not include any mineral resource designations within the Park. Currently, private mineral collecting (i.e., rockhounding) within the Park is prohibited unless a special permit from the District Superintendent is obtained, and this Park policy would not change with implementation of the General Plan. Obtaining a special permit provides for the continuation of mineral resource discovery and classification as part of research projects, while protecting further resource degradation. There are existing "casual" mining claims throughout the Park, administered by the BLM, and the General Plan will in no way impair the legitimate rights of individuals who hold title to specific federal mining claims. ***Minerals Guideline 2-2*** would not preclude any necessary basic road repairs that may be necessary for individuals to access their mining claims.

Therefore, implementation of the General Plan and the proposed improvements in all areas of the Park—including the Ricardo Campground Complex and Red Cliffs Focused Use Management Zones; the proposed trailhead parking areas, trails, primitive backcounty camping, and interpretive signage displays; and the proposed Last Chance Canyon, Nightmare Gulch, and Black Rock Canyon Cultural Preserves—as described in the General Plan would not result in the loss of availability of a regionally or locally important known mineral resource, and this impact would be **less than significant**.

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5.16 NOISE

This section describes ambient noise conditions in the planning area and analyzes the potential noise impacts of implementing the General Plan. The regulatory setting, acoustic fundamentals, the existing noise-sensitive, and vibration-sensitive land use, existing noise sources, and ambient noise environment are discussed in this section. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines,*** and below.

5.16.1 Regulatory Setting

5.16.1.1 Federal Plans, Policies, Regulations, and Laws

U.S. Environmental Protection Agency Noise Control Act (Public Law 92-574)

The federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that would jeopardize public health or welfare.[1] Although the EPA was given a major role in disseminating information to the public and coordinating federal agencies, each federal agency retains authority to adopt noise regulations pertaining to agency programs.[2]

In 1974, in response to the requirements of the federal Noise Control Act, the EPA identified indoor and outdoor noise level limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor and indoor noise exposure limits of 55 dB L_{dn} and 45 dB L_{dn}, respectively, are identified as desirable to protect against speech interference and sleep disturbance in residential, educational, and healthcare areas. The sound-level criterion identified to protect against hearing damage in commercial and industrial areas is 70 dB 24-hour L_{eq} (both outdoors and indoors).

[1] The U.S. Environmental Protection Agency (EPA) was given the responsibility for providing information to the public regarding identifiable effects of noise on public health and welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act also directed that all federal agencies comply with applicable federal, State, interstate, and local noise control regulations.

[2] The EPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

Federal Transit Administration Transit Noise and Vibration Impact Assessment

Federal Transit Administration (FTA) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses to address the human response to groundborne vibration (FTA 2018):

- 65 VdB (referenced to 1 µin/sec and based on the RMS velocity amplitude) for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities);
- 80 VdB for residential uses and buildings where people normally sleep; and
- 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics at the request of the U.S. Environmental Protection Agency (EPA) (FTA 2018). For fragile structures, the committee recommends a maximum limit of 0.25 in/sec PPV (FTA 2018).

5.16.1.2 State Plans, Policies, Regulations, and Laws

The *State of California General Plan Guidelines*, published by the Governor's Office of Planning and Research (2017), provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. Table 5.16-1 presents acceptable and unacceptable community-noise-exposure limits for various land-use categories. Generally, residential uses are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA CNEL/L_{dn}. Residential uses are normally unacceptable in areas exceeding 70 dBA CNEL/L_{dn} and conditionally acceptable within 55–70 dBA CNEL/L_{dn}. Schools are normally acceptable in areas up to 70 dBA CNEL/L_{dn} and normally unacceptable in areas exceeding 70 dBA CNEL/L_{dn}. Recreation uses are normally acceptable in areas up to 75 dBA CNEL/L_{dn}. The guidelines also present adjustment factors that may be used to arrive at noise-acceptability standards that reflect the noise-control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise issues.

California Department of Transportation Vibration Criteria

The effects of groundborne vibration include movement of building floors, rattling of windows, shaking of items that sit on shelves or hang on walls, and rumbling sounds. In extreme cases, vibration can damage buildings, although this is not a factor for most projects. Human annoyance from groundborne vibration often occurs when vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance can be well below the damage threshold for normal buildings.

Table 5.16-1 State Noise Compatibility Guidelines, by Land Use Category

Land Use Category	Community Noise Exposure (CNEL/L_{dn}, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multiple-Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70-80	75+	

Notes:

CNEL = community noise equivalent level; dBA = A-weighted decibels; L_{dn} = day-night noise level (the 24-hour energy mean [average] noise level with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m.)

[1] Specified and use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4] New construction or development should generally not be undertaken.

Source: Governor's Office of Planning and Research 2017

California Department of Transportation (Caltrans) recommends a more conservative threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant structures (Caltrans 2020a) to protect fragile, historic, and residential structures. These standards are more stringent than the federal guidance established by the Committee of Hearing, Bio Acoustics, and Bio Mechanics, presented above.

5.16.1.3 Local Plans, Policies, Regulations, and Ordinances

State Parks is not required to adhere to local plans, policies, regulations, or ordinances in their lands; however, State Parks tries to be consistent with local requirements.

Kern County Noise Ordinance

The Kern County Noise Ordinance (Chapter 8.36 of the Kern County Code) defines sound-level performance standards for sensitive receptors. The ordinance forbids noise from construction, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:

1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
2. Emergency work is exempt from this section.

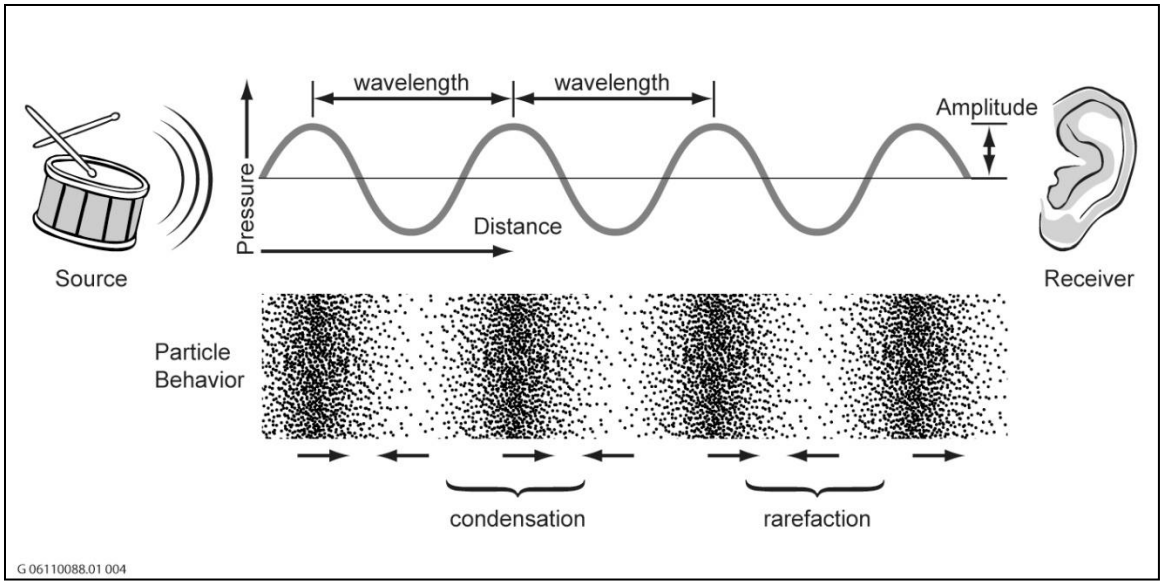
5.16.2 Sound Fundamentals

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave by a disturbance or vibration that causes pressure variation in the air that the human ear can detect.

5.16.2.1 Sound Properties

A sound wave is introduced into a medium (air) by a vibrating object. The vibrating object (e.g., vocal cords, the string of a guitar, or the diaphragm of a radio speaker) is the source of the disturbance that moves through the medium (Figure 5.16-1). Regardless of the type of source creating the sound wave, the particles of the medium through which the sound moves are vibrating in a back-and-forth motion at a given rate (frequency). The frequency of a wave refers to how often the particles vibrate when a wave passes through the medium. The frequency of a wave is measured as the number of complete back-and-forth vibrations of a particle per unit of time. One complete back-and-forth vibration is called a cycle. If a particle of air undergoes 1,000 cycles in 2 seconds, then the frequency of the wave would be 500 cycles per second. The common unit used for frequency is in cycles per second, called Hertz (Hz).

Each particle vibrates as a result of the motion of its nearest neighbor. For example, the first particle of the medium begins vibrating at 500 Hz and sets the second particle of the medium into motion at the same frequency (500 Hz). The second particle begins vibrating at 500 Hz and thus sets the third particle into motion at 500 Hz. The process continues throughout the medium; hence each particle vibrates at the same frequency, which is the frequency of the original source. Subsequently, a guitar string vibrating at 500 Hz will set the air particles in the room vibrating at the same frequency (500 Hz), which carries a sound signal to the ear of a listener that is detected as a 500-Hz sound wave.



Source: Data provided by AECOM in 2019

Figure 5.16-1. Sound Wave Properties

The back-and-forth vibration motion of the particles of the medium would not be the only observable phenomenon occurring at a given frequency. Because a sound wave is a pressure wave, a detector could be used to detect oscillations in pressure from high to low and back to high pressure. As the compression (high-pressure) and rarefaction (low-pressure) disturbances move through the medium, they would reach the detector at a given frequency. For example, a compression would reach the detector 500 times per second if the frequency of the wave were 500 Hz. Similarly, a rarefaction would reach the detector 500 times per second if the frequency of the wave were 500 Hz. Thus, the frequency of a sound wave refers not only to the number of back-and-forth vibrations of the particles per unit of time but also to the number of compression or rarefaction disturbances that pass a given point per unit of time. A detector could be used to detect the frequency of these pressure oscillations over a given period of time. The period of the sound wave can be found by measuring the time between successive high-pressure points (corresponding to the compressions) or the time between successive low-pressure points (corresponding to the rarefactions). The frequency is simply the reciprocal of the period; thus an inverse relationship exists so that as frequency increases, the period decreases, and vice versa.

A wave is a phenomenon that transports energy along a medium. The amount of energy carried by a wave is related to the amplitude (loudness) of the wave. A high-energy wave is characterized by large amplitude; a low-energy wave is characterized by small amplitude. The amplitude of a wave refers to the maximum amount of displacement of a particle from its rest position. The energy transported by a wave is directly

proportional to the square of the amplitude of the wave. This means that a doubling of the amplitude of a wave indicates a quadrupling of the energy transported by the wave.

5.16.2.2 Sound and the Human Ear

Because of the ability of the human ear to detect a wide range of sound-pressure fluctuations, sound-pressure levels are expressed in logarithmic units called decibels (dB) to avoid a very large and awkward range in numbers. The sound pressure level in decibels is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure and then multiplying by 20. The reference sound pressure is considered the absolute hearing threshold (Caltrans 2013). Use of this logarithmic scale reveals that the total sound from two individual 65-dB sources is 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB).

Because the human ear is not equally sensitive to all audible frequencies, a frequency-dependent rating scale was devised to relate noise to human sensitivity. An A-weighted dB (dBA) scale performs this compensation by discriminating against frequencies that are more sensitive to humans. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities for regulating environmental noise. Figure 5.16-2 presents typical indoor and outdoor noise levels.

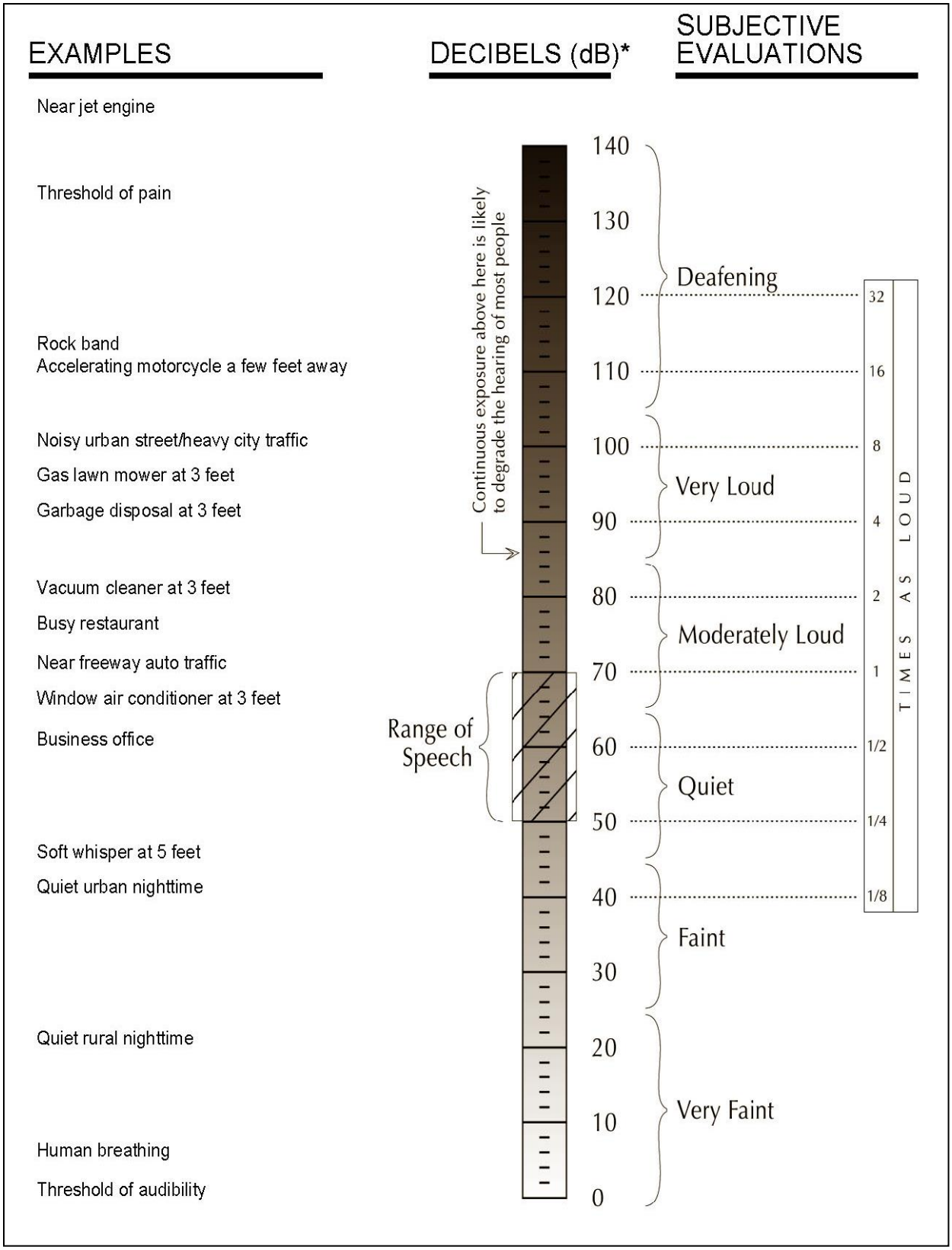
With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Caltrans 2013), as presented in Table 5.16-2. Table 5.16-2 was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broadband noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50–70 dBA because this is the usual range of voice and interior noise levels. For these reasons, a noise level increase of 3 dBA or more is typically considered a substantial degradation of the existing noise environment.

Table 5.16-2 Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level (dBA)	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (Except for Tones)	1.3
3	Just Barely Perceptible	2.0
6	Clearly Noticeable	4.0
10	About Twice (or Half) as Loud	10.0

Note: dBA = A-weighted decibels

Source: Caltrans 2013



Source: Data compiled by AECOM in 2019

Figure 5.16-2. Typical Noise Levels

5.16.2.3 Sound Propagation and Attenuation

As sound (noise) propagates from the source to the receptor, the attenuation, or manner of noise reduction in relation to distance, depends on surface characteristics, atmospheric conditions, and the presence of physical barriers. The inverse-square law describes the attenuation caused by the pattern in which sound travels from the source to receptor. Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of 6 dBA per doubling of distance (dBA/DD). However, from a line source (e.g., a road), sound travels uniformly outward in a cylindrical pattern with an attenuation rate of 3 dBA/DD. The surface characteristics between the source and the receptor may result in additional sound absorption and/or reflection. Soft surfaces such as dirt cover or vegetation can provide an additional 1.5 dBA/DD. Hard surfaces such as parking lots, water, and other roadway surfaces would provide additional attenuation. Atmospheric conditions such as wind speed, temperature, and humidity also affect noise attenuation. Furthermore, the presence of a barrier between the source and the receptor may also attenuate noise levels. The actual amount of attenuation depends on the size of the barrier and the frequency of the noise. A noise barrier may consist of any natural or human-made feature such as a hill, grove of trees, building, wall, or berm (Caltrans 2013).

All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dBA with its windows closed; by contrast, a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate-glass windows one-quarter inch thick typically provides an exterior-to-interior noise reduction of 30–40 dBA with its windows closed (Caltrans 2013).

5.16.2.4 Noise Descriptors

The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and amplitudinal fluctuation of the noise. The noise descriptors most often used when dealing with traffic, community, and environmental noise are defined below (Caltrans 2013):

- L_{max} *(maximum noise level):* The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the "peak (noise) level."
- L_{min} *(minimum noise level):* The minimum instantaneous noise level during a specific period of time.
- L_X *(statistical descriptor):* The noise level exceeded X% of a specific period of time.
- L_{eq} *(equivalent noise level):* The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to

relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.

- *L_{dn} (day-night noise level):* The 24-hour L_{eq} with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- *CNEL (community noise equivalent level):* A noise level similar to the L_{dn} described above, but with an additional 5-dBA "penalty" added to noise events that occur during the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading, and television. If the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dBA higher than the L_{dn}.
- *SENL (single-event [impulsive] noise level):* A receiver's cumulative noise exposure level from a single impulsive noise event, which is an acoustical event of short duration that involves a change in sound pressure above some reference value. SENLs typically represent the noise events used to calculate the L_{eq}, L_{dn}, and CNEL.

Community noise is commonly described in terms of the ambient noise level, the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average (equivalent) sound level, L_{eq}, which corresponds to a steady-state sound level that contains the same total energy as a time-varying signal over a given time period (usually 1 hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and shows a positive correlation with community response to noise.

5.16.2.5 Negative Effects of Noise on Humans

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Physical damage to the auditory system can lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over an extended period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a brief period. Both gradual and traumatic hearing loss may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and

communication. Although most interference may be classified as annoying, the inability to hear a warning signal is considered dangerous. Noise may also contribute to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, noise level, and duration of exposure (Caltrans 2013).

5.16.2.6 Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structureborne noise. Both natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment) can result in groundborne vibration. Some vibration sources, such as factory machinery, are continuous; others, such as explosions, are transient. As is the case with airborne sound, groundborne vibration may be described by amplitude and frequency.

Vibration amplitude is typically expressed in peak particle velocity (PPV) or root mean square (RMS), as in RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is the metric often used to describe blasting vibration and other vibration sources that result in structural stresses in buildings (FTA 2018).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of 1 second. As with airborne sound, the RMS velocity is often expressed in decibel notation as velocity decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018). This velocity decibel scale is based on a reference value of 1 microinch per second (µin/sec).

The background vibration-velocity level typical of residential areas is approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2018).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is barely perceptible. The range of human perception of vibration is from approximately 50 VdB, the typical background vibration-velocity level, to 100 VdB, the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to

nearby structures. Constant or transient vibration can weaken structures, crack facades, and disturb occupants (FTA 2018).

Construction-generated vibration can be transient, random, or continuous. Transient construction vibration is generated by blasting, impact pile driving, and wrecking balls. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Continuous vibration results from vibratory pile drivers, large pumps, horizontal directional drilling, and compressors. Table 5.16-3 summarizes the general human response to different levels of groundborne vibration.

Table 5.16-3 Human Response to Different Levels of Groundborne Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there is an infrequent number of events per day.

Note: VdB = velocity decibels referenced to 1 µinch/sec and based on the root mean square vibration velocity.
Source: FTA 2018

5.16.3 Environmental Setting

5.16.3.1 Existing Sensitive Land Uses

Land uses that are sensitive to noise and vibration are those uses where exposure would result in adverse effects (i.e., annoyance and/or structural damage) and uses where quiet is an essential element of their intended purpose. Residences are of primary concern because of the potential for increased, prolonged exposure of individuals to both interior and exterior noise or vibration. Other noise-sensitive land uses are hospitals, schools, convalescent facilities, hotels, churches, libraries, and other uses where low interior noise levels are essential.

The land uses east and south of the Park, not in federal or state ownership, are within Kern County's jurisdiction and are primarily zoned agricultural and A-1 MH - Limited agriculture, mobile home combining, and RF – recreation and forestry. Noise-sensitive land uses located near the Park include scattered houses. Onyx Ranch SVRA, also managed by State Parks, provides many OHV riding opportunities, including cross country play, trail riding, and advanced technical hill climbing opportunities, and bird watching at Butterbredt Spring. The closest sensitive uses are approximately 3,000 feet west of the Red Rock Canyon State Park and these sensitive uses are completely shielded by existing terrain with no direct line of sight to the Park.

The Ricardo Visitor Center is located at the entrance to Ricardo Campground via Abbott Drive. There is a paved parking lot and shaded picnic tables in the day-use area adjacent to the visitor center.

The Ricardo Campground is a developed campground and is frequently full during holidays, peak-season (spring and fall) weekends, and significant astronomical events. The campground has 50 primitive sites available to accommodate tent and RV camping. Also, the Red Cliffs day-use area has two accessible picnic sites.

Most of the Park operations facilities are located at the Ricardo Campground Complex and consist of administrative, public safety, maintenance offices, and a maintenance yard. There are also several manufactured homes used for employee housing adjacent to the maintenance yard. The Park shares its operations facilities with Onyx Ranch SVRA, including the maintenance, public safety, and resource management programs.

Red Rock Canyon State Park has a variety of destinations for visitors, including unique natural, geological, historical, and human-built points of interest. Visitors are generally interested in camping and outdoor recreational experiences in a desert landscape. Most visitors come to camp with family and friends, hike and walk through unique geological formations, stargaze, picnic, horseback ride, view wildlife, and take photographs. Many visitors come to partake in regional motorized recreation (off-highway and 4-wheel drive vehicles). Many people visit the Park to enjoy hiking on designated trails or in the broader Park.

The Ricardo Visitor Center provides Park orientation information, exhibits about the Park's natural and cultural history and resources, a bookstore, and a media room. The Desert View Nature Trail is a one-mile loop trail located at the south end of the Ricardo Campground. The Hagen Canyon Nature Preserve day-use area is located off SR 14 at Abbott Drive. The trail is 1.2 miles long and features wildflowers in the early spring, red cliffs, rock formations, and the site for many Hollywood movies. Red Cliffs Natural Preserve day-use area is located off SR 14, approximately 1/3-mile south of Abbott Drive, and provides a parking lot, pit toilets, and picnic tables. Nightmare Gulch can be accessed via the Iron Canyon dirt road from Red Cliffs. There is a parking/staging area next to the gated trailhead entrance. Opal Peak is a popular vista point with 360-degree views of the Park and region. Last Chance Canyon is a popular destination for visitors to the Park and attracts diverse recreation groups for its aesthetic values.

5.16.3.2 Existing Noise Sources

Natural sounds from meteorological effects (e.g., wind rustling plants, running water) and the Onyx Ranch SVRA, as well as road noise from passing vehicles, and noise from day visitors and campers, are the ambient noise source. The predominant noise source in the General Plan area is the vehicular traffic on State Route 14.

5.16.3.3 Existing Traffic Noise Levels

Traffic noise levels were estimated using the Federal Highway Administration's (FHWA's) traffic noise prediction model (FHWA-RD-77-108) and traffic data obtained from the Caltrans Traffic Counts (Caltrans 2020b). Table 5.16-4 below presents a summary of the modeled vehicular traffic noise levels for the existing condition. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Actual noise levels vary from day to day, depending on local traffic volumes, shielding from existing structures, variations in attenuation rates attributable to changes in surface parameters, and meteorological conditions.

As discussed above, the dominant noise source in the General Plan area is the vehicular traffic along SR 14. Therefore, the ambient noise level in the area is assumed to be 69 dB (Table 5.16-4) at the western boundary of the General Plan site along SR 14.

Table 5.16-4 Summary of Modeled Vehicular Traffic Noise Levels Serving the Existing Red Rock Canyon State Park

Roadway Segment and Location	Distance (feet) from Roadway Centerline to CNEL				CNEL (dBA) 100 Feet from Centerline of Near Travel Lane
	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL	
State Route 14 from Brandsburg Road to Reeman Junction	88	278	878	2,777	69.4

Notes:
CNEL = community noise equivalent level; dBA = A-weighted decibels. Calculated noise levels do not consider any shielding or reflection of noise by existing structures, vegetation, or terrain features; or noise contribution from other sources. See modeling results in Appendix D for further detail.
Source: FHWA 1978, Modeling performed by AECOM in 2022

5.16.4 Project Impacts

5.16.4.1 Analysis Methodology

This analysis considers how implementation of the General Plan would or would not change noise and vibration impacts.

Land use types and major noise sources in the vicinity of the General Plan area were identified based on existing documentation (e.g., the *aerial images*) and site reconnaissance data. To assess potential short-term impacts from construction noise, noise-sensitive receptors and their relative exposure (considering topographic barriers and distance) were identified.

FHWA's traffic noise prediction model was used to model traffic noise levels along affected roadways, based on daily traffic volumes. Traffic noise levels were estimated at 100 feet from the centerline of the near travel lane.

Groundborne vibration impacts were qualitatively assessed based on existing documentation (e.g., vibration levels produced by specific construction equipment) and the distance of sensitive receptors from the given source.

Predicted noise levels were compared with applicable standards to determine significance.

5.16.4.2 Threshold of Significance

Based on Appendix G of state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to noise if it would:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Generation of excessive groundborne vibration or groundborne noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

5.16.4.3 Issues Not Discussed Further in This EIR

There are no airports or airfields located within two miles of the General Plan site. Thus, the project would not result in the exposure of people using or working at the General Plan site to excessive levels of aircraft-related noise. This impact (c) is not discussed further.

5.16.5 Impact Analysis

Impact 5.16-1 Noise—Short-Term Construction-Generated Noise Levels

Construction of new facilities or improvements of the existing facilities would mainly be in the focused use management zones at the Richardo Campground Complex and Red Cliffs. Other proposed facilities throughout the Park include the proposed trailhead parking areas, trails, and interpretive signage displays, and primitive backcountry camping areas. Construction activities under the General Plan could include site preparation (e.g., clearing, excavation, and grading), staging, trenching, paving, finishing, cleanup, and other miscellaneous activities. Noise levels from individual construction equipment would range from 79 dBA to 91 dBA at 50 feet, as shown in Table 5.16-5. No pile driving or rock blasting would occur as part of construction and this method of construction was not evaluated.

Table 5.16-5 Typical Construction-Equipment Noise Levels

Type of Equipment	Noise Level (dBA) at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control[1]
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front-End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75
Compactor	81	75
Paver	89	80
Pavement Scarifier	90	-
Drill	98	80
Generator	78	75

Notes: dBA = A-weighted decibels

[1] Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Sources: FTA 2018, FHWA 2006

Potential locations of construction sites within the General Plan area could occur near or at the existing facilities for camping, touring, sightseeing, geology and nature studies, star gazing, exploration of historic sites, equestrian activities, and hiking.

The simultaneous operation of on-site construction equipment associated with roadway improvements could result in combined intermittent noise levels up to approximately 86 dBA L_{eq} at 50 feet from the construction activity. Based on the equipment noise levels and a typical noise-attenuation rate of 6 dBA/DD, exterior noise levels at the closest existing noise-sensitive receptors (located approximately 3,000 feet from the boundary of the General Plan area and are shielded by terrain) would be below 50 dBA without noise controls. However, construction-related noise at the on-site facilities, if occupied by the visitors, could occur within 50 to 100 feet of the existing sites for camping, touring, sightseeing, geology and nature studies, star gazing, exploration of historic sites, equestrian activities, and hiking. Recreational areas within the Park could be temporarily closed if construction activities were to create an impediment to access or safety concerns.

There are no existing policies related to short-term construction noise in the General Plan of the Park. However, construction generally would be limited to daytime hours and thus, although not required, would generally be consistent with the County Noise Ordinance that forbids noise from construction, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, if the construction

site is within one thousand (1,000) feet of an occupied residential dwelling. This is outside of the recognized sleep hours for residents and is also outside of evening and early morning hours and time periods when residents are most sensitive to noise.

The following goal and guideline found in ***Chapter 4 - The Plan, Section 4.6.1.1 Visitor Experience and Recreation Opportunities*** of the in the General Plan are designed to promote a positive visitor experience when visiting the Park.

Recreation Goal 1: State Parks will maintain the Park's qualities of solitude and wildness for future generations. Management decisions will favor the desert environment, promote the health and well-being of desert ecosystems, and promote sustainable activities over time in providing for the health, inspiration, and education of Californians.

Recreation Guideline 1-3: Continue to work with appropriate agencies to minimize the negative effects of aerial flyovers, noise, and other impediments to visitor solitude and the remote desert experience.

With careful Park planning, any potential temporary construction noise would be a minor impact on visitors and other sensitive users, such as Park staff living on site. This would be achieved by planning construction activities when Park use is low and during daylight hours, or temporarily closing off areas to the public. Therefore, construction-related noise implemented under the General Plan would be temporary and would not result in the exposure of people to excessive levels of construction noise above applicable standards. Therefore, this impact would be **less than significant**.

Impact 5.16-2 Noise—Increases in Long-Term (Operational) Noise Levels from Non-transportation Stationary and Area Sources

Other than new parking lots, implementation of the General Plan would not involve the introduction of new stationary noise sources. Noise-generating facilities, such as a parking lot, would include noise generated by conversation, doors slamming, vehicle passage, and engines starting and stopping. Proposed parking areas would be located within the General Plan area. Daily operations of the parking lot would result in noise levels below 40 dB noise level at the nearest receptors to each respective parking area. As a result, parking events would not cause a long-term substantial noise increase to occur. This impact would be **less than significant**.

Area-source noise may result from maintenance activities, such as mowing and vegetation clearing (mowers, edgers, trimmers); however, these activities have been ongoing in the Park for years and are not a new source of noise. According to EPA, such activities could result in noise levels reaching approximately 83 dBA at 3 feet from the source (from mowers and trimmers), depending on the exact equipment type and size (EPA 1974). Based on these equipment noise levels and a typical noise-attenuation rate

of 6 dBA/DD, exterior noise levels at the closest existing noise-sensitive receptor would not exceed 40 dBA. As a result, this impact was found to be **less than significant**.

Impact 5.16-3 Noise—Increases in Transportation-Related Noise Levels

Implementation of the General Plan does not change or increase the number of visitors in the General Plan area; therefore, no vehicular traffic increase would occur due to the General Plan. Additionally, as more and more electric and other alternative modes of transportation (i.e. hydrogen fuel cell) come into use replacing fossil fuel powered vehicles, noise from transportation will decrease as these vehicles are much quieter than traditional vehicles. This impact is **less than significant**.

Impact 5.16-4 Noise—Exposure of Persons to or Generation of Excessive Groundborne Vibration or Noise Levels

The movement and operation of any temporary construction equipment may generate temporary ground-borne vibration. Depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, the operations/activities involved, and the construction material of the vibration-sensitive uses (the buildings and other structures) affected, varying degrees of temporary groundborne vibration may occur. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in the distance (approximately 9 VdB per doubling of distance from the source). The type and density of soil can also affect the transmission of energy. Table 5.16-6 provides vibration levels for typical construction equipment.

Table 5.16-6 Typical Vibration Levels for Construction Equipment

Equipment		PPV at 25 Feet (in/sec)	Approximate L_v at 25 Feet
Pile Driver (Impact)	Upper Range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	94
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Truck		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Notes: in/sec = inches per second; Lv = the velocity level in decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude; PPV = peak particle velocity

[1] For normal residential buildings and for buildings more susceptible to structural damage, respectively.

Sources: Caltrans 2020a, FTA 2018.

Construction equipment for implementation of the General Plan may include the maximum generation of vibration from trucks and bulldozers. The vibration level associated with the use of a large bulldozer is 0.089 in/sec PPV (87 VdB) at 25 feet (FTA 2018). The vibration-sensitive uses (buildings) nearest to the construction sites are the residential uses are approximately 3,000 feet away. At these distances, the most substantial vibration generated by construction equipment would attenuate (at 9 VdB per doubling of distance) to less than 30 VdB and 0.0001 in/sec PPV, which would be less than the criteria of 80 VdB and 0.2 in/sec PPV recommended by Caltrans. Also, vibratory rollers are frequently used for backfill and paving work. As shown in Table 5.16-6, vibratory rollers have a higher reference value of 0.21 in/sec PPV at 25 feet (Caltrans 2020a). The resulting vibration level from the vibratory roller would be 32 VdB and 0.0002 in/sec PPV at a distance of 3,000 feet (the nearest sensitive uses), which would be below the 0.2 in/sec PPV recommended by Caltrans for structural damage, and above the criteria of 80 VdB for annoyance. Therefore, any short-term construction would not exceed the threshold for structural damage, and would not expose persons to or generate excessive ground-borne noise or vibration. For these reasons, this impact would be considered **less than significant**.

5.17 Recreation

This section analyzes impacts on recreation resources and opportunities that could result from the implementation of the General Plan. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines***, and below.

5.17.1 Regulatory Setting

There are no specific federal regulations that apply to recreation at the Park.

See ***Chapter 4 - The Plan, Section 4.3.1 State Park Classification PRC Section 5019.53*** regarding recreation resources and opportunities in State Parks.

The following sections in ***Chapter 2 - Existing Conditions and Chapter 4 - The Plan*** also provide details on the regulatory setting related to recreation:

- ***Section 2.5.3 – OHV Recreation*** offers a history of OHV recreation use at the Park.
- ***Section 4.5 – Road and Trail Network*** describes laws, regulations, and policies for motorized vehicles, roads and trails and changes to routes since the 1982 Red Rock Canyon State Park General Plan.

5.17.2 Environmental Setting

Visitors to the Park are generally interested in camping and outdoor recreational experiences. Most visitors come to camp with family and friends, hike and walk through unique geological formations, stargaze, picnic, horseback ride, view wildlife, take photographs, and partake in motorized vehicle touring and using off-highway and four-wheel drive vehicles. Bicycles are allowed on Park roads, but cycling does not seem to be a popular activity. Dogs are allowed only in picnic areas, the Ricardo Campground, and primitive roads, and are not allowed on trails. One of the few ways to access remote areas of the Park is to drive to destinations. Street-legal vehicles are allowed on the Park's primitive (native dirt substrate) road system. ***Chapter 2 – Existing Conditions*** provides detailed information about the recreation resources and opportunities available at the Park:

- ***Section 2.4 Existing Facilities and Operations*** describes s elements that support public outdoor use, such as visitor and recreational facilities and park administration, maintenance, and operations facilities and staff.
- ***Section 2.5 Visitor Use and Recreation*** contains a summary of visitor interests and the Park's existing recreation resources including campsites, non-motorized trails, and day-use picnic areas.

5.17.3 Project Impacts

5.17.3.1 Threshold of Significance

Based on Appendix G of the state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to recreation if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.17.3.2 Issues Not Discussed Further in This EIR

The General Plan will not affect use of existing neighborhood or regional parks or other recreational facilities outside of the Park. Thus, there would be no impact related to neighborhood or regional parks or other recreational facilities outside the Park and this topic is not evaluated further in this EIR.

5.17.4 Impact Analysis

Impact 5.17-1 Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The General Plan proposes a few new or improved recreational facilities, most of which are changes in the existing use of roads and new non-motorized trails. State Parks identified roads needed for Park operations and those that lead to key visitor destinations, as well as roads that impacted significant resources, or were dangerous/hazardous, redundant or dead-end roads. Some roads are proposed to be decommissioned (non-system) or redesignated as non-motorized trails. See ***Figure 4-1 – General Plan Preferred Concept Map for Red Rock Canyon State Park*** in ***Chapter 4 - The Plan*** for a detailed map of proposed facilities.

Roads and Trails

Proposed changes to roads and trails include:

- Adding two non-motorized trails within the Hagen Canyon Natural Preserve (exact trail alignment to be determined by Park staff and resource specialists).
- Adding a non-motorized trail within the Red Cliffs Natural Preserve (exact trail alignment to be determined by Park staff and resource specialists).

- Converting Black Rock Canyon Road, Nightmare Gulch, and the El Paseo Road spur road to non-motorized trails.
- Converting an approximate half-mile section of Last Chance Canyon Road near Cudahy Camp to a non-motorized trail.
- Converting the Roaring Ridge Road spur road and several short routes to non-system roads because they are redundant, unsafe, impact sensitive resources, or dead end.
- Allowing bicycles on primitive roads outside of natural and cultural preserves (boundaries for the Park's existing and proposed cultural and natural preserves are delineated not to include or affect designated primitive roads for motorized vehicle and bike use).
- Providing two ingress and egress access corridors for non-street legal vehicles registered as OHVs through the Park in the following areas:
    - Sierra View Road connecting EP 465 to Dove Springs BLM OHV Area
    - From the Ricardo Campground on Red Rock Wash Road to Dove Springs BLM OHV area
- Potentially adding a hiking trail at the Donley day-use area.

Street-Legal Vehicle Touring

The primitive road system and trails proposed in this General Plan are necessary and relate directly to access and the enjoyment and inspiration of the Parks primary historical and natural resource values, many of which are in the more remote areas of the Park. ***Chapter 4 - The Plan, Section 4.6.1.1 Visitor Experience and Recreation Opportunities*** of this General Plan includes the following goals and guidelines for vehicle access and for monitoring, restoration, and public education for motorized vehicle use within the Park.

Street-Legal Vehicle Touring Goal 1*:* State Parks will perpetuate self-guided street-licensed vehicle touring on designated primitive roads to enable people to reach the isolated scenic and natural areas of the Park while protecting sensitive resources.

Street-Legal Vehicle Touring Guideline 1-1 The use of vehicles on all primitive roads will be monitored by State Parks staff. Access can be rerouted or halted, if necessary, to protect Park resources. State Parks will restore areas that are damaged from unauthorized use per natural and cultural resource management guidelines and policies.

Street-Legal Vehicle Touring Guideline 1-2: Provide clear regulatory signage for vehicles, and continually update park brochures, online information, and

bulletin boards to inform visitors where they can legally operate their vehicles within the Park.

OHV Ingress and Egress Corridors

The proposed ingress and egress corridors will benefit all OHV recreationists, including those with non-street legal OHVs, by retaining regional connectivity to adjoining public lands. Because many visitors access Park destinations using motorized vehicles, the General Plan retains street-legal motorized vehicle access on Park roads. Non-street legal vehicles are allowed on Red Rock Wash Road and Sierra View Road; however, they are not permitted elsewhere in the Park. Sierra View Road would become the main connection point between BLM OHV areas to the north and west of the Park boundary.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.1 Visitor Experience and Recreation Opportunities*** of the General Plan are for monitoring, restoration, and public education for OHV use within the Park.

OHV Use Goal 1: State Parks will allow street-licensed OHVs to travel on designated connectivity roads (i.e., Red Rock Wash and Sierra View Road) if the use does not significantly impact sensitive natural and cultural resources.

OHV Use Guideline 1-1: The use of OHVs on designated connectivity roads will be monitored by State Parks staff. Access can be rerouted or halted, if necessary, to protect Park's resources. State Parks will restore areas that are damaged from unauthorized use per natural and cultural resource management guidelines and policies.

OHV Use Guideline 1-2: Regulatory and wayfinding (orientation) signage at Park boundaries on Red Rock Wash and Sierra View Road will be provided to inform visitors where they can legally operate their non-street legal OHVs within the Park. Information will also be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground.

OHV Use Guideline 1-3: Develop a regional map of OHV recreation riding areas, facilities, and resources within a 50- to 100- mile radius of the Park for the OHV riding public.

OHV Use Guideline 1-4: Encourage OHV use in areas outside the Park and create an environment in the Park with reduced OHV usage. Park staff should have resources including up-to-date knowledge of regional OHV recreation riding area access outside the Park and a map illustrating access to these areas to disseminate to the OHV riding public.

The changes to roads and trails in the General Plan will meet recreational demand for motorized and non-motorized visitor access while protecting sensitive natural or cultural resources. During development of the General Plan, the proposed road and trail

changes and designations described above were specifically chosen and designed to improve operations and safety and minimize and avoid any impact to sensitive resources. New non-motorized trails would be constructed but are largely limited to re-designation of existing vehicle roads. The exact trail alignment for the new trails in Red Cliffs and Hagen Canyon Natural Preserves will be determined by Park staff and resource specialists. No new roads are proposed, and roads decommissioned or redesignated as non-motorized trails will reduce physical effects to the environment. Additionally, goals and guidelines for monitoring, restoration, and public education about motorized vehicle use within the Park will be implemented. Thus, the changes to Park roads and trails would not result on significant adverse physical effects on the environment. This impact is **less than significant**.

Camping

The General Plan identifies proposed "dry" (no water or other developed facilities) primitive/environmental camping areas in the northeast section of the Park. The walk-in camping areas with a single campsite each would be unpaved and in undisturbed natural settings. The campsites, each with a clearing for a tent, may offer a picnic table.

The General Plan proposes an equestrian day-use and dry camping area within the Park's northwest section. The primitive camping area with up to two campsites or one small group camping area would be unpaved and in an undisturbed natural setting, with day-use parking/staging area and possible shade ramada for temperature moderation and corral. The primitive equestrian camping area, with clearings for tents, may offer picnic tables.

Table 5.17-1 shows the proposed locations for campsites by type, management area, and possible amenities.

Table 5.17-1. Proposed Campsite Types, Locations, and Possible Amenities

Campsite Type	Proposed Area	Management Area	Possible Amenities
Equestrian	Sierra View Road/Opal Peak Road/Roaring Ridge Road area	Limited Use Management Zone or Sensitive Resources Management Zone	Picnic tables and clearing for tents. Space for recreational vehicles (RVs), self-contained camping vehicles or horse trailers. No water or other developed facilities. No RV hookups. Pack out trash.
Primitive/ Environmental (walk-in only)	Northeast section of Park	Limited Use Management Zone, Sensitive Resources Management Zone or preserve	Clearing for a tent and a picnic table. No water or other developed facilities. Pack out trash

Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development. Campsites in preserves and Sensitive

Resources Management Zones would only be considered if their placement avoids impacts on sensitive cultural and natural resources.

The following goals and guidelines of the General Plan aim to manage impacts related to camping in the Park on sensitive resources.

Camping Goal 1: State Parks will perpetuate the Ricardo Campground and provide dry primitive/environmental and equestrian camping opportunities within the Park consistent with protecting the Park's sensitive resources.

Camping Guideline 1-3*:* Establish primitive/environmental camping areas. Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development.

Camping Guideline 1-4**:** Working with equestrian groups, other stakeholders, and the public, determine a suitable location for equestrian day-use parking/staging and camping area. Establish and utilize appropriate criteria such as proximity to existing road and trail network, number of campsites, and the potential for a shade structure for temperature moderation and corral. Detailed investigations by Park staff and resource specialists shall be made before approval of any specific site for development.

With implementation of these goals and guidelines, impacts on the physical environment from the construction of new primitive/environmental and equestrian camping areas would be **less than significant**.

The General Plan also proposes to allow OHV camping and access in the Ricardo campground, campground loop trail and on designated connectivity roads to adjoining OHV recreation areas (e.g., BLM OHV Areas, Onyx Ranch SVRA). The Ricardo Campground is in the Focused Use Management Zone that allows non-street legal vehicle use in designated areas. See ***Chapter 4 – The Plan, Section 4.4.1 Focused Use Management Zone***, for information about allowable uses.

Allowing OHV camping and access only in the Ricardo Campground would avoid impacts on sensitive cultural and natural resources and would provide a benefit to the OHV recreation user. Impacts related to camping in existing campgrounds would not result in impacts on the physical environment; therefore, there is **no impact.**

<u>Visitor Use Facilities</u>

As mentioned above, the changes to roads and trails in the General Plan will meet recreational demand for motorized and non-motorized visitor access while protecting sensitive natural or cultural resources and State Parks will re-route or halt motorized vehicle use, if necessary, to protect the Park's resources. Proposed camping areas will also be consistent with protecting the Park's sensitive resources. All visitor-use facilities,

including day-use parking/staging and picnic areas and interpretive opportunities and signage, will be placed to maximize visitor and staff use while minimizing negative effects on viewshed, night skies, and opportunities for solitude, and natural, and cultural resources pursuant to the following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.2 Other Visitor and Operations Facilities*** of the General Plan.

Facilities Goal 1: State Parks will strive toward excellent facilities that represent the intrinsic qualities of the Park while protecting natural and cultural resources. Design and maintenance of Park facilities should embody State Parks mission while producing meaningful places and spaces worthy of preservation by future generations.

Facilities Guideline 1-3: Provide visitor-use facilities (visitor center, picnic areas, campsites, non-motorized trails, etc.) that offer the opportunity for diverse visitor experiences. New facilities will be designated and geographically placed to maximize visitor or staff use while minimizing negative effects on viewshed, night skies, and opportunities for solitude, and natural and cultural resources.

Facilities Guideline 1-8: Protect natural and cultural resource values when developing facilities.

Facilities Goal 3: Provide roads and trails that offer access and the opportunity for varied visitor experiences throughout the Park without compromising the integrity of the Park's natural, cultural, historical, and aesthetic resources.

Furthermore, the Park's interpretation and education program will provide public outreach and messaging about where people can legally recreate in the Park. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.15 Interpretation and Education*** of the General Plan includes specific interpretive goals that aim to educate recreation users of the importance of resource protection in the Park.

Interpretation Goal 1: Expand interpretive themes from the General Plan. Provide relevant and thematic interpretive materials that address the Park's sense of place and history and meet the needs and interests of the visitors.

Interpretation Guideline 1-3: Develop content about geological resources at Red Rock Canyon State Park and the region. Include content that explores protecting fragile or otherwise special geological features such as the badlands

Interpretation Guideline 1.4: Develop content about natural resources at Red Rock Canyon State Park and the region. Include content about conserving sensitive and unique species and controlling exotic invasive species, such as:

- rare, threatened, endangered, and sensitive species, such as the Red Rock tarplant, desert tortoise, Mohave ground squirrel, and golden eagles

- how exotic species have altered the Mojave Desert landscape and natural processes
- the intent of the California Desert Protection Act
- how recreational activities impact resources
- the ecological significance of habitat connectivity and habitat buffers

***Interpretation Guideline 1.7*:** Educate the visitors to be responsible stewards by interpreting its resource management strategies, techniques, and practices.

Interpretation Goal 5: Interpretation supports park management goals. Strive to achieve park management goals through interpretation whenever possible, including public safety, land-use, critical resources, human impacts, resource management strategies, and other issues.

***Interpretation Guideline 5-3*:** Use informative, well-placed, and consistent signage and other media to explain impacts and help protect resources from visitors' damage.

Proposed visitor recreational facilities will be placed to maximize visitor and staff use while minimizing adverse physical effect on the environment and the Park's interpretive and education program will promote the protection of the Park's sensitive resources. The impact of proposed visitor recreational facilities on the physical environment is **less than significant**.

Non-motorized recreation users (e.g., pedestrians, equestrians) would see a benefit from implementation of the General Plan as a result of the removal of conflicts with motorized recreation and reduced noise. Converting Black Rock Canyon and Nightmare Gulch to non-motorized trails would remove conflicts on these routes, would reduce noise in proposed preserves, and would further protect sensitive cultural and natural resources by eliminating the potential for offroad driving in these sensitive areas. While not an impact on the physical environment, these effects would have a **positive impact** on the visitor experience.

Furthermore, all of the goals and guidelines in the General Plan aim to balance visitor recreation and protection of physical environmental resources, such as air quality, biological resources, cultural resources, tribal cultural resources, geology, soils, paleontology, minerals, and water quality.

5.18 Transportation and Traffic

This section analyzes impacts related to transportation that would result from the implementation of the General Plan. The impact analysis examines the components of the transportation system in the project area. To provide context for the impact analysis, this section begins with applicable regulations and provides context for the existing and physical operational conditions for the transportation system consistent with Section 2.1.3, "Major Transportation Corridors", and section 2.4, "Existing Facilities and Operations" of the existing General Plan. There is no public transportation to the Park. While existing roads within the General Plan area are "walkable," they are designed primarily for vehicular traffic. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.18.1 Regulatory Setting

5.18.1.1 Federal

There are no federal plans, policies, regulations, or laws related to transportation and circulation which are applicable to the implementation of the General Plan.

5.18.1.2 State

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the SHS would need to be approved by Caltrans.

Caltrans' Local Development – Intergovernmental Review Program Interim Guidance (Caltrans, December 2020) provides guidance on the evaluation of traffic impacts on State highway facilities. The document recommends that CEQA reviewers comment on vehicle miles traveled (VMT), "applying local agency thresholds or absent those, thresholds recommended in adopted CEQA Guidelines or Governor's Office of Planning and Research's (OPR's) approved Technical Advisory."

Senate Bill 743

Governor Brown signed SB 743 in September 2013, which created a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 required the OPR to amend the CEQA Guidelines to provide an alternative to the level of service (LOS) for evaluating transportation impacts, as well as recommend methodologies and significance thresholds. SB 743 does not change the discretion that the lead agencies have to select methodology or define significance thresholds.

Under SB 743, the focus of transportation analysis essentially shifted from the social inconvenience of traffic congestion to adverse physical effects associated with vehicular travel demand. Measurements of transportation impacts may include total VMT, vehicle miles traveled VMT per capita, automobile trip generation rates, or automobile trips generated. Vehicle miles traveled, or VMT, has long been a common metric to use to measure travel demand. A VMT is one vehicle traveling on a roadway for one mile. Many communities have been estimating and developing policies related to VMT for years, including estimates and goals for VMT per person, VMT per employee, or other methods of normalization. SB 743 directs revisions to the CEQA Guidelines that would create criteria for assessing travel demand, such as "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated" (OPR 2018).

5.18.1.3 Regional and Local

Kern County General Plan Goals, Policies, and Implementation Measures Related to Circulation

Kern County maintains Red Rock-Inyokern Road through the Park. The goals and policies in the Kern County General Plan Update that relate to the potential impacts on transportation and circulation would be implemented by Kern County on the roads they maintain.

5.18.2 Existing Setting

The transportation facilities in the project area include the state routes and local roadways, as shown in Figure 2-1. Visitors drive to most destinations within the Park. The Park's main entrance is off SR 14, near Cantil. Visitors turn onto Abbot Drive and drive 1/4-mile down a paved road to reach the Ricardo Campground complex, which includes the Park visitor center and day-use area. Park signs indicating the turnoff are visible on SR 14. CalTrans maintains 100 feet of Abbot Drive from SR 14, Kern County maintains the road to the Park gate, then State Parks maintains the road from there.

Visitors can also access other destinations in the Park using the primitive road and trail system off SR 14 and various Kern County, state, and BLM-maintained routes originating outside the Park, including:

- Scodie (SC)-94 Red Rock Wash Road
- SC-103 Joshua West Road
- Red Rock-Inyokern Road -- Kern County maintained through the Park
- El Paso (EP)-15 to Hart Road to Last Chance Canyon Road – BLM maintained
- EP-30 -- BLM maintained

- Pleasant Valley Road
- El Paseo Road
- Sierra View Road to SC-103 to EP-15 --BLM maintains the road to the Park boundaries.

There also are a few primitive roads from the Ricardo Campground complex.

Roadways

The state routes and local roadways adjacent to the General Plan area are described below.

State Route 14

State Route (SR) 14 is a significant state highway transportation artery that generally runs north-south through the western portion of the Park and provides direct access to and bisects the Park in a north/south direction. There is a north-south route between the intersection with Route 395 near Inyokern and the south County line at Rosamond. The freeway from south County line to near Mojave is a two-lane Highway except through Mojave (4-lanes) and Expressway through Red Rock Canyon and other locations northerly.

Red Rock-Randsburg Road generally proceeds northeast along the park's southern edge, while Red Rock-Inyokern Road runs through a portion of the Park's northwest corner (see Figure 2-1).

State Route 178

SR 178 is an east-west route between Bakersfield and the eastern County line at Ridgecrest; the route passes through the Isabella area; the route exists as a freeway through Bakersfield and part of Kern River Canyon and is a two-lane road for the remainder except through Ridgecrest where the route consists of 4-lanes; there is a jog in the route between its intersection with SR 14 and Inyokern, a distance of about four miles, and a two-mile jog within the City of Ridgecrest.

Redrock Randsburg Road

Red Rock-Randsburg Road intersects the Park's southern boundary, a two-lane northeast-southwest route that extends from SR 14 south of the General Plan area to Carlock Road to the east and extends from Carlock Road to the east to SR 395.

Red Rock-Inyokern Road

Red Rock-Inyokern Road intersects the Park's northern boundary and runs through a portion of the Park's northwest corner, a two-lane northeast-southwest route that

extends from SR 14 south of the General Plan area to Carlock Road to the east and extends from Carlock Road to the east to SR 178.

5.18.3 Project Impacts

5.18.3.1 Threshold of Significance

Based on Appendix G of CEQA Guidelines, implementation of the General Plan would result in a potentially significant impact related to transportation and traffic if it would:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

d) Result in inadequate emergency access.

5.18.3.2 Issues Not Discussed Further in This EIR

The General Plan does not include any new roads that would increase hazards due to a geometric design feature or incompatible uses; therefore, this impact (c) is not discussed further.

5.18.4 Impact Analysis

Impact 5.18-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

Primary access to the General Plan site will continue to be from SR 14. Implementation of the General Plan does not include any permanent changes to the geometry of the area roadways and would not conflict with any applicable plan or policy related to nearby transportation systems such as SR-14. Nor would it conflict with programs related to managing traffic congestion that exists within the Kern County General Plan. As a result, **no impact** would result from project operations.

Facilities improvements would include temporary construction; however, these activities would be on-site and are not expected to directly impact surrounding public roadways.

The following existing goal and guideline found in ***Chapter 4 - The Plan, Section 4.6.1.2 – Other Visitor and Operations Facilities*** apply transportation under the General Plan:

Facilities Goal 3: Provide roads and trails that offer access and the opportunity for varied visitor experiences throughout the Park without compromising the integrity of the Park's natural, cultural, historical, and aesthetic resources.

Facilities Guideline 3-2: Develop a comprehensive Roads and Trails Management Plan (to include issues such as maintenance, assessment of roads and trails, restoration of erosing roads and trails, measures to reduce soil erosion, volunteer efforts, changes in recreation uses, etc.).

For roads that the County maintains, Kern County General Plan goals and policies will be implemented by the County as described in Section 5.18.1.3.

These goals, guidelines, and policies would help avoid conflicts with any program, plan, ordinance, or policy and therefore, implementation of the General Plan would have **no impact**.

Impact 5.18-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)

Because VMT analysis is intended to capture the long-term impacts of a General Plan, construction activities are not typically subject to VMT analysis. As a result, no analysis of construction VMT is warranted for any temporary construction activities associated with facilities improvements. Moreover, the project's operational characteristics would not change from the existing conditions of operations, and thus detailed CEQA transportation analysis of operational VMT is not required. Therefore, no significant VMT impact would result from General Plan implementation.

There are no existing policies related to VMT analysis in the existing General Plan of the Park. VMT is now the preferred methodology for assessing transportation impacts under CEQA. Since the project's operational characteristics would not change from the existing conditions of operations and the General Plan would not cause an increase in traffic volumes in any of the public roadways, no new goals or guidelines would be required. There is **no impact.**

Impact 5.18-4 Result in inadequate emergency access

Implementation of the General Plan does not include any permanent changes to the public roadway network. Park operations and maintenance, and security-related vehicle trips would remain unchanged from existing conditions. As a result, no impact on emergency access would result from Park operations and there would be **no impact**.

For facilities improvements, construction impacts would generally be limited to on-site and not directly impact the area's public roadways and access to or from nearby properties. For on-site temporary construction impacts, such as paving roads and parking lots, some roads may be temporarily closed. Prior to closing any roads, Parks will evaluate access for emergency services and ensure there are alternative routes or plans in place for temporary closures.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.6 – Public Safety*** of the in the General Plan are designed to promote visitor, staff, and facility safety.

Safety Goal 1: Promote visitor safety while recognizing that the desert's climate, geology, wildlife, and vegetation are inherently hazardous. Measures to promote visitor safety will be taken while considering the importance of maintaining the visitor's experiences of adventure, discovery, and wilderness.

Safety Guideline 1-1: Continually evaluate, expand, and adapt the visitor safety program to increase safety throughout the Park (e.g., communicate extreme climate conditions to the public when they occur).

Safety Guideline 1-3: State Parks will evaluate visitor and environmental hazards and, where appropriate, develop measures to ensure public safety.

Safety Guideline 1-4: States Parks will develop and keep current public safety messaging about where visitors can seek help in an emergency (e.g. Park contact information, locations with cell phone connectivity) and how to recreate in the desert safely. Public safety messaging will be placed on bulletin boards at the Ricardo Visitor Center and Ricardo Campground and in day-use picnic and parking/staging areas.

Roads and Trails Management Plan

The Park acknowledges the wide range of values that roads and trails hold for park visitors and the various types of recreation uses available for visitors. Thus, the Park should consider developing a road and trail management plan once the revision of the general plan is approved. The RTMP is a long-range document that builds on the general plan and serves as a decision-making tool for Park management. It will be balanced to meet the needs of the park visitor, maintain public safety, protect the park resources, and maintain the quality of the visitor experience. The plan will further analyze the road and trail network and study the appropriate type and level of recreational access. It may include recommendations for additional trails and use types based on stakeholder and public input. Additionally, the plan may recommend realignment or closure of selected roads and trails, or segments of them, for the protection of sensitive resources and to reduce redundant (parallel) travel routes. The management zones designated by the General Plan will provide the Roads and Trails Management Plan application regulations. Appropriate emergency access will be maintained throughout the Park at all times. The existing trail and fire road facilities will not be adversely impacted or conflict with park policies. As a result, the impact of temporary construction on emergency services access would be **less than significant**.

5.19 Tribal Cultural Resources

This section analyzes the potential impacts on tribal cultural resources that could result from implementation of the General Plan. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines,*** and below.

5.19.1 Regulatory Setting

5.19.1.1 Federal

Adherence to federal regulations may be required for Federal permits or funding, or other programs or actions that include Federal involvement.

- *National Historic Preservation Act, Section 106*

  The purpose of the National Historic Preservation Act (NHPA) (Title 16, Section 470 et seq. of the U.S. Code) is to protect sites, buildings, structures and objects significant in American architecture, history, archaeology, and culture. Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties. Section 106 applies to actions initiated, licensed or permitted by the federal government which have the potential to affect properties listed or eligible for listing on the National Register of Historic Places. Under Section 106, the responsible Federal agency must:

  - Identify "historic properties" (cultural resources) which may be affected by project
  - Determine the effects of the project on the subject properties
  - Consult with appropriate state and local officials, Native American tribes, and members of the public regarding potential effects on cultural resources and consider their views and concerns when making project decisions

  Pursuant to Section 106, the importance of the cultural resource and the severity of the impact are both evaluated in terms of significance. Mitigation is required for actions that result in significant impacts to significant resources.

5.19.1.2 State

- *Public Resources Code Section 5097.991.*

  It is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.

- *Public Resources Code Section 21080.3.1.*

  Consultation with Native Americans is conducted for any project that would result in the undertaking of a negative declaration, mitigated negative declaration, or environmental impact report.

- *Public Resources Code Section 21084.3.*

  Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resources.

- *Government Code*

  Confidentiality of archaeological resource records and Native American consultation information. Government Code Section 6254 (r) states that records of Native American graves, cemeteries, sacred places, places, features, objects in the possession of a state agency are not required to be disclosed. Government Code Section 6254.10 states that archaeological site information and information from Native American consultation maintained by Department of Parks and Recreation is not required to be disclosed.

- *Executive Order W-26-92*

  All state agencies shall recognize and, to the extent prudent and feasible within existing budget and personnel resources, preserve and maintain the significant heritage resources of the State. Each state agency is directed to administer the cultural and historic properties under its control in a spirit of stewardship and trusteeship for future generations; to initiate measures necessary to direct its policies, plans, and programs in such a way that state-owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and to ensure that the protection of significant heritage resources are given full consideration in all of its land use and capital outlay decisions

- *Executive Order B-10-11*

  Every state agency and department shall encourage communication and consultation with Native American Tribes.

- *California State Parks Department Operations Manual and Resource Management Policies and Directives*

  The Department Operations Manual (DOM) is the guiding policy manual for California State Parks. Included within the DOM is a volume of resource management policies and directives. These policies and directives provide guidance toward the preservation of natural and cultural resources and on the uses that may

impact those resources, as well as to amplify the legal codes contained in the Public Resources Code, the California Code of Regulations, and the California State Park and Recreation Commission's Statement of Policy and Rules of Order.

The Resource Management Directives include policies on archaeological, historical, and cultural resource preservation, protection, consultation, research, and professional procedures and practices.

- *State Parks Cultural Resource Review and Related Procedures (Departmental Notice 2004-02)*

  The Department's procedures for protecting historical resources in conformance with PRC sections 5024 and 5024.5 and Executive Order W-26-92.

- *State Parks Consultation Policy (Departmental Notice 2007-05)*

  The Department recognizes its special responsibility as the steward of many sites of cultural and spiritual significance to living Native peoples of California. Therefore, it is the policy of California State Parks to engage in open, respectful, ongoing consultation with appropriate Native California Indian tribes or groups in the proper management of areas, places, objects, or burials associated with their heritage, sacred sites, and traditional cultural properties or cultural traditions in the State Park System.

  Prior to implementing projects or policies that may have impacts to Native California Indian sites within the State Park System, the Department will actively consult with local Native California Indian tribes regarding the protection, preservation and/or mitigation of cultural sites and sacred sites in the State Park System.

- *State Parks Confidential Cultural Resource Data Governance (Departmental Notice 2021-09)*

  Established protocol to manage confidential cultural resources information that is critical for effective environmental compliance, risk management, and stewardship for California State Parks. Access to, and use of, the information is constrained by governance to restrict access, define allowable uses, and defend against misuse or inadvertent disclosure.

5.19.2 Environmental Setting

The Park is within the ethnographical territory of the Nüwa, Niwiwi, or Kawaiisu people. The Kawaiisu and their neighbors (Tubatulabal, Panamint Shoshone, Southern Paiute, Kitenemuk, Yokuts, and Serrano) have traditions about the creation of the world and its peoples, and supernatural beings and places that exist within the landscape of the Park, the Mojave Desert, the Tehachapi Mountains, and other places in the region.

Tribal cultural resources (including Native American archaeological sites) and sacred lands have been identified within the Park. A Native American Heritage Commission Sacred Lands File search conducted in 2018 was positive for sacred lands. Tribal consultation conducted in support of this General Plan and previous planning efforts in accordance with State Park policies and Assembly Bill 52 (2014) [AB 52)], identified additional tribal cultural resources and areas of specific concern to Native Americans within the Park. ***Chapter 2 - Existing Conditions, Section 2.6.4.2 – Tribal Cultural Resources*** provides a summary of the tribal cultural resources of the Park.

5.19.3 Project Impacts

5.19.3.1 Threshold of Significance

Based on Appendix G of state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to tribal cultural resources if it would:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

   i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

   ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

5.19.4 Impact Analysis

Impact 6.19-1 Tribal Cultural Resource Impacts

Red Rock Canyon State Park contains a wide range of tribal cultural resources (as defined by PRC Section 21074) that have the potential to be damaged from vandalism or inappropriate recreational use. Extensive research and inventory of the Park's cultural resources and numerous consultations with local Native American tribes and groups have occurred to date, and inventory and consultation are also ongoing processes; therefore, the potential exists for previously unknown tribal cultural resources to be encountered and inadvertently damaged during facilities construction, rehabilitation, improvements, resource management projects, restoration, or maintenance operations. Prior to development or modification of facilities, consultation with local Native

American groups will be conducted. Additionally, as noted in ***Section 5.10 - Cultural Resources,*** the Area of Potential Effect (APE) for facility development would be surveyed and/or tested and any identified Native American archaeological artifacts, features, and/or sites recorded and assessed.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.12 – Cultural Resources*** of the General Plan are focused on the protection of tribal cultural resources.

Tribal Cultural Resources Goal 1: Identify and interpret the tribal cultural resources, traditional cultural places, and past and present cultural uses in the Park and protect these culturally significant places.

Tribal Cultural Resources Guideline 1-1: Work with local Native American groups and historical accounts and ethnographic records to identify tribal cultural resources, including special cultural and religious significance sites within the Park.

Tribal Cultural Resources Guideline 1-2: Record the tribal cultural resources within the Park through consultation with the Kawaiisu and other Native American groups.

Tribal Cultural Resources Guideline 1-3: Work with Native American groups to protect and preserve the tribal cultural resources, traditional cultural places, areas of significance, and sacred sites within the Park.

Any maintenance, construction, or other activities that have the potential to encounter or disturb tribal cultural resources will involve consultation and monitoring in accordance with state law and State Parks policies. Native American monitoring will be conducted by a representative/representatives of a local Tribe/local Tribes, as identified by the Native American Heritage Commission (NAHC).

If any previously undocumented tribal cultural resources or suspected tribal cultural resources are identified during any maintenance, construction, or other activities – work will be temporarily halted in the area of the resource/suspected resource. Work will not resume in that area until the Native American monitor inspects the resource, and appropriate avoidance, protection, or treatment is implemented.

In the event of an accidental discovery or recognition of human remains during any maintenance, construction, or other activities – all work will cease immediately in the area of the find in compliance with California Health and Safety Code §7050.5 and §7052; and Public Resources Code §5097.99. The State Parks' Sector Superintendent (or authorized representative) will notify the County Coroner/Medical Examiner in accordance with § 7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage

Commission in Sacramento will be consulted to identify the most likely descendant/s and the appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC § 5097.98).

Hold to the highest standards and requirements any archaeological investigation/ collection permits. Such permits, especially those entailing archaeological excavations, should include comprehensive research designs that review existing literature and document existing collections and provide appropriate cataloging and curation of excavated materials. Excavation permits should also include tribal review and approval, and approval from senior State Parks archaeological staff. Archaeological excavations that have not been reviewed as part of an existing project require evaluation under State Parks' environmental review process to avoid significant impacts on the environment and other State Parks' resources.

Tribal Cultural Resources Guideline 1-4: Develop interpretation and education programs with local Native American groups to highlight their cultures, continuing presence, and long-time use of and association with Red Rock Canyon State Park and its resources.

With implementation of these goals and guidelines and adherence to State Parks' mandates related to the protection of tribal cultural resources during future planning efforts, impacts on tribal cultural resources from implementation of the General Plan would be **less than significant.**

5.20 Utilities and Service Systems

This section analyzes impacts on utilities and service systems that could result from implementation of the General Plan. A description of existing utilities and service systems may be found in ***Chapter 2 - Existing Conditions, Section 2.4.3 – Operations Facilities.*** Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 – Goals and Guidelines.***

5.20.1 Regulatory Setting

5.20.1.1 Federal Plans, Policies, Regulations, and Laws

No federal plans, policies, regulations, or laws related to public services and utilities are applicable to the General Plan project planning area.

5.20.1.2 State Plans, Policies, Regulations, and Laws

- *California Integrated Waste Management Act*

  The California Integrated Waste Management Act of 1989 created the California Integrated Waste Management Board, now known as the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle is the agency designated to oversee, manage, and track the 92 million tons of waste that are generated in California each year. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the state's waste reduction, reuse, and recycling goals. CalRecycle promotes a sustainable environment in which these resources are not wasted but can be reused or recycled. In addition to many programs and incentives, CalRecycle promotes the use of new technologies to divert resources away from landfills.

- *2019 California Green Building Standards Code*

  The standards included in the 2019 California Green Building Standards Code (CALGreen Code) (Title 24, Part 11 of the CCR) became effective on January 1, 2020.[1] The CALGreen Code was developed to enhance the design and construction of buildings, and the use of sustainable construction practices, through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality (California Building Standards Commission 2019).

  Chapters 4 and 5 of the 2019 CALGreen Code requires construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements

[1] The California Energy Commission approved the 2022 CALGreen Code August 11, 2021 and it was approved by the California Building Standards Commission in December 2021. The 2022 CALGreen Code will become effective January 1, 2023.

include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, the 2019 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

Chapter 5 of the 2019 CALGreen Code defines standards for plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) and outdoor water use.

5.20.1.3 Regional Plans, Policies, Regulations, and Ordinances

Although State Parks is not subject to Kern County jurisdiction on state lands, gargabe waste from the Park goes to a Kern County waste facility. Therefore, a discussion of the Kern County Integrated Waste Management Plan is included here.

- *Kern County Integrated Waste Management Plan*

  The solid waste management plan is a comprehensive guide for all solid waste management activities in the County. The plan identifies the existing solid waste generation and disposal facilities in Kern County, estimates future solid waste disposal demand, and identifies programs to meet this future need.

  The Kern County Integrated Waste Management Plan (KCIWMP) was established in response to the California Integrated Waste Management Act of 1989 (AB 939). AB 939 required cities and counties to reduce solid waste disposal 25 percent by January 1, 1995 and 50 percent by January 1, 2000. The law also established a hierarchy that the local jurisdictions must comply with to address waste management issues. The California Integrated Waste Management Act requires each local jurisdiction to prepare and carry out the following solid waste elements: · Source Reduction and Recycling Element. · Household Hazardous Waste Element · Non-disposal Facility Element · Countywide Siting Element · Countywide Integrated Waste Management Summary Plan. Together these elements make up the KCIWMP.

5.20.2 Environmental Setting

A description of existing utilities and service systems may be found in ***Chapter 2 - Existing Conditions, Section 2.4.3 – Operations Facilities.***

5.20.3 Project Impacts

5.20.3.1 Threshold of Significance

Based on Appendix G of the state CEQA Guidelines, implementation of the Red Rock Canyon State Park General Plan would result in a potentially significant impact related to utilities and service systems if it would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

5.20.3.2 Issues Not Discussed Further in This EIR

The Park is in a remote location and does not have access to electric power or natural gas, or telecommunications facilities. No telephone service is provided by commercial communications providers. Telephone service uses microwave and satellite technology. Cell phone service is available in the developed areas of the Park (e.g., Ricardo Campground Complex). AT&T and Verizon are the main carriers. Internet service for the Park operations facilities, such as the visitor center, is provided by a relay system through California City. Therefore, these issues are not discussed further in this EIR.

5.20.4 Impact Analysis

Utilities services are limited due to the Park's remote location. Planned facilities include dry environmental/primitive backcountry and equestrian camping areas, primitive parking/staging areas and non-motorized trails, educational/interpretive day-use signage, and improvements to existing facilities. The Park uses on-site septic systems in the developed area of the Park (Ricardo Campground Complex). Goals and guidelines in this General Plan provide guidance for management and to minimize any impacts to Park utilities and service systems.

Impact 5.20-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water and Wastewater Facilities: Currently, pit toilets are provided at the Ricardo Campground Complex for the campground, day-use area, visitor center, and campfire center, and at the Red Cliffs day-use area. The General Plan does not include the expansion of, or new developed campgrounds. No significant changes to the Park staff offices and maintenance yard are planned. Modest facility improvements or enhancements proposed in the General Plan would not require additional water spickets, sinks, or toilets. State Parks will use state-of-the art conservation measures. New, limited primitive/environmental and equestrian camping areas would be dry (e.g., no water or other developed facilities). Therefore, State Parks does not anticipate an increase in visitation or staffing, or the need for relocation of wastewater treatment and water supply facilities. Under the General Plan, demand for wastewater treatment and water supply will remain relatively unchanged. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.3 – Utilities*** of the in the General Plan relate to water and wastewater utilities.

***Utilities Goal 1*:** New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Guideline 1-1: Using state-of-the-art conservation measures will minimize water usage at any new Park facility. Primitive/environmental campsites and equestrian camping area will be "dry" (no water or other developed facilities).

Utilities Guideline 1-2: Any new utility lines shall be buried. Siting of buried utility lines shall be done only with prior review by the State Park geologist, a State Park Archaeologist, and other departmental resource specialists.

Utilities Guideline 1-4: Comply with the State Water Resources Control Board for clean, safe water. Compliance may include upgrading the existing water treatment plant.

With implementation of state regulations and laws, and the goals and guidelines listed above, impacts to water and wastewater treatment facilities would be **less than significant**.

See ***Section 5.14, Hydrology and Water Quality***, for further impact analysis.

Storm Water Drainage: Implementation of the General Plan and the limited planned Park improvements would not result in a substantial net increase in impervious surfaces that could in turn create localized increases in stormwater runoff. Any changes in the developed portion of the Park (Ricardo Campground Complex) would be within the existing footprint. There is an existing stormwater drainage diversion ditch at the Ricardo Campground Complex which carries stormwater flow around and away from the

Park compound and deposits the water on the downstream side. This drainage ditch follows the natural terrain to a low point where the storm flow would naturally drain.

There are no other stormwater drainage systems within the Park; stormwater runoff is directed to vacant areas for overland flow and groundwater recharge. New Park facilities could include non-motorized trails, parking/staging areas, and unimproved primitive backcountry camping areas, which would not be paved. Although these areas would become less permeable with use over time through soil compaction, stormwater percolation would still occur. Furthermore, these areas would be few in number and small in size, and therefore would not result in the creation of substantial new impervious surfaces that could result in enough stormwater runoff to create flooding. It is not anticipated that implementation of the General Plan would require or result in the relocation or construction of new or expanded storm drainage facilities, the construction or relocation of which could cause significant environmental effects. However, should any new systems need to be installed to provide additional drainage, Parks would follow all applicable state laws and the new system would implement appropriate Best Management Practices (BMPs) to minimize water quality impacts as well as minimize the amount of flow into water bodies that could be negatively impacted by sediment or pollutant transport from the use of the Park. Therefore, impacts from implementation of the General Plan to stormwater drainage systems and facilities would be **less than significant**. S*ee* ***Section 5.14, Hydrology and Water Quality,*** for further impact analysis.

Electric Power, Natural Gas or Telecommunications Facilities: The Park currently does not have electricity from a utility provider. Solar panel systems and diesel generators provide all power. The solar arrays are in the Ricardo Campground Complex. Propane is used for heating and cooking at staff housing. No telephone service is provided by commercial communications providers. Telephone service uses microwave and satellite technology. Cell phone service is available in the developed areas of the Park. Internet service for the Park operations facilities is provided by a relay system through California City. Improvements to all of these utilities systems would be beneficial for the Park.

The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.3 – Utilities*** of the in the General Plan relate to utilities.

***Utilities Goal 1*:** New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Guideline 1-3: If new development is intended (e.g., development of a new visitor or operations facility), primary consideration should be given to the use of passive solar design, solar-assisted heating, and air conditioning, and other alternative energy sources, and the incorporation of passive cooling and heating techniques to reduce energy use including building orientation and insulation.

With implementation of state regulations and laws, and the goals and guidelines listed above, impacts from improvements to electric power, natural gas, and telecommunications would be **less than significant**.

Impact 5.20-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The California Aqueduct is the primary source of potable water at the Park. State Parks treats the water for use in the Ricardo Campground Complex. Despite current and limited potential increases in demand in the Park under the General Plan, conservation methods would be implemented. State Parks will use state-of-the art conservation measures to minimize water usage to better ensure sufficient water supplies are available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

As described above, ***Utilities Goal 1*** and ***Utilities Guideline 1-1*** will promote water conservation; therefore, the impact from General Plan implementation to water supply would be **less than significant**.

Impact 5.20-3 Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The Park would continue to accommodate its wastewater needs through on-site septic systems and leach lines, and a waste water treatment facility at the Ricardo Campground Complex, which includes staff housing. Future wastewater treatment requirements would be similar to existing conditions. Upgrades to the wastewater treatment facility may be needed in the future, and would be evaluated under CEQA at that time. Therefore, the impact from General Plan implementation on wastewater treatment capacity would be **less than significant**.

Impact 5.20-4 Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Because the General Plan includes modest improvements and facilities, State Parks does not anticipate significant increased demand beyond existing conditions or generating solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.3 – Utilities*** and ***Section 4.6.1.4 – Sustainability and Greenhouse Gas Emissions*** of the in the General Plan relate to waste reduction.

Utilities Goal 1: New facilities within the Park will be designed to maximize efficiency, energy conservation, and resource conservation efforts.

Utilities Guideline 1-5: Comply with all CalRecycling goals and guidelines established by Resources Agency for trash storage and removal.

Sustainability Goal 1: Reduce, reuse, and recycle waste produced by Park visitors and operations within the Park.

Sustainability Guideline 1-1: Find new means to reduce, reuse, and recycle materials to conserve resources and reduce greenhouse gas emissions by reducing the need to acquire and process raw materials. Implement these techniques when they don't have adverse effects on Park resources.

Sustainability Guideline 1-2: Encourage resource efficiency by Park visitors through education about the importance of reducing, reusing, and recycling waste.

Sustainability Guideline 1-3: Where feasible, compost waste to reduce the amount of refuse transported to off-site landfills.

Implementation of the General Plan goals and guidelines listed above would ensure that the existing waste facilities will be adequate to meet the waste generated by the Park; therefore, this impact would be less than significant.

Impact 5.20-5 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

State Parks complies with all federal, state, and local management and reduction statutes and regulations related to solid waste. Trash is collected by State Parks staff in the Ricardo Campground Complex and the Red Cliffs parking area. Trash is collected and picked up by a commercial service. Additionally, with the General Plan goals and guidelines related to solid waste reduction detailed above (***Utilities Goal 1, Utilities Guideline 1-5; Sustainability Goal 1, Sustainability Guidelines 1-1, 1-2, and 1-3***), the impact from General Plan implementation would be **less than significant.**

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5.21 WILDFIRE

This section analyzes impacts related to wildfire that would result from the implementation of the General Plan. The following analysis considers drivers of wildfire risk, and also provides background and context on wildfire concepts in addition to the information provided in ***Chapter 2 - Existing Conditions*** of the General Plan. These concepts include wildfire regime and wildfire behavior, and wildfire management practices. Actions that the Park will incorporate into future facilities as well as operation of the Park are found within ***Chapter 4 - The Plan, Section 4.6 Goals and Guidelines,*** and below.

5.21.1 Regulatory Setting

5.21.1.1 Federal

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 provides the legal basis for the Federal Emergency Management Agency's (FEMA) mitigation planning requirements for state, local, and tribal governments as a precursor to mitigation grant assistance. The Disaster Mitigation Act of 2000 requires that local governments prepare a Local Hazard Mitigation Plan (LHMP) that must be reviewed by the State Mitigation Officer, approved by FEMA, and renewed every 5 years. The LHMP must include a planning process, a risk assessment, a mitigation strategy, and plan maintenance and updating procedures to identify the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government. Natural hazards include, but are not limited to, earthquakes, tsunamis, tornadoes, hurricanes, flooding, and wildfires.

5.21.1.2 State

California Department of Parks and Recreation District Management Plan

- *Management Plan Section 0303.1.3.1.1: Planning*

  Section 0303.1.3.1.1 requires preparation of unit wildfire management plans and unit prescribed burn plans.

- *Management Plan Section 0131.2: Wildfire*

  Section 0131.2 states that wildland fire, whether human-caused or naturally ignited, may contribute to or hinder the achievement of Park management objectives. Therefore, Park fire management programs will be designed to meet Park resource management objectives while ensuring that firefighter and public safety are not compromised.

- *California Department of Parks and Recreation Operations Manual – Natural Resources Handbook*

  The Natural Resources Chapter of the Department of Parks and Recreation Operations Manual is the basic natural resource policy document for the State Park System. The policies, definitions, processes, and procedures contained in this chapter guide the management of the natural resources under the jurisdiction of the Department of Parks and Recreation, including naturally occurring physical and biological resources and associated intangible values, such as natural sounds and scenic qualities. The chapter guides and directs the various programs of the Department that affect the recognition, protection, restoration, and maintenance of the natural resources so that their heritage values may be effectively perpetuated and enjoyed by present and future generations of State Park System visitors.

- *California Public Resources Code*

  Section 4102 of the California Public Resources Code defines State Responsibility Areas (SRA) as areas of the state in which the California Department of Forestry and Fire Protection (CAL FIRE) has determined that the financial responsibility for preventing and suppressing fires lies with the State of California. SRAs are lands in California where CAL FIRE has legal and financial responsibility for wildfire protection. SRA lands typically are unincorporated areas of a county, are not federally owned, have wildland vegetation cover, have housing densities lower than three units per acre, and have watershed or range/forage value. Where SRAs contain built environment or development, the local government agency assumes responsibility for fire protection (CAL FIRE 2007).

  LRA include lands that do not meet criteria for SRAs or federal responsibility areas, or are lands in cities, cultivated agricultural lands, and nonflammable areas in the unincorporated parts of a county. LRAs can include flammable vegetation and wildland-urban interface areas. LRA fire protection is provided by the local fire departments, fire protection districts, county fire departments, or by contract with CAL FIRE

  Section 4290 of the California Public Resources Code was adopted for establishing minimum wildfire protection standards in conjunction with building, construction, and development in State Responsibility Areas (SRAs). Under Section 4290, the future design and construction of structures, subdivisions, and developments in SRAs must provide for basic emergency access and perimeter wildfire protection measures as specified in Section 4290. These measures provide for road standards for emergency access, signing and building numbering, water supply reserves, and fuel breaks and greenbelts. Local standards that exceed those of Section 4290 supersede Section 4290.

Section 4291 of the California Public Resources Code defines and describes fire protection measures and responsibilities for mountainous, forest, brush, and grass covered lands. These measures include, but are not limited to, the following:

- Maintenance of defensible space of 100 feet from each side and from the front or rear of a structure, but not beyond the property line.
- Removal of a portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe.
- Maintenance of a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood. Construction or rebuilding of a structure must comply with all applicable state and local building standards.

Section 4311 of the California Public Resources Code prohibits lighting, building, or use of a fire within a Unit except in a camp stove or fireplace provided, maintained, or designated for such purpose. Portable camp stoves may be used in portions of Units approved by State Parks. Section 4311 further prohibits, upon a finding of extreme fire hazard by State Parks, smoking or building fires in portions of Units other than those designated by State Parks for such purposes.

Section 4427 of the California Public Resources Code limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, when the equipment is located on or near land covered by forest, brush, or grass. Before such equipment may be used, all flammable material, including snags, must be cleared away from the area around such operation for a distance of 10 feet. A serviceable round point shovel with an overall length of not less than 46 inches and a backpack pump water-type fire extinguisher, fully equipped and ready for use, must be maintained in the immediate area during the operation.

Section 4431 of the California Public Resources Code requires users of gasoline-fueled internal combustion–powered equipment operating within 25 feet of flammable material on or near land covered by forest, brush, or grass to have a tool for firefighting purposes at the immediate location of use. This requirement is limited to periods when burn permits are necessary. Under Section 4431, the Director of Forestry and Fire Protection specifies the type and size of fire extinguisher necessary to provide at least a minimum assurance of controlling fire caused by use of portable power tools during various climatic and fuel conditions.

Section 4442 of the California Public Resources Code prohibits the use of internal combustion engines running on hydrocarbon fuels on any land covered by forest, brush, or grass unless the engine is equipped with a spark arrestor and is constructed, equipped, and maintained in good working order when traveling on

any such land.[1] In addition, a spark arrester affixed to the exhaust system cannot be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite flammable material.

- *California Building Standards Code*

  The State of California's minimum standards for structural design and construction are provided in the California Building Standards Code (CBSC) (24 CCR). The standards set forth in the CBSC are based on the International Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous more detailed or more stringent regulations. The CBSC provides standards for various aspects of construction, including (but not limited to) excavation, grading, and earthwork construction. In accordance with California law, certain aspects of the proposed project would be required to comply with all provisions of the CBSC. The CBSC requires certain building requirements to adhere to the Fire Code (Part 9). Local agencies must ensure that development in their jurisdictions comply with guidelines contained in the CBSC. Cities and counties can, however, adopt building standards beyond those provided in the code.

- *Very High Fire Hazard Severity Zones (Government Code 51177)*

  Very High Fire Hazard Severity Zones (FHSZ) are defined by Government Code Section 51177 as areas designated by CAL FIRE as having the highest possibility of having wildfires. These zones are based on consistent statewide criteria and the severity of fire hazard that is expected to prevail in those areas. The Very High FHSZs are also based on fuel loading, slope, fire weather, and other factors, such as wind, that have been identified by CAL FIRE as a major cause of the spreading of wildfires. FHSZ maps are produced and maintained for each county. 2018 California Strategic Fire Plan CAL FIRE's Strategic Fire Plan provides an overall vision for a built and natural environment that is more fire resilient through the coordination and partnerships of local, state, federal, tribal, and private entities (CAL FIRE 2018). First developed in the 1930s, the Strategic Fire Plan is periodically updated; the current plan was prepared in 2018. The Plan analyzes and addresses the effects of climate change, overly dense forests, prolonged drought, tree mortality, and increased severity of wildland fires through goals and strategies. The primary goals of the 2018 Strategic Fire Plan are to do the following.

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[1] A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles larger than 0.0232 inch from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the U.S. Forest Service.

- Improve the availability and use of consistent, shared information on hazard and risk assessment.
- Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities.
- Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans.
- Increase awareness and actions to improve fire resistance of human-made assets at risk and fire resilience of wildland environments through natural resource management.
- Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers.
- Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services.
- Implement needed assessments and actions for post-fire protection and recovery.

5.21.1.3 Local

Although State Parks is not subject to Kern County jurisdiction on state lands, Kern County Office of Emergency Services is an extension of the State of California Emergency Plan and Parks would coordinate with Kern County in the case of an emergency. Therefore, a discussion of this plans is included here.

Kern County Emergency Operations Plan

This plan was written by the Kern County Office of Emergency Services and is an extension of the State of California Emergency Plan. It establishes the emergency organization, assigns responsibilities, establishes policies, and provides for coordination among staff. This Emergency Operations Plan (EOP) will be reviewed and tested regularly and revised when necessary to meet changing conditions and needs. The Director of Emergency Services is empowered to update existing plans and agreements and approve the addition of contingency plans to the Basic Plan, subject to review by the Emergency Council.

5.21.2 Environmental Setting

5.21.2.1 Local and State Responsibility Areas

Fire prevention areas considered to be under state jurisdiction are referred to "state responsibility areas" or SRAs, and CAL FIRE is responsible for vegetation fires within SRA lands. In general, SRA lands contain trees producing, or capable of producing, forest products; timber, brush, undergrowth, and grass, whether of commercial value or not, that provide watershed protection for irrigation or for domestic or industrial use; or lands in areas that are principally used, or are useful for, range or forage purposes.

Fire prevention areas considered to be under local jurisdiction are referred to as "local responsibility areas" or LRAs. LRAs include incorporated cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government. Kern County Fire Department is the lead fire agency for the portions of the project area that are within the LRA. There are three Kern County Fire Stations located within 15 miles of the Park. Kern County Fire Station 85 is located approximately 14 miles south of Red Rock Canyon State Park in California City, Station 73 is located approximately 15 miles north in Inyokern, and Station 75 is located approximately 15 miles east in Randsburg. State Parks staff do not actively participate in firefighting operations, but do contribute to law enforcement issues as they relate to fires within the Park (Dingman, pers. comm., 2022).

Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189 require identification of fire hazard severity zones within the State of California. Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upward into trees and tall brush), and ember production and movement within the area in question. In SRAs, CAL FIRE is required to delineate three wildfire hazard ranges: moderate, high, and very high. As shown in Figure 5.21-1 and Figure 5.21-2, the Park exists within a LRA and a SRA. The portion of the Park located to the west of SR 14 is designated by CAL FIRE as Moderate Fire Severity Zones; the remainder of the project site is not designated (CAL FIRE 2007).

As stated above, CAL FIRE identifies only very high fire hazard severity zones in LRAs. There are no very high fire hazard severity zones in the Red Rock Canyon State Park planning area (CAL FIRE 2007).

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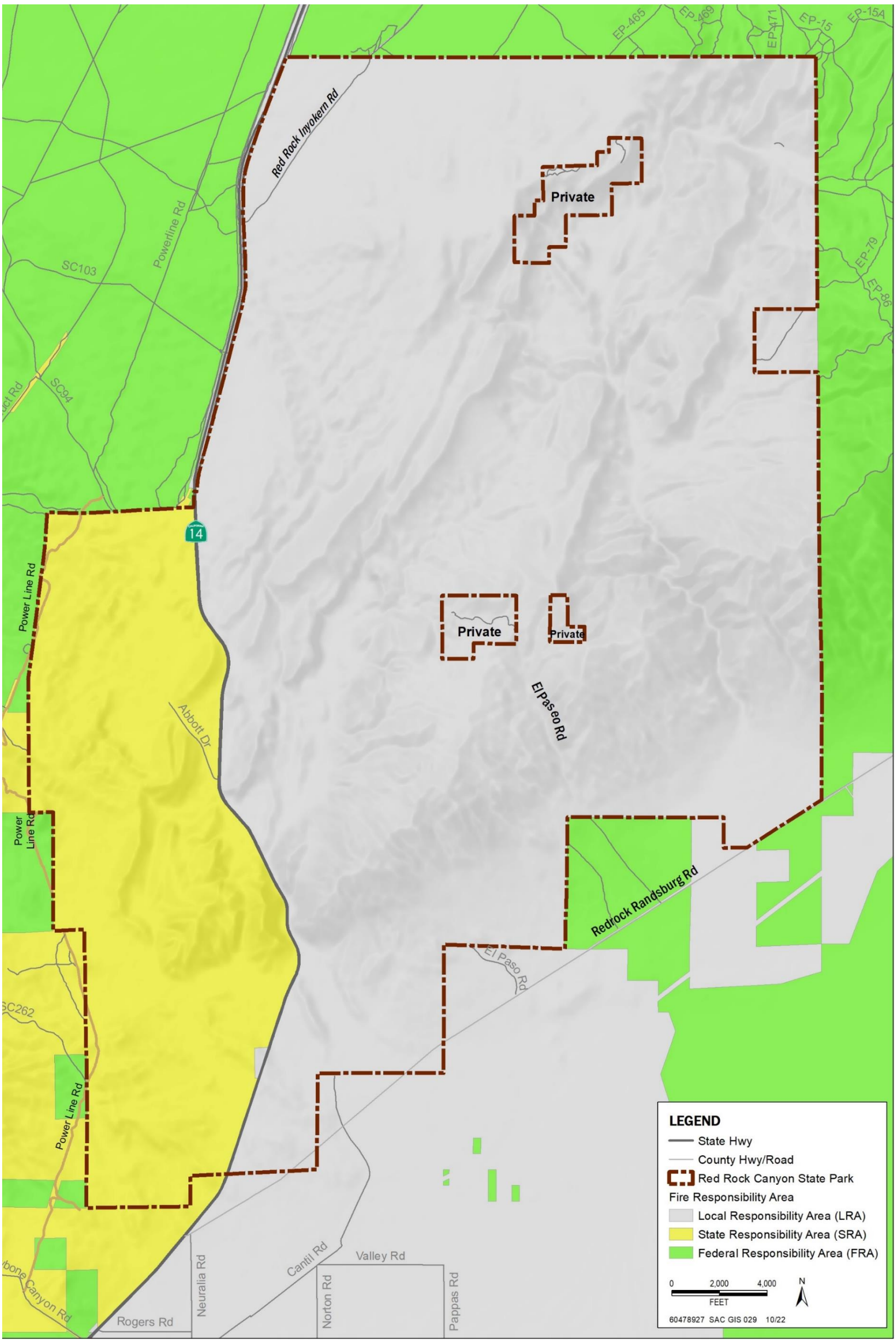

Figure 5.21-1. Fire Responsibility Areas

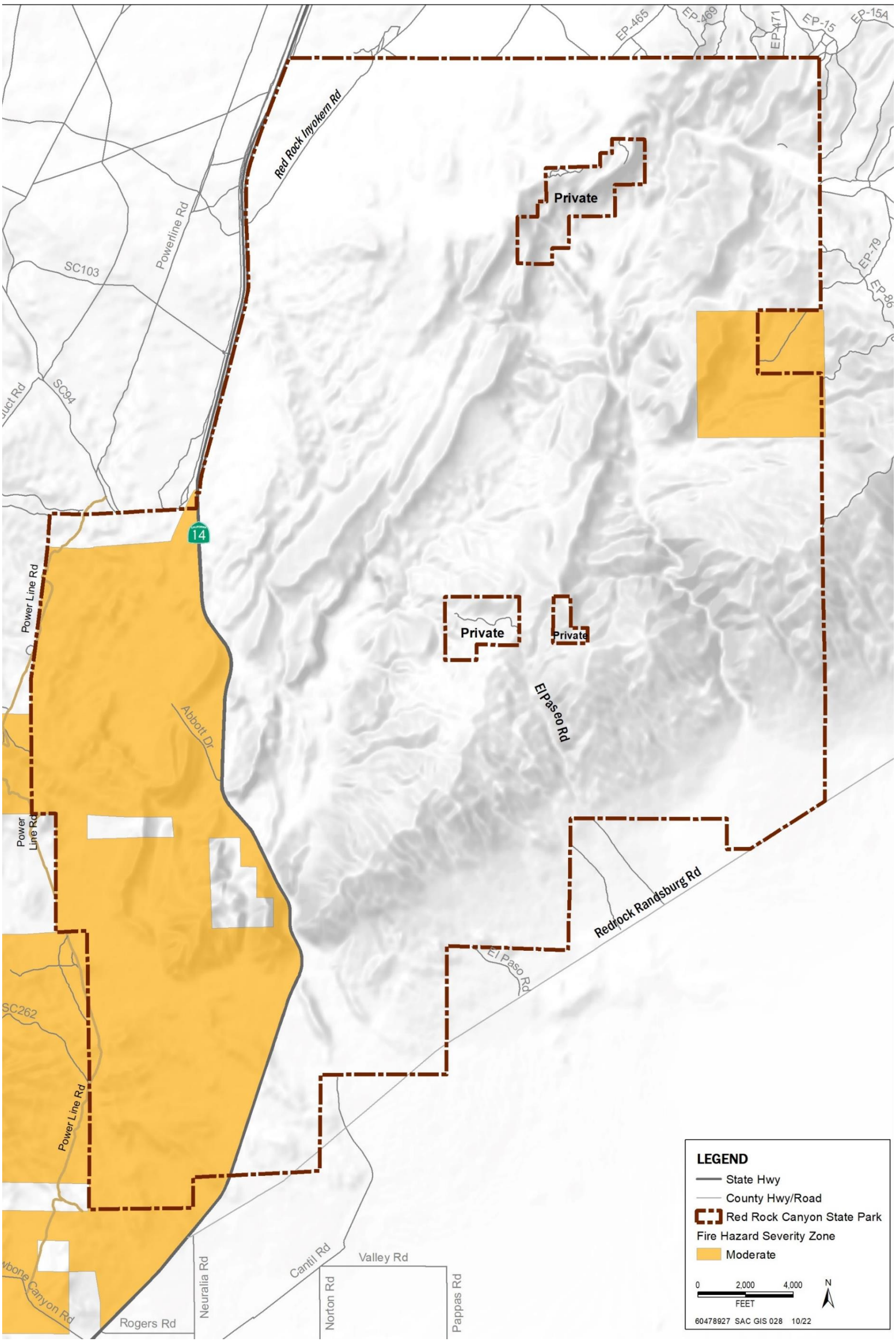

Figure 5.21-2. Fire Hazard Severity Zones

Wildfire Regime and Controlling Factors

Wildfire behavior is a product of several variables, primarily climate, vegetation, topography, and human influences, which intermix to produce local and regional fire regimes that affect how, when, and where fires burn. The fire regime in any area is defined by several factors, including fire frequency, intensity, severity, and area burned. Each of these are important for an understanding of how the variables that affect fire behavior produce fire risks. Fire frequency refers to the number of fires that occur in a given area over a given period of time, fire intensity refers to the speed at which fire travels and the heat that it produces, fire severity involves the extent to which ecosystems and existing conditions are affected or changed by a fire, and area burned is the size of the area burned by wildfire.

Three of the four variables controlling wildfire behavior (climate, vegetation, and human influence) are rapidly changing in California and elsewhere—changes which are producing a fire regime that, in areas like the Mojave Desert where Red Rock Canyon State Park is located, is increasingly susceptible to fire danger and gradually becoming more hazardous. This region has historically been characterized by patchy, small fires but is beginning to shift to a regime of continuous, large fires due to the dramatic increase in non-native annual grasses that produce continuous fine fuel beds. The Mojave Desert region is generally defined by low to moderate fire hazard, with relatively small, infrequent, and patchy burns (Klinger et. al 2021). Warming, frequent droughts, and the legacy of past management policies, combined with the increase in development and expansion of the wildland-urban interface (WUI) has increased the possibility of catastrophic damage during wildfires, which poses a substantial threat and cost to society. Wildfires in California have, consequently, become an increasing topic of concern for Californians, particularly for those who live in or near the WUI.

Human Influence

Human influence on wildfire is broad and can be substantial. It includes direct influences such as the ignition and suppression of fires, and indirect influence through climate change and alterations in land use patterns that support modified vegetative regimes. Anthropogenic influence more directly controls fire frequency than area burned because anthropogenic ignitions are responsible for a large number of ignitions, but once started, fire spread and behavior become a function of fuel characteristics, terrain, and weather conditions. Areas where human influence is concentrated, but not so much so that the environment reflects an urban setting, greatly exacerbate the risk of wildfire due to the potential capacity for human-caused ignitions and fire spread (Balch et al. 2017).

Wildfire ignitions can be generated by either natural or human causes, the proportion of which depend on a variety of factors, including the presence of human activity and local climate and weather patterns. However, the greater share of ignitions across the U.S.

are human-caused. Human-induced wildfire ignitions have the ability change fire characteristics in two ways: (1) changing the distribution and density of ignitions, and (2) changing the seasonality of burning activity (Balch et al. 2017). A study of wildfires across the U.S. for the 20-year period between 1992 and 2012 showed that 82 percent of wildfires during that period were started by human causes (Balch et al. 2017), while in California specifically, humans account for starting approximately 95 percent of wildfires in the state (Isaacs-Thomas 2020). Circumstances in California have made the environment particularly vulnerable to human- caused fires with expansion of the WUI and introduction of more people in areas susceptible to wildfire at all times of the year

Human ignitions include a multitude of sources, including escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson (Keeley and Syphard 2018). Areas near human development, especially areas near campgrounds and roads, consequently, generate fires at a more frequent rate than very remote or urban areas (Mann et al. 2016).

Climate Change

Wildfire activity is closely related to temperature and drought conditions (Westerling et al 2006; Schoennagel et al. 2017). In recent decades, increasing drought frequency and warming temperatures have led to an increase in wildfire activity (Westering et al. 2006). In particular, the western U.S. has seen increases in wildfire activity in terms of area burned, number of large fires, and fire season length (Westerling et al. 2006; Abatzoglou and Williams 2016). It is estimated that since 1985, more than 50 percent of the increase in the area burned by wildfire in the western United States is attributable to anthropogenic climate change (Abatzoglou and Williams 2016). As climate change persists, it will produce ever-increasing temperatures and drier conditions that will generate abundant dry fuels. All wildfires (those initiated by both natural and manmade sources) tend to be larger under drier atmospheric conditions and when fed by drier fuel sources (Balch et al. 2017). Additionally, climate change has led to more favorable wildfire conditions during a longer period of the year as the spring season has warmed—driving an earlier spring snowmelt, and as winter precipitation has overall decreased (Westerling et al. 2006). Climate change will continue to produce conditions for a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year.

Wildfire Management

Historically, humans have intervened deliberately and dramatically in the fire regime through Native American use of fire, followed by fire suppression and, more recently, actions that affect fuel connectivity. The legacy land management practice of fire suppression has led to a buildup of forest fuels and an increase in the occurrence and

threat of large, severe fires (Westerling et al. 2006). With the expansion of the WUI and the threat that large, severe, intense wildfires pose, fire suppression remains the management technique for more than 95 percent of wildfires in the U.S. (Schoennagel et al. 2017). Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Modern wildfire management practices may also encompass actions targeted at reducing human wildfire ignition through education programs.

Fuels Management

Vegetation treatment is a primary approach to wildfire management, because it can reduce the intensity and severity of wildfire, slowing fire movement and creating favorable conditions for firefighting to protect targeted, high-value resources (Carey and Schuman 2003, Agee and Skinner 2005, Prichard et al. 2010). Fuel reduction has proven successful where it is targeted at protecting specific resources in limited geographic areas, such as in areas of extreme fire danger or in the WUI. Areas that are treated often exhibit different fire progression and severity characteristics from areas that are not treated (Carey and Schuman 2003, Agee and Skinner 2005, Prichard et al. 2010).

Fuel treatments are most effective when wildfires are driven by prevailing seasonal conditions of heat intensity and air, soil, and fuel moisture content. In circumstances where extreme weather conditions exist, such as in cases of extremely low humidity and very high winds, fuel treatments are less effective (Brown et al. 2012). While there is no evidence that definitively shows that forest fuel treatments can lead to a reduction in the overall size of a fire (USFS 2009; Schoennagel et al. 2017), such treatments can aid in protecting public safety, and homes and other structures by reducing wildfire intensity and severity in treated areas under normal fire conditions. Where treatments have occurred, the pattern of wildfire progression may be limited in some areas to low-intensity underbrush and surface burning, which can create safe conditions for firefighters to successfully suppress fires in areas near homes or other structures, or around areas of high resource value. Fuel treatments also promote faster forest recovery post-fire by causing less damage to soils and leaving some live vegetation within burn areas (USFS 2009), protecting resources such as soils, wildlife, riparian function, and wetlands (Kim et al. 2013).

Wildfire Prevention Programs

Wildfire prevention education has been shown to be an effective form of wildfire management by successfully reducing the incidence of wildfire (Hermansen-Baez et al. 2019). Wildfire prevention education includes methods targeted at reducing accidental, preventable wildfire starts. Such prevention education might include public service announcements on radio or TV, visiting homeowners in at-risk areas, signs, news releases, presentations at public forums, or distributing handouts such as brochures and

fliers. Other effective wildfire prevention programs can include enforcement of regulations prohibiting high-risk activities (e.g., fireworks). Wildfire prevention programs can be a cost-effective approach to reducing the incidence of wildfire because it reduces future firefighting costs, which can offset the initial costs associated with implementing these programs (Hermansen-Baez et al. 2019).

Red Rocks Canyon State Park Wildfire Regime

Red Rocks Canyon State Park consists of approximately 25,324 acres of public land within the western Mojave Desert along the El Paso Mountain Range, approximately 80 miles east of Bakersfield, CA. Surface waters are scarce in the desert region and streams are typically ephemeral and formed by flashy, episodic events. The majority of the park consists of desert scrub (21,777 acres) with a band of Desert outcrop and Badlands (2,821 acres) diagonally bisecting the park from the northeast to the southwest. The remainder of the land cover types within the park consist of riparian (673 acres), wetland (2 acres), and developed (76 acres). Invasive plant species are also widespread throughout the park, many of which exhibit higher flammability characteristics than native plant communities and contribute more substantially to wildfire risk. The frequency of wildfires within the Park has not been a significant issue in the past, but the risk of invasion by non-native annual grasses could exacerbate the risk of wildfire within the park (Fusco et al. 2019).

Historically infrequent in the southwestern deserts, fire has increased in frequency and extent in recent decades and has been attributed to the invasion of non-native annual grasses (e.g., red brome [*Bromus rubens*] and buffelgrass [*Pennisetum ciliare*)]) (Abella 2010; Brooks and Matchett 2006). Non-native plant invasions can alter fire regimes by changing the frequency, intensity, extent, type, or seasonality of fire (Brooks and Matchett 2006). However, invasive non-native plant species have historically not been a substantial issue in the Park. Based on the state fire history inventory, wildfire has never been reported in the Park (CAL FIRE 2017). The nearest historical fires are all greater than 10 miles west and north of the Park in the southern Sierra Nevada Mountains. The most recent fire in the vicinity of the Park was the 48,000-acre 2016 Erskine Fire, which burned within 14 miles of RRCSP (CAL FIRE 2017).

State Parks Wildfire Management

CA State Parks has developed a balanced process to address forest fuel management (including boundary fuel management) where appropriate and in accordance with its mission and environmental compliance and permitting requirements. Fuel modification is only undertaken when it is consistent with existing park plans, including General Plans and other management plans as required by Public Resources Section 5002.2. State Parks takes wildland fire preparedness seriously, undertaking wildfire management planning, vegetation management and fuel modification; internal policies guide training,

reporting and other fire related activities. Management actions for wildland fires on State Park lands include: pre-fire planning, fuel (vegetation) management, public safety measures, fire control support, post-fire evaluation and rehabilitation. State Parks is an active participant on the Governor's Forest Management Task Force, which is coordinating statewide efforts for fire preparedness, wildland fire planning, and is working to speed implementation of fuel reduction and prescribed fire projects statewide (DPR 2022).

Fuels Management

Fire management activities within the Red Rock Rocks Canyon State Park currently focus on preventing the spread of invasive non-native annual grasses which can be highly flammable and serve to ignite the other vegetation within the park, that is typically less susceptible to ignition (Fusco et al. 2019).

5.21.3 Project Impacts

5.21.3.1 Threshold of Significance

Based on Appendix G of the CEQA Guidelines, project would have a potentially significant impact related to wildfire if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

5.21.3.2 Issues Not Discussed Further in This EIR

Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment (c)— Infrastructure designed to reduce the movement of wildfires (such as fuel breaks, emergency water sources, power lines or other utilities) is not proposed under the General Plan. This would result in **no impact** under CEQA, and this issue is not discussed further in this EIR.

5.21.4 Impact Analysis

Impact 5.21-1 Substantially impair an adopted emergency response plan or evacuation plan

State Parks does not currently maintain an emergency access plan specific to Red Rocks Canyon State Park. Emergency access and evacuation in the event of a wildfire at Red Rocks Canyon State Park is coordinated with Kern County's Office of Emergency Services. State Route (SR) 14 is a significant state highway transportation artery that generally runs north-south through the western portion of the Park. Two Kern County roads, Red Rock-Inyokern Road and Red Rock-Randsburg Road intersect the Park's northern and southern boundaries, respectively. Red Rock-Randsburg Road generally proceeds northeast along the park's southern edge, while Red Rock-Inyokern Road runs through a portion of the Park's northwest corner. These roads would help meet evacuation needs from the RRCSP. As discussed in ***Section 5.18 Transportation and Traffic***, implementation of the General Plan does not include any permanent changes to the public roadway network and access would not change during operations. **No impact** on emergency access would result from Park operations. Construction impacts would generally be limited to on-site, and not directly impact the area's public roadways and access to or from nearby properties. Construction activities would not impede emergency vehicles or adopted emergency evacuation plans, and this impact would be **less than significant.**

Impact 5.21-2 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire

Appendix G of the CEQA Guidelines determines wildfire impacts based on whether a proposed project would occur within or near a SRA or on lands classified as very high fire hazard severity zones. As discussed above, more than half of Red Rocks Canyon State Park has no fire hazard severity rating. The remainder of the park is within a SRA and designated by CAL FIRE as Moderate Fire Hazard Severity. These zones are modeled based on vegetation, topography, weather, crown fire potential, and ember production and movement. Additionally, the location of the Park under implementation of the General Plan, will not change and thus, wildfire risks associated with location and topography will not be substantially different from the baseline existing conditions. Based on the state fire history inventory, wildfire has never been reported in the Park (CAL FIRE 2017). As described above, current management actions for wildland fires on State Park lands include: pre-fire planning, fuel (vegetation) management, public safety measures, fire control support, post-fire evaluation and rehabilitation.

As discussed in ***Section 5.3 Project Description***, minor development, primarily consisting of additional parking, primitive campgrounds, picnic areas, and navigation and

education signage are proposed at multiple locations within the Park, as well as improvements to existing facilities. During construction, the primary fire hazards would be from vehicles and construction equipment. Construction vehicles use flammable fuels, such as diesel and gasoline, and would be operated in proximity to dry vegetation; their hot tailpipes or sparks from chains or other metal objects could ignite dry brush, especially during the warmer, dry months between June and October. Therefore, depending on the time of year and location of construction activities, there could be a temporary increase in exacerbated fire risk in the area.

Land use controls have been incorporated into the General Plan: for example, campfires are only allowed in provided metal rings within the campgrounds, and in high fire danger events, a superintendent order is posted which prohibits wood burning fires and only allows for propane. This requirement is designed to contain fires and prevent any accidental spread or ignition of surrounding vegetation.

Fire management activities within the Park currently focus on preventing the spread of invasive non-native species, which can be highly flammable have been known to contribute to the increased susceptibility of wildfires in areas where wildfires have historically been scarce. The following vegetation management goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.2 Other Visitor and Operations Facilities*** and ***Section 4.6.1.10 Vegetation Resources*** and ***Section 4.6.1.13 Climate Change*** of the in the General Plan will be implemented to minimize the spread of invasive non-native grasses, thereby minimizing additional wildfire risks due to the spread of these species.

Facilities Goal 2: Enhance existing facilities within the Ricardo Campground Complex (campground, visitor center, Park operations facilities and maintenance yard) and consider future potential changes to improve staff efficiency and effectiveness and visitor experience.

Facilities Guideline 2-8: Whenever possible, use native vegetation for screening Park operations and maintenance facilities from public view.

Native Plant Communities Goal 1: Promote and restore the sustainability of natural ecosystem processes by actively managing plant community health and development while protecting cultural landscapes and resources. Efforts also will address the conservation of sensitive and unique species and the control of invasive exotic species.

Native Plants Guideline 1-1: State Parks will develop scientifically based vegetation management objectives for habitat restoration and enhancement. Furthermore, California State Parks will develop management plans that avoid or minimize human impacts on the native plant communities within the Park. Tribes will be consulted in the development of such management plans so that

consideration can be given to traditional gathering needs and integration of traditional knowledge.

Native Plants Guideline 1-2: When appropriate, State Parks will seek partnerships with neighboring landowners to implement a congruent plan for restoring and preserving desert plant community health on a landscape scale.

Sensitive Plant Species Goal 1: Protect and conserve all sensitive plant species in the Park by protecting and stewarding the Park's natural ecosystems.

Sensitive Plants Guideline 1-5: State Parks will avoid or minimize human activities that cause imbalances in the natural ecological system. State Parks will conduct management activities, such as invasive exotic plant control and habitat restoration, that foster ecological balance.

Invasive Exotic Plants Goal 1: Manage invasive exotic plants to minimize their negative impacts on native plant and animal species and other natural resources and natural processes.

Invasive Plants Guideline 1-1: State Parks will develop an invasive exotic plant species management plan. The plan will identify, map, monitor, and control exotic plant infestations that threaten native habitats. Monitoring and control efforts may require cooperative work with neighboring landowners, including government agencies like the BLM, to be effective at a landscape scale.

Invasive Plants Guideline 1-2: The management plan will address the ability of horses and other pack animals to carry and spread exotic plant seed throughout the Park. The Park will consider adopting a policy congruent with federal agencies, such as the National Park Service, to evaluate regulations to reduce exotic species introduction. Such a program may include the removal of solid waste by equestrians.

Invasive Plants Guideline 1-3: State Parks will develop interpretive content media about how exotics like tamarisk have altered the Mojave Desert landscape and natural processes.

Climate Change Goal 1: Understand the climate impacts felt to date and predicted impacts based on best available information.

Climate Guideline 1-1: Collect local weather data and determine whether changes recorded in climate data correlate with trends observed in vegetation, wildlife, fire, and hydrology.

Climate Guideline 1-2: Evaluate statewide and regional summaries of anticipated climate change impacts and vulnerabilities. These include but are not limited to the regional summaries in California's Fourth Climate Change Assessment, the California Climate Change Adaptation Plan, and California Department of

Fish and Wildlife's Vulnerability Assessments for range of fish, wildlife, and plants. Track these and other sources of climate science information and guidance as it continues to evolve.

The Natural Resources Handbook - Supplements the DOM and contains specific information pertaining to resource management operations, processes, and procedures such as prescribed fire, wildfire, non-native species, and tree protection guidelines.

0313.2 Fire Management – This section of the natural resources handbook outlines requirements set forth by State Parks that guide wildfire management and prescribed fire management within the State Parks.

0313.2.1.1 Wildfire Management Planning The Department can best protect its facilities, natural and cultural resources, and personnel and visitors by maintaining a park unit wildfire management plan that provides park staff and appropriate fire suppression personnel with important information on park infrastructure, resources values, and general suppression tactics before a wildfire occurs. The format for unit wildfire management plans can be found in the Natural Resources Handbook.

0313.2.1.1.1 Wildfire Management Planning Policy It is the policy of the Department that each Department-operated unit that may experience wildland fires will have a wildfire management plan providing requisite information for managing wildfire events, such as the locations of sensitive park resources, facilities, water supplies and existing roads. Wildfire management plans will be reviewed by designated headquarters staff and approved by the District Superintendent.

0313.2.2 Prescribed Fire Management Recurring fires were an integral part of the evolution of most wildland ecosystems in California. Although the restoration of fire as an ecological process remains an important goal, fire is also used to reduce threatening accumulations of fuels, control exotic plant species, protect forest soils, restore native plant assemblages, and improve habitat for wildlife. Prescribed fire is applied within appropriate ecological parameters. Fire is a disruptive influence in any ecosystem and must be used with assurance that the end result will be consistent with the Department's mandate to preserve and protect California's natural heritage.

0313.2.2.1 Prescribed Fire Management Policy It is the policy of the Department to restore fire to its proper role in native ecosystems in accordance with the broader charge to restore and perpetuate natural ecological processes in the natural environments of the State Park System. Other important objectives consistent with the policy to restore fire to native ecosystems are the

prevention of damaging fires from excessive fuel load and abnormal plant community structure, the improvement of wildlife habitat, the control of exotic species, and various other ecological objectives.

State Parks would prepare wildfire and prescribed burn management plans as well as implement additional Park fire management programs designed to meet Park resource management objectives while ensuring that firefighter and public safety are not compromised as required by the State Parks District Management Plan. Vehicles would be maintained in good working order and equipped with spark arrestors consistent with PRC 4442. All projects within the SRA would provide minimum wildfire protection standards identified in PRC 4290, including providing adequate emergency access. Adherence to these safety measures, when considered together, would minimize the risk of increased frequency, intensity, or size of wildfires and decrease the risk of exposure of people or structures to wildfire. In addition, the continued implementation of fire safety protocols and vegetation management policies outlined in the Natural Resources Handbook would further reduce the potential of wildfires. Therefore, impacts related to implementation of the General Plan to exacerbate wildfire risks would be **less than significant**.

Impact 5.21-3 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes

As discussed in ***Section 5.14 Hydrology and Water Quality,*** the improvements that are proposed under the General Plan would not result in the creation of substantial new impervious surfaces that could result in enough stormwater runoff to create flooding. This project would not expose people or structures to significant risks associated with downstream flooding as a result of drainage changes. Thus, impacts from implementation of the General Plan would be **less than significant**.

As discussed in ***Chapter 2 – Existing Conditions*** of the General Plan, as well as ***Section 5.14 Hydrology and Water Quality***, the Red Rock Canyon area is subject to severe flash flooding from rainfall events. Human and mechanical activities that have altered the watershed, such as wildfire, can increase the severity and effects of flash floods. Flash floods can represent a substantial threat to facilities and human life, depending on the location of facilities, roads, and trails in relationship to known flood hazard areas. The following goals and guidelines found in ***Chapter 4 - The Plan, Section 4.6.1.6 Public Safety*** and ***Section 4.6.1.8 Hydrology Resources*** of the in the General Plan relate to visitor safety and flooding.

Safety Goal 1: Promote visitor safety while recognizing that the desert's climate, geology, wildlife, and vegetation are inherently hazardous. Measures to promote

visitor safety will be taken while considering the importance of maintaining the visitor's experiences of adventure, discovery, and wilderness.

Safety Guideline 1-1: Continually evaluate, expand, and adapt the visitor safety program to increase safety throughout the Park (e.g., communicate extreme climate conditions to the public when they occur).

Safety Guideline 1-3: State Parks will evaluate visitor and environmental hazards and, where appropriate, develop measures to ensure public safety.

Safety Guideline 1-4: States Parks will develop and keep current public safety messaging about where visitors can seek help in an emergency (e.g. Park contact information, locations with cell phone connectivity) and how to recreate in the desert safely. Public safety messaging will be placed on bulletin boards at the Richardo Visitor Center and Ricardo Campground and in day-use picnic and parking/staging areas.

Safety Goal 2: Plan for geological events (e.g., floods, earthquakes) to minimize dangers to lives and facilities. Comply with incident action plans for State Parks and the District.

Safety Guideline 2-3: Structures to be constructed or modified shall be designed to comply with the latest edition of the California Building Standards Code, CCR Title 24.

Safety Goal 4: Ensure that all facilities and structures provide a safe environment for visitors.

Safety Guideline 4-1: Recognize the potential for major flash flood events and ensure that Park facilities are sited to avoid flash flood damage.

Hydrology Goal 2: Consider areas of flooding impacts when planning for visitor services or additional facilities within the Park.

Hydrology Guideline 2-1: The potential for flooding shall be evaluated before developing facilities and public use areas. However, local flash flooding is possible in other areas in the unit.

The Ricardo Campground Complex and Red Cliffs Focused Management Areas are not located in a FEMA 100-year flood zone. With implementation of the General Plan goal and guidelines listed above, and compliance with the requirements of the DPR Natural Resources Operations Manual, impacts from flooding would be **less than significant**.

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5.22 Other CEQA Considerations

This chapter addresses California Environmental Quality Act (CEQA) considerations that are required as part of an EIR, including:

- Significant and Unavoidable Environmental Effects (Section 5.22.1),
- Irreversible and Irretrievable Commitments of Resources and Significant Irreversible Environmental Changes (Section 5.22.2),
- Growth-Inducing Effects (Section 5.22.3), and
- Cumulative Impacts (Section 5.22.4).

5.22.1 Significant and Unavoidable Environmental Effects

Implementation of the goals and guidelines contained in **Chapter 4 - The Plan**, along with compliance with applicable federal and state laws and regulations, avoids potential significant effects or maintains them at a less than significant level, as described in the specific resource topics of this EIR. Therefore, no unavoidable significant environmental effects associated with the implementation of the General Plan would occur.

5.22.2 Irreversible and Irretrievable Commitments of Resources and Significant Irreversible Environmental Changes

A commitment of resources is irreversible and irretrievable when the use or consumption of such resources is neither renewable nor recoverable for use in the future. Section 15126.2 of the CEQA Guidelines require a discussion of such resources. The commitment of resources refers to the use of nonrenewable resources such as fossil fuels, water, and electricity, and also to changes to land use which would commit future generations to similar uses.

The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms. The analysis in this EIR indicates that no significant irreversible changes to the physical environment would occur from the implementation of the General Plan. Implementation of goals and guidelines included in the General Plan would prevent irreversible and irretrievable commitments of resources.

The General Plan includes a variety of new operations facilities, primitive camping sites, equestrian camping and facilities, reserves, etc. and proposes conceptual new trailheads, interpretive opportunities, picnic areas, and parking as shown in **Chapter 4 - The Plan**. These changes may be considered a long-term commitment of resources; however, the impacts resulting from these facilities could be reversed through removal of the facilities and discontinued access and use. Parks removes, replaces, or realigns

facilities, such as primitive roads and trails, to protect sensitive resources or where activities significantly impair or detract from the natural or scenic setting or quality of Park uses determined to be of primary importance.

Energy resources would be consumed in the form of gasoline, diesel fuel, or oil for equipment and transportation vehicles, and human labor and propane would be used for heating. Construction activities would generate non-recyclable materials, such as solid waste and construction debris. There are no unusual characteristics of any projects or facilities envisioned in the General Plan that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the County and region. This impact is projected to be minor due to the limited number of facilities planned and use of sustainable practices in construction, maintenance, and operations, as proposed in the General Plan through various goals and guidelines, including Facilities Guideline 1-6 that promotes incorporation of sustainable features and high-performance facility design to the maximum extent possible. The goals and guidelines also include actions to use renewable energy generation systems, such as solar and other alternative energy sources (Utilities Guideline 1-3) and promotes the acquisition and use of low- or zero-emission vehicles for Park staff (Greenhouse Gas Guidelines 1-4). These measures would reduce the use of non-renewable energy resources as part of Park operations and with implementation of the General Plan. Building materials would include a variety of materials such as rocks, wood, concrete, glass, steel, and other materials. In addition, Sustainability Guideline 1-1 encourages finding a new means to reduce, reuse, and recycle materials to conserve resources and reduce greenhouse gas emissions by reducing the need to acquire and process raw materials. Using these nonrenewable resources is expected to account for a small portion of the resources and their area of origin and would not affect the availability of these resources for other needs within the area. Therefore, General Plan implementation could result in limited irreversible and irretrievable commitment of energy and material resources during construction and operation.

5.22.3 Growth-Inducing Effects

CEQA (CEQA Guidelines, Section 15126.2[d]) requires an examination of the direct and indirect impacts of the proposed project, including the potential of the project to induce growth leading to changes in land use patterns and population densities and related impacts on environmental resources. A project has the potential to induce growth both directly and indirectly. Direct growth-inducement would result if a project involved construction of new housing. Indirect growth-inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);

- a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; or,
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area) or adding development adjacent to undeveloped land.

Growth-inducement itself is not an environmental effect, but it may lead to foreseeable environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

The General Plan does not include development of new housing and would not generate the need for new staffing. One of the intended outcomes of the General Plan would be to allow for stable and sustainable overall visitation to the Park as a whole that would not encourage an increase in annual visitor numbers. Thus, the General Plan would not foster economic growth by creating addition demand for tourist services in the adjacent communities and surrounding region. Therefore, the General Plan would not result in additional development or directly foster population growth.

The General Plan does not propose new or expansion of existing roads or utility infrastructure. Therefore, the proposed projects would not induce substantial population growth indirectly through the extension of roads or other infrastructure.

5.22.4 Cumulative Impacts

5.22.4.1 Introduction

Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Where a project's incremental effect is not cumulatively considerable, the effect need not be considered significant, but the basis for concluding the incremental effect is not cumulatively considerable must be briefly described. Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can

result from individually minor but collectively significant projects taking place over a period of time" (14 California Code of Regulations [CCR] § 15355).

As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone (14 CCR § 15130(b)). As stated in CEQA, "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable" (PRC § 21083(b)). An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR (14 CCR § 15130(a)(1)). The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable (14 CCR § 15064(h)(4)). The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects that do not contribute to the cumulative impact (14 CCR § 15130(b)).

As discussed throughout this chapter, future development and resource management efforts that may occur with General Plan implementation would not result in significant project-level environmental impacts. The goals and guidelines in the General Plan would preserve, protect, and restore resources and otherwise minimize potential adverse physical effect related to biological resources, cultural resources, scenic resources, hazards, water quality, traffic, and public utilities. The management actions reflected in the goals and guidelines of the General Plan would maintain Park's contributions to potential cumulative impacts at less-than-significant.

5.22.4.2 Cumulative Plans and Projects Considered in this Analysis

The CEQA Guidelines, Section 15130(b)(1), identifies two approaches to analyzing cumulative impacts. The first is the summary approach (also known as the "plan" approach), wherein the relevant projections, as contained in an adopted general plan or related planning document that evaluates regional or areawide conditions, are summarized. The second is the list approach, through which a defined set of past, present, and reasonably anticipated future projects producing related or cumulative impacts is considered for analysis. Using both the plan approach and list approach provides the most comprehensive set of land use change that could contribute to potential cumulative effects.

<u>Regional Plans</u>

There are several regional planning efforts near the Park. These include planning efforts by the BLM and Kern County, including general and conservation plans.

Bureau of Land Management

Bureau of Land Management's California Desert Conservation Area Plan. Congress designated the 25 million-acre California Desert Conservation Area (CDCA) in 1976 through the Federal Land Policy and Management Act (FLPMA). The CDCA Plan serves as the land-use guide for the management of public lands. The CDCA Plan and its multiple-use class zoning and special designation strategies for protecting resources and providing users on public lands were approved in 1980. The CDCA Plan includes changes resulting from the CDPA of 1994.

Bureau of Land Management's Northern and Eastern Mojave Desert Management Plan and Final Environmental Impact Statement. The CDCA was amended through six concurrent plans, including the Northern and Eastern Mohave Desert Plan (NEMO). The NEMO planning area is in the northeastern CDCA, primarily the eastern Mojave Desert, western Basin, and Rangelands surrounding Death Valley National Park. The six plans together provide a landscape approach to managing desert ecosystems. While the CDCA Plan still applies, within the NEMO planning area, the plan adopts, for example, standards for public land health and guidelines for grazing management; recovery and/or conservation of federally endangered and threatened plant and animal species; and conservation of special status plants, animals, and natural communities, among other things.

Bureau of Land Management's West Mojave Plan/Habitat Conservation Plan. Red Rock Canyon State Park is in the western Mojave Desert. The West Mojave Plan/Habitat Conservation Plan and CDCA Plan amendment present a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part while providing a streamlined program for complying with the requirements of the California and Federal Endangered Species Acts. The planning area includes 3.2 million acres of public land and 3.0 million acres of private land. The document was produced through a collaborative effort of state and federal agencies and local jurisdictions.

Bureau of Land Management's West Mojave Route Network Project Land Use Amendment and Final Supplemental Environmental Impact Statement.

The West Mojave Route Network Project considers seven planning decisions amending the motor vehicle access, recreation and livestock grazing elements within the CDCA Plan for the West Mojave Planning Area. In addition, the West Mojave Route Network Project also includes implementation-level decisions, including designation of a route network and associated travel management plans.

The analysis in the Supplemental EIS updates the 2005 West Mojave Plan Final EIS analysis of environmental impacts associated with motor vehicle access including soils, air, cultural, riparian and water-associated Unusual Plant Assemblages (UPAs), and

certain biological resources, and environmental impacts associated with the grazing program, including soils and riparian and other water-associated UPAs.

Bureau of Land Management's Desert Renewable Energy Conservation Plan. The Desert Renewable Energy Conservation Plan (DRECP) is a multiagency (BLM, CDFW, USFWS, and California Energy Commission) conservation and planning document intended to guide renewable energy projects in the Mojave, Colorado, and Sonoran Deserts of California. The DRECP is designed to provide for the conservation of sensitive species and ecosystems and streamline environmental review and permitting for renewable energy and transmission projects. The plan will meet the requirements of the Federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and the Federal Land Policy and Management Act.

The DRECP planning area encompasses seven California counties, including Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego, and 22.5 million acres of private, state, and Federal lands. Approximately 50 percent of the planning areas are on BLM-administered lands. Thirteen State Parks lay within the planning area, including Red Rock Canyon State Park.

Onyx Ranch SVRA Management Plan

Onyx Ranch SVRA is the second largest unit of California State Parks Off-Highway Motor Vehicle Recreation Division and is the newest SVRA. Located in Eastern Kern County on the western edge of the Mojave Desert, the SVRA offers over 26,000 acres of scenic and challenging terrain for all-terrain vehicles (ATVs), motorcycles, recreational off-highway vehicles (ROVs), and 4x4 vehicles.

Onyx Ranch SVRA is surrounded by mostly BLM land that traverse across BLM, State Parks, and private land. Onyx Ranch SVRA has semi-developed camping areas that are available, however the majority of park visitors enjoy the option of dispersed camping throughout the park and the surrounding areas.

State Parks is in the process of working on a General Plan for Onyx Ranch SVRA. This plan will provide a comprehensive management plan that will guide the future of Onyx Ranch SVRA for the next 20 to 30 years. The General Plan update will incorporate mission-driven goals and guidelines to focus management efforts on maintaining and improving programs, facilities, visitor experiences, resource management, and regional recreation connectivity.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County.

The Kern County General Plan 2015-2023 Housing Element projects the unincorporated county's population will increase by 47,485 residents (15.5 percent) to 354,020 residents between 2015 and 2023 and the number of housing units will increase by 26,179 units (23 percent) during the same time frame (Kern County 2016, as amended 2021).

Relevant Projects

Relevant projects are those in the vicinity that have the possibility of interacting with the proposed project to generate a cumulative impact (based on proximity and construction schedule) and either are partially occupied or under construction, have received final discretionary approvals, or have applications accepted as complete by local agencies and are currently undergoing environmental review. The projects considered for the cumulative impact analysis are identified in Table 5.22-1.

Table 5.22-1. Relevant Projects

Project	Location/Distance from Red Rock Canyon State Park	Project Description
Aratina Solar Project	Edwards AFB / 25 miles SE	The Aratina Solar Center is a solar project that was unanimously approved by the Kern County Board of Supervisors in October 2021. The Aratina Solar Project is currently under development in eastern Kern County, near the communities of Boron and Desert Lake. The project has undergone a revised site design that increases project setbacks from residential areas by up to a half-mile, in an effort to reduce the visibility of the project to local communities. Aratina 2.0 is a phrase that can be used by Kern County that refers to the revised site design. The project will feature a photovoltaic solar array (no mirrors) and battery system with a generation capacity of up to 530 MWac. The project size will take up to 2,300 acres of private land and create approximately 570 construction jobs.
Bellefield Solar Project	Near CA city / 16 miles south	The Bellefield Solar project was unanimously approved by the California City Planning Commission in April 2022. The Kern County Board of Supervisors approved the majority of the project in December 2021. The Bellefield Solar project is split among numerous parcels, with most parcels being within unincorporated Kern County and about 30% in California City. The project will develop a solar facility and associated infrastructure necessary to generate up to 1,500 megawatts (MW) of alternating current (AC) power with an up to 1,500 megawatt-hour (MWh)-AC energy storage system. It will cover about 8,371 acres. The project's permanent facilities would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, energy storage system(s), and operations and maintenance. Separate mitigation measure plans were created for the unincorporated Kern County and the California City parcels.
Camino Solar Project	South of Tehachapi / > 20 miles SW	The Bureau of Land Management approved the Camino Solar project in May 2020. The Camino Solar project is expected to start construction in early 2023. The project will allow for construction and operation of a solar

Project	Location/Distance from Red Rock Canyon State Park	Project Description
		photovoltaic power generating facility and associated facilities that would generate a combined total of approximately 44 megawatts (MW) of renewable electrical energy and up to 44 MW of energy storage capacity on approximately 150 acres of privately-owned land and 233 acres of land owned by the Bureau of Land Management in unincorporated Kern County. The project site is located approximately 12 miles south of the City of Tehachapi and approximately 16 miles northwest of the unincorporated community of Rosamond. Permanent facilities would include solar panels, service roads, on-site battery storage systems, communication cables, overhead and underground transmission lines, and electrical switchyards, inverters and transformers.
Eland 1 Solar Project	CA city / 12 miles S	The Eland 1 Solar facility is currently under construction and expected to be operating in early 2023. The Eland 1 Solar project is further expanding the Expanded Beacon Project by adding five additional solar facility sites in proximity to the Expanded Beacon Project boundaries. Collectively, the five solar facilities would generate up to 500 MW of renewable electrical energy on approximately 2,652.7 acres of privately-owned land. The project site is in unincorporated Kern County and the five sites are located on 32 parcels. The project site is located south of Munsey Road, east and west of Neuralia Road, east of California SR 14, and north and south of Phillips Road.
Kudu Solar Project	CA city / 12 miles S	The Kudu Solar Project was completed in 2019 in eastern Kern County. It includes a solar photovoltaic generating facility and associated infrastructure necessary to generate up to 500 megawatts of renewable energy and 600 megawatt hours of energy storage capacity on approximately 1,955 acres of privately-owned land. The project's permanent facilities include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, energy storage system(s), inverter stations, and operations and maintenance facilities. The Kudu Solar Project could potentially share infrastructure with the adjacent Eland 1 Solar Project, including but not limited to substations and gentie lines.
RB Inyokern Solar Project	Inyokern, CA / 16 miles NE	The RB Inyokern Solar has not started construction. The proposed project includes the construction, operation, maintenance, and ultimate decommissioning of a 26.6-megawatt alternating current solar facility with energy battery storage units over a 166.5-acre area of privately owned land. It is located north of Highway 178 and is bordered by Highway 395 on the east and by Brown Road on the west. The project would result in permanent impacts to 166.5 acres of desert tortoise and Mohave ground squirrel. The project is expected to result in incidental take of desert tortoise and Mohave ground squirrel, which are designated as a threatened species under CESA.
Sanborn Solar Project	Sanborn, CA / 20 miles south	The Kern County approved the Sanborn Solar Project in 2020. The first phase of the Edwards Sanborn Solar project is completed and its 345 MW of PV and 1,505 MWh of storage are now fully operational. Other phases of the project are still in progress and should be completed by 2024. The Edward's Sanborn project is located in Kern County on land leased from Edwards Air Force Base as well as on adjacent private land. The project will

Project	Location/Distance from Red Rock Canyon State Park	Project Description
		include one PV power-generating facility, on 31 parcels, which would produce a combined total of 220 megawatts of electricity with up to four gigawatt hours of energy storage on approximately 1,200 acres of land. It is generally located south of State Route 58 and immediately east of State Route 14 in the Mojave area.
Supplemental Recirculated Environmental Impact Report (2020/2021) for Revisions to the Kern County Zoning Ordinance – 2020 A, focused on Oil and Gas Local Permitting	County-wide	Board of Supervisors approved in March 2021 Revisions to the Kern County Zoning Ordinance – 2020(A), focused on Oil and Gas Local Permitting Text amendments to various Chapters of Title 19 (Kern County Zoning Ordinance) reconsiders land use approval process for oil and gas exploration, extraction, operations, and production activities. Revisions include, but not limited, site development standards and review process through the following: (a) Removing the "Unrestricted Drilling" Section in Chapter 19.98 and amending the "Drilling by Ministerial Permit" and "Drilling by Conditional Use Permit" Sections (b) Establishing "Tier Area" maps to identify scope of existing and future oil and gas activities and type of permit required; (c) Establishing an Oil and Gas Conformity Review and Minor Activity Review, as part of the "Drilling by Ministerial Permit" Section, to ensure compliance with proposed Implementation Standards and Conditions; (d) Establishing Implementation Standards and Conditions Section; (e) Establishing requirements for property owner signature on site plans with split estate ownership, in some instances; and (f) Revising various Chapters within the Zoning Ordinance to ensure consistency with proposed requirements of Chapter 19.98. These Chapters include: • 19.08 - Interpretations and General Standards; • 19.12 - Exclusive Agriculture (A) District; • 19.14 - Limited Agriculture (A-1) District; • 19.26 - Mobilehome Park (MP) District; • 19.38 - Medium Industrial (M-2) District; • 19.40 - Heavy Industrial (M-3) District; • 19.44 - Open Space (OS) District; • 19.46 - Natural Resources (NR) District; • 19.48 - Drilling Island (DI) District; • 19.50 - Floodplain Primary District; • 19.66 - Petroleum Extraction (PE) Combining District; • 19.81 - Outdoor Lighting (Dark Skies Ordinance); • 19.88 - Hillside Development; • 19.102 - Permit Procedures; and • 19.108 - Nonconforming Uses, Structures, and Lots

5.22.4.3 Geographic Scope

The geographic area that could be affected by the General Plan and its proposed projects varies depending upon the environmental resource being evaluated. Issues considered in a more local context (i.e., construction noise) are not addressed in a greater regional context because the impacts associated with these activities/resources generally occur in close proximity to the proposed project. However, the cumulative effects analysis for other environmental resources includes a larger area, when appropriate. For example, the regional context of air quality and greenhouse gas emissions issues considers the potential effects of projects occurring in surrounding counties and cities. Biological resources have both site-specific and regional geographic scopes, dependent upon the individual resource being evaluated.

Table 5.22-2 presents the general geographic areas associated with the different environmental topics addressed in this EIR.

Table 5.22-2. Geographic Scope of Cumulative Impacts

Issue Area	Geographic Area
Aesthetics	General Plan boundary and surrounding local public viewpoints
Air Quality	East Kern Air Pollution Control District
Biological Resources	Project site and surrounding areas, as well as areas of Kern County corresponding with affected species and habitat
Cultural Resources	General Plan boundary, with regional implications
Energy and Greenhouse Gas	The wasteful and inefficient use of energy is considered in the context of Kern County. Global with emissions levels and rates established at the statewide level
Geology, Soils, and Paleontological Resources	Local (immediate vicinity), and for paleontological resources, the significance of potential finds is considered in the context of California
Hazards and Hazardous Materials	Local (immediate vicinity)
Hydrology and Water Quality	Project site and surrounding areas as well as relevant projects in the Fremont and Indian Wells hydrologic units of the South Lahontan Hydrologic Basin and Indian Wells Valley Groundwater Basin
Mineral Resources	Limited to areas of economically viable deposits
Noise	Construction noise is limited to the General Plan area and would not be compounded with other known adjacent projects that will be under construction at the same time
Recreation	Local and regional projects that result in physical effects on the environment
Transportation and Traffic	Roadways affected by project traffic
Tribal Cultural Resources	General Plan boundary, with regional implications
Utilities and Service Systems	Individual service providers
Wildfire	Local and regional

Source: Data compiled by AECOM in 2022

5.22.4.4 Cumulative Impacts

Aesthetics

The geographic context for aesthetics consists of the General Plan boundary and public views of the Park from the surrounding area. These aesthetic resources can also be viewed while driving along State Route 14, and much of the land along SR 14 that traverses the Park was designated a scenic easement to recognize the framed view as you enter and exit the road. There are no related cumulative projects within the viewshed of the Park. Thus, the proposed facilities within General Plan would not be visible within the same viewshed as the cumulative projects, and would not combine to result in cumulative changes within the same viewshed.

Most of the Park would include management zones that restrict development to elements such as primitive dirt roads, parking, and equestrian staging areas; primitive/environmental camping areas; non-motorized dirt trails; interpretive and wayfinding signage; and picnic tables. Only a small fraction of the Park is in the focused-use management zone, which allows for development of Park operations and visitor services buildings, including the campground.

As discussed in Section 5.7, Aesthetics, General Plan goals and guidelines for new or modified facilities would minimize the impact to scenic vistas and sensitive viewsheds, protecting scenic features from constructed and human intrusions and preserve the visitor's experience of the natural landscape and historical features. Placement of facilities would consistently take into consideration and integrate with the area's natural elements as to not significantly detract from the Park's scenic resources, including scenic vistas. State Parks will develop design standards or guidelines for Park facilities and signages to create a sense of Park visual continuity, preserve positive aesthetic values. State Parks will visually screen new or modified operations facilities (e.g., maintenance yard) from primary public-use areas and use elements to minimize a negative visual impact of those facilities, where appropriate. New or updated facilities in the focused-use management zone, such as the Ricardo Campground complex, would be designed to limit artificial lighting. Therefore, the General Plan would have a **less-than-significant cumulative impact** related to aesthetics.

Air Quality

The geographic scope for air quality consists of the Eastern Kern Air Pollution Control District (East Kern APCD). The East Kern APCD is currently in non-attainment status under State Ambient Air Quality Standards for ozone (1 hour and 8 hour), and PM_{10}, and it is unclassified for $PM_{2.5}$ and carbon monoxide. As discussed in Section 5.8, Air Quality, the trends for these pollutants are improving.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, to result in nonattainment of regional ambient air quality standards. Instead, a project's individual emissions contribute to overall air quality conditions. The nonattainment status of regional pollutants is a result of past and present development within the air basin. Ongoing development and operation of new land uses would generate additional emissions of ozone precursors (ROG and NO_X) and PM, which may adversely affect the region's ability to achieve attainment of the applicable air quality standards, representing a significant cumulative impact. Each additional project within the East Kern APCD has the potential to cause a net increase in emissions that would contribute to this cumulative air quality impact. Construction activities throughout the region would emit criteria air pollutants from earthmoving activities and construction equipment. The operation of past, present, and future projects would contribute criteria air pollutant and precursor emissions to the region that when added to the other emissions occurring within the region.

The General Plan includes additional or modified non-motorized dirt trails, roads and trailhead/equestrian parking areas, designated environmental/primitive backcountry camping areas, new or improved interpretive/educational and wayfinding signage and picnic tables at interpretive opportunity sites (e.g., Last Chance Canyon, Cudahy Camp). Construction activities related to these actions would be spread out over several years and would individually be temporary and occur over a short duration. Development within the Park would follow all federal and state regulations related to air quality as well as implement the goals and guidelines identified in Section 5.8 intended to minimize the construction-related emissions of criteria pollutants.

The General Plan would include long-term goals and guidelines to reduce criteria pollutants emissions. Long-term operations under the General Plan are not anticipated to substantially increase visitation such that there is a corresponding substantial increase in vehicle miles traveled to and from the Park. Operational activities would not substantially increase beyond existing conditions, and the General Plan includes goals and guidelines that encourage low- or zero-emission vehicles for use in conducting Park operations. In addition, non-street legal OHV use on trails and roads used in the past will no longer be allowed, which would also reduce vehicle emissions. Implementation of the General Plan would not increase of any criteria pollutant for which the East Kern APCD is in non-attainment under federal or state ambient air quality standards including emissions of ozone precursors. Therefore, the General Plan would have a **less than cumulatively considerable** contribution to air quality impacts.

Biological Resources

As urbanization pressures and large-scale energy projects increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level.

The geographic scope for the analysis of cumulative impacts on biological resources is Kern County, as well as areas of Kern County corresponding with affected species and habitat. The project, in combination with other development in the region, could cause a substantial adverse change in biological resources. Given the number of present and reasonably foreseeable future development projects in Kern County, there would be an incremental cumulative loss of habitat and loss of plant and wildlife species, including special-status species. This is a significant cumulative impact.

There are a number of special-status species that currently utilize the Park and surrounding vicinity. Implementation of the General Plan, in addition to the other projects underway or proposed within Kern County, would have the potential to impact the same plant and wildlife species, including Joshua trees; special-status plants; special-status wildlife, including desert tortoise, Mohave ground squirrel, tricolored blackbird, and willow flycatcher; golden eagles, other raptors, and bats. The Park contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. (see ***Chapter 2 - Existing Conditions, Section 2.6.2 Plant Life*** and ***Section 2.6.3 Animal Life.***)

Implementation of the General Plan, particularly designation of two new Natural Preserves; best management practices; and specific goals and guidelines will afford greater protection to native plant and wildlife species, including special-status species; wetlands; all habitats, including those that are considered sensitive natural communities by the resource agencies. Any impacts to species will be avoided or minimized to the fullest extent possible. Surveys for sensitive species as well as best management practices, such as scheduling of construction activities outside of periods when species are breeding or more likely to be impacted, will be implemented. In addition, the movement of native fish or wildlife will remain effective through the protection of habitat connectivity within the Park and the greater region. Therefore, the General Plan **would have a less than cumulatively considerable** contribution to any significant cumulative impact related to biological resources.

Cultural Resources

Kern County has been inhabited by prehistoric and historic peoples for thousands of years. Cultural resources in the region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. Urbanization and agricultural use in the region has caused the destruction or disturbance of numerous prehistoric sites and historic structures. Specific federal, state, and local laws are designed to protect such resources. These laws have led to the discovery, recordation, preservation, and curation of artifacts and historical structures. The proposed project, as well as all other projects in the area, are required to comply with these laws. However, even with these regulations, cultural

resources are still degraded or destroyed as cumulative development in the region proceeds. This is a significant cumulative impact.

The project, in combination with other development in the region, could cause a substantial adverse change in the significance of unique cultural resources. Because all significant cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving artifacts found. federal, State, and local laws can protect these resources, in most instances.

The Park contains potentially significant historical resources (as defined in 14 CCR § 15064.5 [a]) and a wide range of archaeological properties (as defined by 14 CCR § 15064.5 and PRC 21083.2 [g]) that could be damaged from vandalism or inappropriate recreational use or be disturbed, destroyed, or degraded by new development and facility improvements proposed in the General Plan. Extensive research and inventory of the Park's cultural resources has occurred over the years, but is not considered complete; therefore, the potential exists for the discovery of previously unknown precontact Native American sites and historic-era sites and potential impacts on these resources from facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations.

As discussed in Section 5.10, Cultural Resources, prior to development or modification of facilities, the Area of Potential Effect (APE) for facility development would be surveyed and/or tested and any identified archaeological artifacts, features, and/or sites recorded and assessed, as defined more specifically in these goals and guidelines. Impacts to resources can be further avoided and/or recognized through a range of cultural resource planning methods that include continually surveying and recording resources within the Park, nominating eligible resources for the NRHP and CRHR in order for decision makers to be further aware of the value of eligible resources, developing measures to protect resources from natural processes that may affect archaeological resources, using non-invasive research and investigative methods, and

other planning methods as documented in the goals and guidelines in the General Plan. Consultation with state historians will occur when developing plans for projects affecting historic buildings, structures, objects, and landscapes, and consultation with State Archaeologists will occur when developing plans for projects potentially affecting archaeological resources. With implementation of these goals and guidelines and consultation with state historians and the State Archeologist during future planning efforts, as well as following federal and state regulations, impacts on archeological and cultural resources resulting from implementation of the General Plan are less than significant. Therefore, the General Plan **would have a less than cumulatively considerable** contribution to any significant cumulative impact related to archaeological or historical cultural resources.

Energy and Greenhouse Gas

Increased demand for energy resources, primarily fuel, electricity, and natural gas, is a byproduct of all future land uses and development throughout the region. Energy is consumed during all construction activities, typically in the form of diesel fuel for off-road construction equipment and a mix of gasoline and diesel fuel for construction-related vehicle trips. Operational energy is consumed for heating, cooling, and electricity in homes and businesses; for public infrastructure and service operations; and for agriculture, industry, and commercial uses.

Kern County and some of the cities within the region implement general plans and other policy documents that include goals and policies to reduce energy demands through the use design features, building materials, and building practices; encourage the use of renewable energy sources; and ensure adequate electricity and natural gas and related distribution systems are available to meet energy demands. In addition, many service providers encourage energy conservation through programs.

As described in Section 5.11, Energy and Greenhouse Gas, the General Plan incorporates goals and guidelines that promote incorporation of sustainable features and high-performance facility design to the maximum extent possible and actions to use renewable energy generation. Systems. With the incorporation of federal and state regulations and the goals and guidelines, implementation of the General Plan will not result in wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. There is no significant cumulative impact, and implementation of the General Plan **would not result in a cumulatively significant** incremental contribution to a significant cumulative impact related to the wasteful, inefficient, excessive, and unnecessary consumption of energy or interfere with any applicable renewable energy or energy efficiency plans.

The geographic scope for related projects considered in the cumulative effect analysis for GHG emissions is global because impacts of climate change are experienced on a

global scale regardless of the location of GHG emission sources. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system, which is considered a significant cumulative effect. Therefore, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to the significant impact of global climate change is cumulatively considerable. As discussed in Section 5.11, the General Plan would not result in the generation of GHG emissions at a rate or in an amount that would directly or indirectly have a significant impact on the environment, or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. By following federal and state laws and implementing the goals and guidelines described in Section 5.11, greenhouse gas emissions of future Park operations should be reduced over time due to the use of low- to zero-emissions electric equipment and vehicles and renewable energy. Therefore, the contribution of GHG emissions generated by the General Plan would be **less than cumulatively considerable**.

Geology, Soils, and Paleontological Resources

The potential for damage from seismic hazards is site-specific, and thus there is no additive effect. Therefore, there would be **no cumulative** effect due to seismic ground shaking. Please see the cumulative impact analysis under "Hydrology and Water Quality" for cumulative impacts related to soil erosion.

Fossil discoveries resulting from excavation and earthmoving activities associated with development are occurring with increasing frequency throughout California. The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions, such as part of a research project. The heritage encased in each fossil represents a non-renewable resource. If an organism has a fossil record, that record is represented by a finite number of specimens. That number decreases as they are destroyed by weathering, erosion, or the actions of humans. Unique, scientifically important fossil discoveries are relatively rare, and the likelihood of encountering them is specific to a site and based on the type of specific geologic rock formations found underground.

Kern County is underlain by Pleistocene-age sediments, which is considered a sensitive rock unit under Society of Vertebrate Paleontology guidelines (Kern County 2004). As discussed in Section 5.12, "Geology, Soils, and Paleontological Resources," the project area is underlain by a diversity of geologic formations ranging in age from Precambrian (approximately 600 million years Before Present [B.P.]) to late Holocene (less than 10,000 years B.P.) with most of the Park's fossils have been recovered from the Dove

Springs Formation. Geologic formations in the Park contain fossils ranging from plants and small invertebrates to large vertebrates. Numerous vertebrate fossil specimens have been recorded in Kern County and other locations throughout the San Joaquin Valley. The fact that vertebrate fossils have been recovered in the Park and other recorded vertebrate fossil localities have been recorded throughout the San Joaquin Valley suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities of the related projects. Therefore, this is considered a potentially significant cumulative impact and the proposed project's contribution could be cumulatively considerable.

As discussed in Section 5.12, the proposed interpretive signage throughout the Park would help to educate visitors regarding the necessity for protection of paleontological resources and the fact that unauthorized collection of paleontological materials is prohibited. The goals and guidelines General Plan would also promote preservation and support continued scientific research and academic field studies regarding the Park's geologic formations and paleontological resources. Implementation of the General Plan goals and guidelines would ensure that impacts from damage to or destruction of unique paleontological resources would be less than significant. The General Plan's impact associated with potential damage to unique paleontological resources is **less than cumulatively considerable**.

Hazards and Hazardous Materials

Hazardous materials impacts associated with the past or current uses of a project site usually occur on a project-by-project basis, and are site-specific rather than regional in nature. Any hazardous materials uncovered during construction activities would be managed consistent with applicable federal, state, and local laws to limit exposure and clean up the contamination. In addition, the use, storage, transport, and disposal of hazardous materials would be managed in accordance with applicable federal and state requirements to limit risk of exposure. Other projects in the vicinity of the Park that could create similar hazardous material effects during standard construction activities would also be required to comply with measures that would minimize and/or avoid exposure of hazardous materials to people or the environment. Therefore, there would be **no cumulative impact** associated with hazardous materials use, storage, transport, or accidental spills.

Hydrology and Water Quality

Cumulative effects related to hydrology and water quality should be considered in the context of the Fremont and Indian Wells hydrologic units of the South Lahontan Hydrologic Basin and Indian Wells Valley Groundwater Basin. The cumulative plans and

projects would implement projects that generate construction-related discharges of sediment and pollutants to receiving waters.

As discussed in Section 5.14, Hydrology and Water Quality, Construction-related earthmoving activities would expose soils to potential erosion from wind and water. Earthmoving activities during the winter months would expose soils to rain events, which could mobilize loose soil and result soil erosion. Subsequent soil transport during storm events could result in sedimentation within and downstream of the project site. Furthermore, earthmoving activities during the summer months could result in wind erosion. Accidental spills of construction-related fuels, oils, hydraulic fluid, and other hazardous substances could contaminate stormwater flows, resulting in the potential degradation of surface water quality downstream of the disturbance area. State Parks is required by law to comply with the provisions of the SWRCB's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-009-DWQ as amended by Order 2012-0006-DWQ) (Construction General Permit). Implementation of the General Plan goals and guidelines, along with compliance with the SWRCB's Construction General Permit, OHV Soil Standard and Guidelines, and the DPR Natural Resources Handbook, would ensure that impacts associated with water quality and substantial erosion or siltation during construction and operation would be less than significant.

Project applicants that disturb more than 1 acre of land must prepare SWPPPs and implement BMPs that are consistent with Lahontan RWQCB requirements as part of the NPDES Construction General Permit. In addition, all State Parks projects must be implemented in compliance with the Stormwater Management Plan, which contains specific requirements for design and construction of construction and operational stormwater control and quality facilities. State Parks is required to obtain CWA permits for in-water work that would contain site-specific measures to protect water quality. Other private development and City and County agency projects must comply with local agency Stormwater Management Plans, and may also be required to obtain CWA permits, that also contain contains specific requirements for design and implementation of construction and operational stormwater control and quality facilities. Implementation of these regulatory requirements would substantially reduce construction and operational erosion and water quality impacts in compliance with the *Water Quality Control Plan for the Central Coastal Basin* (Central Coast RWQCB 2019). Therefore, construction and operation-related impacts from erosion and water quality and potential conflicts with a water quality control plan from implementation of the General Plan and the other projects considered in this cumulative analysis would be **cumulatively less than significant.**

Cumulative development projects have and could continue to reduce groundwater recharge in the basin where projects include new impervious surfaces as a result of proposed development. Implementation of the General Plan would not result in a substantial increase in impervious surfaces and therefore would not decrease the potential for groundwater recharge. Because potable water at the Park is imported via the California aqueduct, because no changes to potable water use are proposed, and because no changes are proposed to the Park's minimal use of groundwater for small areas of habitat restoration and natural resource protection, the General Plan would not substantially decrease groundwater supplies. Furthermore, implementation of the goals and guidelines in the General Plan listed above would ensure that Park operations and water use do not negatively affect water quantity. Therefore, implementation of the General Plan would not adversely affect groundwater sustainability and would not impede sustainable groundwater management of the basin. Thus, the cumulative contribution of the General Plan to a decrease in regional groundwater supplies and conflicts with sustainable groundwater management is considered **cumulatively less than significant**.

Mineral Resources

The cumulative context related to the availability of mineral resources is related to the presence of economically viable deposits. Although mining activities formerly took place on lands that are now within the Park, such activities ended in the late 1970s. The Park is not classified by California Geological Survey as an area that contains known or potential regionally important mineral deposits. Likewise, there are no areas within the Park designated by Kern County for mineral or petroleum exploration or extraction. Thus, impacts would not combine such that a cumulative impact could occur. Thus, there would be **no cumulative impact** associated with mineral resources.

Noise

Noise is a localized occurrence and attenuates rapidly with distance. Therefore, only cumulative development projects in the direct vicinity of the Park could add to anticipated project-generated stationary-source noise, thus resulting in cumulative noise impacts. Implementation of the General Plan improvements would not occur all at the same time and would be spread out over years. There are no related projects that would occur simultaneously in the vicinity of the Park that could result in a cumulative impact. Construction noise is temporary, with no associated long-term operations to add to the permanent noise environment as a cumulative impact. Therefore, there would be **no cumulative impacts**.

Recreation

The city and county general plans, West Mojave Route Network project, and the future Onyx Ranch SVRA Management Plan could include additional recreational facilities the construction or expansion of which could have an adverse physical effect on the environment. These potential cumulative impacts from construction of recreation-related projects could be similar to those identified in this EIR (e.g., air quality; biological resources; cultural, paleontological, and tribal cultural resources; geology and soils, hydrology and water quality; and noise) and could combine with the effects of the General Plan. Cumulative impacts from these recreation projects are not knowable at this time, and it is speculative to gauge the extent to which this would create any cumulative impact. It is assumed that, cumulative projects would be required to undergo project-level environmental review and reduce potentially significant impacts to a less-than-significant level under CEQA and to minimize adverse effects under NEPA.

Proposed visitor recreational facilities will be placed to maximize visitor and staff use while minimizing adverse physical effect on the environment and the Park's interpretive and education program will promote the protection of the Park's sensitive resources. As discussed in Section 5.17, Recreation, all of the goals and guidelines in the General Plan aim to balance visitor recreation and protection of physical environmental resources, such as air quality, biological resources, cultural resources, tribal cultural resources, geology, soils, paleontology, minerals, and water quality. As described in the specific resource topics of this cumulative impact analysis, implementation of the goals and guidelines contained in the General Plan, along with compliance with applicable federal and state laws and regulations, avoids potential significant cumulative effects or maintains them at a 'less than significant' level. Therefore, the General Plan's contribution to potential cumulative impacts from adverse physical effects caused by construction or expansion of recreational facilities would be **less-than-significant cumulatively**.

Transportation and Traffic

Primary access to the Park will continue to be from SR 14. Implementation of the General Plan does not include any permanent changes to the public roadway network. For facilities improvements, construction impacts would generally be limited to on-site and not directly impact the area's public roadways and access to or from nearby properties. Since the project's operational characteristics would not change from the existing conditions of operations and the General Plan would not cause an increase in traffic volumes in any of the public roadways. As discussed in Section 5.18, Transportation and Traffic, implementation of the General Plan would have no impacts to transportation. Therefore, there would be **no cumulative impacts**.

Tribal Cultural Resources

As stated above, Kern County has been inhabited by prehistoric peoples for thousands of years. Urbanization and agricultural use in the region has caused the destruction or disturbance of numerous tribal cultural resources sites. Regulations protecting tribal cultural resources have substantially reduced the rate and intensity of these impacts. However, even with these regulations, tribal cultural resources are still degraded or destroyed as cumulative development in the region proceeds. This is a significant cumulative impact.

The project, in combination with other development in the region, could cause a substantial adverse change in the significance of a tribal cultural resource. Because all significant tribal cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. As stated previously, the cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary.

As described in Chapter 5.19, Tribal Cultural Resources, extensive Native American archaeological and Tribal Cultural resources have been identified, with substantially more resources potentially undiscovered. Potential impacts would be avoided and minimized through compliance with federal and state law, State Parks' policies, and State Parks' standard project requirements. Careful planning will be required including flexibility in how recreational opportunities are met for visitors to the Park. It is critical that implementation of the General Plan goals and guidelines be utilized when appropriate during project implementation. As individual projects are implemented, more specific measures should be considered that are relevant to the specific resources that will be affected. Utilization of appropriate guidelines would ensure that substantial adverse impacts to tribal cultural resources at the Park would not occur. In addition, as noted in Section 5.10, the Area of Potential Effect for facility development would be surveyed and/or tested and any identified Native American archaeological artifacts, features, and/or sites recorded and assessed. In the even that unknown/unexpected human remains are uncovered during any facility development project, steps outlined in § 7050.5 of the California Health and Safety Code will be followed as described in Section 5.10.

Compliance with federal and state law, State Parks' policies, State Parks' standard project requirements, and General Plan goals and guidelines would offset the General

Plan's contribution to cumulative loss or destruction of tribal cultural resources by requiring avoidance or protective measures for significant resources identified before or during activities that have the potential to degrade tribal cultural resources. Therefore, the General Plan **would have a less than cumulatively considerable** contribution to any significant cumulative impact related to tribal cultural resources.

Utilities and Service Systems

The appropriate service providers are responsible for ensuring adequate provision of utilities within their service boundaries. Future development within each service providers' boundaries would be required to assess impacts related to demand for water supply and generation of solid waste during the environmental review process to ensure that sufficient water supply and solid waste facility capacity are available to meet demand.

Utilities services are limited due to the Park's remote location. The Park is in a does not have access to public purveyors' electric power or natural gas, or telecommunications facilities. The General Plan does not include any substantial improvements or development; therefore, State Parks does not anticipate the need to relocate or construct new or expanded water or storm water drainage facilities. The Park uses on-site septic systems in the developed area of the Park (Ricardo Campground Complex). Therefore, the proposed project would have **no cumulative impact** on municipal wastewater collection, conveyance, or treatment facilities; storm drainage facilities; or electric power or natural gas, or telecommunications facilities.

The California Aqueduct is the primary source of potable water at the Park. Modest facility improvements or enhancements proposed in the General Plan would not require additional water spickets, sinks, or toilets. Despite current and limited potential increases in demand in the Park under the General Plan, conservation methods would be implemented. State Parks will use state-of-the art conservation measures to minimize water usage to better ensure sufficient water supplies are available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. New, limited primitive/environmental and equestrian camping areas would be dry (e.g., no water or other developed facilities). Therefore, the General Plan would have a **less-than-significant cumulative impact** related to water supply.

Because the General Plan includes modest improvements and facilities, State Parks does not anticipate a substantial increase in solid waste beyond existing conditions or generating solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. State Parks would comply with Cal-Recycling goals and guidelines for trash storage and removal. The existing waste facilities will be adequate to meet the waste generated by the Park. The cumulative projects would be required to implement all

State and local recycling and solid waste reduction programs. Therefore, impacts associated with exceedance of local infrastructure capacity or impairment of solid waste reductions goals from implementation of the proposed project and the other projects considered in this cumulative analysis would be **cumulatively less than significant.**

Wildfire

Cumulative effects related to wildfire hazards are driven by the factors of climate, vegetation, human influences, and changes in land use that influence the three first factors. As climate change and human activity produce conditions that are more conducive to wildfire ignition and spread, and create fires that burn with greater intensity, it is likely that future ignitions will result in more wildfires of greater size and intensity. The regional environment is an area of existing high wildfire danger, and activities and conditions on adjacent lands pose a substantial threat in terms of wildfire risk. In the vicinity of the Park, the Onyx Ranch SVRA, BLM open lands, and El Paso Wilderness Area are within State Responsibility Areas (SRAs) and designated by CAL FIRE as Moderate, High, and Very High Fire Severity Zones.

Local and regional city and county general plans provide for additional local and regional development. Such development includes the introduction of new populations and expanded geographic areas of human influence. However, the Park is far from large population centers. The small, scattered community of Cantil in the Fremont Valley resides the closest (six miles) to the Park, with less than 100 residents.

The Park exists within a LRA and a SRA. The portion of the Park located to the west of SR 14 is within the SRA and designated by CAL FIRE as Moderate Fire Severity Zones (see Figures 5.21-1 and 5.21-2 in ***Section 5.21, Wildfire***). The remainder of the Park is within a LRA where fire protection services are provided by the Kern County Fire Department. As discussed in Section 5.21, State Parks would prepare wildfire and prescribed burn management plans as well as implement additional Park fire management programs designed to meet Park resource management objectives while ensuring that firefighter and public safety are not compromised as required by the State Parks District Management Plan. Vehicles would be maintained in good working order and equipped with spark arrestors consistent with PRC 4442. All projects within the SRA would provide minimum wildfire protection standards identified in PRC 4290, including providing adequate emergency access. Adherence to these safety measures, when considered together, would minimize the risk of increased frequency, intensity, or size of wildfires and decrease the risk of exposure of people or structures to wildfire. In addition, the continued implementation of fire safety protocols and vegetation management policies outlined in the Natural Resources Handbook would further reduce the potential of wildfires. Therefore, the proposed project would result in **less than significant cumulative** effects related to wildfire risks.

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5.23 ALTERNATIVES TO THE PROPOSED PLAN

The guiding principles for the analysis of alternatives in this EIR are provided by the CEQA Guidelines (§ 15126.6), which indicate that the alternatives analysis must: (1) describe a reasonable range of alternatives to the project that could feasibly attain most of the basic objectives of the project; (2) consider alternatives that could reduce or eliminate any significant environmental impacts of the project, including alternatives that may be more costly or could otherwise impede the project's objectives; and (3) evaluate the comparative merits of the alternatives. The CEQA Guidelines [§ 15126.6(d)] permit the evaluation of alternatives to be conducted in less detail than is done for the proposed project. Descriptions of the project alternatives, including the No Project Alternative, are provided in this EIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the Preferred Alternative, which is the General Plan as described in ***Chapter 4 - The Plan***.

This EIR found that no significant environmental impacts would occur with implementation of the General Plan. However, a variety of user groups may perceive some of the changes that would be implemented with the General Plan as negative. While these changes may appear significant to users who would rather continue to use the Park as they have in the past, these changes would not be considered significant changes or impacts in the context of CEQA.

The following three alternatives address different potential uses and their implications.

5.23.1 ALTERNATIVE 1: Allow OHV and Rock Hounding Throughout the Park (Concept #1)

5.23.1.1 Description

Alternative 1 would maintain an extensive primitive route network throughout the Park to maximize access to destinations in vehicles. This Alternative would require a change in the classification of the Park from State Park to State Recreation Area which requires approval by the State Park and Recreation Commission. This alternative was presented to the public as Concept #1 during the planning process. This alternative would provide extensive opportunities for vehicular-based recreation and would have minimal changes to the existing route network. All designated primitive routes would allow green sticker use, except for Red Rock – Inyokern Road, which is a County Road. This alternative would include the option of driving loops and retain key corridors for OHV recreation. This alternative would also allow for rock hounding throughout the Park.

5.23.1.2 Impact Evaluation

Although the uses that this alternative allows were at times present in the Park, these uses are available in adjacent areas and do not meet the mission purpose and vision of this Park for the resource protection desired for sensitive biological, cultural, and geological resources. The Park was specifically acquired for the value of these resources.

The mission of State Parks is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. The Park provides balanced and resource sensitive access for visitors to explore and enjoy its habitat, landscape, and natural and human history. Rock hounding is allowed on most surrounding BLM lands and collectors have plenty of opportunities in the area surrounding the Park. Also, there are hundreds of acres surrounding the Park that provide ample opportunities for OHV use, including Onyx SVRA and nearby BLM lands including the Jawbone and Dove Springs recreation areas. The General Plan allows OHV use (green sticker) on two designated roads that would connect to these other areas that allow OHV use. Therefore, implementation of this alternative would not be consistent with State Park's purpose for acquiring the park, and would result in impacts on some of the sensitive resources specifically protected. Compared to the General Plan, the OHV and Rock Hounding Alternative would result in **more extensive impacts** on sensitive resources.

5.23.2 ALTERNATIVE 2: No OHV Access to Areas Outside Park (Concept #4)

5.23.2.1 Description

Alternative 2 would focus on the protection of sensitive natural and cultural resources and would not allow any OHV use at the Park, including designated primitive routes. Under this alternative, some primitive routes would be converted to non-motorized trails. This alternative was presented to the public as Concept #4 during the planning process. This alternative would permanently close Last Chance Canyon and Nightmare Gulch to OHV activity. Several additional Natural Preserves would be created under this alternative, including a Last Chance Riparian, Lower Last Chance Canyon, and Nightmare Gulch Preserves. Vehicle access would not be allowed to any of these reserves. Alternative 2 would also create two Cultural Preserves, one in the Red Buttes area, and one in Black Rock Canyon.

5.23.2.2 Impact Evaluation

This alternative would afford the highest level of protection for natural and cultural resources at the Park; however, if all legal OHV use was eliminated, this alternative might have the potential to result in more illegal and destructive OHV use within the Park due to vehicles traveling to adjacent state, federal and private land. In addition, some areas of the Park would not be accessible to some members of the public. Compared to the General Plan, this alternative would result in greater protection of sensitive resources. However, this alternative would also result in some impacts on recreation resources (OHV access to adjacent public lands) currently available at the Park. Therefore, compared to the General Plan, the No OHV Access Alternative would result in **more extensive impacts** than the General Plan.

5.23.3 No Project Alternative

5.23.3.1 Description

CEQA requires an evaluation of the "No Project Alternative" and its impact (CEQA Guidelines § 15126.6[e][1]). The No Project Alternative represents perpetuation of existing management actions, and its analysis is based on the physical conditions that are likely to occur in the future if the project (the General Plan) is not approved and implemented. The purpose of describing and analyzing the no project alternative is to allow decision-makers to compare the impacts of approving the proposed General Plan with the expected impacts of not approving the General Plan.

The No Project Alternative would keep the previous 1982 General Plan in place with all of its goals and policies and the additional acreages as it relates to State Park use. It is assumed that the existing patterns of operation and management would continue, and recreational and operational facilities could be implemented as described with the 1982 General Plan. OHV use was never addressed in the 1982 General Plan, even though illegal OHV use was tolerated at certain times over the years. OHV use is currently only allowed with a green sticker on two designated roads that connect to areas where OHV use is legal (Onyx SVRA and BLM lands), which includes hundreds of acres that surround the Park. Collecting minerals and rock hounding would also not be allowed, even though it was also tolerated over the years. Visitation and Park use would be expected to increase as the statewide and regional populations grow. Many of the management actions that would protect, preserve, and restore natural and cultural resources that have been identified for the General Plan would not be in place to guide the stewardship of the Park's resources.

5.23.3.2 Impact Evaluation

The No Project Alternative, which would continue to follow the management goals and guidelines within the original General Plan approved in 1982, would be difficult to implement due to the extensive policies that California State Parks has enacted or emplaced since its approval. These policies provide a multitude of measures to protect resources within the Park and all other parks managed by State Parks. Based on the policies that exist now, much of the facility development for visitors and park operations proposed in the General Plan would be difficult to implement. The main reason that a revision to the previous General Plan was determined to be necessary, was because it was outdated, not compatible with current policies, and does not cover a large part of the Park.

The majority of the Park lands were not included in the 1982 General Plan, which only had approximately 3,000 acres at the time of adoption. Since then, an additional 24,000 acres were acquired through federal land transfers and the 1994 California Desert Protection Act. These lands contain significant resources that require protection.

Managing the Park under the existing 1982 General Plan would result in potentially significant impacts to sensitive resources in the newly acquired lands because of a lack of enforceable rules for these areas.

Therefore, compared to the General Plan, the No Project Alternative would result in **more extensive impacts** than the General Plan.

5.23.4 Environmentally Superior Alternative

The General Plan, as presented in Chapter 4 – The Plan, is the environmentally superior alternative because it balances protection of resources while allowing for high-quality recreation and focuses OHV use to areas that are not environmentally sensitive. It also addresses management for the entire acreage of the Park, consistent with State Parks' current management frameworks.

5.24 List of Preparers

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Chapter 6. WORKS CITED

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6.4 CHAPTER 4

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6.5 CHAPTER 5

5.1 Introduction

None.

5.2 EIR Summary

None.

5.3 Project Description

None.

5.4 Environmental Setting

None.

5.5 Environmental Effects Elminated from Further Analysis

None.

5.6 Environmental Impact Analysis

None.

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5.22 Other CEQA Considerations

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5.23 Alternatives to the Proposed Plan

None.