

5.3.13 Recreation Resources

This section describes the affected environment of recreation resources for the Lake Powell Pipeline (LPP) project. It identifies recreation areas, facilities and use on lands managed by federal, state and local government agencies and on privately owned land. It reviews identified recreation needs and opportunities documented in federal land management plans and State Comprehensive Outdoor Recreation Plans (SCORP) for Utah and Arizona.

5.3.13.1 Affected Environment

5.3.13.1.1 Recreation Areas, Facilities and Use.

Construction and operation activities associated with the LPP Project would occur on federal, state, and private lands in Utah's Kane and Washington counties, and in Arizona's Coconino and Mohave counties. The following recreation areas and facilities on public, tribal and private lands are located in the recreation resources area of potential effect:

- Glen Canyon National Recreation Area (GCNRA)
- Vermilion Cliffs National Monument (VCNM)
- Paria Canyon – Vermilion Cliffs Wilderness (PCVCW)
- Grand Staircase – Escalante National Monument (GSENM)
- BLM – Kanab Field Office (KFO)
- BLM – Arizona Strip Field Office (ASFO)
- Kaibab-Paiute Indian Reservation
- Pipe Springs National Monument (PSNM)
- BLM – St. George Field Office (SGFO)
- Sand Hollow State Park (Utah)
- Private Recreational Facilities

5.3.13.1.1.1 Glen Canyon National Recreation Area.

GCNRA encompasses more than 1.2 million acres, stretching from Lees Ferry in northern Arizona to the Orange Cliffs in southern Utah (NPS, 2009). Approximately four percent (16,687 acres) of the recreation resources area of potential effect lies within GCNRA.

The National Park Service (NPS) administers, operates and maintains GCNRA, which offers water-based and backcountry recreational opportunities, and includes scenic vistas, unique geologic features, and a vast panorama of human history. GCNRA includes Glen Canyon Dam and Lake Powell, the second largest manmade lake in North America.

GCNRA was established to provide for the management of public outdoor recreation use and the enjoyment of Lake Powell and adjacent lands in Arizona and Utah. In 2003, there were 1.9 million visitors and more than 1.2 million overnight stays. Recreation uses range from those activities that require solitude and an undisturbed setting to those that require mechanical means, such as power boating and four-wheel driving. The most popular forms of recreation are water-based activities such as boating, fishing, water skiing, and boat camping. The city of Page, Arizona, provides a significant portion of the infrastructure required to support these recreational activities in the form lodging, restaurants, and permanent housing for people employed by these businesses and the lake concessionaires.

According to NPS policies, the enjoyment of park resources and values by people is part of the fundamental purpose and all park units (NPS, 2007). The NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks, and will maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the NPS provides opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks. NPS policies also state that scenic views and visual resources are considered highly valued associated characteristics that the NPS strives to protect.

Tourist traffic to GCNRA is heavier during the summer than during the winter months (NPS, 2007). However, traffic in the vicinity is characterized as light throughout the year, and all roads operate well below their design capacities throughout the year.

GCNRA points of interest in the vicinity of the LPP Project are shown on Figure 5-157. Recreation areas and facilities within the recreation resources area of potential effect are described in the following subsections.

Dead Dog and Ropes Recreation Areas

The Dead Dog dispersed recreational area and Ropes trail are located south of Glen Canyon Dam and west of the Colorado River. These areas are accessible from Highway 89 and unpaved roads, just south and west of the dam. These recreational areas are frequented by local OHV enthusiasts (Hughes, pers. comm.). The Ropes area contains a designated, but unmarked camping area.

Colorado River Discovery Rafting Tours

Colorado River Discovery offers rafting tours of the Colorado River below Glen Canyon Dam. Half-day float trips are offered annually from March 1 through November 30. Full-day rowing trips were also available in 2009 (CRD, Undated). Rafting trips depart from Page, Arizona, and include a drive through the two-mile-long Glen Canyon Dam access tunnel, a stop to view ancient petroglyphs, and conclude at Lees Ferry. Prices for the trips include a river usage fee.

Highway 89

Highway 89 serves as a connector between Interstates 17 and 40 to the south, and Interstate 15 to the north and west. The mix of traffic on Highway 89 includes a substantial portion of heavy trucks, which provide both local services and long-haul transportation of goods. Highway 89 connects Kanab, Utah, and Page, Arizona, with 72 paved miles. This highway, including the portion located in GCNRA, is designated “scenic”. Refer to Section 5.3.16 (Visual Resources) for up-to-date information on scenic roads.

Carl Hayden Visitor Center

The Carl Hayden Visitor Center is located on Highway 89, on the west side of Glen Canyon Dam. Attractions at the visitor center include tours of the dam (fee required and security measures in place), exhibits, video shows, and a relief map of the entire Glen Canyon area. The facility is owned and operated by the Bureau of Reclamation, who, in turn, provides space for NPS staff and exhibits (Hughes 2009). Ranger talks are presented daily on a variety of subjects throughout the year. Ranger programs are presented three times a week from Memorial Day through mid-September, and opportunities for solar telescope viewing are offered outside the visitor center several times a week from April through October. A bookstore and restrooms are located in the Carl Hayden Visitor Center. NPS staff reported visitor numbers of 405,031 at the Carl Hayden Visitor Center for the 2008 calendar year (Sweatland 2009).

Glen Canyon Dam Overlook

The Glen Canyon Dam Overlook, located on Scenic View Drive off of Highway 89, provides a spectacular view of the dam and Colorado River from just downstream. From the paved (asphalt) parking area a 5 to 10 minute walk leads downhill over uneven, sandy, and rocky terrain. There is a handrail halfway down the trail. NPS staff reported visitor numbers of 63,271 at Glen Canyon Dam Overlook for the 2008 calendar year (Sweetland 2009). The NPS categorizes this day hike trail as “easy.”

Chains Recreation Area and Hanging Garden Trail

East of Glen Canyon Dam and adjacent to the town of Page, Arizona, an unpaved road heading north off of Highway 89 leads to an area known as “The Chains.” This area provides scenic views of Lake Powell and the upstream side of the dam. This day-use, publicly accessible area includes a large gravel parking lot, two unisex pit toilets (no water provided), and some signage. No safety fencing currently exists at this location. The Chains area is used by local residents for fishing and swimming (Hughes 2009). NPS staff reported visitor numbers of 50,597 at the Chains area for the 2008 calendar year (Sweetland 2009). Lake shore access is possible at the Chains area, depending on the lake elevation. The lake is very deep at this location, and good swimming skills are required. In the Chains area, visitors may partake in a self-guided tour through slick rock sand formations (NPS, 2009). The NPS categorizes this day hike trail as “easy to moderate.”

The Hanging Garden Trail is adjacent to the Chains area. This one mile roundtrip hike leads visitors to the Hanging Gardens area, a “desert oasis on the mesa top high above the Colorado River and Lake Powell.” Obscured by Jurassic Navajo sandstone, this seep spring quickly absorbs rainwater, and slowly releases it over time to create a surprisingly lush plant and animal habitat. A free guide is available for the Hanging Garden trail. The trail is poorly signed, and no formal parking area is provided at the trailhead. The NPS categorizes this day hike trail as “easy to moderate” (NPS, 2009).

Wahweap Recreation Area

The Wahweap Recreation Area can be reached from Highway 89 via a south access road (Lakeshore Drive) or via a north access road (Wahweap Drive) (Figure 5-157). These access roads are paved (asphalt). Pay stations are located along both access roads in the vicinity of Highway 89. Lakeshore Drive receives more use than does Wahweap Drive, as it is located closer to the city of Page and provides easier access to Phoenix (Hughes 2009). The Wahweap Recreation Area is heavily developed and heavily used. Facilities at this location include:

- Lake Powell Resort (lodge, restaurant, boat tours, gift shop)
- Boat Rentals and Repairs
- Boat Launches and Marina
- Fuel Pumps and Docks
- Stores, Showers, Laundry Facilities
- Picnic Area
- Campground
- Amphitheater
- Ranger Station
- Fishing, Swimming, and Hiking Areas

NPS staff reported visitor numbers of 1,383,000 at the Wahweap Recreation Area for the 2008 calendar year (Sweetland 2009).

Wahweap Overlook

The access road to the Wahweap Overlook is located between the north and south Wahweap Recreation Area access road intersections with Highway 89 (Figure 5-157). This graveled roadway, which is in fair condition, leads to a large, graveled parking area and high point that offers a 360-degree panorama of GCNRA. A rustic shelter and bench are provided for visitors, but there is no railing at the viewpoint. Visitors must pack garbage out and keep pets on leashes. NPS staff reported visitor numbers of 36,250 at the Wahweap Overlook for the 2008 calendar year (Sweatland 2009).

Lone Rock Recreation Area

Located along Highway 89, near the western boundary of GCNRA (Figure 5-157), is the Lone Rock access road. This paved (asphalt) access road leads northeast to a fee station and then to Lone Rock Recreation Area. The area consists of an informal boat launch and primitive campsites. Four micro-flush toilets, six vault toilets, one wheelchair accessible comfort station, an outdoor (cold water) shower, OHV use area, dump station, potable water (seasonal), and a day use area are provided. No reservations are required. Lone Rock is officially closed to the public during the winter months, but Lone Rock Beach still receives some use (Hughes 2009). NPS staff reported visitor numbers of 43,241 at the Lone Rock Recreation Area for the 2008 calendar year (Sweatland, pers. comm.).

BPS-2

Big Water

89

Utah
Arizona

Lake Powell

Intake Pump Station

BPS-1

Glen Canyon Dam

Lower Antelope
Canyon

Page

98

20

89

89A

89A

-  Airport
-  Area Information
-  Beach Access
-  Dam
-  Entrance/Fee Station
-  Marina Services
-  Point of Interest
-  Trailhead/Scenic View
-  Camping
-  Primitive Camping

-  Project Pump Station
-  Proposed Substation
-  Water Conveyance System
-  Project Transmission Lines
-  Highways
-  Roads
-  Glen Canyon NRA
-  State Boundaries
-  Cities
-  Lakes

FERC Project Number:
12966-001
BLM Serial Numbers:
AZA-34941
UTU-85472



Lake Powell Pipeline Project

Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-157

Glen Canyon National
Recreation Area

5.3.13.1.1.2 Vermilion Cliffs National Monument.

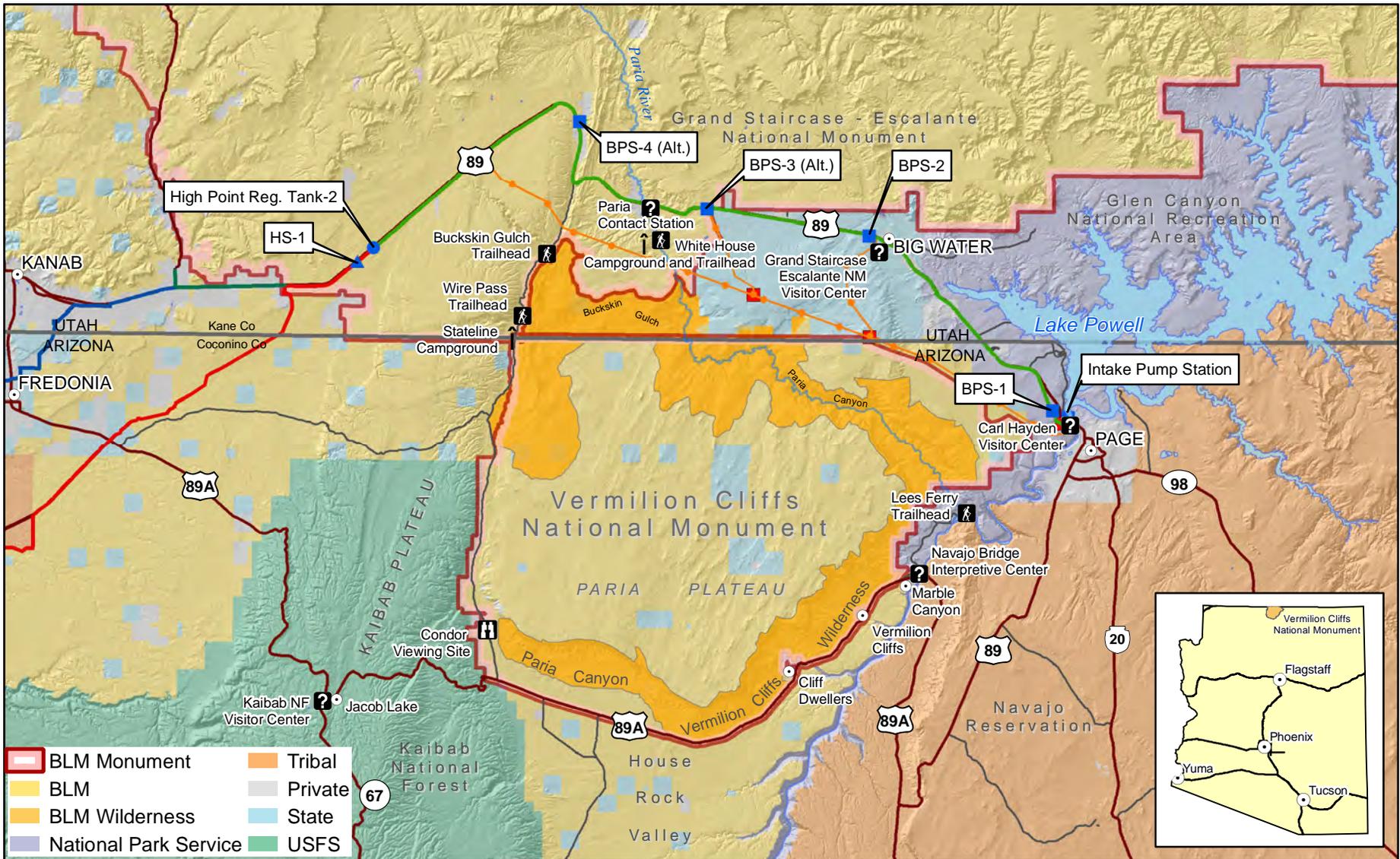
The Vermilion Cliffs National Monument (VCNM) was established on November 9, 2000, by President Clinton to “protect an array of scientific, biological, geological, hydrological, cultural, and historical objects” (BLM, 2008a). Located in northern Coconino County, Arizona, the VCNM contains 279,566 acres of BLM-administered lands, 13,438 acres of Arizona State Trust lands, and 683 acres of private land. Approximately one percent (4,124 acres) of the recreation resources study area lies in the VCNM.

The VCNM borders GCNRA, Glen Canyon National Recreation Area, the BLM’s Kanab (Utah) Field Office, and the BLM’s Arizona Strip Field Office (Figure 5-158). Located in a remote section of northern Arizona, accessible from Highways 89 and 89A via House Rock Valley Road, this area includes spectacular geologic formations.

The scenic beauty of the VCNM’s Paria Canyon and Coyote Buttes is known internationally. The colorful and winding corridors, narrow constricted gorges, and multilayered displays of vibrantly colored sandstone attract hikers and photographers. There are no designated trails and permits are required. Other recreational opportunities and features in the Paria Canyon/Coyote Buttes include wildlife viewing, geologic viewing, a cultural/historic site, dispersed camping, and an interpretive site.

5.3.13.1.1.3 Paria Canyon – Vermilion Cliffs Wilderness.

Located in Arizona and Utah, this WA is primarily (90 percent) within VCNM but also within the Kanab Field Office (10 percent), and is located south of GSENM. WA This area is accessible from Highways 89 and 89A via House Rock Valley Road. The BLM’s Kanab Field Office and Arizona Strip Field jointly manage this designated WA for the use and enjoyment of visitors in a manner that leaves the area unimpaired for future use and enjoyment as wilderness (BLM, 2008b). BLM staff reported dispersed visitor use numbers of 40,256 for the PCVCW between October 1, 2008, and September 30, 2009 (Kiel 2009a).



BLM Monument	Tribal
BLM	Private
BLM Wilderness	State
National Park Service	USFS

Water Conveyance System	Project Pump Station	Lakes
Hydro System - South Alternative	Project Regulating Tank	Major Rivers & Streams
Hydro System - Southeast Corner Alternative	Project Hydro Station	State Boundaries
KCWCD System	Cities	Project Transmission Lines
Hydro System - Existing Highway Alternative	Proposed Substation	Highways
		Roads

FERC Project Number:
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BLM Serial Numbers:
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Lake Powell Pipeline
Spatial Reference: UTM Zone 12N, NAD-83

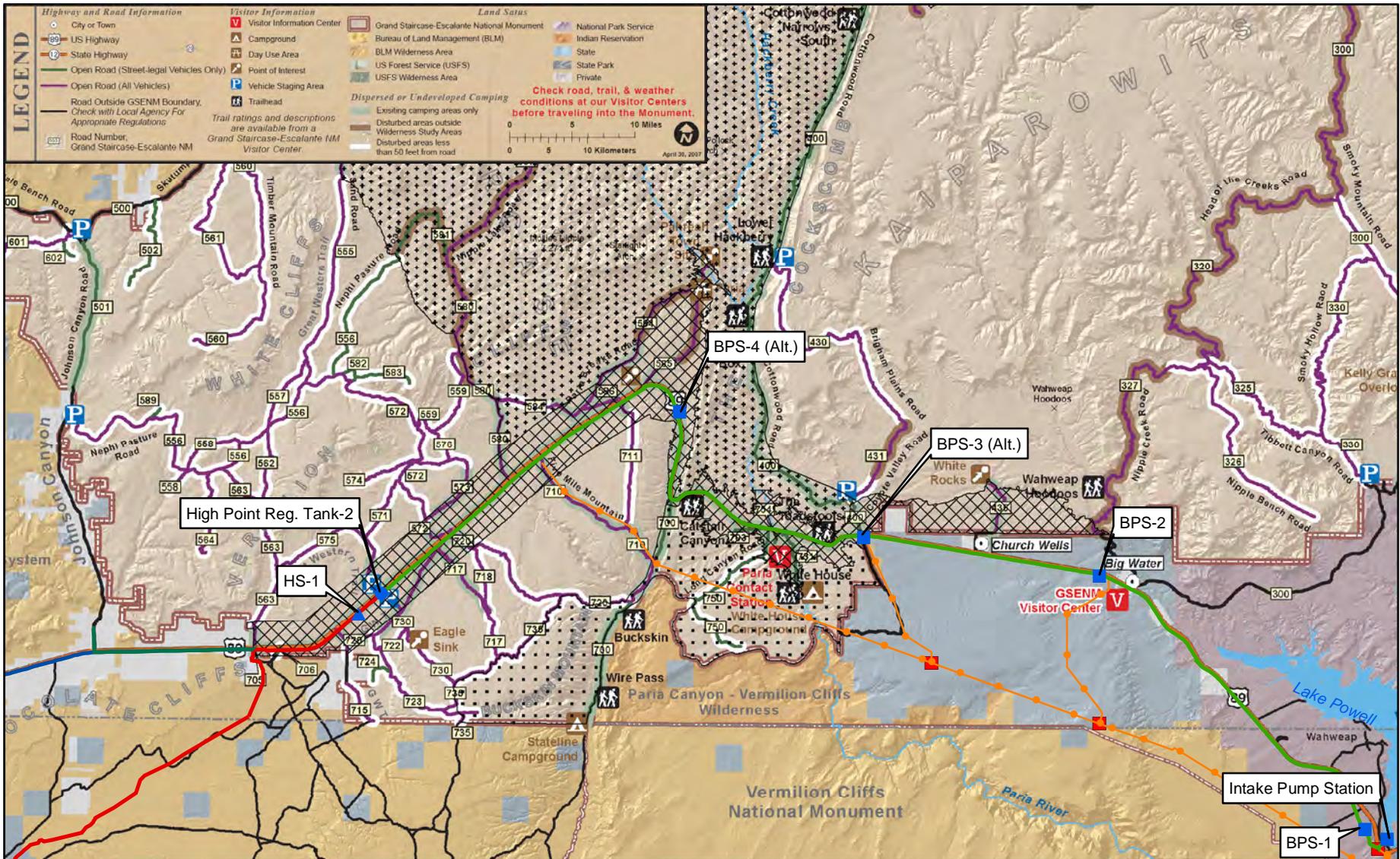
UDWRe Figure 5-158

Vermilion Cliffs National Monument

5.3.13.1.1.4 Grand Staircase-Escalante National Monument.

Grand Staircase-Escalante National Monument (GSENM), located in southern Utah, encompasses the spectacular Grand Staircase of cliffs and terraces, stretches across the rugged Kaiparowits Plateau, and includes the Escalante River Canyons. Managed by BLM, GSENM includes approximately 1,870,000 acres of public lands with approximately 15,000 acres of private lands dispersed within the outer boundary. Sixty-eight percent of the national monument located in Kane County and 32 percent in Garfield County (BLM, 2000). The GSENM is partially bordered on the east by GCNRA and on the south by the PCVCWA (Figure 5-159). Approximately 16 percent (54,000 acres) of the recreation resources study area lies in GSENM.

Visitor development in GSENM is limited to minor facilities, such as interpretive kiosks and pullouts located in small areas of the monument's periphery (BLM, 2000). The major BLM visitor centers are located outside of GSENM's borders, in surrounding towns. GSENM does not contain any designated wilderness areas, although about 50 percent of GSENM is wilderness study area (including the Cockscomb and Wahweap wilderness study areas, see below).



<ul style="list-style-type: none"> ■ Project Pump Station ● Project Regulating Tank ▲ Project Hydro Station ■ Proposed Substation 	<ul style="list-style-type: none"> — Water Conveyance System — Hydro System - South Alternative — Hydro System - Southeast Corner Alternative — KCWCD System — Hydro System - Existing Highway Alternative — Project Transmission Lines 	<p>SRMA</p> <ul style="list-style-type: none"> HIGHWAY 89 CORRIDOR SRMA PARIA CANYON-VERMILION CLIFFS SRMA PARIA-HACKBERRY SRMA 	<p>FERC Project Number: 12966-001</p> <p>BLM Serial Numbers: AZA-34941 UTU-85472</p>	<p>Lake Powell Pipeline</p> <p>UDWRe Figure 5-159 MWH</p>
<p>Source: http://www.blm.gov/ut/st/en/fo/grand_staircase-escalante/visitor_information/travel_brochure_.html</p>				<p>Grand Staircase- Escalante National Monument</p>

Guided Trips

For visitors preferring guided trips, GSENM has over 100 operators offering services for: auto tours, hiking, backpacking, bicycling, horseback riding, ranch recreation, hunting, fishing, and therapeutic recreation (KCOTFC, 2010.) Geology and natural history tours, photography classes, environmental education, and pack trips are also available.

Cockscomb Wilderness Study Area

The Cockscomb Wilderness Study Area (WSA), located on the north side of Highway 89 between the Cockscomb on the west and the eastern GSENM boundary (Figure 5-160), provides opportunities for primitive recreation. Visitors can explore the Paria River by foot or horseback (BLM, Undated 1). The aesthetic Cockscomb, a jagged sandstone ridge, affords visitors a challenging and scenic trek to the top, which can be accomplished by rock scrambling or by following a side canyon to the summit. Sightseeing, cultural site investigation, photography, nature study, day hiking, outdoor art work, bird watching, and other pursuits are possible recreation endeavors within the Cockscomb WSA.

Wahweap WSA

The Wahweap WSA is located north of Highway 89 and east of the Cockscomb WSA (Figure 5-161). This WSA, which includes the White Rocks “Point of Interest”, can be reached via Highway 89 at Church Wells (BLM, Undated 2).

Highway 89 Corridor Special

The Highway 89 corridor is a Special Recreation Management Area (SRMA) where more intense recreation management is needed because it is a focal point for visitation. The Highway 89 Corridor SRMA encompasses the highway corridor within GSENM, and includes features such as the old Pahreah Townsite, BLM Paria Contact Station, White House Campground, and Paria River Canyon. Recreation opportunities along the Highway 89 Corridor SRMA include scenic driving, day-use hiking, camping, road and mountain bicycling, scenic and interpretive viewing.

SRMAs are “well-defined land units that support a combination of natural features that make them attractive and management for interrelated recreation opportunities on a sustained basis” (BLM, 1999). In SMRAs, emphasis is placed on maintaining specific features or recreation opportunities that make the SMRA unique or particularly desirable to recreationalists and other members of the public.



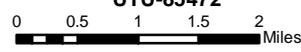
Project Pump Station	BLM	GSENM Boundary
Proposed Substation	BLM Wilderness	FERC Project Number: 12966-001
Water Conveyance System	State	BLM Serial Numbers: AZA-34941 UTU-85472
Project Transmission Lines	Private	
Highways	Township	
Streams	Section	

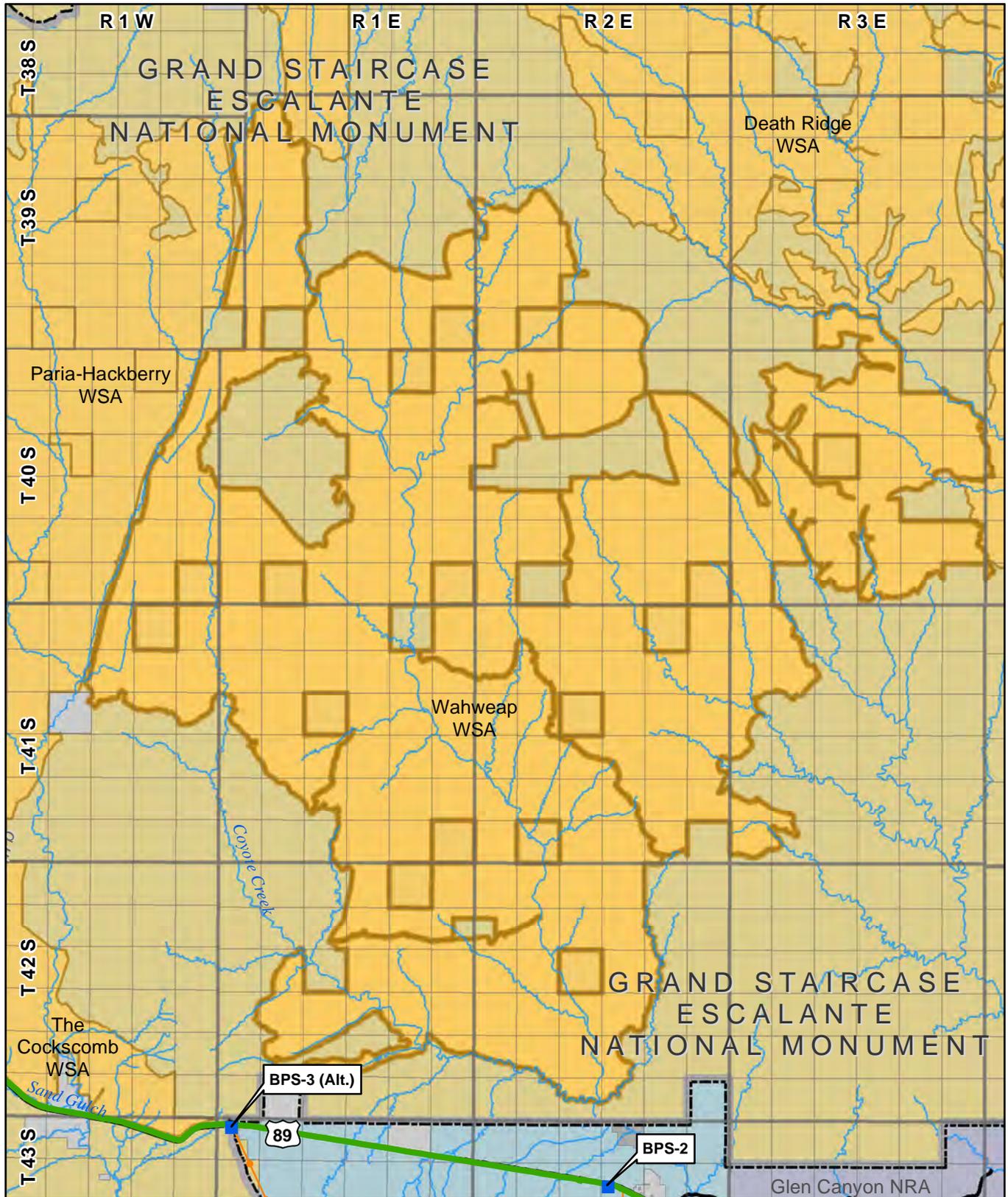
Lake Powell Pipeline Project

Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-160 **MWH**

The Cockscomb Wilderness Study Area





Project Pump Station	BLM
Water Conveyance System	BLM Wilderness
Project Transmission Lines	National Park Service
Highways	State
Streams	Private
Township	Section

GSENM Boundary

FERC Project Number:
12966-001

BLM Serial Numbers:
AZA-34941
UTU-85472

0 1 2 3 4 Miles

Lake Powell Pipeline Project

Spatial Reference: UTM Zone 12N, NAD-83

UDWR Figure 5-161 **MWH**

**Wahweap
Wilderness Study Area**

Historic Trails

The general alignments of the Old Spanish National Historic Trail and the Dominguez – Escalante Trail are believed to follow the 89 corridor through GSENM.

The Old Spanish National Historic Trail links Santa Fe and Los Angeles, traveling 2,700 miles across six states (BLM, Undated 3). Designated by Congress as a National Historic Trail in 2002, it is jointly administered by BLM and NPS in partnership with other federal, state, and local government entities, as well as private landowners that manage or own lands along the trail route. Only a few remnant traces of the rugged trail remain. Although seldom used for recreational purposes, opportunities along the trail include camping, hiking, landscape photography, and wildlife viewing. Many points of historical or cultural interest can be found along the trail as well. Vehicles must remain on existing roads. The trail does not currently have any visitor facilities or services.

Fathers Francisco Dominguez and Silvestre Escalante, Spanish priests, traveled on foot from Santa Fe, New Mexico, through western Colorado, to Spanish Fork, Utah, and then down through northern Arizona and back to Santa Fe in 1776. While the exact route of the Dominguez-Escalante Trail is unknown, the priests may have followed the present day Highway 89 corridor.

Refer to Section 5.3.16 (Visual Resources) and the Final Visual Resources Study Report for up-to-date information on historic trails (UDWRe 2016b).

Paria Canyons and Plateaus Special Recreation Management Area

The Paria Canyons and Plateaus SRMA includes lands south of the Highway 89 Corridor SRMA and east of House Rock Valley Road. Recreational activities available in the Paria Canyons and Plateaus SRMA include canyoneering, equestrian use, backpacking, hiking, hunting, and scenic touring (BLM, 2000). Access to this area is available primarily from House Rock Valley Road and the Paria Contact Station turnoff. In the 2000 GSENM Management Plan, BLM stated that this SRMA will be managed to provide continued primitive, uncrowded, and remote recreational experiences. While overall social encounters will remain comparatively low, the Paria Canyons and Plateaus SRMA are managed to create opportunities for a range of social encounters.

Big Water Visitor Center

GSENM Visitor Center in Big Water is located east of GSENM, on the south side of Highway 89 in the Town of Big Water (Figure 5-159). Constructed in 2002, this modern structure includes indoor and outdoor paleontology exhibits, interpretive signage, outdoor amphitheater, picnic tables, shade structures, restrooms with running water, water fountains, a bookstore, and a sizable, lighted parking lot that can accommodate RVs and includes two universally accessible parking spaces. The center is open daily. Visitor Center staff members reported receiving over 35,000 visitors in 2008. 2015 annual visitation was 36,792 for Paria Contact Station, White House Campground, and Paria River Canyon.

BLM's Paria Contact Station is located along the south side of Highway 89, west of Church Wells and east of the Cockscomb (Figure 5-159). The contact station includes a gravel entrance road and parking lot, modern restrooms, trash and recycling containers, and a water pump. Interpretive signage is also provided near the entryway. The Paria Contact Station includes directional signage to the White House Campground. Information regarding PCVCW is available at the contact center, along with hiking and overnight permits.

To access the White House Campground (Figure 5-159), visitors use the turnoff for Paria Contact Station and a two mile unpaved road. Tucked up against a rock bluff to the north, the White House Campground

consists of a gravel cul-de-sac with: five walk-in tent sites; two vault toilets; picnic tables, grills and fire pits; interpretive signage; and a self-pay station. The White House Campground is open year-round. While there is no campground host, the area is patrolled. The White House Campground receives high use during the spring and throughout the fall, with some use in the summer (Stewart, 2009). BLM staff reported that 881 people used the White House Campground between October 1, 2008, and September 30, 2009 (Kiel, 2009a). 2015 annual visitation was 2,075.

Toadstools Trailhead

The Toadstools Trailhead is located on the north side of Highway 89, just east of the Paria Contact Station (Figure 5-159). The graveled trailhead provides parking for about ten vehicles and several interpretive signs. The 1.5 mile roundtrip Toadstools Trail receives heavy use. The sandy trail, which has a change in elevation gain of only 100 feet, leads hikers through colorful “hoodoos” and unusual rock formations. BLM staff reported use numbers of 5,232 for the Toadstools Trailhead between October 1, 2008, and September 30, 2009 (Kiel, 2009a). 2015 annual visitation was 15,643.

Catstair Canyon Trailhead

The Catstair Canyon is located on the south side of Highway 89, at the hairpin turn just east of the Cockscomb (Figure 5-159). Sight lines for vehicles entering and exiting the trailhead are very poor. Gravel parking for a few vehicles is available and the area receives occasional visitation (Stewart, 2009).

House Rock Valley Road

House Rock Valley Road intersects with Highway 89 just west of the Cockscomb (Figure 5-159) and runs south for 30 miles until it intersects with Highway 89A in Arizona. Driving time between highways 89 and 89A is approximately two hours. When dry, this dirt and gravel road is usually passable for high clearance two-wheel-drive vehicles, but is not recommended for RVs, travel trailers, or passenger cars. Visitors from around the world use this road to access Coyote Butte (Kiel, 2009b). This road, which receives heavy use and is in fair condition, provides access to Five Mile Mountain Road (which intersects with Highway 89 west of the Paria Movie Set Road and is popular with OHVs), Buckskin Gulch Trailhead, Wire Pass Trailhead, and the Stateline Campground/Arizona National Scenic Trail Trailhead. The majority of recreational activities take place to the east (Stewart, 2009) of the road in the PCVCW and VCNM. BLM staff reported use numbers of 463 and 5,361 for the Buckskin Gulch and Wire Pass trailheads between October 1, 2008, and September 30, 2009 (Kiel, 2009a). 2015 annual visitation for the Buckskin Gulch Trailhead was 1,434.

Refer to Section 5.3.16 (Visual Resources) and the Final Visual Resources Study Report for up-to-date information on scenic roads (UDWRe 2016b).

Paria Movie Set and Pahreah Townsite Point of Interest

The Paria Movie Set and Pahreah Townsite historical marker is located along the north side of Highway 89 just west of the Cockscomb (Figure 5-159). An unpaved parking area allows visitors to view the historical marker and read several interpretive signs. From Highway 89 an unpaved road leads about five miles to the movie set and townsite. A toilet and picnic area is located at the site. The last two to three miles of the dirt road are narrow, steep, and winding. It is passable with most normal-to-high clearance vehicles, except in wet weather. The Paria River bed in this vicinity can be experienced on foot or horseback.

The Paria Movie Set was previously located at this site as well. The original Paria Movie Set was torn down, and replaced with a replica (Stewart, 2009). The replica movie set was burned-down by vandals in 2006.

Off Highway Vehicle Use and Hunting

To access Open/ATV roads in the southern portion of GSENM, visitors typically use Highway 89. BLM staff reported dispersed visitor use numbers of 68,086 for the Highway 89 corridor between October 1, 2008, and September 30, 2009 (Kiel, 2009a).

Several Open/ATV roads intersect with Highway 89 west of the Cockscomb. These roads, which are popular with recreational users year round and with rifle/muzzleloader deer hunters in the fall, lead north and south (to Buckskin Mountain) from Highway 89. This area is part of the Paunsaugunt hunting unit, well known for trophy-sized mule deer. Popular roads include Five Mile Mountain, 580, 721, 720, and 717.

Great Western Trail

The Great Western Trail (GWT) is planned to be a 4,000-mile, multiple use pathway that crosses BLM and US Forest Service lands in Arizona, Utah, Idaho, Wyoming, and Montana. Portions of the trail have been designated, including that portion that crosses Highway 89 west of the Cockscomb near milepost 45 (Figure 1-159). Although not signed on Highway 89, the trail is signed just off the highway on both the north and south sides. Small parking areas are provided on both sides of the highway. The parking area on the north side of the highway is graveled, while that on the south side is natural surfaced. Beyond GWT signage on the south side of Highway 89, there is a gravel pullout/turn-around area with split-rail fencing and a trail sign-in station. From here the trail leads south (Road 730) to the Eagle Sink “Point of Interest”. The GWT in this vicinity is mostly used by motorized vehicles, with some equestrian use (Stewart, 2009).

Kanab Visitor Center

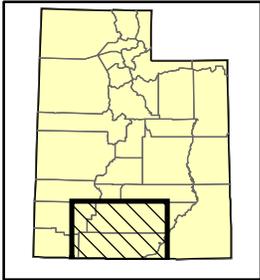
The GSENM Visitor Center is located on the north side of Highway 89, on the east side of Kanab (within the city limits), and several miles west of GSENM. The modern center includes ample, asphalt parking with space for cars and trailers, restrooms with running water, and signage. Indoor exhibits provide information regarding the geology, archaeology, and anthropology of GSENM. Hiking permits and overnight camping permits can be obtained at this visitor center.

Staff at the Kanab Visitor Center commented that the number of visitors received at the center annually had decreased in 2009 from previous years. Approximately 80 to 100 guests would typically visit the center each day in past years, but only 40 to 60 guests were doing so in 2009. 2015 annual visitation was 47,312. Many visitors come to the center seeking permits to the geologic feature in the PCVCW known as “The Wave.”

5.3.13.1.1.5 BLM – Kanab Field Office.

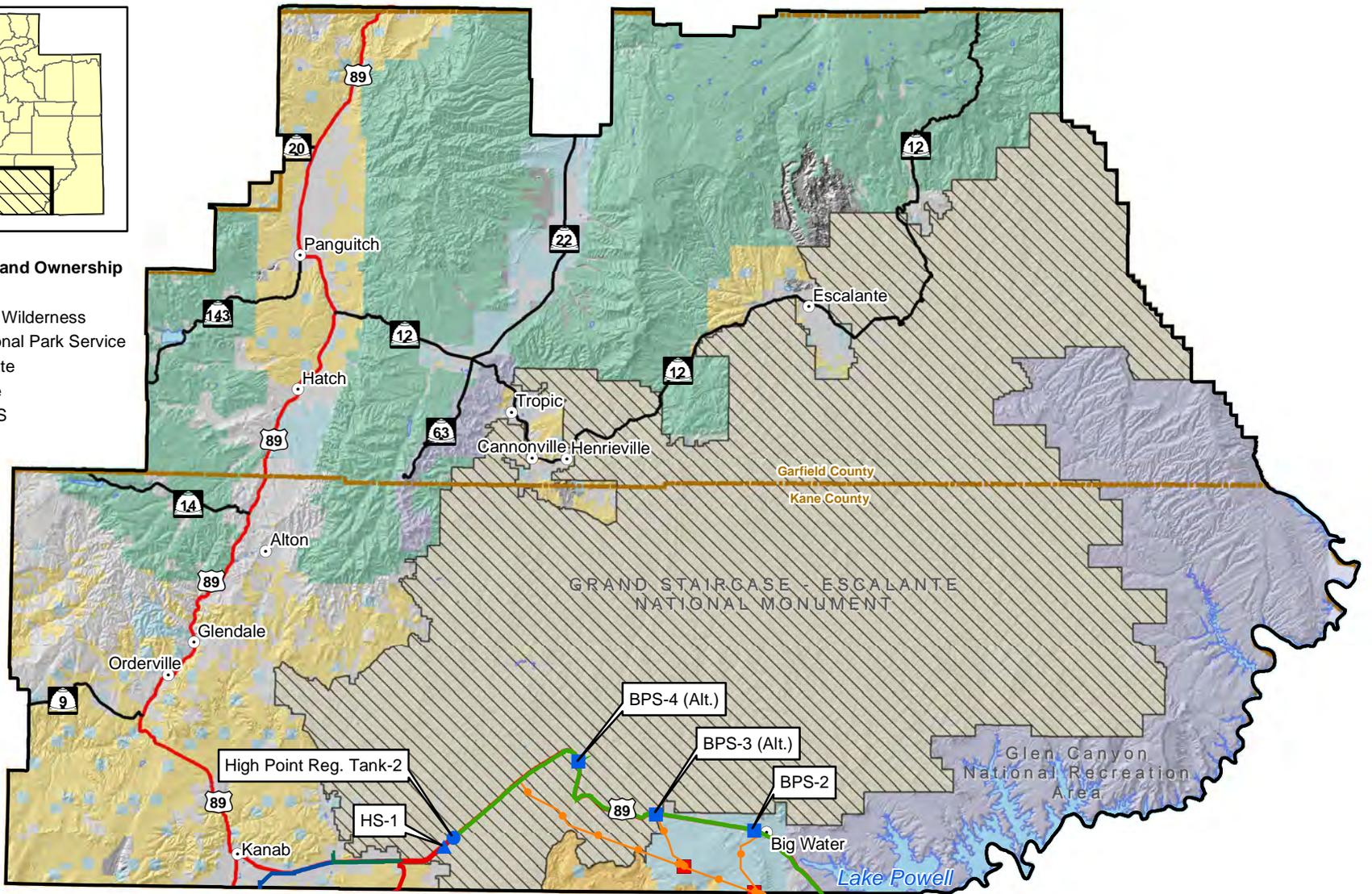
BLM’s Kanab Field Office (KFO) manages lands located in south-central Utah (Figure 5-162). This area is bordered by: Piute and Wayne counties to the north; Washington County and Zion National Park in the west; Arizona state line (including a boundary with Kaibab-Paiute Indian Reservation) to the south; and GCNRA to the east. KFO. Approximately three percent (8,543 acres) of recreation resources study area lands are managed by KFO.

Those areas of KFO west of GSENM are used primarily by OHVs, dispersed campers, and wood cutters. Deer hunting is also popular in fall (Christensen, 2009). The general alignments of several historic trails



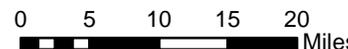
General Land Ownership

- BLM
- BLM Wilderness
- National Park Service
- Private
- State
- USFS



- | | | |
|---|---|--|
| Cities | Water Conveyance System | Interstate |
| Project Pump Station | Hydro System - South Alternative | U.S. Highway |
| Project Regulating Tank | KCWCD System | State Highway |
| Project Hydro Station | Hydro System - Existing Highway Alternative | County Boundaries |
| Proposed Substation | Kanab Field Office | GSENM Boundary |
| Project Transmission Lines | Lakes | |

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UTU-85472



Lake Powell Pipeline

Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-162 MWH

**BLM Kanab Field Office
Administration Area**

(Honeymoon Trail, Old Spanish National Historic Trail, and Dominguez – Escalante Trail) are believed to pass through this same area.

5.3.13.1.1.6 BLM - Arizona Strip Field Office.

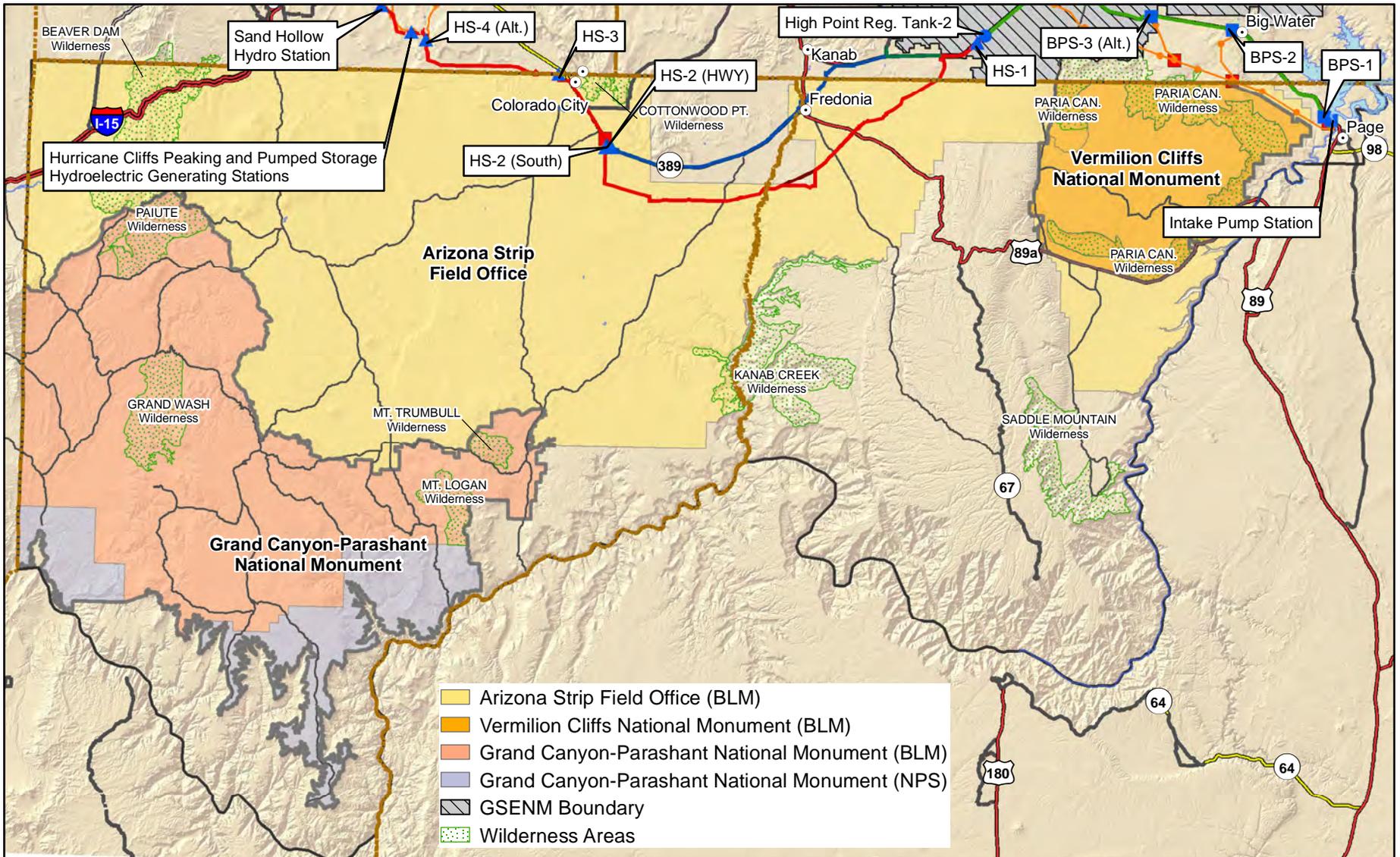
BLM's Arizona Strip Field Office (ASFO) encompasses roughly 1.98 million acres of land between the VCNM to the east and the Grand Canyon-Parashant National Monument to the west (Figure 5-163). The ASFO also borders GCNRA, GSENM, and KFO. The ASFO is located in both Coconino and Mohave Counties, Arizona, with: 1,679,896 acres of BLM lands, 170,165 acres of Arizona State Trust lands, and 130,962 acres of private lands. The communities of Fredonia and Colorado City, Arizona, are located on enclaves of private lands within ASFO, with the communities of St. George, Big Water, Hurricane, Hildale, and Kanab, Utah, directly across the state line. Since ASFO includes several communities within the Planning Area that are linked via US 89A, Arizona 389, and Interstate 15, together with large portions of the area being easily accessible via a number of unpaved county roads, it receives a fair amount of recreational use (BLM, 2008c). Approximately 25 percent (81,240 acres) of the recreation resources study area is managed by ASFO.

The ASFO attracts visitors interested in wildlife hunting and viewing opportunities. The region has long been known for its trophy-size mule deer, as well as populations of pronghorn, coyotes, quail, dove, rabbits, waterfowl, and the seldom seen mountain lion. Bighorn sheep are also seen in portions of the ASFO. In contrast, many of the public lands in the region are near to and thus readily accessible from communities, making community interface lands extremely important for day-use recreation and organized group activities (BLM, 2008c).

Probably the most popular activities in the region involve some form of OHV driving for pleasure. Exploring or sightseeing constitutes the activity of choice for many visitors and can involve various modes of transportation, such as sports-utility vehicle, equestrian, small aircraft, walking, OHV, hiking, motorcycle, bicycle, sedan, or motor home. Other popular activities include visiting cultural sites, bird watching, viewing wildflowers, camping, hiking, backpacking, climbing, and seasonal whitewater boating. Flying radio-controlled aircraft, rock crawling, parasailing, and geocaching are also growing in popularity.

The majority of lands in ASFO are essentially a transition between the two extremes of urban and wilderness settings. These transitional lands offer a moderate to high degree of challenge and risk for visitors seeking outdoor adventures of many sorts. Opportunities for the public to enjoy a wide variety of motorized, mechanized, and non-motorized recreation activities are very good because of the ample supply of unpaved roads, primitive roads, trails, and a handful of backcountry airstrips. These lands contain a mix of trailheads (ranging from well-developed with facilities to backcountry airstrips), information/safety signs, and rudimentary recreation facilities that provide modest, setting-appropriate convenience for visitors. The near-urban public lands tend to be subjected to the greatest variety of simultaneous visitor use in the most confined space. While challenge and risk are typically not as important as in more remote settings, these lands can be important for competitive and challenge events. Many of the primary routes provide de facto "backcountry byway" opportunities, as no official backcountry byway designations exist.

Stateline Campground is a small campground located 9.3 miles south of Highway 89, along the House Rock Valley Road. It is one mile south of the Wire Pass Trailhead. Facilities at this campground include both drive-in and walk-in campsites (7 total), restrooms, picnic tables, and fire pits. There is no water, no trash pick-up and no fee to camp. The Arizona Scenic Trail can be access from the Stateline Campground.



○ Cities	— Interstate	— Water Conveyance System	● Project Regulating Tank
☪ Lakes	— US Highway	— Hydro System - South Alternative	▲ Project Hydro Station
▤ County Boundaries	— ST Highway	— Hydro System - Southeast Corner Alternative	FERC Project Number: 12966-001
▭ Kanab Field Office	— Hwy	— KCWCD System	BLM Serial Numbers: AZA-34941 UTU-85472
▭ Monument Boundary	— Major Road	— Hydro System - Existing Highway Alternative	
■ Proposed Substation	— Minor Road	■ Project Pump Station	
— Project Transmission Lines			

0 6 12 18 24 Miles

Lake Powell Pipeline
Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-163

BLM Arizona Strip Field Office Administration Area

Sand Hills Special Recreation Management Area and Uplands Recreation Management Zone

The BLM - ASFO has identified several SRMAs within the recreation resources study area. These areas have a distinct primary recreation-tourism market (the targeted visitors and where they come from), as well as a corresponding and distinguishing recreation management strategy. Within each SRMA, one or more potential Recreation Management Zones (RMZs) were identified, with each zone providing a particular recreation niche within the larger targeted recreation-tourism market strategy.

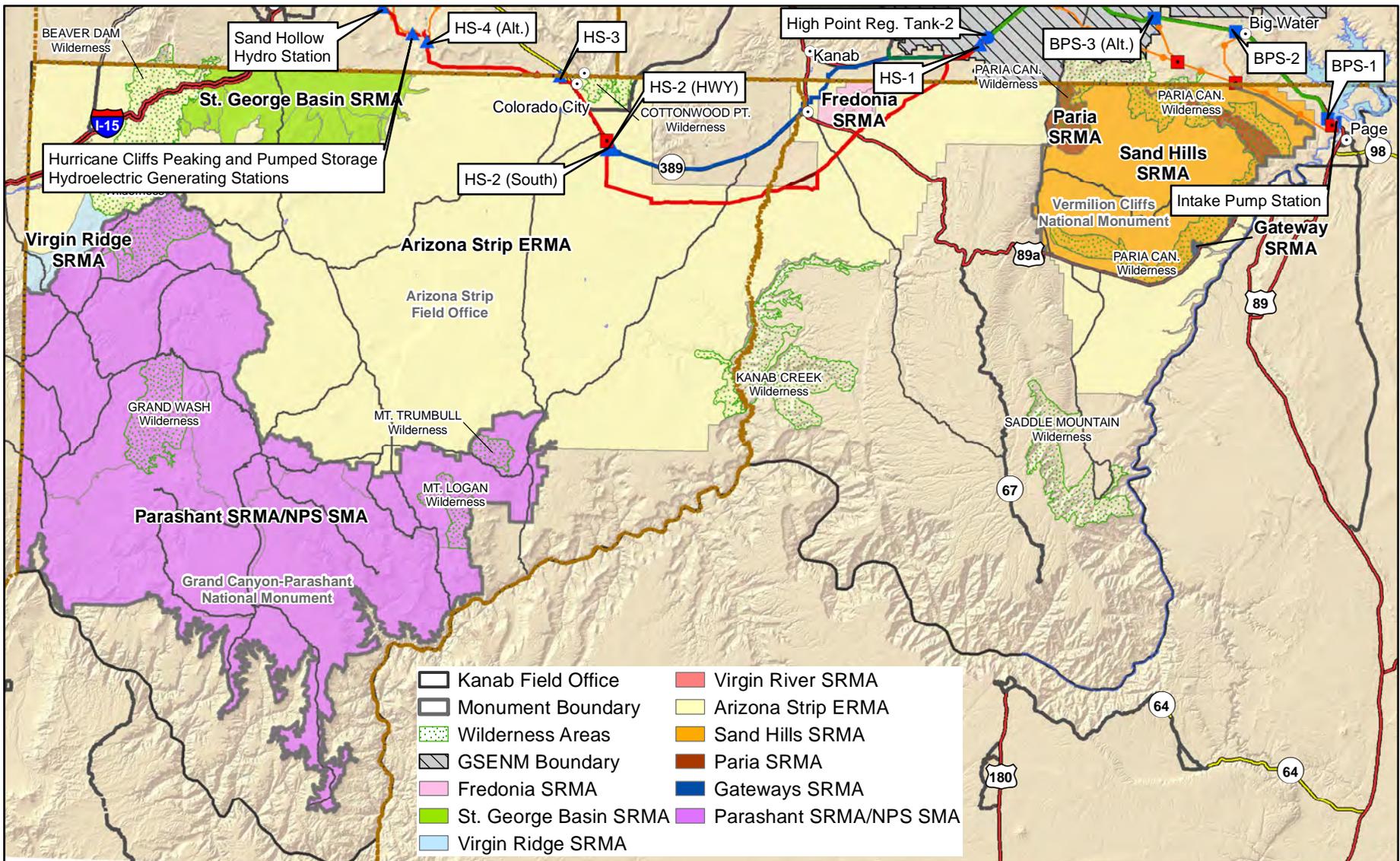
The Sand Hills SRMA and Uplands RMZ are located at the east end of the recreation resources study area. These areas, which overlap with VCNM, are adjacent to GCNRA. Approximately 8,500 acres of the Sand Hills SRMA and Uplands RMZ are managed by ASFO (Figures 5-164 and 5-165).

Fredonia Special Recreation Management Area and Associated Recreation Management Zones

The Fredonia SRMA (14,969 acres), Shinarump Cliffs RMZ (3,965 acres), Badlands RMZ (5,151 acres), and Fredonia Rural Park RMZ (5,853 acres) are located east of the Town of Fredonia (Figures 5-164 and 5-165).

The primary strategy for the Fredonia SRMA is to target a demonstrated community recreation-tourism market demand from primarily local communities (dependent on public lands recreation and/or related tourism use, growth, and/or development), as well as some regional visitors, for motorized/mechanized/non-mechanized exploring, managed target shooting, fitness activities, sightseeing, equestrian, hiking, competitive and organized events, viewing and appreciating natural landscapes and cultural sites. This demand is supported by the area's distinctive landscape and its close proximity to the communities of Fredonia, Arizona, and Kanab, Utah; local recreation-tourism visitors value these public lands as their own 'back-yard' recreation settings (BLM, 2008c).

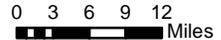
The Badlands RMZ is managed for self-directed, primitive, adventure, challenge, exploration in a natural setting close to town. The Shinarump Cliffs RMZ is managed for close-to-home, self-directed motorized/mechanized adventure for scenic, natural, and historic appreciation. The Fredonia Rural Park RMZ is managed for quick, easy access from town to sustainable day-use adventure, challenge, exercise, social, and outdoor recreation (BLM, 2008c).



Kanab Field Office	Virgin River SRMA
Monument Boundary	Arizona Strip ERMA
Wilderness Areas	Sand Hills SRMA
GSENM Boundary	Paria SRMA
Fredonia SRMA	Gateways SRMA
St. George Basin SRMA	Parashant SRMA/NPS SMA
Virgin Ridge SRMA	

Cities	Water Conveyance System	Interstate
Lakes	Hydro System - South Alternative	US Highway
County Boundaries	Hydro System - Southeast Corner Alternative	ST Highway
Proposed Substation	KCWCD System	Hwy
Project Pump Station	Hydro System - Existing Highway Alternative	Major Road
Project Regulating Tank	Project Transmission Lines	Minor Road
Project Hydro Station		

FERC Project Number:
 12966-001
 BLM Serial Numbers:
 AZA-34941
 UTU-85472

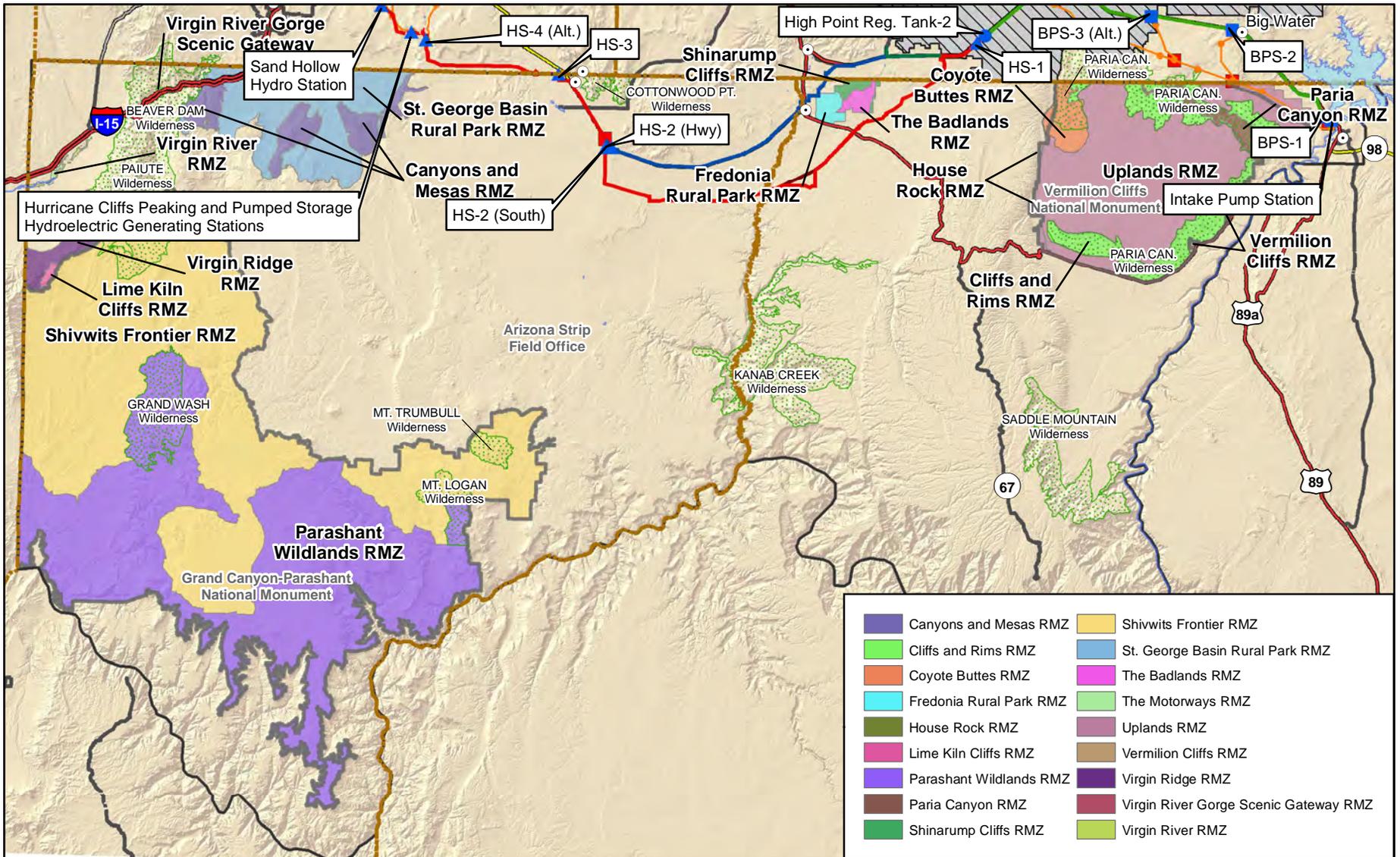


Lake Powell Pipeline

Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-164

Sand Hills and Fredonia SRMAs



○ Cities	■ Project Pump Station	— Interstate	— Water Conveyance System
☪ Lakes	● Project Regulating Tank	— US Highway	— Hydro System - South Alternative
▭ County Boundaries	▲ Project Hydro Station	— ST Highway	— KCWCD System
▭ Kanab Field Office	■ Proposed Substation	— Hwy	— Hydro System - Southeast Corner Alternative
▭ Monument Boundary	— Project Transmission Lines	— Major Road	— Hydro System - Existing Highway Alternative
▭ GSENM Boundary			
▭ Wilderness Areas			

FERC Project Number: 12966-001
BLM Serial Numbers: AZA-34941, UTU-85472

Lake Powell Pipeline
 Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-165

Uplands, Shinarump Cliffs, Badlands, and Fredonia Rural Park RMZs

0 3 6 9 12 Miles

Cottonwood Point Wilderness

Cottonwood Point Wilderness is part of the impressive Navajo Sandstone plateau overlooking the Arizona Strip to the south. The 1,000-foot high, multicolored Vermilion Cliffs, wooded canyons, craggy pinnacles, and alcoves dominate the landscape and are visible from scenic Highway 389. The wilderness is contiguous to the southern end of BLM's Canaan Mountain Wilderness in Utah which has been recommended for wilderness designation. The wilderness is adjacent to the small communities of Colorado City, Arizona, and Hildale, Utah, and the rural settlement of Cane Beds. Urban sights and sounds are readily noticeable from much of the wilderness. The exterior wilderness boundary encompasses various parcels of private lands, primarily around the southern periphery of Lyon Point.

Fredonia Welcome Center

Located on Highway 89A, north of its intersection with Highway 389, is the Fredonia Welcome Center. This development, which is in good condition, includes a lighted parking lot with 20 parking spaces, four trailer spaces, four shaded picnic tables, restrooms, interpretive signage, a pet exercise area, an outdoor exhibit including a historic log cabin (built circa 1930), and a shop.

Historic Trails

The general alignments of several historic trails (Honeymoon Trail, Old Spanish National Historic Trail, and Dominguez – Escalante Trail) are believed to pass through the ASFO portion of the recreation resources study area. Additionally, portions of GWT are located in this area.

Honeymoon Trail (BLM - ASFO and SGFO) is located between St. George, Utah, and Lee's Ferry, Arizona. This historic wagon route was used for several years by young married couples from Arizona seeking a "temple" marriage in what was the only Mormon temple west of the Mississippi River, hence its interesting name. The trail is 138 miles one-way, with elevations ranging from 3,000 feet to 5,000 feet mean sea level (MSL). Permitted uses on the trail include hiking, equestrian use, and some vehicle use. The trail can be used in any season, as long as it is dry. BLM categorizes Honeymoon Trail as easy-to-moderate, and notes that, while much of the trail is still visible, it is only sporadically marked (BLM, 2002).

Refer to Section 5.3.16 (Visual Resources) and the Final Visual Resources Study Report (UDWRe 2016b) for up-to-date information on historic trails.

Fredonia – Vermilion Cliffs Scenic Drive Road

Fredonia is a western point of departure for the Highway 89 and Highway 89A loop (BLM, 2009), which has been designated "Scenic" by the Arizona Department of Public Transportation. The best time for traveling on the road is between May and October (BLM, 2009). The road may not be passable in winter months. This loop proceeds east on Highway 89A from Fredonia through wide landscapes of rolling sage plains that slowly rise to the approach of the Kaibab Plateau, or west to the Kaibab Monocline. The loop circles the massive Paria Plateau and northern Kaibab Plateau Uplift. The loop continues through the Kaibab Plateau, Marble Canyon, Glen Canyon, and the Cockscomb.

Refer to Section 5.3.16 (Visual Resources) and the Final Visual Resources Study Report (UDWRe 2016b) for up-to-date information on scenic roads.

Arizona Strip Pull-Off

The Arizona Strip Pull-off is located on the west side of Highway 389 near milepost 9. The graveled pull-off is capable of accommodating about 20 cars, and includes interpretive signage on the Vermilion Cliffs and Honeymoon Trail.

5.3.13.1.1.7 Kaibab – Paiute Indian Reservation.

The Kaibab-Paiute Indian Reservation encompasses more than 120,000 acres of plateau and desert grassland in northern Arizona, just southwest of Fredonia. Highway 389 bisects the Reservation. Pipe Spring National Monument (PSNM, described below) is adjacent to Highway 389 and surrounded by Kaibab-Paiute Indian Reservation. The Kaibab Band of Paiute Indians offers interpretive programs and leads tours of ancient rock art sites. Kaibab band members work as seasonal rangers and help tell the Pipe Spring story from the Paiute point of view. Seasonal hunting and fishing is available to the general public by permit. Public travel on Kaibab-Paiute Indian Reservation is limited to the existing county roads (Rouch, Moccasin, and Mt. Trumbull/Toroweap). Travel elsewhere requires a permit and/or guide services. Approximately 10 percent (33,561 acres) of the recreation resources study area lies on Kaibab-Paiute Indian Reservation.

The Kaibab Band of Paiute Indians tribal headquarters is located along the north side of Highway 389, adjacent to PSNM.

Kaibab-Paiute Tribe Campground and RV Park

The Kaibab-Paiute Tribe Campground and RV Park is located off of Highway 389, on Moccasin Road in the Pipe Spring National Monument. The 47-unit campground is open from April through October. Operated on a first-come-first serve basis, the campground includes amenities such as: potable water, vault restrooms, showers, grills, picnic tables, and fire rings. No utility hook-ups or waste disposal is available, and ATV use is prohibited. The Kaibab-Paiute Tribe Campground and RV Park charges user fees.

Trails

The general alignments of the Old Spanish National Historic Trail and the Honeymoon Trail are believed to pass through Kaibab-Paiute Indian Reservation.

Visitors to Kaibab-Paiute Indian Reservation can hike the Heart (or Mu'uputs) Canyon Trail for a fee, using a guide arranged in advance. This trail is located several miles north of Highway 389.

Refer to Section 5.3.16 (Visual Resources) and the Final Visual Resources Study Report (UDWRe 2016b) for up-to-date information on historic trails.

5.3.13.1.1.8 Pipe Spring National Monument.

Surrounded by Kaibab-Paiute Indian Reservation and located just north of Arizona Highway 389, PSNM is a historic Mormon settlement that is part of the National Park system. Designated in 1923, Pipe Spring National Monument (PSNM) commemorates western pioneer settlement and American Indian-pioneer interactions on the frontier. Living history in the monument depicts how an early Mormon settlement looked and worked in the 1800s. The expansive view from the monument is an important part of its historic character, because it provides an appreciation of the settlement's isolation and of the commanding

position provided by its location. Approximately 40 acres of the recreation resources study area is on land administered and managed by the Pipe Spring National Monument.

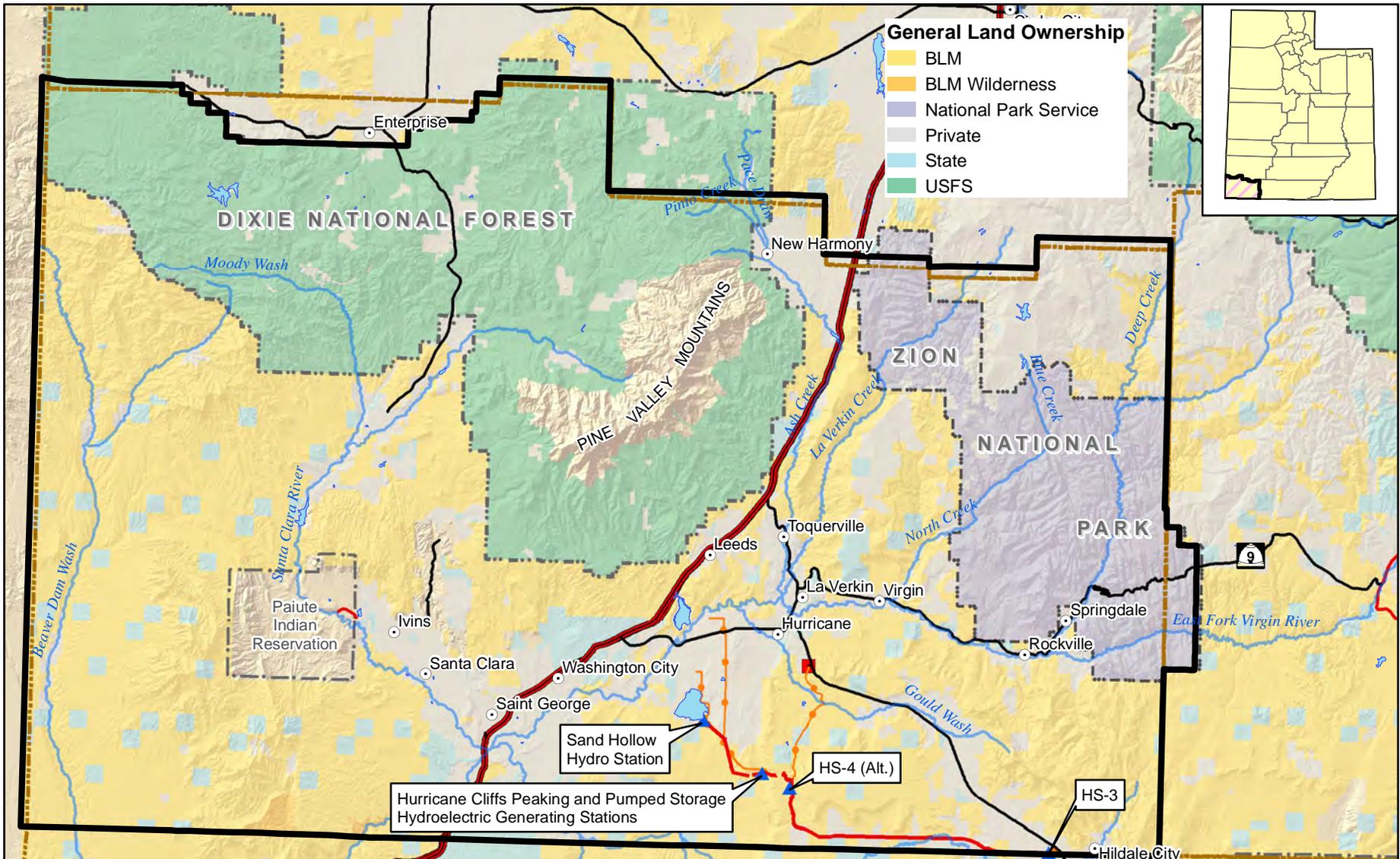
PSNM is a day-use park that includes a visitor center, bookstore, museum, ranch building and grounds (including corrals, an orchard, a seasonal garden, and cabins). PSNM also includes the Winsor Castle fort and a one-half mile loop known as Ridge Trail. The ranch and buildings are open daily and tours are offered at the historic fort every 30 minutes. In the summer, rangers also give ‘living history’ demonstrations (KCOTFC, 2010). Scenic views of the Arizona Strip can be observed along the Ridge Trail. Approximately 55,000 people visit PSNM annually.

5.3.13.1.1.9 BLM – St. George Field Office.

The 629,000 acres of public lands administered by BLM’s SGFO lie almost entirely within Washington County, Utah (Figure 5-166). Situated in the southwestern corner of Utah, the area lies astride the transition between three major physiographic provinces including the Colorado Plateau, the Great Basin, and the Mojave Desert. This unique blend of geologic landforms creates a wealth of varying landscapes, open vistas, and spectacular scenery that is recognized in national and international sectors. Interstate 15 provides the primary north-south access through SGFO. Utah Highways 9 and 59, which have been designated “Scenic”, provide the primary east-west access. Zion National Park and the Pine Valley Mountains of the Dixie National Forest define the eastern and northern boundaries of SGFO. To the west lie the desert valleys and mountains of Nevada, while the broad, undeveloped expanses and rugged topography of the Arizona Strip lie immediately to the south (BLM, 1999). Approximately 12 percent (38,746 acres) of the recreation resources study area is managed by the SGFO.

In its 1999 *St. George Field Office Record of Decision and Resource Management Plan*, BLM stated that its objective for recreation management was to “...provide an array of quality recreation experiences within the agency’s capability logical recreation niche to meet the reasonable needs and expectations of local residents and visitors from outside the area” (BLM, 1999). In its plan, BLM also asserted that public lands in Washington County would generally remain open (excepts as otherwise prescribed) to most forms of outdoor recreation including, but not limited to: hiking, touring, camping, hunting, picnicking, sightseeing, rock hounding, mountain biking, equestrian use, swimming, fishing, rafting/kayaking, rock climbing, target shooting, and various forms of motorized recreation.

Traffic counter data collected by BLM in 2010 showed that 10,931 vehicles used the 2800 Road South that leads into the Warner Valley from Hurricane. Roads and trails in this area are used for motorcycle, ATV, mountain bike, and equestrian events. These events include the Cholla Challenge mountain bike race and the Color Country Endurance Ride (equestrian).



○ Cities	— Interstate	● Project Regulating Tank
▭ BLM St. George Field Office	— U.S. Highway	▲ Project Hydro Station
▭ Lakes & Reservoirs	— State Highway	— Water Conveyance System
— Major Rivers & Streams	▭ National Parks	— Hydro System - South Alternative
▭ County Boundaries	▭ Dixie National Forest	— Hydro System - Southeast Corner Alternative
▭ Proposed Substation	▭ Indian Reservation	— Hydro System - Existing Highway Alternative
— Project Transmission Lines	■ Project Pump Station	— KCWCD System

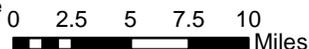
FERC Project Number:

12966-001

BLM Serial Numbers:

AZA-34941

UTU-85472



Lake Powell Pipeline

Spatial Reference: UTM Zone 12N, NAD-83

UDWRe Figure 5-166

BLM St. George Field Office Administration Area

Off-Highway Vehicle Use

Statewide OHV issues within Utah are addressed in a comprehensive fashion by the Utah Division of Parks and Recreation (UDPR) through the OHV Advisory Council. The approximately 629,000 acres of public land within the administrative boundary of SGFO are designated as “open to OHV use”, “open for OHV use on existing or designated roads/trails”, or “closed to OHV use”. Approximately 13 percent (80,668 acres) of these lands are open to OHV use; approximately 65 percent (412,329 acres), are open for OHV use on existing or designated roads/trails; and approximately 22 percent (135,775 acres) are closed to OHV use.

OHV use on public lands in Washington County is, in large part, limited to use of existing roads and trails. OHV use in several special management areas and watersheds is limited to designated roads and trails. The Sand Mountain SRMA is open to OHV use without limitation. Portions of the Red Cliffs National Conservation Area are closed to OHV use.

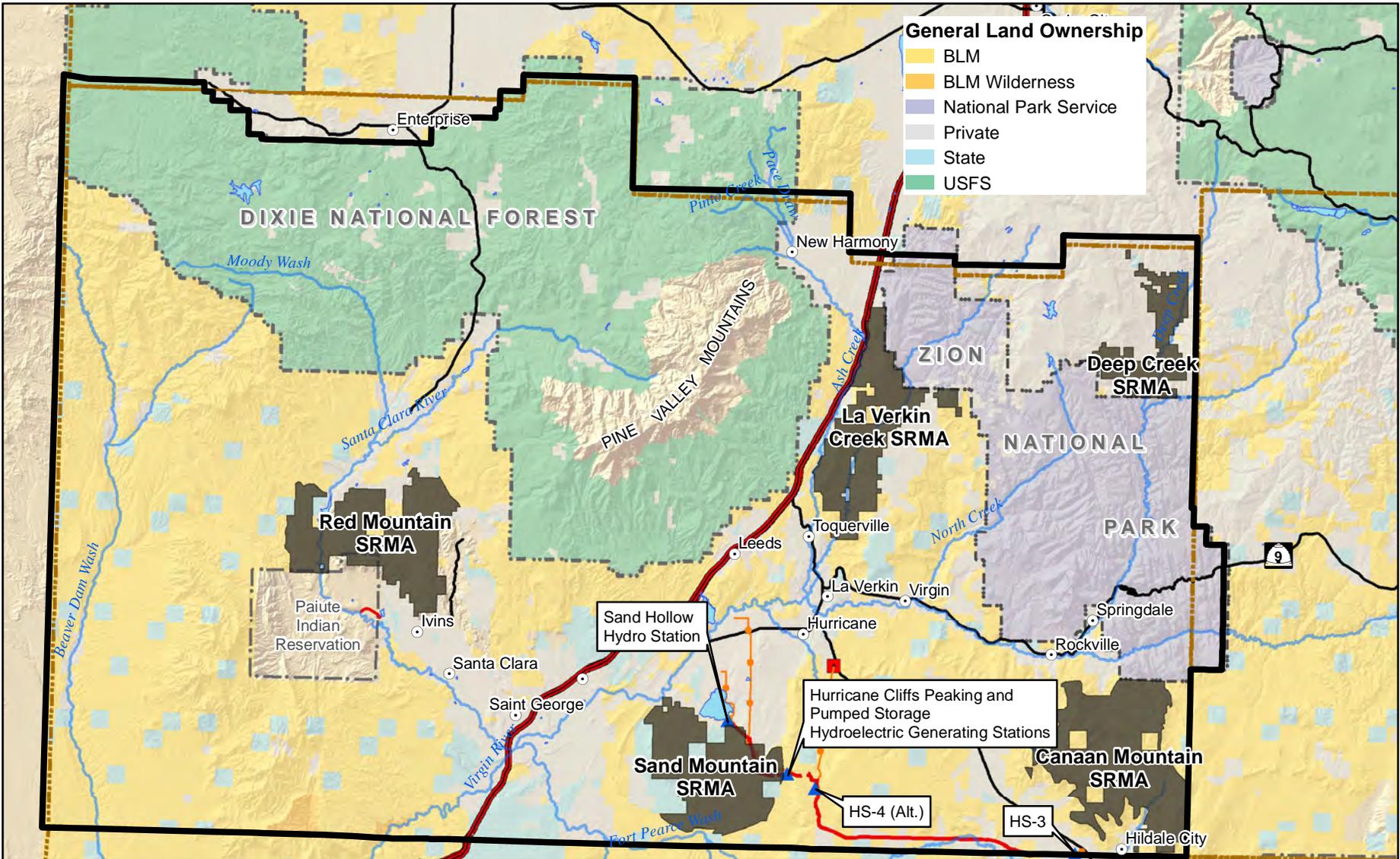
Sand Mountain Special Recreation Management Area

Sand Mountain SRMA encompasses 20,709 acres of public land just to the south and east of St. George, Utah (Figure 5-167). The SRMA is south of the towns of Washington and Hurricane, and immediately adjacent to Sand Hollow State Park. Primary recreation activities in Sand Mountain SRMA include: OHV riding, competitive events (such as the OHV Rhino Rally and horseback endurance rides in Warner Valley), horseback riding, scenic driving and viewing, visiting historic and paleontological sites, natural history education, semi-private recreation, undeveloped camping, picnicking, guided tours, and recreation instruction. The area provides open riding opportunities on the dunes, and miles of technical trails suitable for full-size 4x4s. Views from atop Sand Mountain include downtown St. George, the Hurricane Cliffs, the Arizona Strip, the Pine Valley Mountains, and the RCNCA. Approximately 1.5 percent of the Sand Mountain SRMA (5,057 acres) lies within the recreation resources study area.

BLM’s SGFO considers the 20,000-acre, Sand Mountain Open OHV area to be the most important piece of recreation real estate in southwest Utah. This area is an economic driver that hosts major motorized events and races. More importantly, it provides a play area for OHV’s in a densely populated area that contains many sensitive plant and animal species. The identified OHV area helps protect habitat for those sensitive species by confining OHV operations to a designated area; thereby protecting sensitive species habitat in the surrounding areas.

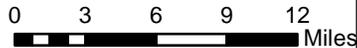
Sand Mountain SRMA is both a local and regional destination (Kiel, 2009b). Sand Mountain dunes are patrolled for BLM by Utah State Park law enforcement staff. The area attracts people in early spring and late fall. BLM staff reported use numbers of 5,237 and 19,214 for dispersed use areas and active use areas of the Sand Mountain SRMA, respectively, between October 1, 2008, and September 30, 2009 (Kiel, 2009a).

There are three ways to access Sand Mountain. The first is through Sand Hollow State Park. After paying the park entrance fee, users can drive their ATVs through a tunnel (beneath the park access road) on the west side of Sand Hollow Reservoir and be on dunes in minutes. The second access is through the town of Washington, Utah, via Interstate 15, Telegraph Road, and Washington Dam Road. Access to Sand Mountain SRMA from the Washington Dam Trailhead is free. The third access is through the Town of Hurricane, Utah, via 700 West Road, 2060 Road South, and Warner Valley Road. Access to the SRMA from the Warner Valley Road trailhead is also free. There is no published trail and facilities map of the Sand Mountain SMRA.



○ Cities	— Interstate	● Project Regulating Tank
▭ BLM St. George Field Office	— U.S. Highway	▲ Project Hydro Station
▭ BLM St George FO SRMA	— State Highway	— Water Conveyance System
▭ Lakes & Reservoirs	▭ National Parks	— Hydro System - South Alternative
— Major Rivers & Streams	▭ Dixie National Forest	— Hydro System - Southeast Corner Alternative
— Project Transmission Lines	▭ Indian Reservation	— Hydro System - Existing Highway Alternative
▭ County Boundaries	■ Project Pump Station	— KCWCD System

FERC Project Number:
 12966-001
BLM Serial Numbers:
 AZA-34941
 UTU-85472



Lake Powell Pipeline

Spatial Reference: UTM Zone 12N, NAD-83

UDWR Figure 5-167 **MWH**

BLM St. George Field Office SRMAs

Red Cliffs Desert Reserve

Red Cliffs National Conservation Area (RCNCA) is in central Washington County and is part of the larger multi-jurisdictional Red Cliffs Desert Reserve. Funding was obligated through the American Recovery and Reinvestment Act (ARRA) of 2009 to construct two new trailheads (White Reef and Red Mountain) that provide fenced parking areas, interpretive kiosks, vault toilets, and other visitor amenities. Both were completed in fiscal year 2010. The White Reef trailhead provides access to a newly designated approximately 6 mile long non-motorized trail system that provide connections to other trails in RCNCA. ARRA funding was also used in 2010 to repave/reconstruct the 3 mile paved access road to the Red Cliffs Recreation Site.

Set aside for the protection of desert tortoises and other rare and sensitive plants and animals, RCNCA includes 62,000 acres of scenic wildlife reserve. The area is located both east and west of Interstate 15, between the Town of Leeds on the north and Quail Creek State Park on the south (Figure 5-168). Approximately 0.2 percent (808 acres) of RCNCA lies within the recreation resources study area. The RCNCA is a popular recreation area as it is immediately adjacent to several growing communities, and provides a scenic red rock backdrop. Recreational opportunities in the reserve include mountain biking, hiking, horseback riding, wildlife viewing, geologic viewing, dispersed camping, and rock climbing. Within the recreation study area portion of RCNCA are portions of the Virgin River Trail, Arch Trail, West Cinder Knoll Trail, and East Cinder Knoll Trail (Figure 5-169).

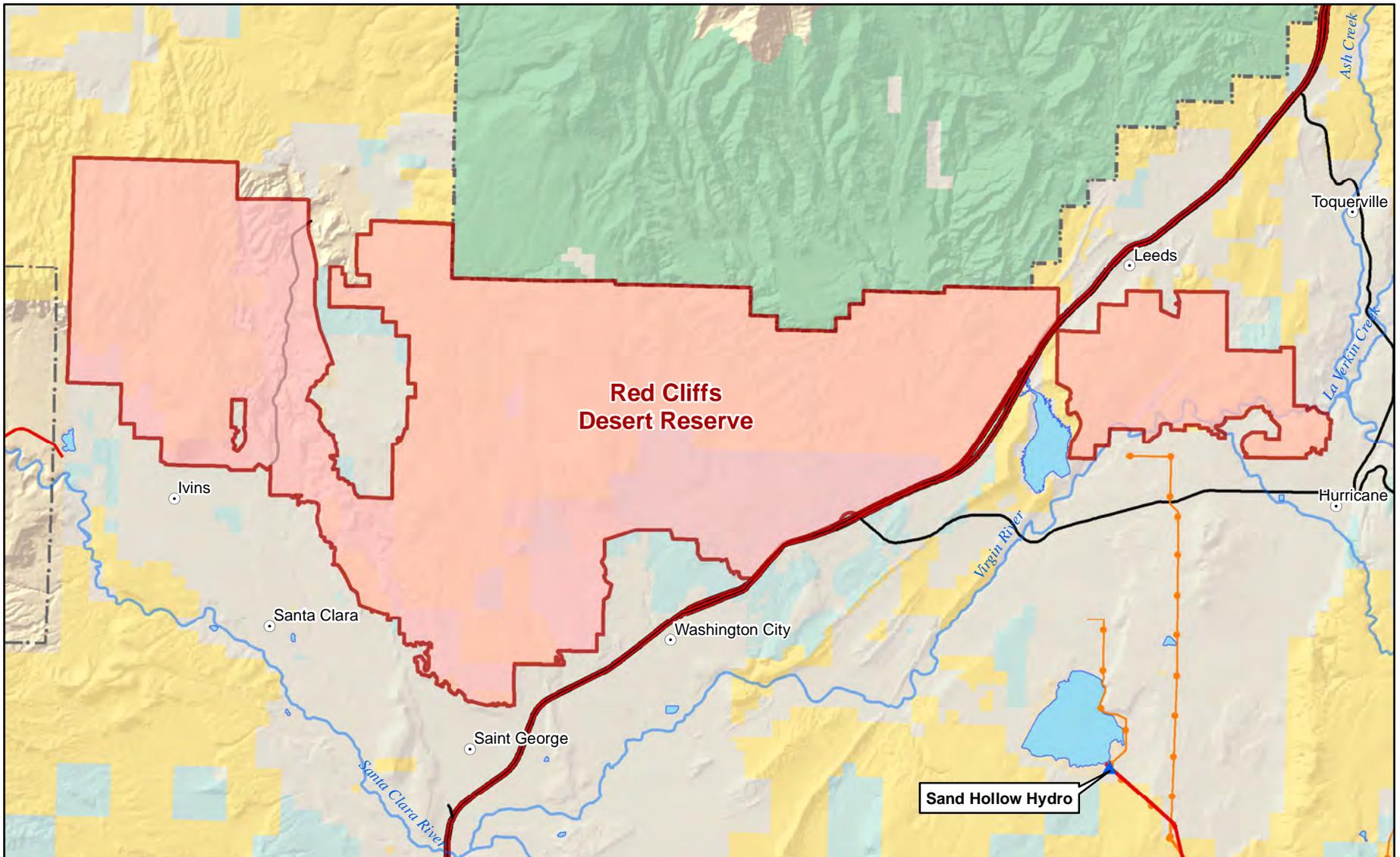
Hurricane Cliffs Non-Motorized Trail System.

The Hurricane Cliffs Non-Motorized Trail System is located east of RCNCA and south of Utah Highway 9 (Figure 5-170). The primary access to the trail system is from Highway 59. The trail system traverses 23 miles of the Mojave Desert and is bordered by Gooseberry Mesa to the east, the Virgin River to the north, and Hurricane Cliffs to the west (BLM, Undated 4). This trail system affords visitors spectacular views of the surrounding geographic features. At an elevation of 4,000 feet above MSL, scenes include the face of Hurricane Mesa, the spires of Zion National Park, and chasms of the Virgin River and its tributaries.

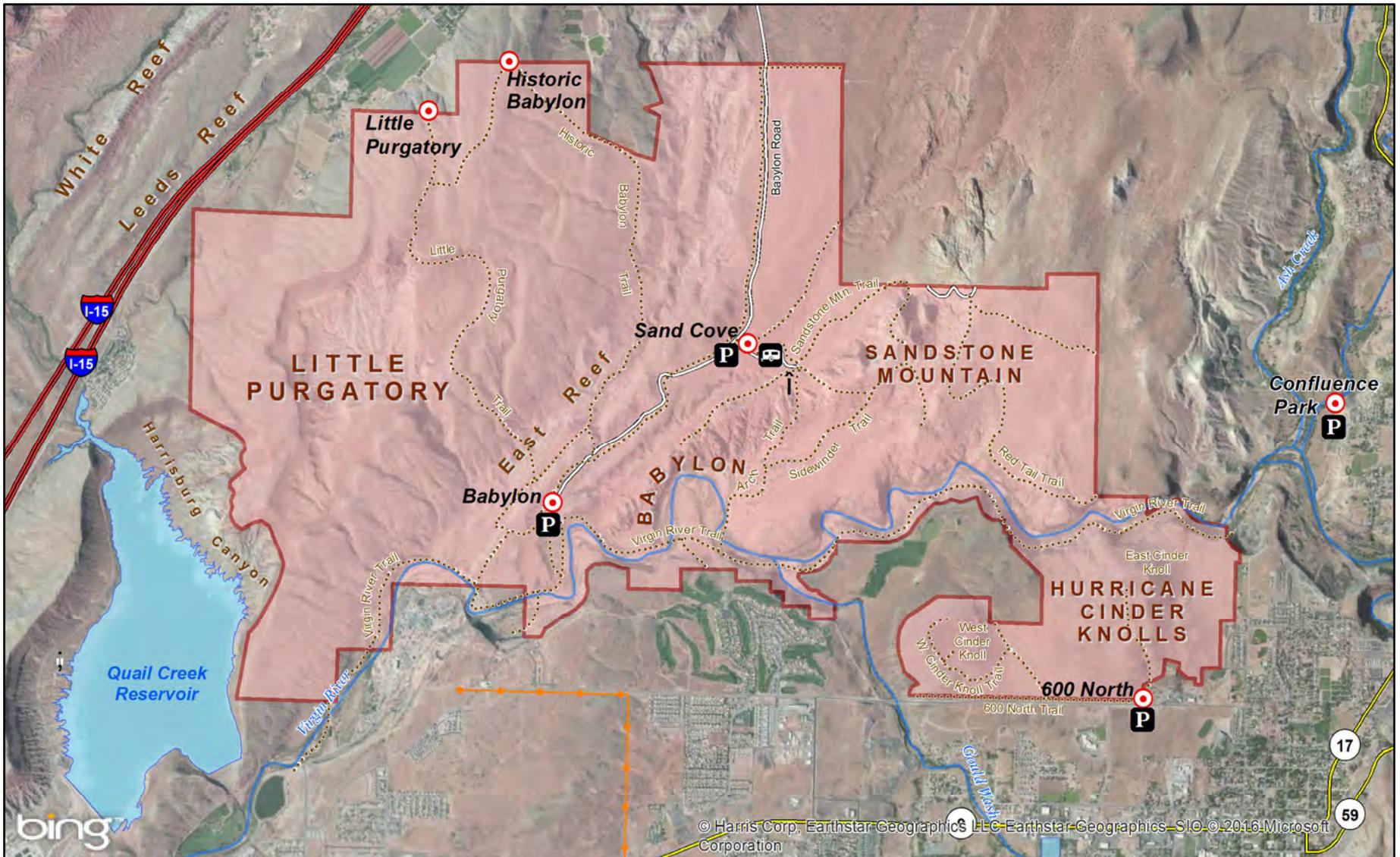
The Hurricane Cliffs Trail System includes ten trails: Jem, Chinatown Wash, Rim, Canal, Gould's Rim, Gould's, More Cowbell, Dead Ringer, Cryptobiotic, and Goosebumps. Only non-motorized users are permitted on the trail system. Equestrians are limited to the Chinatown Wash and the Rim Trail, between the Chinatown Wash and the Virgin Dam Trailhead. The Canal Trail, a route that consists of a 1904 historic water canal, is open to hikers only. All trails are managed by the BLM, except the Canal Trail which is managed by the Hurricane City Historical Preservation Association. All trail intersections are signed, and some "reassurance" signs can be found along the trails. Dispersed camping is allowed, but campers are asked to use only those sites where previous camping use is evident. Campfires are permitted, but are generally discouraged. There is no trash collection in the area.

Frog Hollow OHV Area

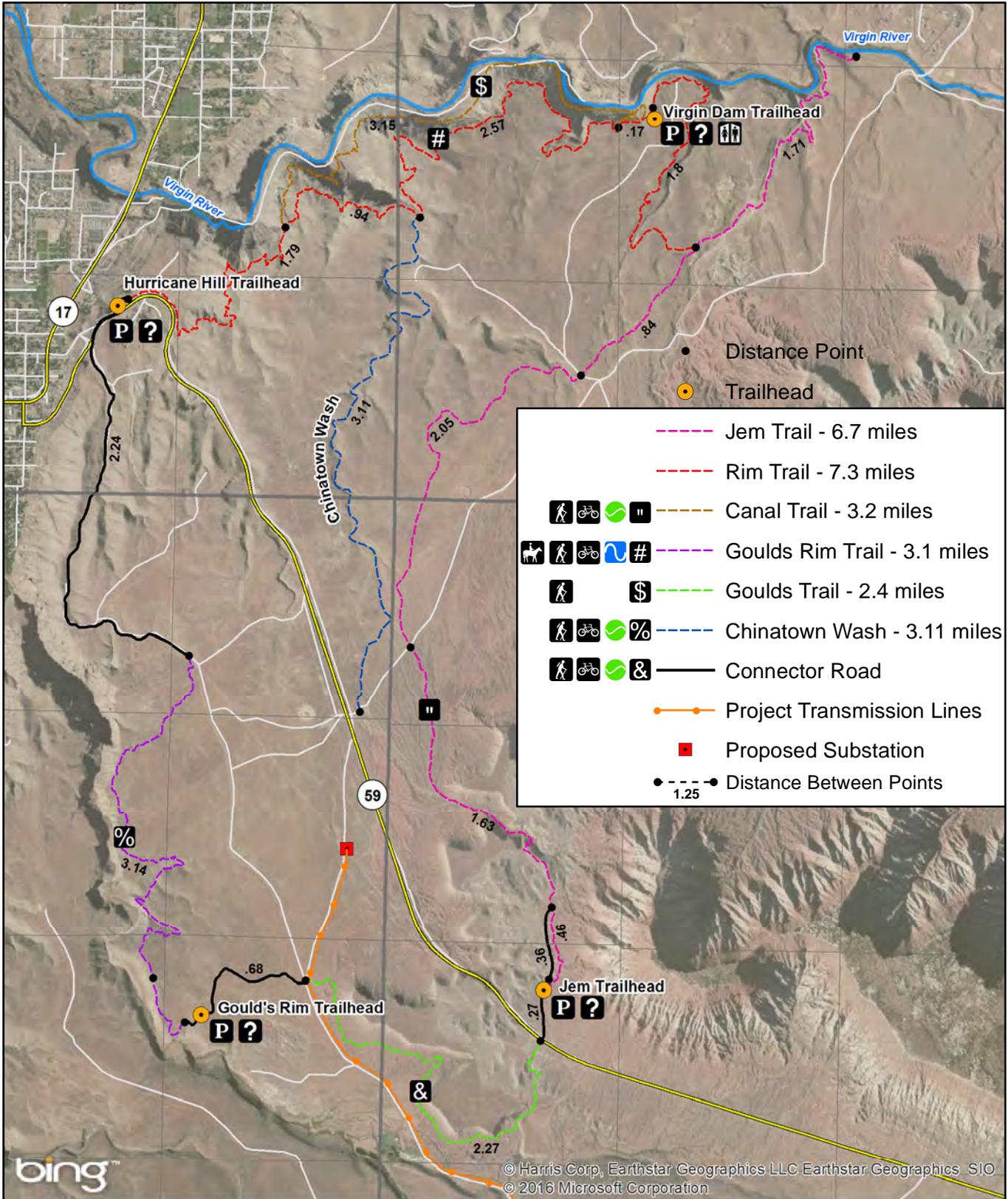
The "Frog Hollow" OHV area is located south of the Gould's Rim and Gould's trails (see Section 3.2.9.4). Primary access to this area, which is very popular with mountain bikers and slow OHV users (Kiel, 2009b), is from Highway 59 near Hurricane.



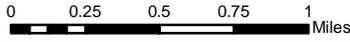
<ul style="list-style-type: none"> ○ Cities ▭ Red Cliffs Desert Reserve ▲ Project Hydro Station — Hydro System - South Alternative — Project Transmission Lines ▭ Lakes & Reservoirs — Major Rivers & Streams 	<ul style="list-style-type: none"> — Interstate — U.S. Highway — State Highway ▭ County Boundaries ▭ National Parks ▭ Dixie National Forest ▭ Indian Reservation 	<ul style="list-style-type: none"> ▭ BLM ▭ BLM Wilderness ▭ National Park Service ▭ Private ▭ State ▭ USFS 	<p>FERC Project Number: 12966-001</p> <p>BLM Serial Numbers: AZA-34941 UTU-85472</p>	<p style="text-align: center;">N</p>	<p style="text-align: center;">0 1 2 3 4 Miles</p>	<p style="text-align: center;">Lake Powell Pipeline</p> <p style="text-align: center;">Spatial Reference: UTM Zone 12N, NAD-83</p> <hr/> <p style="text-align: center;">UDWRe Figure 5-168 </p> <hr/> <p style="text-align: center;">Red Cliffs Desert Reserve</p>
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<ul style="list-style-type: none"> ○ Cities ⋯ Trail — Road ■ Lakes & Reservoirs — Major Rivers & Streams ■ Red Cliffs Desert Reserve 	<ul style="list-style-type: none"> — Interstate — US Highway — ST Highway — Hwy — Major Road — Project Transmission Lines 	<ul style="list-style-type: none"> ○ Recreation Point ■ Parking ■ Trailer Parking ⋮ Camping ↑ Primitive Camping 	<p>FERC Project Number: 12966-001</p> <p>BLM Serial Numbers: AZA-34941 UTU-85472</p>	<p>Lake Powell Pipeline Spatial Reference: UTM Zone 12N, NAD-83</p> <p>UDWRe Figure 5-169 </p> <p>Red Cliffs Desert Reserve Recreation</p>
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<ul style="list-style-type: none"> ST Highway Roads Streams Project Transmission Lines 	<ul style="list-style-type: none"> Proposed Substation Township Section 	<p>FERC Project Number: 12966-001</p> <p>BLM Serial Numbers: AZA-34941 UTU-85472</p>	<p>Lake Powell Pipeline Project</p> <p>Spatial Reference: UTM Zone 12N, NAD-83</p> <p>UDWRe Figure 5-170 </p> <p>Hurricane Cliffs Non-Motorized Trail System</p>
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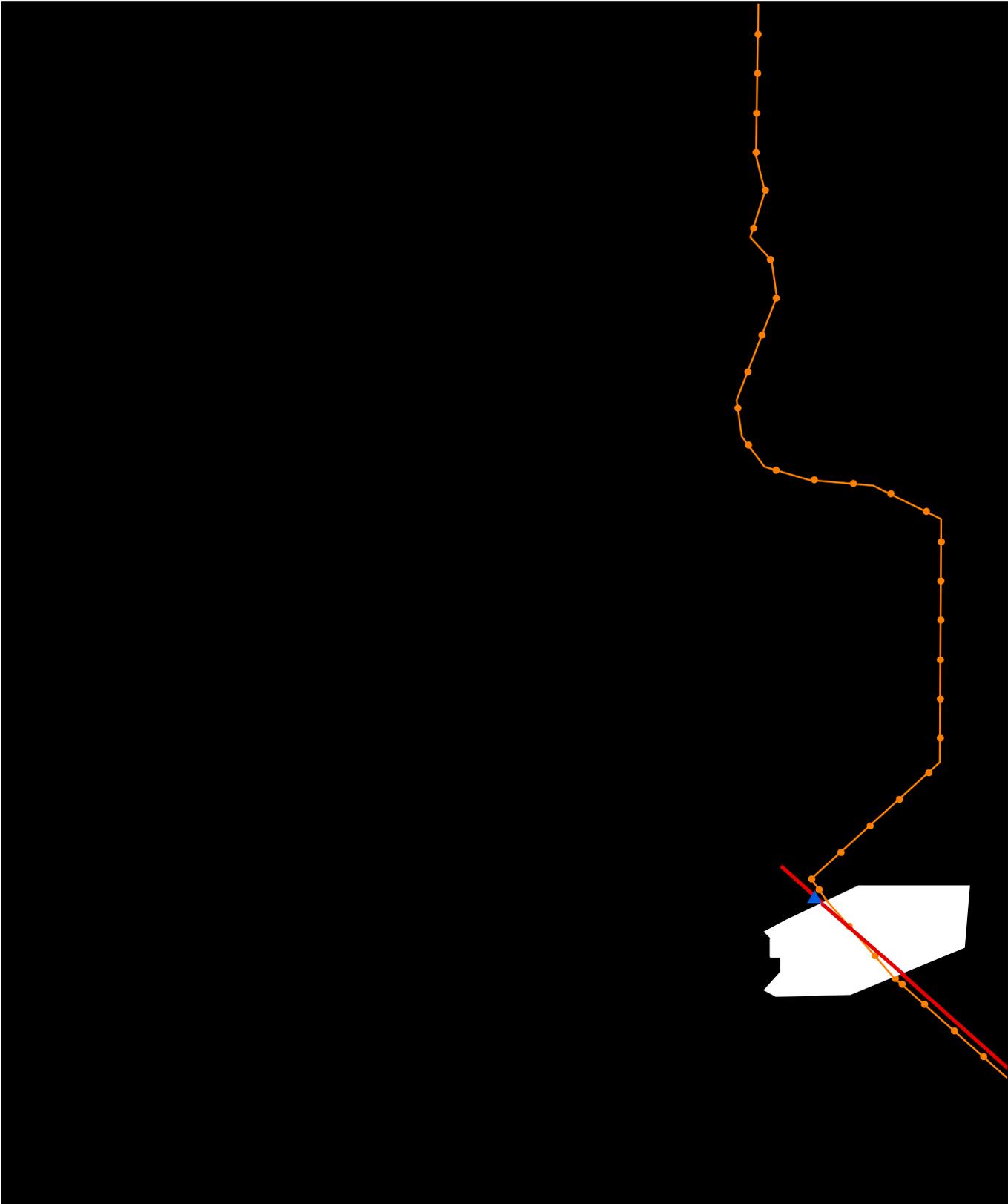
5.3.13.1.1.10 Sand Hollow State Park.

Located about 10 miles east of St. George and about 5 miles southwest of Hurricane, the Sand Hollow Reservoir and surrounding lands have been designated one of Utah's newest state parks. Warm water fishing and boating opportunities are found here. Patrons also engage in OHV use on the Sand Mountain dunes, as well as RV and tent camping. This 20,000 acre park is on WCWCD land, and is one of the most visited destinations in the Utah State Park System (USP, 2009). Approximately 0.4 percent (1,315 acres) of Sand Hollow State Park lies within the recreation resources study area.

The park (Figure 5-171) includes an entry station and large parking lot next to the Sand Hollow Reservoir, along with a modern comfort station. The parking lot and comfort station are well-signed and well-lit, with ample trash facilities. A permit is required for watercraft launches and OHV access to the south and east sides of the reservoir. Sand Mountain is accessible by a tunnel located south of an OHV staging area.

Overnight camping facilities are available for a fee. The Westside Campground offers full hookups (water, sewer, and electric), barbeques, fire pits, tables, and cabanas (UTI, 2009a). "Sandpit" is the new OHV accessible campground located along the south shore of the reservoir. The 30-site campground includes six sites with water and electrical hookups and five large group sites. Restrooms and showers are provided. Primitive camping is available along the east and south shores of the reservoir. Up to eight people are allowed per vehicle, per site (UTI, 2009a). Picnic tables and pit toilets are available, but this area is largely undeveloped.

According to a Utah Division of Parks and Recreation 2010 report, Sand Hollow State Park receives between 183,000 and 300,000 visitors annually (UDPR, 2010). Sand Hollow State Park was used by 351,339 visitors in 2015. The park is popular with local residents. Most visitation occurs from March through October with peak months being May through August.



<p>▲ Project Hydro Station</p> <p>— Hydro System - South Alternative</p> <p>—●— Project Transmission Lines</p>	<p>FERC Project Number: 12966-001</p> <p>BLM Serial Numbers: AZA-34941 UTU-85472</p> <p>Source: http://mappery.com/map-of/Sand-Hollow-State-Park-Map</p>	<p>Lake Powell Pipeline Project</p> <p><small>Spatial Reference: UTM Zone 12N, NAD-83</small></p> <p>UDWRe Figure 5-171 [REDACTED]</p> <p>Sand Hollow State Park</p>
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5.3.13.1.1.11 Private Recreational Facilities.

Several privately owned and operated recreational facilities are located within the recreation resources study area. These facilities are described in the following subsections.

Amangiri Resort Spa and Villas at Lake Powell

The upscale, 600-acre Amangiri Resort Spa and Villas are located about a mile south of Highway 89 in Canyon Point, Utah, about three miles from the Arizona border. The resort, which opened in October 2009, is a 25 minute drive from Page, Arizona. Visitors to the resort enjoy scenic views of GSENM. Architecturally, the resort has been designed to blend into the landscape with natural hues, materials, and textures. Features at the resort include: pavilion, living room, gallery, library, dining room, private dining room, cellar, spa and beauty salon, fitness center, pool, and 34 suites (Amangiri, 2009).

Paria Outpost Resort

The Paria Outpost Resort is located just south of Highway 89 and less than a mile west of the BLM's Paria Contact Station (see Section 3.2.4.8). The resort offers rustic, yet comfortable bed and breakfast accommodations, a restaurant, RV camping in the resort parking lot, and tent camping (Paria Outpost, 2009). Guide and shuttle services are also available. On-site recreational activities include horseback riding, a climbing wall, wading fountain, outdoor volleyball area, and horseshoes.

Adjacent to the Paria Outpost Resort is the Paria Canyon Adventure Ranch. Facilities at the ranch include tent and RV camping, a 14-bed hostel, private cabin, horse stable, restaurant, shower house, laundry, and dance hall (www.pariacampground.com, undated, accessed 1/28/16).

Olympus Academy

The Olympus Academy (site formerly was Diamond Ranch Academy) is located on 200 acres near Hurricane, Utah. The academy is reached by turning south from Utah Highway 59 (milepost 19) and traveling south on Antelope/Branham Ranch Road for approximately two miles. This road also serves those using BLM SGFO's Hurricane Cliffs trail system and the Frog Hollow OHV area (see Section 3.2.9.5). Founded in 2014, the Olympus Academy is a youth residential treatment center for troubled teenagers. Students are enrolled year-round. Recreational facilities at the ranch include fishing ponds, a fitness center, and equine facilities (Olympus Academy, 2016).

WillowWind RV Park

The WillowWind RV Park is located on Utah Highway 9, just west of Hurricane, Utah. Open year-round, the 173-site RV Park includes the following amenities for a fee: dumping facilities, flush toilets, full hook-ups, hot and cold running water, restrooms, a clubhouse/library, laundry facilities, picnic tables, cable television and television hook-ups, group sites, phones and phone hook-ups, and tent sites (WillowWind RV Park, 2016).

Sand Hollow Resort

Located less than one mile west of Sand Hollow State Park's main entrance is the Sand Hollow Resort. The resort features 27 holes of golf on two courses, golf practice facilities, a clubhouse, and accommodations (for permanent, seasonal, or overnight purchase/rental) (Sand Hollow Resort 2014).

5.3.13.1.2 Identified Recreation Needs.

Recreation needs identified for the areas and facilities described in Section 5.3.13.1.1 are listed in this section, as are recreation trends and needs identified for those portions of Arizona and Utah that lie within the recreation resources area of potential effect.

5.3.13.1.2.1 Arizona State Comprehensive Outdoor Recreation Plan.

Pursuant to the 1964 Land and Water Conservation Fund Act, Arizona prepared an update to its Statewide Comprehensive Outdoor Recreation Plan (SCORP) in 2008. The purpose of the 2008 SCORP (Arizona State Parks [ASP], 2007) was to encourage greater recreation opportunities for the public. Arizona's SCORP provides, among other information, county profiles detailing existing and needed outdoor recreation opportunities. Relevant information regarding the State, Coconino County, and Mohave County is discussed in the following subsections.

Arizona prepared another update to its SCORP in 2013 (ASP, 2013). This update summarized the current outdoor recreation situation and trends. It provided decision makers and outdoor recreation managers with an analysis of issues facing Arizona and suggested strategies to address these issues. Top priority issues were: secure stable funding; improve collaborative planning and partnerships; and, respond to the needs of special populations and changing demographics.

While the LPP project is not generally expected to contribute to meeting the needs identified in SCORPs, surveys of local residents, and various agency plans, these and other needs would be considered as appropriate and agreed to in consultation with resources agencies during detailed LPP Project design and construction.

State of Arizona

The 2000 US Census reported that Arizona had a population of less than 5 million. Conservative estimates place the Arizona population at 7.7 million by 2025, and at 11 million by 2050. As the Arizona population grows, so will the number of people participating in outdoor recreation activities. The anticipated population growth in the state will include an increase in the elderly population from 13.3 percent in 1995, to an estimated 21.3 percent in 2025. This elderly population increase may influence the demand in Arizona for different types of outdoor recreation.

Arizona outdoor recreation trends identified in the 2008 SCORP include the following:

- Visitation trends indicate parks, campgrounds, other recreation areas that used to have plenty of room for weekend visitors are now filling up by Thursday or Friday mornings.
- People are frequently choosing weekend destination points that are more than two hours away from home.
- More people are using sport utility vehicles and OHVs to access back country areas.
- Previously remote areas are now experiencing crowding or overuse.
- While there are still considerable open spaces and public lands in Arizona today, urban sprawl is rapidly reducing the amount of open space around cities and cutting off access to trails, roads, and public lands close to the cities.
- Rural areas are also experiencing substantial growth/development, reducing or eliminating access to public lands, recreational trails, and roads.

- Without adequate funding and local, regional, and statewide planning for the increasing demands for outdoor recreation opportunities, Arizona will find itself unable to meet demands for outdoor recreation opportunities.

In 2011 Arizona's population reached 6.4 million people. The rate of population growth slowed during the recession that began in 2009. As of 2011, Arizona was the eighth fastest growing state in the US (ASP, 2013).

Coconino County

The Arizona SCORP included a survey of Coconino County residents. In the survey, approximately 74 percent of Coconino households stated they had visited a park or recreation area an average of 8.9 times within the last 3 months; with a population of 116,320 (based on the 2000 U.S. Census), this equates to 766,083 visits. According to the survey, 40 percent of county residents believe nature-oriented parks should be a priority when determining the allocation of funding, followed by open space areas (31 percent), neighborhood parks (16 percent), and multi-use parks (13 percent). With regards to prioritizing park projects, 48 percent of Coconino residents believe existing facilities should be repaired, 32 percent would like to see new parks created, and 20 percent want new facilities developed. When asked about major problems parks and recreation areas face, the top issue reported by Coconino County residents was "too much litter", followed by "not enough funding", "too crowded", "not well maintained", and "no problems."

Mohave County

The Arizona SCORP included a survey of Mojave County residents. This survey indicates that approximately 66 percent of Mojave households stated they had visited a park or recreation area an average of 7.2 times within the last 3 months; with a population of 155,032 (based on the 2000 U.S. Census), this equates to 736,712 visits. According to the survey, 40 percent of county residents believe nature-oriented parks should be a priority when determining the allocation of funding, followed by neighborhood parks (23 percent), open space (23 percent), and multi-use parks (14 percent). With regards to prioritizing park projects, 49 percent of Mojave residents believe existing facilities should be repaired, 30 percent would like to see new parks created, and 21 percent want new facilities developed. When asked about major problems parks and recreation areas face, the top issue reported by Mohave residents was "not well maintained", followed by "no problems", "too much litter", "not enough parks", and lastly, "not enough funding."

5.3.13.1.2.2 Utah State Comprehensive Outdoor Recreation Plan.

In the 2003 Utah SCORP (Utah Division of Parks and Recreation [UDPR], 2003), it was reported that the perceived need for and use of urban and wildland trails has significantly increased since 1993. The SCORP stated that Utah residents were greatly concerned about ensuring public access to public lands, and wanted to know more about their lands. Additional concerns identified in the Utah SCORP include: the need to renovate and repair local parks in rural areas; a desire to expand parks, trails, and recreation centers in urban areas; and issues involving the significant costs associated with operating and maintaining urban facilities compared to rural facilities.

The Utah SCORP included a survey of state districts. A common theme throughout all districts involved the need for more water-related projects and linear-shaped open spaces, including recreational corridors (e.g., trails, bikeways, OHV routes), riparian corridors, riverways, stream and canyon protection, canyon access, corridors between subdivisions/town, and wildlife corridors. More funding for open spaces was also identified as a need. Officials in local areas reported that they would like to see more local control in

the decision process, and greater focus on projects that address local concerns. A summary of outdoor recreation priorities, as expressed by Utah residents, is provided in the list below.

Outdoor recreation priorities identified for the St. George Planning District in the Utah SCORP include:

- Regulate boating on busy waters for good/safe experience.
- Designate areas for OHVs.
- Need more trails that go places or connect-including horse trails.
- Protect river corridors.
- Develop areas for displaced federal land/national park users (overflow)-camp, day use, OHVs.
- Improve existing parks and services.

The 2014 Utah SCORP (UDPR, 2013) included the following conclusions regarding recreation demands, needs, and issues for the Five County Planning Area (which includes Washington and Kane counties):

- Popular activities were picnicking, hiking or backpacking, and walking for pleasure or exercise. Other popular activities included camping, swimming, and fishing. Among the Utah districts, the Five County District had the highest proportion of participants in rock climbing or rappelling.
- The greatest needs based on percentages of respondents reporting high importance but low satisfaction with availability were for OHV trails, swimming pools, and camping areas. Survey respondents expressed relatively high satisfaction with facility availability within the district. When asked about the top two needs for recreation facilities, respondents in the Five County District most commonly indicated parks and pools.
- In the municipal survey, officials indicated that ball fields and courts were the highest priority for new facility needs as well as other facility renovation needs. Estimated costs for top priority facilities reported by 18 responding municipalities totaled \$6.6 million.

While the LPP project is not generally expected to contribute to meeting the needs identified in SCORPs, surveys of local residents, and various agency plans, these and other needs would be considered as appropriate and agreed to in consultation with resources agencies during detailed LPP Project design and construction.

5.3.13.1.2.3 Glen Canyon National Recreation Area.

No recreation needs relevant to the LPP Project or hydropower system have been identified during review of existing GCNRA documents or during discussions with GCNRA personnel.

5.3.13.1.2.4 Vermilion Cliffs National Monument and Paria Canyon – Vermilion Cliffs Wilderness.

No recreation needs relevant to the LPP Project or hydropower system have been identified during review of existing BLM planning documents or during discussions with BLM personnel.

5.3.13.1.2.5 Grand Staircase-Escalante National Monument.

The 1999 GSENM Management Plan states that BLM and Utah Department of Transportation will explore the possibility of developing bicycle lanes or parallel bicycle routes along Highway 89. Furthermore, additional recreational opportunities may be developed to accommodate all visitors, and focus on learning about geology, history, archaeology, biology, paleontology, and scenic viewing. Short interpretive trails and scenic overlooks will be developed as well. According the 1999 Management Plan,

BLM will look for appropriate opportunities to highlight GSENM resources along Highway 89, around the communities of Church Wells and Big Water.

5.3.13.1.2.6 BLM – Kanab Field Office and BLM – Arizona Strip Field Office.

The ASFO Resources Management Plan states that in the Fredonia SRMA and its associated RMZs “the BLM will produce close-to-town opportunities for community residents and seasonal, regional visitors to enjoy directed day-use adventure activities in scenic landscapes along structured travel routes and open space areas associated with Woodhill Road...” Other BLM recreation actions in ASFO include, “to the extent practicable, the ‘natural’ or ‘remote’ settings in Specialized and Primitive Travel Management Areas will be restored and/or maintained...” Also, the Old Spanish National Historic Trail resources will be identified, recorded, and protected on federal land. Significant trail segments, corridors, and associated sites should be identified, protected, and interpreted for public use. Viewsheds, as observed from any of these areas (trail segments, trail corridors, or associated sites), will be maintained.

No recreation needs relevant to the LPP project or hydropower system were identified during project planning or consultation.

5.3.13.1.2.7 Kaibab – Paiute Indian Reservation and Pipe Springs National Monument.

No recreation needs relevant to the LPP Project or hydropower system have been identified.

5.3.13.1.2.8 BLM – St. George Field Office.

BLM will use innovative partnerships, pursue grant monies, and work with volunteers, organized user groups, and other recreation providers in developing and managing selected recreation opportunities on the public lands managed by the SGFO because the fiscal and staffing resources available to BLM are likely to remain inadequate to fully accomplish this objective (BLM, 1999).

The BLM’s 1999 resource management plan also states that the BLM will work towards, among other things, up to 50 miles of equestrian trails near Sand Mountain to meeting growing demands. The plan also indicates that the BLM will assist in marking and signing portions of the Old Spanish National Historic Trail that cross public lands in Washington County.

A draft amendment to the SGFO resource management plan (BLM, 2015) and associated environmental impact statement (BLM, 2015) were issued in 2015. No recreation needs relevant to the LPP project or hydropower system were identified in these documents.

5.3.13.1.2.9 Sand Hollow State Park and Quail Creek State Park.

The Sand Hollow State Park Resource Management Plan (UDPR, 2010) included a chapter titled “Issues and Recommendations”. Included in this chapter are recommendations related to park access and improvements to facilities.

5.3.13.1.2.10 Private Recreation Facilities and Use.

No recreation needs relevant to the LPP Project or hydropower system have been identified.

5.3.13.2 Environmental Effects

The significance criterion for determining if effects on recreation resources are significant are as described in Study Plan 9. That is, potential effects on recreation are considered “significant” if construction, operation, or maintenance activities would result in:

- Changes to recreation management settings
- Changes to existing and proposed recreation sites
- Changes to special recreation permitting
- Reduction or increase in recreation visitation at existing recreation sites
- Changes in overall operation of existing and proposed recreation facilities.

In addition, potential effects on recreation may be temporary or permanent, and direct or indirect. Direct effects interfere with use of a recreation facility or area, while indirect effects result from noise, air pollution, and visual changes that affect the quality of recreation available at a facility or use area. Additional LPP Project construction traffic experienced in route to a recreation facility or use area is also considered an indirect effects. LPP Project noise, air pollution, visual, and traffic effects are described briefly in this section, and detailed in separate study reports.

5.3.13.2.1 Proposed Action

5.3.13.2.1.1 Glen Canyon National Recreation Area.

Dead Dog and Ropes Recreation Areas

Construction Effects

The Water Conveyance System South Alternative, including BPS-1, would be constructed about 2,000 feet west of Highway 89 in the vicinity of the “Dead Dog” and “Ropes” dispersed recreational areas. Heavy equipment used to construct LPP Project facilities would result in significant, but temporary and indirect visual, air pollutant, noise, and additional LPP Project construction traffic effects on recreation use.

Operation Effects

Following construction and restoration (see Chapter 5, Mitigation and Monitoring), BPS-1 would be visible to recreationists accessing the “Dead Dog” and “Ropes” areas. This would be a minor, permanent, indirect effect on recreation. See the Final Visual Resources Study Report 16 (UDWRe 2016b) for additional effects analysis concerning the appearance of the booster pump station.

Colorado River Discovery Rafting Tours

Construction Effects

The Water Conveyance System South Alternative would have no measurable effects on the Colorado River Discovery Rafting Tours. Minor temporary air pollutant and noise effects associated with construction at the existing Glen Canyon Substation would occur.

Operation Effects

There would be no change in annual river flows downstream of Glen Canyon Dam and, therefore, no effects on the operations of Colorado River Discovery Rafting Tours. US Bureau of Reclamation would continue to release an average of 8.23 million acre-feet annually from Glen Canyon Dam during LPP Project operation.

Highway 89

Construction Effects

BPS-1 would be constructed west of Highway 89. About 2,000 feet north of the Carl Hayden Visitor Center, the pipeline from the Intake Pump Station would cross the highway and head northwest to BPS-1. The buried pipeline would then run northwest, along the south side of Highway 89 within GCNRA. Heavy equipment used to construct these LPP Project facilities would result in significant, indirect, temporary visual, air pollutant, noise, and additional LPP Project construction traffic effects on recreation use.

Operation Effects

BPS-1 and the Intake Pump Station would be visible to recreationists using Highway 89 after construction and restoration. These would be minor, indirect effects on Highway 89 recreationists.

Carl Hayden Visitor Center

Construction Effects

The buried pipeline from the Intake Pump Station would cross Highway 89 about 2,000 feet north of the Carl Hayden Visitor Center. Heavy equipment used to construct these facilities would result in significant, temporary, indirect effects. These temporary, indirect effects would include potential visual changes, air pollutants, and additional LPP Project construction traffic for up to 4 hours. Prevailing winds from the southwest would disperse air pollutants into an area away from the visitor center.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational use at the Carl Hayden Visitor Center. These operations would be unnoticed by those at the visitor center.

Glen Canyon Dam Overlook

Construction Effects

Construction of the LPP Project South Alternative would have no direct or indirect effects on recreational use at Glen Canyon Dam Overlook during construction. Construction would be unnoticed by those at the overlook.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational use at Glen Canyon Dam Overlook. These operations would be unnoticed by those at the overlook.

Chains Recreation Area and Hanging Garden Trail

Construction Effects

The Water Intake System and Intake Pump Station would be constructed on the Lake Powell shoreline directly opposite the Chains Recreation Area, and about 1,600 feet away. Heavy equipment used to construct these facilities would result in significant, temporary, visual effects; and minor particulate matter smaller than 10 micron diameter (PM₁₀) concentrations and noise levels in the “Chains” area. Most of the PM₁₀, carbon monoxide, nitrogen dioxide and sulfur dioxide generated from the construction would disperse within the work site to levels below the National Ambient Air Quality Standards (NAAQS) concentrations and prevailing southwest winds would transport any residual air pollutants north of the “Chains” area and over Lake Powell. The highest sound pressure levels generated at the Water Intake System site (94 dBA) during construction would attenuate to 64 dBA at the “Chains” area, which is equivalent to moderate conversational speech.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreational use at the “Chains” area and Hanging Garden Trail. That is, operations would be unnoticed. Minor, indirect effects would occur to recreationists in portions of the “Chains” area and Hanging Garden Trail, because of the visibility of the Water System Intake and Intake Pump Station.

Wahweap Recreation Area

Construction Effects

The Water Conveyance System and BPS-1 would be constructed about 2,500 feet south of the Wahweap Recreation Area south access road (Lakeshore Drive) intersection with Highway 89. The conveyance system also would be constructed just south of the heavily used Wahweap north recreation access road (Wahweap Drive) intersection with Highway 89. Heavy equipment used to construct these facilities would result in minor, indirect, temporary, visual, air pollutant, noise, and additional LPP Project construction traffic effects on recreationists accessing the Wahweap Area.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or measurable indirect effects on recreational use of the Wahweap Recreation Area. LPP operations would be unnoticed by those accessing and using the Wahweap Recreation Area.

Wahweap Overlook

Construction Effects

The Water Conveyance System would be constructed about 1,000 feet south of the Wahweap Overlook access road intersection with Highway 89. Heavy equipment used to construct these facilities would result in minor, indirect, temporary visual, air pollutant, noise, and additional LPP Project construction traffic effects on recreationists accessing the overlook.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational use in the Wahweap Overlook. These operations would be unnoticed by those at the overlook. While BPS-1 would be visible to those accessing Highway 89 from the overlook, the view from the overlook, itself, is focused on Lake Powell and Wahweap.

Lone Rock Recreation Area

Construction Effects

The Water Conveyance System would be constructed south of the Lone Rock recreation access road intersection with Highway 89. Heavy equipment used to construct these facilities would result in minor, indirect, temporary visual, air pollutant, noise, and additional LPP Project construction traffic effects on recreationists accessing the Lone Rock Recreation Area.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational use in the Lone Rock Recreation Area. These operations would be unnoticed by those using the recreation area.

5.3.13.2.1.2 Vermilion Cliffs National Monument.

Construction Effects

The Water Conveyance System construction would have moderate, temporary, direct effects on recreational users accessing VCNM via the East Clark Bench Road (south from Highway 89), the White House Campground road, and the House Rock Valley Road. These effects would occur as the pipeline construction blocks established access from Highway 89 to these roads. These temporary, direct effects would have a maximum duration of 8 hours at each road crossing of the pipeline. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where these roads intersect with Highway 89. Indirect effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreation resources in VCNM. These operations would be unnoticed by those using VCNM.

5.3.13.2.1.3 Paria Canyon – Vermilion Cliffs Wilderness

Construction Effects

The Water Conveyance System construction would have significant, temporary, direct effects on recreational users accessing the PCVCW via the East Clark Bench Road (south from Highway 89), the White House Campground road, roads in the Ferry Swale area, and the House Rock Valley Road. These effects would occur as the pipeline construction blocks established access from Highway 89 to these roads. These temporary direct effects would have a maximum duration of 8 hours at each road crossing of

the pipeline. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where these roads intersect with Highway 89. Indirect effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreation resources in PCVCW. These operations would be unnoticed by those using PCVCW.

5.3.13.2.1.4 Grand Staircase-Escalante National Monument.

Guided Trips

Construction Effects

The Water Conveyance System and Hydro System construction would have moderate direct and indirect effects on guided trip providers and participants in GSENM. Temporary, direct effects would occur on guided trip providers and participants as the pipeline construction blocks established access from Highway 89 to trailheads, interpretive sites, access roads and visitor centers. These temporary, direct effects would have a maximum duration of 8 hours at a specific site. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on guided trip providers and participants. Indirect effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment and at facility locations. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on guided trip providers and participants in GSENM. These operations would not interfere with access to GSENM recreation facilities or use areas. Guided trip providers and participants would experience minor, indirect effects as they view specific LPP Project facilities (pump stations, hydro stations, etc.) along Highway 89. These facilities may not be in keeping with the desire of guided trip participants to experience unaltered, natural landscapes.

Cockscomb WSA

Construction Effects

The Water Conveyance System, BPS-3 Alt., and BPS-4 Alt. would have moderate, temporary, direct and indirect effects on recreational users of the nearby Cockscomb WSA during construction of these features. Direct effects would result from pipeline construction blocking established access (via Cottonwood Canyon Road) to this WSA from Highway 89. This temporary, direct effect would have a maximum duration of 8 hours. A temporary bypass road would provide temporary access to the recreation site, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Indirect effects would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 3,000 feet of the BPS-3 Alt. and BPS-4 Alt. sites and would disrupt recreational experiences

of users in the south and west portions of the WSA. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreation resources in the Cockscomb WSA. These operations would not interfere with access to, or use of, the WSA. Recreational users of the WSA would experience minor, indirect effects from viewing BPS-3 Alt. and BPS-4 Alt. facilities, because of their close proximity to the WSA boundaries.

Wahweap WSA

Construction Effects

The Water Conveyance System and BPS-3 Alt. would have moderate, temporary, direct and indirect effects on recreational users of the nearby Wahweap WSA during construction. Direct effects would result from pipeline construction blocking established access (via Cottonwood Canyon Road) to the west side of this WSA from Highway 89. This temporary, direct effect would have a maximum duration of 8 hours. A temporary bypass road would provide temporary access to the recreation site, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Indirect effects would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 3,000 feet of the pipeline alignment and BPS-3 Alt. site, and would disrupt recreational experiences of users in Unit 13 of the WSA. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreation resources in the Wahweap WSA. These operations would not interfere with access to, or use of, the WSA. Recreational users of the WSA would experience minor indirect effects from viewing BPS-3 Alt. facility because of its proximity to the WSA boundaries.

Highway 89 Special Recreation Management Area

Construction Effects

The Water Conveyance System, Hydro System, BPS-3 Alt., BPS-4 Alt., High Point Regulating Tank-2, and HS-1 would have moderate, temporary, direct effects on recreational users of the nearby Highway 89 Corridor SRMA during construction of these features. These effects would occur as the pipeline construction blocks established access from Highway 89 to trailheads, interpretive sites, access roads and visitor centers. These temporary direct effects would have a maximum duration of 8 hours at a specific site. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Operation Effects

LPP Project operations would have no direct effects on recreation resources in the Highway 89 Corridor SRMA. These operations would not interfere with access to, or use of, the WSA. Recreational users of the

SRMA would experience minor indirect effects from viewing facility sites because of their proximity to the SRMA.

Historic Trails

Construction Effects

The effects of construction on GSENM historic trails would be similar to those described above for the Highway 89 Corridor SRMA, as these trails are believed to follow the highway corridor through the GSENM.

Operation Effects

LPP Project operations would have no direct effects on recreation resources of GSENM historic trails. These operations would not interfere with access to, or use of, the trails. Users would experience minor indirect effects from viewing LPP facilities.

Paria Canyons and Plateaus Special Recreation Management Area

Construction Effects

The Water Conveyance System construction would have moderate, temporary, direct effects on recreational users accessing the Paria Canyons and Plateaus SRMA via the East Clark Bench Road (south from Highway 89, mostly on State of Utah land), White House Campground road, and House Rock Valley Road. Temporary, direct effects would occur on recreational users as the pipeline construction blocks established access from Highway 89 to these roads. These temporary, direct effects would have a maximum duration of 8 hours at each road crossing of the pipeline. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where these roads intersect with Highway 89. Indirect effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the Paria Canyons and Plateaus SRMA. These operations would be unnoticed by those using the SRMA.

GSENM Visitor Center in Big Water

Construction Effects

The Water Conveyance System construction would have moderate to significant, temporary, direct and indirect effects on recreational users accessing the GSENM Visitor Center in Big Water. Moderate, temporary, direct effects would occur on recreational users as the pipeline construction blocks established access from Highway 89 to the visitor center. A temporary bypass road would provide temporary access to the recreation site, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. These temporary direct effects would have a maximum duration of 8 hours. Significant, temporary, indirect effects would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Effects from noise would attenuate to background levels

within 800 feet. Prevailing winds from the southwest would disperse air pollutants away from the visitor center.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the GSENM Visitor Center in Big Water. These operations would be unnoticed by those using the visitor center.

Paria Contact Station, White House Campground, and White House Trail

Construction Effects

The Water Conveyance System construction would have significant, temporary, indirect effects on recreational users accessing the Paria Contact Station, White House Campground and Paria River Canyon. These effects would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Indirect effects from noise would attenuate to background levels within 800 feet of the sources. Prevailing winds from the southwest would disperse air pollutants away from the Paria Contact Station, White House Campground, and Paria River Canyon.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the Paria Contact Station, White House Campground and Paria River Canyon. Operations would be unnoticed by those using these areas.

Toadstools Trailhead

Construction Effects

The Water Conveyance System construction would have moderate, temporary, direct and indirect effects on recreational users accessing the Toadstools Trailhead and trail. Moderate, temporary, direct effects would occur as the pipeline construction blocks established access from Highway 89 to the trailhead. These temporary direct effects would have a maximum duration of 8 hours. A temporary bypass road would provide temporary access to the recreation site, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Temporary, indirect effects from visual changes, noise, air pollutants, and additional LPP Project construction traffic would also occur on recreational users of the Toadstools Trailhead and trail. Indirect effects from noise would attenuate to background levels within 800 feet of the sources. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Additional LPP Project construction traffic would occur along Highway 89 during pipeline construction and delay recreational users in their vehicles.

Operation Effects

Following construction, restoration, and redevelopment of the parking area, LPP Project operations would have no direct or indirect effects on recreational users of the Toadstools Trailhead and trail. These operations would be unnoticed by those using the trailhead and trail.

Catstair Canyon Trailhead

Construction Effects

The Water Conveyance System construction would have significant, temporary, indirect effects on recreational users accessing Catstair Canyon. Effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur. The effects from noise would attenuate to background levels within 800 feet of the sources. Prevailing winds from the southwest would disperse air pollutants away from Catstair Canyon.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of Catstair Canyon. These operations would be unnoticed by those using the area.

House Rock Valley Road

Construction Effects

The Water Conveyance System construction would have minor, temporary, direct effects on recreational users accessing the House Rock Valley Road and associated areas (Buckskin Gulch Trailhead, Wire Pass Trailhead, and the Stateline Campground/Arizona National Scenic Trail Trailhead). These effects would occur as the pipeline construction blocks established access from Highway 89 to House Rock Valley Road. These temporary, direct effects would have a maximum duration of 8 hours. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. This road serves as the primary access point for visitors hiking to the internationally renowned geological feature/destination known as “The Wave”.

Minor, temporary, indirect effects from visual changes, air pollutants, noise and additional LPP Project construction traffic would occur on recreational users of the House Rock Valley Road where it intersects with Highway 89. Effects from noise would attenuate to background levels within 800 feet of the sources. Prevailing winds from the southwest would disperse air pollutants away from House Rock Valley Road.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the House Rock Valley Road. These operations would be unnoticed by those using the road.

Paria Movie Set and Pahreah Townsite Point of Interest

Construction Effects

The Water Conveyance System construction would have minor, temporary, indirect effects on recreational users accessing the Paria Movie Set and Pahreah Townsite Point of Interest. Effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where

the movie set and townsite access road intersects with Highway 89. Effects from noise would attenuate to background levels within 800 feet of the sources.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the Paria Movie Set and Pahreah Townsite. Operations would be unnoticed by those using these areas.

Off-Highway Vehicle Use and Hunting

Construction Effects

The Water Conveyance System and Hydro System construction would have moderate to significant, direct and indirect effects on Open/ATV roads and hunting in GSENM. Moderate, temporary, direct effects would occur as pipeline construction blocks established access from Highway 89 to open/ATV roads located south of Highway 89. These temporary, direct effects would have a maximum duration of 8 hours at a specific site. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Significant, temporary, indirect effects from noise, air pollutants, visual changes, and additional LPP Project construction traffic would occur on ATV users and hunters. Effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment and at facility locations. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on OHV users and hunters in GSENM. While operations would be unnoticed, OHV users and hunters would experience minor, indirect effects as they view specific LPP Project facilities (pump stations and hydro stations).

Great Western Trail

Construction Effects

The Water Conveyance System and Hydro System construction would have moderate to significant, direct and indirect effects on recreational users of the GWT. Significant, temporary, direct effects would occur on GWT users as the pipeline and penstock construction blocks established access from Highway 89 to the south parking area and trail. These temporary direct effects would have a maximum duration of 8 hours at the GWT crossing of the buried pipeline/penstock. A temporary bypass road would provide temporary access to the recreation site, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on GWT users. Effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

Following construction, restoration, and redevelopment of the south parking, LPP Project operations would have no direct effects on recreational users of the GWT. While operations would be unnoticed, GWT users would experience minor, indirect effects as they view HS-1.

GSENM Visitor Center in Kanab

Construction Effects

As it is located six miles or more from the GSENM Visitor Center in Kanab, construction of the Proposed Action would have no direct effects. A minor, indirect effect would result from additional LPP Project construction traffic temporarily delaying visitor center users along Highway 89.

Operation Effects

Operation of the Proposed Action would have no direct or indirect effects on the GSENM Visitor Center in Kanab. That is, operations would be unnoticed by those using the visitor center.

5.3.13.2.1.5 BLM – Kanab Field Office.

Construction Effects

The Water Conveyance System and Hydro System construction would have moderate, temporary, direct and indirect effects on recreation resources within the public lands administered by BLM KFO. Significant, temporary, direct effects would occur on recreational users at BPS-3 Alt./Road 400 (south of Highway 89 at GSENM east boundary), and Road 705 as the penstock construction blocks established access from Highway 89 to these roads. These temporary direct effects would have a maximum duration of 8 hours at the Road 400 crossing of the buried pipeline and at the Road 705 crossing of the buried penstock. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Other BLM access roads intersecting with Highway 89 between GSENM west boundary and Johnson Canyon Road would be temporarily blocked by the Kane County Pipeline construction, with a maximum duration of 4 hours at each road crossing of the 24-inch diameter buried pipeline. A temporary bypass road would provide temporary access to the Johnson Canyon Road, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

In addition to being a major access point for the eastern portion of the KFO, Johnson Canyon Road is also a major access point for the western portion of GSENM. A temporary bypass road would provide temporary access to the Johnson Canyon Road, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of Road 400 (north and south of Highway 89), Road 705, Road 563 and other BLM roads intersecting with Highway 89 between GSENM west boundary and Johnson Canyon Road, and on recreational users of Johnson Canyon Road, itself. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Residual air pollutants would disperse near Highway 89 outside of the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles accessing sites along Highway 89 and Johnson Canyon Road.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreation resources in KFO-administered lands. Operations would be unnoticed by those using these lands.

5.3.13.2.1.6 BLM - Arizona Strip Field Office.

Sand Hills Special Recreation Management Area and Uplands Recreation Management Zone

Construction Effects

The Water Conveyance System construction would have moderate, temporary, direct effects on recreational users accessing the Sand Hills SRMA and Uplands RMZ via the East Clark Bench Road (south from Highway 89), the White House Campground road, and the House Rock Valley Road. Temporary direct effects would occur on recreational users as the pipeline construction blocks established access from Highway 89 to these roads. These temporary direct effects would have a maximum duration of 8 hours at each road crossing of the pipeline. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where these roads intersect with Highway 89. Indirect effects from noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational users of the Sand Hills SRMA and Uplands RMZ. Operations would be unnoticed by those using these areas.

Fredonia Special Recreation Management Area and Associated Recreation Management Zones

Construction Effects

The Hydro System construction would take place several miles from the Fredonia SRMA and associated RMZs. Access to these areas would not be affected by construction, and no visual changes, air pollutants, or noise would be apparent; therefore, no direct or indirect recreational effects would occur.

Operation Effects

As described above, LPP Project facilities would be located several miles from the Fredonia SRMA and associated RMZs; therefore, LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia SMRA and associated RMZs.

Cottonwood Point Wilderness

Construction Effects

The Hydro System construction would have no direct effects on the Cottonwood Point Wilderness. Access to the wilderness via Highways 389 and 237 would not be impeded. Minor, temporary, indirect effects on wilderness recreational users would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Construction of facilities, including the pipeline, HS-2 South,

and HS-3, would be visible from the western portions of the Cottonwood Point Wilderness; however, the indirect visual effects of construction on recreation users would be minimal, because of distance. Noise generated during construction activities would attenuate to background levels within 3,000 feet of the pipeline, HS-2 South, and HS-3 sites. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreation resources in the Cottonwood Point Wilderness. These operations would not interfere with access to, or use of, the wilderness. Recreational users would experience minor, indirect effects from viewing HS-2 South and HS-3 facilities, because of their close proximity to the wilderness boundaries.

Fredonia Welcome Center

Construction Effects

The Hydro System construction would take place six miles or more east of the Fredonia Welcome Center; therefore, Hydro System construction would have no direct or indirect effects on the recreation resources of the Fredonia Welcome Center.

Operation Effects

LPP Project operations would take place six miles or more east of the Fredonia Welcome Center; therefore, Project operation would have no direct or indirect effects on recreational users of the Fredonia Welcome Center following construction and restoration.

Historic Trails

Construction Effects

The Hydro System, including HS-2 South and HS-3, would have moderate, temporary, direct and indirect effects on recreational users of the historic trails during construction. Temporary direct effects would occur on recreational users as the penstock construction crosses the historic trails. These temporary direct effects would have a maximum duration of 8 hours at each trail crossing. Temporary bypass trails would provide temporary access to the trails, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Significant, temporary, indirect effects due to visual changes, air pollution, noise, and additional LPP Project construction traffic would take place during construction. Noise generated during construction activities would attenuate to background levels within 800 feet of the penstock alignment and facility sites and would disrupt recreational experiences of historic trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the historic trails would be temporarily affected by construction activities and traffic during construction.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreational users of the historic trails. These operations would not interfere with access to, or use of, the historic trail. However, users would experience minor, indirect effects as they view HS-2 South and HS-3.

Fredonia – Vermilion Cliffs Scenic Drive

Construction Effects

The Hydro System construction would have moderate, temporary, direct effects on recreation resources where the penstock crosses Highway 89A. The established road access would be interrupted for a maximum of 8 hours. A temporary bypass road would provide temporary access to the Highway 89A, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of the Fredonia – Vermilion Cliffs Scenic Drive where the buried penstock would cross under Highway 89A. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles traveling along Highway 89A.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia – Vermilion Cliffs Scenic Drive. Operations would be unnoticed by those using the scenic drive following construction and restoration.

Vermilion Cliffs Highways Scenic Drive

Construction Effects

The Water Conveyance System and Hydro System construction would have significant, temporary, direct effects on recreation resources where the pipeline/penstock crosses Highway 89A. The established road access would be interrupted for a maximum of 8 hours. A temporary bypass road would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur where the pipeline/penstock crosses Highway 89A. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia-Vermilion Cliffs Scenic Road. Operations would be unnoticed by those using the scenic road, following construction and restoration.

Arizona Strip Pull-Off

Construction Effects

The Hydro System construction would have no direct effects on recreation resources at the Arizona Strip Pull-Off on Highway 389. Access to the pull-off via Highway 389 would not be impeded. Recreational users of the pull-off would experience significant, temporary, indirect visual, air pollutant, noise, and additional LPP Project construction traffic effects from penstock construction and HS-2 South construction along Yellowstone Road. Noise generated during construction activities would attenuate to background levels within 800 feet of the penstock alignment and facility sites and would disrupt recreational experiences of pull-off users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on pull-off users. While operations would be unnoticed, pull-off users would experience minor indirect effects as they view HS-2 South.

5.3.13.2.1.7 Kaibab – Paiute Indian Reservation.

Kaibab-Paiute Tribe Campground and RV Park

Construction Effects

The Hydro System construction would take place four miles or more south of the campground and RV park; therefore, Hydro System construction would have no direct or indirect effects on the recreation resources of these areas.

Operation Effects

LPP Project operations would take place four miles or more south of the campground and RV park; therefore, operations would have no direct or indirect effects on recreational users of these areas.

Historic Trails

Construction Effects

The Hydro System construction would take place several miles south of Kaibab-Paiute Indian Reservation trails; therefore, no direct or indirect effects on recreation resources associated with these trails would occur.

Operation Effects

LPP Project operations would take place several miles south of Kaibab-Paiute Indian Reservation trails; therefore, no direct or indirect effects on recreational users of these trails would occur.

5.3.13.2.1.8 Pipe Spring National Monument.

Construction Effects

The Hydro System construction would take place about four miles south of the PSNM; therefore, no direct or indirect effects on monument recreation resources would occur.

Operation Effects

LPP Project operations would take place about four miles south of the PSNM; therefore, no direct or indirect effects on monument recreation resources would occur.

5.3.13.2.1.9 BLM – St. George Field Office.

Off-Highway Vehicle Use

Construction Effects

The Hydro System construction would have moderate, temporary, direct effects on OHV use and access on public lands administered by BLM SGFO, including motorcycle, ATV, mountain bike, and equestrian events. These effects would include temporary access interruptions or restrictions along gravel and dirt roads and trails crossing the penstock and pipeline alignments. Roads and trails crossed by the penstock and pipeline construction would be interrupted up to a maximum of 8 hours at each crossing site. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Direct effects would occur on recreational users of the unnamed BLM road below the Hurricane Cliffs as construction occurs on the afterbay reservoir, penstock, hydropower plant, tailrace channel, and access bridge. Temporary road detours (see Chapter 5, Mitigation and Monitoring) would provide access to recreational users of the valley below the Hurricane Cliffs. Temporary detours and closures would affect access to BLM trails and other dispersed recreation sites as Hydro System construction proceeds.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational resources along and users of the unnamed BLM road. Noise generated during construction activities would attenuate to background levels within 800 to 1,600 feet of the pipeline alignment and facility sites and would disrupt recreational experiences of OHV and trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Additional LPP Project construction traffic would occur along the roads and OHV recreational users would experience delays.

Operation Effects

LPP Project operations would have no direct effects on OHV use of the unnamed BLM road below the Hurricane Cliffs. While LPP Project operations would go largely unnoticed by users in established OHV areas, vehicles accessing hydropower generation facilities via the unnamed BLM road below the Hurricane Cliffs could cause minor, temporary effects on OHV recreational users of these roads because of occasional traffic delays.

LPP Project operations would require changes to the OHV area designations because the afterbay reservoir would be operated in an area currently designated for OHV use. Such land use plan decisions would require plan amendments.

Sand Mountain Special Recreation Management Area

Construction Effects

The Hydro System construction would have significant direct effects on recreation resources in the Sand Mountain SRMA. The Hurricane Cliffs afterbay reservoir and the penstock to Sand Hollow Hydro Station would be constructed within the eastern portion of the SRMA boundary. The afterbay reservoir construction would remove from use about 200 acres (1 percent of 20,709 acres) of ATV open riding area and technical trails suitable for full-size 4x4s. The Hydro System construction also would disrupt access to the SRMA from Hurricane via the Warner Valley Road trailhead. The 3.8-mile long penstock construction would remove an additional 60 acres (0.3 percent of 20,709 acres) from recreational use in the eastern portion of the SRMA. Dispersed recreation and recreational access at penstock crossings of gravel and dirt roads would be closed for up to 8 hours until construction activities are completed.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational resources within the Sand Mountain SRMA near the afterbay reservoir and along the penstock alignment. Noise generated during construction activities would attenuate to background levels within 800 to 1,600 feet of the penstock alignment and afterbay site and would disrupt recreational experiences of SRMA users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor. Additional LPP Project construction traffic would occur along the roads and recreational users would experience delays.

Operation Effects

LPP Project operations would have significant direct and indirect effects on recreational use of the Sand Mountain SRMA near the afterbay reservoir and hydropower generation facilities associated with the Hurricane Cliffs pumped storage project. The afterbay reservoir would not be available for recreational use because the water levels would fluctuate rapidly and would be unsafe for public recreation activities. The permanent removal of the afterbay reservoir area (approximately 200 acres in the eastern portion of the SRMA, 1 percent of 20,709 acres) from recreational use would be a significant, direct effect on recreation resources. The afterbay reservoir would not be designed for regular water discharge through a spillway; however, the afterbay reservoir would have an emergency spillway that would discharge water during emergency conditions and cause temporary flooding down-gradient (south) of the afterbay and affect recreational use of that portion of the Sand Mountain SRMA.

Significant, indirect visual effects would result from HS-4 Alt., the forebay reservoir, the Hurricane Cliffs pumped storage project, the afterbay reservoir, and the penstock.

LPP Project operations would have temporary, indirect effects on recreational users accessing the Sand Mountain SRMA. Additional traffic accessing the Hurricane Cliffs Hydro Station may occur along the unnamed BLM road below the Hurricane Cliffs as recreational traffic passes through the area of the hydro facilities, resulting in occasional delays.

LPP Project operations would require changes to the Sand Mountain SRMA designation because the afterbay reservoir would be operated in an area currently designated for recreational use. Such land use plan decisions would require plan amendments.

Red Cliffs Desert Reserve

Construction Effects

The Hydro System construction would take place five miles or more south of RCNCA; therefore, no direct or indirect effects on RCNCA recreation resources would occur.

Operation Effects

Project operations would take place five miles or more south of RCNCA; therefore, no direct or indirect effects on RCNCA recreation resources would occur.

Hurricane Cliffs Non-Motorized Trail System

Construction Effects

The Hydro System would have no direct effects on users of the Hurricane Cliffs Non-Motorized Trail System. Access to this trail system would not be impeded during construction. However, minor, temporary, indirect effects on trail system users may result from additional LPP Project traffic along Highway 59 and the unnamed BLM road below the Hurricane Cliffs.

Operation Effects

LPP Project operations would have no direct effects on users of the Hurricane Cliffs Non-Motorized Trail System. While LPP Project operations would go largely unnoticed by trail users, vehicles accessing hydropower generation facilities via Highway 59 and the unnamed BLM road below the Hurricane Cliffs would cause minor, temporary effects, by creating occasional traffic delays.

Frog Hollow OHV Area

Construction Effects

The effects of construction on the Frog Hollow OHV Area would be similar to those described above for the Hurricane Cliffs Non-Motorized Trail System, as Frog Hollow is located just south of this trail system.

Operation Effects

The effects of LPP Project operation on the Frog Hollow OHV Area would be similar to those described above for the Hurricane Cliffs Non-Motorized Trail System, as Frog Hollow is located just south of this trail system.

5.3.13.2.1.10 Sand Hollow State Park.

Construction Effects

The Hydro System construction would have significant direct and indirect effects on recreation resources within Sand Hollow State Park. The penstock construction would temporarily restrict dispersed recreation activities along the penstock alignment ROW. The Sand Hollow Hydro Station construction would displace dispersed camping sites along the east shore of Sand Hollow Reservoir.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional traffic would occur on recreational resources and users within Sand Hollow State Park. Noise generated during construction activities would attenuate to background levels within 800 to 1,600 feet of the pipeline alignment and Sand Hollow Hydro Station. Noise would disrupt the recreational experiences of Sand Hollow State Park users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; prevailing winds from the southwest would disperse air pollutants away from Sand Hollow State Park primary use areas. Additional traffic would occur along the Sand Hollow Road from construction vehicles, and recreational users in vehicles could experience delays during Hydro System construction.

Operation Effects

LPP Project operations would have significant, direct and indirect effects on recreational use of Sand Hollow State Park. Lands within the Sand Hollow Hydro Station operational perimeters would be permanently closed to recreation. Recreational boating and water sports would be restricted in the immediate area of the Sand Hollow Hydro Station tailrace. Visual effects would result from development of the Sand Hollow Hydro Station on the southeast shore of the reservoir. Sand Hollow Reservoir levels would not fluctuate measurably with the regular discharge of LPP Project water from the Sand Hollow Hydro Station.

5.3.13.2.1.11 Private Recreational Facilities.

Amangiri Resort Spa and Villas at Lake Powell

Construction Effects

The LPP Project construction would have moderate, temporary, direct effects on access to the Amangiri Resort Spa and Villas at Lake Powell. Pipeline construction along Highway 89 at the access road intersection would temporarily delay or disrupt access to and from the resort for a maximum of 8 hours. A temporary bypass road would provide temporary access to the resort, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional traffic would occur at the resort access road intersection with Highway 89. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants away from the resort. Additional LPP Project construction traffic could temporarily delay recreational users in vehicles at the intersection of the resort access road and Highway 89.

Operation Effects

Project operations would take place about a mile north and east of the resort spa and villas; therefore, no direct or indirect effects on Amangiri recreation resources would occur following construction and restoration.

Paria Outpost Resort

Construction Effects

The LPP Project construction, which would take place across Highway 89 from the Paria Outpost Resort and Paria Canyon Adventure Ranch, would have significant, temporary, indirect effects. Visual changes, air pollutants, noise, and additional LPP Project traffic would temporarily affect recreational users at the resort and ranch. Construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants away from the resort and ranch. Additional LPP Project traffic could temporarily delay recreational users in vehicles at each resort access road intersection with Highway 89.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreation resources of the Paria Outpost Resort or Paria Canyon Adventure Ranch. Operations would be unnoticed by those using these facilities, following construction and restoration.

Olympus Academy for Youth

Construction Effects

The Hydro System would have no direct effects on the recreational resources of the Olympus Academy for Youth. Access to the Academy would not be impeded during construction. Minor, temporary, indirect effects including visual changes, noise, air pollutants, and additional LPP Project construction traffic would temporarily affect recreational traffic along the Antelope /Branham Ranch Road between the Olympus Academy for Youth and Highway 59. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants away from the academy. Additional LPP Project construction traffic would temporarily delay academy users in vehicles at each access road intersection with Antelope /Branham Ranch Road during transmission line construction.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on Olympus Academy for Youth use of the Antelope/Branham Ranch Road. The Sand Hollow Hydro Station would be approximately five miles southeast of the ranch. LPP Project operations involving access to the hydropower generation facilities along the Antelope/Branham Ranch Road would cause minor, temporary, indirect effects on vehicles accessing the Olympus Academy for Youth, because of occasional traffic delays.

Willowwind RV Park

Construction Effects

The LPP Project construction, located six miles or more south and east of the RV Park, would have no direct or indirect effects on Willowwind RV Park.

Operation Effects

LPP Project operation, located six miles or more south and east of the RV Park, would have no direct or indirect effects on Willowwind RV Park.

Sand Hollow Resort

Construction Effects

Minor, temporary, indirect effects, including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on Sand Hollow Resort recreational resources and users. Noise generated during construction activities would attenuate to background levels within 800 to 1,600 feet of the pipeline alignment and Sand Hollow Hydro Station. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; prevailing winds from the southwest would disperse air pollutants away from Sand Hollow State Park primary use areas. Additional LPP Project construction traffic would occur along the Sand Hollow Road and recreational users in vehicles would experience delays during Hydro System construction.

Operation Effects

LPP Project operations, which would take place three miles or more south and east of the resort, would have no direct or indirect effects on Sand Hollow Resort.

5.3.13.2.2 Existing Highway Alternative.

The construction and operation effects of the Existing Highway Alternative would be the same as described for the Proposed Action (Section 5.3.13.2.1) except for the alignment segment from the west boundary of GSENM to Yellowstone Road west of the Kaibab-Paiute Indian Reservation. The effects of constructing and operating LPP Project Existing Highway Alternative on recreation resources are presented in the following subsections.

5.3.13.2.2.1 BLM – Kanab Field Office.

Construction Effects

The Hydro System construction would have moderate, temporary, direct and indirect effects on recreation resources within the public lands administered by BLM KFO. BLM access roads intersecting with Highway 89 between GSENM west boundary and the established road leading to Lost Spring Gap would be temporarily blocked by the penstock construction, with a maximum duration of 8 hours at each road crossing. Temporary bypass roads would provide temporary access to the recreation sites, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of BLM roads intersecting with Highway 89 between GSENM west boundary and the road leading to Lost Spring Gap. Construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles accessing sites along Highway 89.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreation resources on KFO-administered lands. Operations would be unnoticed, following construction and restoration.

5.3.13.2.2.2 BLM - Arizona Strip Field Office.

Fredonia Special Recreation Management Area and Associated Recreation Management Zones

Construction Effects

The Hydro System construction would have significant, temporary, direct and indirect effects on Fredonia SRMA and associated Recreation RMZs. The penstock construction would occur for 0.8 mile along the northwest boundary of the SRMA and Fredonia Rural Park RMZ. Public access to the construction area within the SRMA and RMZ would be restricted for up to one week.

Significant, temporary, indirect effects, visual changes, air pollutants, noise, and additional LPP Project construction traffic would affect recreational use of portions of the SRMA and RMZs. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants along the northwest boundary of the SRMA, Fredonia Rural Park RMZ and Shinarump Cliffs RMZ.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia SMRA and associated RMZs. Operations would be unnoticed by users, following construction and restoration.

Cottonwood Point Wilderness

Construction Effects

The Hydro System would cross Highway 389 west of the wilderness area, near Colorado City. Access to the wilderness via Highways 389 and 237 would not be impeded. Minor, temporary, indirect effects on wilderness recreational users would result from visual changes, air pollutants, noise, and additional LPP Project construction traffic. Construction of facilities, including the pipeline, HS-2 Highway, and HS-3, would be visible from the western portions of the Cottonwood Point Wilderness; however, the indirect visual effects of construction on recreation users would be minimal, because of distance. Noise generated during construction activities would attenuate to background levels within 3,000 feet of the pipeline, HS-2 Highway, and HS-3 sites. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreation resources in the Cottonwood Point Wilderness. These operations would not interfere with access to, or use of, the wilderness. Recreational users would experience minor, indirect effects from viewing HS-2 Highway and HS-3 facilities, because of their close proximity to the WSA boundaries.

Fredonia Welcome Center

Construction Effects

The Hydro System construction would have moderate to significant, direct and indirect effects on the recreation resources of the Fredonia Welcome Center. The penstock would cross Highway 89A about 300 feet north of the welcome center, and recreational access to the center would be temporarily bypassed during construction of the crossing. The resulting effect would be interrupted recreational opportunity during construction in the vicinity of the center.

Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would temporarily affect recreational use of the Fredonia Welcome Center when open. Construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants away from the center. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles accessing the Fredonia Welcome Center from Highway 89A.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia Welcome Center. These operations would be unnoticed by those using the welcome center, following construction and restoration.

Historic Trails

Construction Effects

The Hydro System, including HS-2 Hwy., would have moderate, temporary, direct effects on recreational users of the historic trails during construction of these features. Temporary direct effects would occur on recreational users as the penstock construction crosses the historic trails. These temporary direct effects would have a maximum duration of 8 hours at each trail crossing. Temporary bypass trails would provide temporary access to the trails, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

The Hydro System, including HS-2 Hwy., would have significant, temporary, indirect effects on historic trails during construction of these features. These effects include visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 800 feet of the pipeline alignment and facility sites. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the historic trails would be temporarily affected by construction activities and traffic during construction.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct effects on recreational users of the historic trails. Access to, and use of, these trails would not be impeded. Users would experience minor, indirect effects as they view HS-2 Hwy and HS-3.

Fredonia – Vermilion Cliffs Scenic Drive

Construction Effects

The Hydro System construction would have moderate, temporary, direct effects on recreation resources where the penstock crosses Highway 89A, just north of the Fredonia Welcome Center. The road would be bypassed for a maximum of 8 hours. A temporary bypass road would provide temporary access, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of the Fredonia – Vermilion Cliffs Scenic Drive where the buried penstock would cross under Highway 89A. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles traveling along Highway 89A.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia – Vermilion Cliffs Scenic Drive, following construction and restoration. These operations would be unnoticed by those using the scenic drive.

Vermilion Cliffs Highways Scenic Drive

Construction Effects

The Hydro System construction would have moderate, temporary, direct effects on recreation resources where the penstock crosses Highway 89A, just north of the Fredonia Welcome Center. The road would be bypassed for a maximum of 8 hours. A temporary bypass road would provide temporary access, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of the Fredonia – Vermilion Cliffs Scenic Road where the buried penstock would cross under Highway 89A. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline/penstock alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles traveling along Highway 89A.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Fredonia-Vermilion Cliffs Scenic Road, following construction and restoration. These operations would be unnoticed by those using the scenic road.

Arizona Strip Pull-Off

Construction Effects

The Hydro System construction would have no direct effects on recreation resources at the Arizona Strip Pull-Off on Highway 389. Access to the pull-off via Highway 389 would not be impeded. Recreational users of the pull-off would experience significant, temporary, indirect visual, air pollutant, noise, and additional LPP Project construction traffic effects from penstock construction and HS-2 Highway construction on the north side of Highway 389. Noise generated during construction activities would attenuate to background levels within 800 feet of the penstock alignment and facility sites and would disrupt recreational experiences of pull-off users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; prevailing winds from the southwest would disperse residual air pollutants away from the pull-off.

Operation Effects

LPP Project operations would have no direct effects on recreational users of the Arizona Strip Pull-Off. Recreational users of the pull-off would experience minor indirect effects from viewing HS-2 Hwy. in the middleground distance zone.

5.3.13.2.2.3 Kaibab – Paiute Indian Reservation.

Kaibab-Paiute Tribe Campground and RV Park

Construction Effects

The Hydro System construction would have moderate, temporary, direct effects on access to the Kaibab-Paiute Tribe Campground and RV Park. Penstock construction along Highway 389 at the access road intersection would temporarily delay or disrupt access to and from the campground and RV Park for a maximum of 8 hours. A temporary bypass road would provide temporary access, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur at the campground and RV park access road intersection with Highway 389. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles at the intersection of the access road and Highway 389.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the Kaibab-Paiute Tribe Campground and RV Park, following construction and restoration. These operations would be unnoticed by those accessing and using the campground and RV Park.

Historic Trails

Construction Effects

The Hydro System would have significant, temporary, direct and indirect effects on recreational users of the Kaibab-Paiute Indian Reservation trails during construction of the penstock. Temporary, direct effects would occur on recreational users as the penstock construction crosses the trails (Old Spanish National Historic Trail and Honeymoon Trail). These temporary direct effects would have a maximum duration of 8 hours at each trail crossing. Temporary bypass trails would provide temporary access to the trails, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. The Hydro System would have significant, temporary, indirect visual, noise, air pollution, and additional LPP Project construction traffic effects on the Old Spanish National Historic Trail and Honeymoon Trail during construction. Noise generated during construction activities would attenuate to background levels within 800 feet of the penstock alignment and facility sites and would disrupt recreational experiences of historic trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the historic trails would be temporarily affected by construction activities and traffic during construction. No construction effects on the Hearts Canyon Trail are anticipated, since this trail is located several miles north of Highway 389.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of trails crossing through the Kaibab-Paiute Indian Reservation, following construction and restoration. These operations would be unnoticed by those accessing and using the trails.

5.3.13.2.2.4 Pipe Spring National Monument.

Construction Effects

The Hydro System construction would have moderate to significant, temporary, direct effects on access to PSNM. Penstock construction along Highway 389 at the access road intersection would temporarily delay or disrupt access to and from the monument for a maximum of 8 hours. A temporary bypass road would provide temporary access, and the original access would be restored to pre-construction conditions by the end of the 8-hour duration. Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur at the PSNM access road intersection with Highway 389. Indirect effects from construction noise would attenuate to background levels within 800 feet of the sources along the pipeline alignment. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles at the intersection of the PSNM access road and Highway 389.

Operation Effects

LPP Project operations would have no direct or indirect effects on recreational users of the PSNM, following construction and restoration. These operations would be unnoticed by those accessing and using the monument.

5.3.13.2.3 Southeast Corner Alternative.

The construction and operation effects of the Southeast Corner Alternative would be the same as described for the Proposed Action (Section 5.3.13.2.1) except for the alignment segment crossing the southeast corner of the Kaibab-Paiute Indian Reservation.

5.3.13.2.3.1 Kaibab – Paiute Indian Reservation.

Construction Effects

The Hydro System construction would have minor, temporary, direct effects on recreation resources. The penstock alignment would roughly parallel an existing, single-track, dirt and gravel road along the existing Navajo-McCullough Transmission Line. Dispersed recreation activities that may occur along the penstock alignment would be disrupted during construction through the southeast corner of the Kaibab-Paiute Indian Reservation. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on dispersed recreation activities in close proximity to the penstock construction. Noise generated during construction activities would attenuate to background levels within 800 feet of the penstock alignment. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

Following construction and restoration, LPP Project operations would have no direct or indirect effects on recreational use along the Southeast Corner Alternative alignment within the boundaries of the Kaibab-Paiute Indian Reservation. These operations would be unnoticed by those recreating in the vicinity of the alignment, following construction and restoration.

5.3.13.2.4 Electrical Transmission Lines System.

The construction and operation effects of the electrical transmission lines system on recreation resources would be the same as the Proposed Action (Section 5.3.13.2.1) for all transmission lines paralleling the Water Conveyance System pipeline and Hydro System penstock. All constructed transmission lines along pipeline and penstock alignments would be viewed by recreational users at various recreation sites, resulting in indirect, construction and operations effects, as described in the Visual Resources Study Report 16 (UDWRe 2016b). Electrical transmission line system alignments that are independent of the Water Conveyance System pipeline and Hydro System penstock alignments are presented in the following sections.

5.3.13.2.4.1 Glen Canyon National Recreation Area.

Dead Dog and Ropes Recreation Areas

Construction Effects

Transmission lines would be constructed about 2,000 feet west of Highway 89 and in the vicinity of the Dead Dog and Ropes dispersed recreational areas. Construction of the LPP Project transmission lines would result in significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic.

Operation Effects

Following construction and restoration, the transmission line corridors would be closed to recreation if required by the applicable management plan (a significant, direct effect). In addition, these lines would be visible to recreationists accessing the Dead Dog and Ropes areas. This would be a minor, indirect effect on recreation.

Colorado River Discovery Rafting Tours

Construction Effects

Transmission line construction would not impede access to, or use of, Colorado River Discovery rafts; therefore, construction would have no direct effects on the Colorado River Discovery Rafting Tours. Minor, temporary, indirect effects would result from air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 1,600 feet of Glen Canyon substation upgrade. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

LPP Project transmission lines operation would have no direct or indirect effects on recreation resources associated with Colorado River Discovery Rafting Tours. These operations would be unnoticed by rafters.

Highway 89

Construction Effects

A transmission line would be constructed west of and parallel to Highway 89, west of Glen Canyon Dam. About 2,000 feet north of the Carl Hayden Visitor Center, the transmission line serving the Intake Pump Station would cross the highway and head northwest to BPS-1. Heavy equipment used to construct these transmission lines would result in significant, temporary, indirect effects on recreation resources. These effects would include visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW. Most air pollutants would disperse to below NAAQS concentrations within the transmission line ROW. Additional LPP Project construction traffic would delay recreational vehicles on Highway 89.

Operation Effects

The transmission line would not impede access to, or recreational use of, US 89; therefore, Hydro System construction would have no direct effects. Following construction and restoration, the transmission line would be visible to recreationists traveling along Highway 89. This would be a minor, indirect effect on recreation, given that the area already contains many other transmission lines and developments.

Carl Hayden Visitor Center

Construction Effects

The transmission line serving the Intake Pump Station would cross Highway 89 about 2,000 feet north of the Carl Hayden Visitor Center. Heavy equipment used to construct the transmission line would result in significant, temporary, indirect effects. These temporary, indirect effects would include potential visual

changes, air pollutants, and additional LPP Project construction traffic for up to 4 hours. Prevailing winds from the southwest would disperse air pollutants into an area away from the visitor center.

Operation Effects

Following construction and restoration, LPP Project transmission lines operation would have no direct or indirect effects on recreational use at the Carl Hayden Visitor Center. The operations would be unnoticed by visitor center users.

Glen Canyon Dam Overlook

Construction Effects

Construction of the electrical transmission lines system would not impede access to, or use of the Glen Canyon Dam Overlook during construction; therefore, no direct effects would result. Minor, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of Glen Canyon Dam Overlook. Construction noise would attenuate to background levels within 1,600 feet of Glen Canyon substation. Most air pollutants would disperse to below NAAQS concentrations within the substation area; prevailing southwest winds would transport any residual pollutants away from the overlook. Construction of the transmission line connections to Glen Canyon substation would be viewed from the overlook and result in visual effects in the middleground distance zone.

Operation Effects

Operation of the electrical transmission lines system would not impede access to, or use of the Glen Canyon Dam Overlook; therefore, no direct effects would result. Following construction and restoration, the additional transmission lines would be visible to recreation users viewing the substation from the overlook. This would be a minor, indirect effect on recreation. The new transmission lines would match the line and form of numerous existing transmission lines entering and connecting to Glen Canyon substation.

Chains Recreation Area and Hanging Garden Trail

Construction Effects

A transmission line would be constructed to the Water Intake System on the Lake Powell shoreline directly opposite (west shore of Lake Powell) the Chains Recreation Area about 1,600 feet away. Construction would result in significant, temporary, indirect effects. These effects would include visual changes, and air pollutants, and noise. The highest sound pressure levels generated at the Water Intake System site (94 dBA) during construction would attenuate to 64 dBA at the Chains area, which is equivalent to moderate conversational speech. Most of the air pollutants would disperse within the work site to levels below the NAAQS concentrations and prevailing southwest winds would transport any residual pollutants north of the Chains area and over Lake Powell.

Operation Effects

Following construction and restoration, the additional transmission lines would be visible to recreation users viewing the Water Intake System from the Chains area and Hanging Gardens. This would be a minor, indirect effect on recreational use at the Chains area and Hanging Gardens Trail.

5.3.13.2.4.2 Vermilion Cliffs National Monument.

Construction Effects

Transmission lines serving BPS-2, BPS-3 Alt., and other Water Conveyance System facilities would be constructed north of VCNM and would have no direct effects on recreation resources. Heavy equipment used to construct the transmission lines would result in minor, temporary, indirect noise effects on VCNM users. Peak noise levels would attenuate to background sound levels within 1,600 feet of the sources. Prevailing winds from the southwest would prevent any temporary air pollutants from dispersing within VCNM.

Operation Effects

There would be no direct effects on recreation resources during operation of the transmission lines serving LPP Project facilities, which would be located one mile north of VCNM boundary. The new transmission lines, constructed adjacent and parallel to existing transmission lines, would be visible to recreationists using VCNM and result in minor, indirect effects.

5.3.13.2.4.3 Paria Canyon – Vermilion Cliffs Wilderness.

Construction Effects

Electrical transmission lines system construction would have no direct effects on recreation resources in the PCVCW, as Hydro System construction would take place at least one mile north of PCVCW boundaries. Minor, temporary, indirect effects from noise would occur on recreational users of the PCVCW. Indirect effects from construction noise would attenuate to background levels within 1,600 feet of the heavy equipment sources along the transmission line alignments. Prevailing winds from the southwest would prevent any temporary air pollutants from dispersing within PCVCW.

Operation Effects

There would be no direct effects on recreation resources during operation of the transmission lines serving LPP Project facilities, as these operations would take place outside of PCVCW boundaries. The new transmission lines, mostly constructed adjacent to existing transmission lines, would be visible to recreationists using PCVCW and would result in minor, indirect effects.

5.3.13.2.4.4 Grand Staircase-Escalante National Monument.

Guided Trips

Construction Effects

Electrical transmission lines system construction, which would parallel existing lines already closed to recreation, would have no direct effects on guided trip providers and participants in GSENM. Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on guided trip providers and participants along transmission line alignments. Noise would attenuate to background levels within 1,600 feet of the sources along the transmission line alignments. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Transmission line construction would be visible from vantage points used by guided trip providers and participants, and would, therefore, result in minor, indirect effects.

Operation Effects

LPP Project transmission lines operation would have no direct effects on guided trip providers and participants in GSENM. These transmission lines would parallel existing lines that are already closed to recreation. The LPP Project transmission lines would not impede access to any additional recreation area. Guided trip providers and participants would experience minor, indirect effects as they view specific transmission lines along Highway 89, adjacent to the Navajo-McCullough Transmission Line, and near GSENM south boundary.

Cockscomb WSA

Construction Effects

The electrical transmission lines system construction would have minor, temporary, indirect effects on recreational users of the nearby Cockscomb WSA during construction. These effects would include visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the BPS-3 Alt. and BPS-4 Alt. transmission lines and would temporarily disrupt recreational experiences of users in the south and west portions of the WSA. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the WSA would be temporarily affected by construction activities and traffic during construction. There would be no direct effects on recreational users of the WSA, as the construction would take place outside of the WSA boundaries.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources in the Cockscomb WSA, as the operations would take place outside of the WSA boundaries. Recreational users would experience minor indirect effects from viewing the transmission lines, because of their proximity to the WSA boundaries (0.5 mile from BPS-3(Alt.) and BPS-4 (Alt.) at closest points).

Wahweap WSA

Construction Effects

The transmission lines serving BPS-3 Alt. would have minor, temporary, indirect effects on recreational users of the nearby Wahweap WSA during construction. These effects would include visual changes, air pollutants, noise, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW and would disrupt recreational experiences of WSA users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the WSA would be temporarily affected by construction activities and traffic during construction. There would be no direct effects on recreational users of the WSA, as the construction would take place outside of the WSA boundaries.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources in the Wahweap WSA, as these operations would take place outside of the WSA boundaries. Recreational users

of the WSA would experience minor indirect effects from viewing the BPS-3 Alt. transmission line in the middleground distance zone (1.5 miles to BPS-3 (Alt.) at closest point).

Highway 89 Special Recreation Management Area

Construction Effects

The transmission lines serving BPS-4 (Alt.) and HS-1 would have no direct effects on recreational users of the Highway 89 Corridor SRMA during construction. Transmission line construction would not impede access to, or recreational use of, Highway 89.

The transmission lines serving BPS-4 (Alt.) and HS-1 would have significant, temporary, indirect effects on recreational users of the nearby Highway 89 Corridor SRMA during construction. These effects would include visual changes, noise, air pollutants, and additional LPP Project construction traffic. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line alignments. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Several dispersed access points for the SRMA would be temporarily affected by construction activities and traffic during construction.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources in the Highway 89 Corridor SRMA. These operations would not impede access to, or use of the SRMA. Users would experience minor, indirect effects from viewing transmission lines because of their proximity to the SRMA. This would affect their recreation experience.

Historic Trails

Construction Effects

The effects of transmission lines construction on GSENM historic trails would be similar to those described above for the Highway 89 Corridor SRMA, as these trails are believed to follow the Highway 89 corridor through the GSENM.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources of GSENM historic trails. These operations would not impede access to, or use of the trails. Users of the historic trails would experience minor, indirect effects from viewing transmission lines.

Paria Canyons and Plateaus Special Recreation Management Area

Construction Effects

The electrical transmission lines system construction would have no direct effects on recreational users accessing the Paria Canyons and Plateaus SRMA) via the East Clark Bench Road (south from Highway 89), the White House Campground road, and the House Rock Valley Road. Transmission line construction would not impede access to, or recreational use of, this SRMA. Significant, temporary, indirect effects from visual changes, noise, air pollutants, and additional LPP Project construction traffic would occur. Indirect effects from noise would attenuate to background levels within 1,600 feet of the

sources along the transmission line ROWs. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

The Transmission Line Alternatives would have no direct effects on recreation resources of the Paria Canyons and Plateaus SRMA. Operations of these lines would not impede access to, or use of the SRMA. Following construction and restoration, the transmission line would be visible to users in the SRMA. This would be a minor, indirect effect on recreation. The new transmission lines would match the line and form of numerous existing transmission lines in this vicinity.

Paria Contact Station, White House Campground, and Paria River Canyon

Construction Effects

The BPS-3 Alt. Transmission Line South construction would have no direct effects on recreational users accessing the Paria Contact Station, White House Campground and Paria River Canyon. This construction would not impede recreational access or use. Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of the Paria Contact Station, White House Campground, and Paria River Canyon. Indirect effects from noise would attenuate to background levels within 1,600 feet of the heavy equipment sources along the transmission line ROW. Prevailing winds from the southwest would disperse air pollutants away from the Paria Contact Station.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources of the Paria Contact Station, White House Campground, and Paria River Canyon. Operation of these lines would not impede recreation access or use. Recreational users would experience minor, indirect effects from viewing BPS-3 Alt. Transmission Line South.

House Rock Valley Road

Construction Effects

The LPP Glen Canyon to Buckskin Transmission Line would cross House Rock Valley Road about four miles south of Highway 89. Construction would not impede recreational access or use; therefore, no direct effects on recreation would result. Construction of the transmission line would result in significant, temporary, indirect visual, air pollutant, noise and additional LPP Project construction traffic effects on recreation. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW. Most air pollutants would disperse to below NAAQS concentrations within the transmission line ROW.

Operation Effects

Transmission line operation would have no direct effects on House Rock Valley Road. Recreation access or use would not be impeded. Following construction and restoration, the additional transmission line would be visible to House Rock Valley Road users. This would be a minor, indirect effect on recreation. The new transmission line would match the line and form of the existing transmission lines in this ROW.

Off-Highway Vehicle Use and Hunting

Construction Effects

The electrical transmission lines system construction would have no direct effects on Open/ATV roads and hunting in GSENM. These uses would not be impeded by construction activities. Significant, temporary, indirect effects from visual changes, air pollutants, noise, and visual changes would occur. Indirect effects from noise would attenuate to background levels within 1,600 feet of the sources along the transmission line ROWs. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Transmission line construction would be visible from vantage points used by guided trip providers and participants.

Operation Effects

LPP Project transmission lines operation would have no direct effects on Open/ATV road users and hunters in GSENM. These uses would not be impeded by operations. Minor, indirect effects would result from viewing transmission lines, which would affect user experiences.

Great Western Trail

Construction Effects

The HS-1 Transmission Line construction would have minor indirect effects on recreational users of GWT, trailheads for which are located on Highway 89, approximately a mile to the northeast. Visual changes, air pollutants, and noise would occur within the 400-foot long construction ROW. Noise would attenuate to background levels within 1,600 feet of the sources along the transmission line ROW. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

Located about a mile southwest of GWT, the HS-1 transmission line operations would have no direct effects on recreational users of GWT. Trail users would experience minor, indirect effects as they view the 40-foot long transmission line.

5.3.13.2.4.5 BLM - Arizona Strip Field Office.

Historic Trails

Construction Effects

The HS-2 South transmission line would have minor, temporary, indirect effects on recreational users of the historic trails during construction. Visual changes, air pollutants, and noise would occur. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission alignment and would disrupt recreational experiences of historic trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreational users of the historic trails on public lands administered by BLM ASFO. Access to, and use of, these trails would not be

impeded. Historic trails users would experience indirect effects as they view the HS-2 South transmission line.

Vermilion Cliffs Highways Scenic Drive

Construction Effects

Significant, temporary, indirect effects from visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational users of the Fredonia-Vermilion Cliffs Scenic Drive where the transmission line would be parallel to or cross over Highway 89A. Construction noise would attenuate to background levels within 1,600 feet of the sources along the transmission line ROWs. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW. Additional LPP Project construction traffic would temporarily delay recreational users in vehicles traveling along the highways.

Operation Effects

LPP Project transmission lines operation would not impede recreation use of the scenic road; therefore, transmission lines operation would have no direct effects on recreational users of the Fredonia-Vermilion Cliffs Scenic Drive. Recreation vehicle users would experience significant, indirect effects as they view transmission lines from the road, pull-outs, and interpretive sites associated with the scenic road.

Arizona Strip Pull-Off

Construction Effects

The HS-2 South transmission line construction would have no direct effects on recreation resources at the Arizona Strip Pull-Off on Arizona Route 389. This construction would not impede access to, or use of, the pull-off. Recreational users of the pull-off, which is 0.64 mile (i.e., the middleground distance zone) from the transmission line, would experience minor, temporary, indirect visual, air pollutant, and noise effects from this construction along Yellowstone Road. Noise would attenuate to background levels within 1,600 feet of the sources along the transmission line ROWs. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW.

Operation Effects

LPP Project transmission lines operation would have not impede access to, or use of, the pull-off; therefore, no direct effects would occur to recreational users of the Arizona Strip Pull-Off. Users of the pull-off would experience minor, indirect effects from viewing HS-2 South transmission line in the middleground distance zone.

5.3.13.2.4.6 BLM – St. George Field Office.

Off-Highway Vehicle Use

Construction Effects

The HS-4 (Alt.) transmission line construction would have no direct effects on recreation. This construction would not impede access to, or use of, OHV areas. Minor, temporary, indirect effects on OHV use and access to public lands administered by BLMSGFO would occur. Minor, temporary, indirect effects would result from visual changes, air pollutants, noise, and additional LPP Project construction

traffic along the Antelope/Branham Ranch Road. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW and would disrupt recreational experiences of OHV and trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Additional LPP Project construction traffic would occur along the roads and OHV recreational users would experience delays.

Operation Effects

LPP Project transmission lines operation would not impede access to, or use of, OHV areas along the Antelope/Branham Ranch Road; therefore, no direct effects on recreation would result. OHV users would experience minor, indirect effects from viewing the HS-4 (Alt.) transmission line.

Sand Mountain Special Recreation Management Area

Construction Effects

The Hurricane Cliffs Afterbay to Hurricane West transmission line and Hurricane Cliffs Afterbay to Sand Hollow transmission line construction would have significant, temporary, direct effects on recreation resources in the Sand Mountain SRMA. These transmission lines would be within the eastern portion of the SRMA boundary, with recreation use on about 60 acres (along 3.8 miles, 0.3 percent of 20,709 acres) of the SRMA closed during construction.

Significant, temporary, indirect effects including noise, visual changes, air pollutants, and additional LPP Project construction traffic would occur along the transmission line ROWs. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROWs and would disrupt recreational experiences of SRMA users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor. Additional LPP Project construction traffic would occur along the roads and recreational users would experience delays.

Operation Effects

LPP Project transmission lines operation would have significant, direct effects on recreational use in the eastern portion of the Sand Mountain SRMA. The Hurricane Cliffs Afterbay to Hurricane West transmission line and Hurricane Cliffs Afterbay to Sand Hollow transmission line corridors would be permanently closed to recreation if required by the applicable management plan, potentially resulting in a loss of about 60 acres (0.3 percent of 20,709 acres) to the SRMA. LPP Project transmission lines would also have significant, indirect visual effects on recreational users in the Sand Mountain SRMA.

Red Cliffs National Conservation Area

Construction Effects

The Hurricane Cliffs Afterbay to Hurricane West transmission line would be constructed about two miles west and one-half mile south of RCNCA's Hurricane Cinder Knolls area. This construction would have minor, indirect effects on recreational users in the Hurricane Cinder Knolls area. These effects would include visual changes, noise, and air pollutants. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission lines. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor.

Operation Effects

The Hurricane Cliffs Afterbay to Hurricane West transmission line operation would have no direct effects on recreation resources in RCNCA, which are located some distance away. Recreational users would experience minor, indirect effects from viewing the transmission line.

Hurricane Cliffs Non-Motorized Trail System

Construction Effects

The HS-4 Alt. transmission line construction would have no direct effects on the Hurricane Cliffs Non-Motorized Trail System. This construction would not impede access to, or use of, the trail system.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur along Gould's Trail during transmission line construction. Noise generated during transmission line construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW and would disrupt recreational experiences of trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Additional LPP Project construction traffic would occur along the roads and recreational users would experience delays.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources of the Hurricane Cliffs Non-Motorized Trail System. These operations would not impede access to, or use of, the trail system. Recreation users of the Gould's Rim Trailhead and Gould's Trail would experience significant, indirect effects as they view the transmission line in the foreground and middleground.

Frog Hollow OHV Area

Construction Effects

The HS-4 Alt. transmission line construction would have no direct effects on the Frog Hollow OHV Area. This construction would not impede access to, or use of, the OHV area.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on users of the Frog Hollow OHV area during HS-4 Alt. transmission line construction. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; prevailing winds from the southwest would disperse air pollutants away from the Frog Hollow area. Additional LPP Project construction traffic would occur along the Antelope /Branham Ranch Road and recreational users would experience delays during transmission line construction.

Operation Effects

LPP Project transmission lines operation would have no direct effects on recreation resources of the Frog Hollow OHV area. These operations would not impede access to, or use of, the OHV area. Users of the OHV area would experience significant, indirect effects as they view the transmission line in the foreground and middleground.

5.3.13.2.4.7 Sand Hollow State Park.

Construction Effects

The Hurricane Cliffs Afterbay to Sand Hollow transmission line and Sand Hollow to Dixie Springs transmission line construction would have significant, direct effects on recreation resources within Sand Hollow State Park. The construction would temporarily restrict dispersed recreation activities along the transmission line ROWs, and would temporarily close the Sand Hollow Road.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational resources and users within Sand Hollow State Park. Noise generated during transmission line construction activities would attenuate to background levels within 1,600 feet of the transmission line ROWs. Air pollutants would mostly disperse to below NAAQS concentrations within the ROW corridor; prevailing winds from the southwest would disperse air pollutants away from Sand Hollow State Park primary use areas. Additional LPP Project construction traffic would occur along the Sand Hollow Road and recreational users in vehicles would experience delays during transmission line construction.

Operation Effects

The Sand Hollow to Dixie Springs Transmission Line ROW, a portion of which runs along the north shore of Sand Hollow Reservoir, would be permanently closed to recreation if required by the applicable management plan. This potential permanent closure would be a significant, permanent, direct effect on recreation. Park users would also experience significant, indirect effects, as they view the transmission lines.

5.3.13.2.4.8 Olympus Academy.

Olympus Academy

Construction Effects

The HS-4 (Alt.) transmission line construction would have no direct effects on the Olympus Academy for Youth. This construction would not impede access to, or use of, academy recreation facilities. Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would temporarily affect recreational traffic along the Antelope /Branham Ranch Road between the Olympus Academy for Youth and Highway 59. Indirect effects from construction noise would attenuate to background levels within 1,600 feet of the sources along the transmission line ROW. Most air pollutants would disperse to below NAAQS concentrations within the construction ROW; prevailing winds from the southwest would disperse residual air pollutants away from the academy. Additional LPP Project construction traffic would temporarily delay academy users in vehicles at each access road intersection with Antelope /Branham Ranch Road and along the road during transmission line construction.

Operation Effects

LPP Project transmission lines operation would have no direct effects on the Olympus Academy for Youth. These operations would not impede access to, or use of, academy recreation facilities. Employees and users of the Olympus Academy for Youth would experience minor, indirect effects as they view the HS-4 (Alt.) transmission line in the middleground.

5.3.13.2.5 No Lake Powell Water Alternative.

The No Lake Powell Water Alternative would involve construction and operation of reverse osmosis water treatment facilities and associated infrastructure near the Washington Fields Diversion and Warner Valley in the St. George metropolitan area. Several of the recreation resources that could be affected by the Hydro System alternatives would be affected by the No Lake Powell Water Alternative. The following sections describe the direct and indirect effects of constructing and operating the No Lake Powell Water Alternative on recreation resources.

5.3.13.2.5.1 BLM – St. George Field Office.

Off-Highway Vehicle Use

Construction Effects

The No Lake Powell Water Alternative construction would have significant, temporary, direct effects on OHV use and access on public lands administered by BLM-SGFO, including motorcycle, ATV, mountain bike, and equestrian events. The Warner Valley Reservoir, the reverse osmosis water treatment facilities, and brine evaporation ponds would remove about 680 acres of public land from OHV recreational use in the Warner Valley area. These effects would include access closures and restrictions along gravel and dirt roads and trails in the Warner Valley area. Direct effects also would occur on OHV recreational users during transmission line construction from the proposed Purgatory Substation to the reverse osmosis water treatment plant site. Temporary detours and closures would affect access to dispersed recreation sites as the transmission line construction proceeds parallel to the Virgin River.

Significant, temporary, indirect effects, including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational resources along, and users of, Pecon Road near Warner Valley and the Washington Fields Diversion. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the transmission line ROW and would disrupt recreational experiences of OHV and trail users. Air pollutants would mostly disperse to below NAAQS concentrations within the transmission line ROW and work areas; residual air pollutants outside of the construction ROW would disperse near the Highway 89 corridor. Additional LPP Project construction traffic would occur along the roads and OHV recreational users would experience delays. Off-highway vehicle users would experience significant, indirect effects as they view construction of the transmission lines, Warner Valley Dam and reservoir, brine evaporation ponds and reverse osmosis water treatment plant. This construction would disrupt the recreational experiences of OHV users.

Operation Effects

The No Lake Powell Water Alternative operations would have significant, permanent, direct effects on OHV use of roads and trails in the Warner Valley area, because some roads and trails would be permanently closed. OHV users would experience significant, indirect effects from viewing the transmission line, Warner Valley Dam and reservoir, brine evaporation ponds and reverse osmosis water treatment plant. Viewing these structures would disrupt the recreational experiences of OHV users. See the Final Visual Resources Study Report 16 (UDWRe 2016b) for additional effect analysis concerning the appearance of No Lake Powell Water Alternative structures.

Sand Mountain Special Recreation Management Area

Construction Effects

The No Lake Powell Water Alternative construction would have significant, temporary, direct effects on open riding opportunities and technical trails suitable for full-size 4x4s in the western portion of the Sand Mountain SRMA. The reverse osmosis water treatment plant, Warner Valley Dam and Reservoir, and brine evaporation ponds would be constructed within the SRMA boundary. Construction of these features would have direct effects on recreation use of about 290 acres (1.4 percent of 20,709 acres) of the SRMA as the construction occurs in the Warner Valley area. Construction would also disrupt access to the SRMA via the Washington Dam Road trailhead and Warner Valley Road trailhead. No recreation activities would be allowed within the operational perimeters of the reverse osmosis water treatment plant and the brine evaporation ponds during construction.

Significant, temporary, indirect effects including visual changes, air pollutants, noise, and additional LPP Project construction traffic would occur on recreational resources within the Sand Mountain SRMA. Noise generated during construction activities would attenuate to background levels within 1,600 feet of the heavy equipment construction sources and would disrupt recreational experiences of SRMA users. Air pollutants would mostly disperse to below NAAQS concentrations within the construction area and along the transmission line corridor. Additional LPP Project construction traffic would occur along Pecon Road and recreational users would experience delays.

Operation Effects

The No Lake Powell Water Alternative operation would have significant, permanent, direct effects on recreational use of the Sand Mountain SRMA. Approximately 290 acres (1.4 percent of 20,709 acres) of land in the western portion of the SRMA would be permanently removed from recreational access and use.

The No Lake Powell Water Alternative operation would also have significant, permanent, indirect effects on recreational users in the Sand Mountain SRMA. Recreation resource users within the remaining SRMA would experience indirect effects as they view the transmission lines, reverse osmosis water treatment plant, Warner Valley Dam and Reservoir, and the brine evaporation ponds. Viewing these structures would disrupt the recreational experiences of OHV users. In addition, users of the SRMA in the vicinity of the brine evaporation ponds would detect odors as the brine evaporates from the ponds.

5.3.13.2.5.2 Private Recreational Facilities

Sand Hollow Resort

Construction Effects

The No Lake Powell Water Alternative features and facilities construction would have no direct effects on the Sand Hollow Resort.

Minor, temporary, indirect effects, including air pollutants, and additional LPP Project construction traffic would affect recreational use of the Sand Hollow Resort. Indirect effects from construction noise would attenuate to background levels within 1,600 feet of the sources, which would be more than one mile away from the resort. Most air pollutants would disperse to below NAAQS concentrations within the transmission line ROW and construction areas; however, prevailing winds from the southwest would disperse residual air pollutants including nitrogen dioxide toward the resort. Additional LPP Project

construction traffic would temporarily delay recreational users in vehicles along Pecon Road. Recreation users of the resort vicinity would experience temporary, indirect effects as they view construction of Warner Valley Dam and other infrastructure constructed as part of the No Lake Powell Water Alternative.

Operation Effects

The No Lake Powell Water Alternative operations would have no direct effects on recreation resources of the Sand Hollow Resort. These operations would not impede access to, or use of, the resort.

5.3.13.2.5.3 Residential Landscapes, Public Parks, and Landscaped Common Areas.

Construction Effects

The No Lake Powell Water Alternative would have no direct effects on construction of residential landscapes, public parks and landscaped common areas. Indirect effects would occur on recreation activities as residential landscapes, public parks and landscaped common areas are converted from traditional irrigated landscapes to non-irrigated landscapes and parks. Temporary indirect effects would include no recreation access to these areas during construction transition activities and potential dust particles adversely affecting air quality.

Operation Effects

Unlike the LPP Project action alternatives, the No Lake Powell Water Alternative would result in eliminating residential outdoor watering with potable water. This would have significant, indirect effects on recreation throughout the St. George metropolitan area. Existing and future residential landscapes would be non-irrigated landscapes with no shade trees, ornamental shrubs, lawns or other vegetative cover typically growing in residential areas within the St. George metropolitan area. Recreational pursuits, including walking, running, playing games, and sports activities on residential lots and in public parks and landscaped common areas would be adversely affected because the vegetation supporting these areas would become non-irrigated landscapes. Public parks with artificial turf would not be affected by eliminating residential outdoor watering.

5.3.13.2.6 No Action Alternative.

The No Action Alternative would not have any construction or operation effects on recreation resources within the LPP Project study area. No construction would occur and no operational activities would occur.

5.3.13.3 Protection, Mitigation and Enhancement Measures

The following protection, mitigation and enhancement measures would be applicable to all LPP Project features and facilities during construction.

Landscape berms would be constructed and vegetated with endemic vegetation species at specific facility sites on BLM, NPS and Reclamation-administered public lands to help screen public views of the LPP Project facilities.

Proposed electrical power transmission line alignments would be parallel to existing transmission or distribution lines to the extent practical to minimize new effects of proposed transmission lines on the visual landscape.

Proposed electrical power transmission line alignments would be parallel to existing electrical power transmission lines and would be aligned within a preferred West Wide Energy Corridor (Section 368 corridor 68-116), as designated and documented in the *Programmatic Environmental Impact Statement, Designation of Energy Corridors on Federal Land in 11 Western States* (DOE and BLM 2008) to the extent practical.

Transmission line towers would be constructed with self-weathering steel or dull-galvanized steel to reduce visual resource effects. Non-reflective, non-specular conductors would be installed to reduce visual resource effects.

Rock cuts and other construction areas along the ROW in sensitive visual areas or landscapes would be painted or sprayed with an artificial desert varnish following construction completion to reduce the visual contrast and restore the appearance of natural desert varnish. Application rates and color tint would be site-specific. Available artificial desert varnish materials used for visual resource effect mitigation purposes would be approved by the BLM or NPS prior to use.

Pumping stations, water treatment facility, buried storage reservoir, hydroelectric generating stations, substations and other project facilities would utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape, per BLM Manual 8400 – Visual Resources Management. Architectural details would be approved as part of local building permit approvals.

Lighting, if temporarily needed to perform construction at night, would be limited to the basic requirements to conduct the work. Lighting would be shielded, and directed down towards the site and not into surrounding areas or onto roads.

5.3.13.3.1 BLM Plan of Development.

UDWRe would complete a detailed Plan of Development (POD) for the final project affecting BLM-administered land and recreation resources. The detailed POD would incorporate mitigation contained in the BLM Record of Decision and provide detailed project design and construction specifics, including but not limited to construction contract timing and phasing, construction access roads and ROW entry points, and other details. The POD would contain detailed plans, including, but not limited to, those listed below. The BLM would review and approve the POD prior to notice to proceed for any surface disturbance activity within the BLM ROW permit. Each of the following plans and strategies will be prepared as part of the final POD.

- Agency Coordination Plan – primary contacts including BLM authorized officer, UDWRe, construction management, environmental compliance inspection contractor, and construction contractors; identification of reporting procedures and frequency.
- Construction Plan – construction schedule, access roads, borrow pits, best management practices, vehicle/equipment washing locations, etc.
- Construction Traffic Management Plan – measures to reduce and manage construction traffic.
- Dust Control Plan – air quality standards and permits, dust control measures, general water sources, air quality monitoring, and reporting.
- Emergency Response Plan – emergency contacts, notification procedures, available resources, and emergency procedures.

- Integrated Weed Management Plan – management of areas with noxious/invasive weeds, treatment and control measures, monitoring, and reporting.
- Mitigation Plan – summary of environmental commitments and mitigation measures, responsible parties, timing, and reporting.
- Public Information Plan – public notification measures.
- Restoration Plan –topsoil (growth medium) and vegetative cover salvage, stockpiling and replacement; plant salvage, maintenance and replacement, seeding, soil stabilization, and post-construction monitoring.
- Spill Prevention, Control, and Countermeasure Plan – procedures for storage and handling of hazardous and toxic materials, necessary permits, spill response and cleanup.
- Stormwater Pollution Prevention Plan – erosion and sediment control measures, compliance inspections and reporting.

The Construction Plan would describe a process under which changes from the POD can be requested in the field during construction.

UDWRe would provide a Compliance Inspector (CI) for the project. The CI would provide environmental oversight and compliance/regulatory activities for the permittee during LPP Project construction activities. The CI would be responsible for ensuring that the permittee complies with all terms, conditions, stipulations and other measures required for the project, and would have the authority to halt activities that are in non-compliance.

A pre-construction meeting between permitting agencies, UDWRe, CI, and the construction contractor would be required prior to any surface disturbing activity occurring. The CI would provide reports to permitting agencies on a schedule based upon the type of ongoing construction activity, and as described in the approved Agency Coordination Plan.

All construction activities would be conducted within the authorized limits of the ROW grant. Any facility relocation, additional construction area, or other use on BLM- or NPS-administered land that is not in accord with the ROW grant would not be initiated without prior approval of BLM or NPS. Cross-country vehicular travel outside of the ROW by construction or maintenance workers would be prohibited, unless prior approval is obtained from the BLM.

UDWRe would notify each BLM field office (ASFO, KFO, Grand Staircase-Escalante Field Office, and SGFO) and the NPS GCNRA office at least 10 days before initiation of project construction. Notification would be made to the designated BLM or NPS representative.

A worker education program would be developed by UDWRe and used during construction. The program would be presented to all personnel who would be on-site, including but not limited to contractors, contractor's employees, supervisors, inspectors, and subcontractors. A handout would be developed addressing environmental protection measures incorporated into the proposed project, and the responsibility of each worker in environmental protection. Each worker would be briefed on his or her environmental compliance responsibilities, provided a handout, and required to sign a certification that he or she understands and would comply with those environmental protection measures.

A Public Information Plan would be developed by UDWRe in coordination with permitting agencies to notify the public and appropriate agencies in advance of the start of each construction phase. The plan would include, as appropriate, public notices, public meetings, letters to nearby residents, and road signs.

5.3.13.3.2 Proposed Action.

5.3.13.3.2.1 Construction.

- Construction of Proposed Action features at or near recreation sites and across access roads to recreation sites would be scheduled outside of high-use recreation periods if possible.
- Construction flaggers would be used as applicable to manage public vehicle access during construction activities at and near recreation sites to avoid or minimize risks to recreationists and construction personnel.
- The Toadstools Trailhead parking area would be restored immediately after LPP Project construction in the vicinity is complete, in coordination with GSENM.
- The GWT south parking area would be restored immediately after LPP construction in the vicinity is complete, in coordination with GSENM. Mitigation measures for permanent effects on BLM SGFO non-motorized trails include, as appropriate, replacing horse riding trails in-kind on nearby BLM land, replacing horse trailer loading and unloading ramps and trailer-vehicle parking areas on BLM land, replacing mountain bike trails in-kind on nearby BLM land, and replacing vehicle parking areas for mountain bike enthusiasts adjacent to the replaced mountain bike trails. The SGFO recreation mitigation measures would be specifically designed and constructed in coordination with the BLM SGFO.
- Effects on the Sand Mountain SRMA would be mitigated using a combination of on-site and off-site measures. On-site measures would include: 1) Maintaining vehicle access during and after construction through and/or around all LPP development; 2) Developing an ATV trailhead (trailer parking, restroom, information kiosk with maps and other interpretation) south of Hurricane, but north of the Hurricane Cliffs afterbay; and 3) Developing an ATV trailhead at Washington Dam Road unless WCWCD has already developed a trailhead at this location. The Sand Mountain SRMA recreation mitigation measures would be designed and constructed in coordination with the BLM SGFO.

5.3.13.3.2.2 Operation and Maintenance.

- During construction, access roads to surface facilities and along pipeline and transmission line rights-of-way would have access controls (locked gates) wherever possible to control unauthorized access.
- LPP Project monitoring, operations and maintenance vehicles would be restricted to safe operating speeds according to road locations.

5.3.13.3.3 Alternatives.

The Existing Highway Alternative, Southeast Corner Alternative, electrical transmission lines system, and No Lake Powell Water Alternative would have the same protection, mitigation and enhancement measures for recreation resources as described for the Proposed Action in Section 5.3.13.3.1.

5.3.13.4 Cumulative Effects

5.3.13.4.1 Proposed Action.

The Proposed Action would have indirect cumulative effects on recreation resources when combined with the effects of the Southern Corridor Highway, which would cross the Proposed Action penstock

alignment near Sand Hollow Reservoir. The Southern Corridor Highway construction would permanently remove open space recreation resources in the vicinity of the Proposed Action effects on the Sand Mountain SRMA, with the intensity of the cumulative effects decreasing with distance from the intersection of the two projects. The long-term indirect cumulative effects on recreation resources would be moderate.

The Proposed Action would have indirect cumulative effects on recreation resources when combined with the effects of the proposed Kern River-Hurricane Natural Gas Pipeline, which would parallel the Southern Corridor Highway. The Kern River-Hurricane Natural Gas Pipeline construction would permanently remove open space recreation resources in the vicinity of the Proposed Action effects on the Sand Mountain SRMA, with the intensity of the cumulative effects decreasing with distance from the intersection of the two projects. The long-term indirect cumulative effects on recreation resources would be moderate.

The indirect cumulative effects of the Proposed Action, Southern Corridor Highway and Kern River-Hurricane Natural Gas Pipeline construction on recreation resources would be long-term, with the Southern Corridor Highway and Proposed Action effects permanent and the Kern River-Hurricane Natural Gas Pipeline cumulative effects occurring only during construction.

The Proposed Action would have no measurable cumulative effects on recreation resources when combined with the LTEMP EIS and future Record of Decision (ROD) actions. The Proposed Action effects on Glen Canyon Dam releases would not be measurable in the Colorado River downstream from Lake Powell, therefore the potential cumulative effects of the Proposed Action and LTEMP EIS and ROD actions would not be measurable.

The Arizona and Utah SCORPs indicate that the resident population will continue to grow in the counties comprising the recreation resources area of potential effect. Population growth is expected to be especially rapid in the St. George metropolitan area. As the population grows, so will its demand for outdoor recreation. Population growth and a corresponding increase in demand for recreation would result in higher occupancy rates for existing recreation facilities in the LPP recreation resources area of potential effect. This cumulative effect would apply to all of the geographic areas and alternatives evaluated in this section.

Surveys performed as part of the SCORP process revealed that residents in the counties comprising the recreation resources study area desired trails, water-related parks, OHV use areas, and interpretive features. It is expected that these facilities would be built over time in the recreation resources area of potential effect, which would alleviate crowding at existing facilities.

The 1999 GSENM Management Plan states that the BLM and Utah Department of Transportation will explore the possibility of developing bicycle lanes or parallel bicycle routes along Highway 89. The BLM will look for appropriate opportunities to highlight GSENM resources along Highway 89, around the communities of Church Wells and Big Water. Furthermore, additional recreational opportunities may be developed to accommodate all visitors, and focus on learning about geology, history, archaeology, biology, paleontology, and scenic viewing. Short interpretive trails and scenic overlooks will be developed as well. These potential actions by the BLM could have cumulative effects on recreation resources when combined with the effects of the Proposed Action construction.

Rapid population growth and urban development in the vicinity of St. George is displacing OHV use. These OHV users, in turn, are recreating on other portions of BLM land administered by the St. George Field Office which is frequented by mountain bikers, hikers, and other non-motorized users. Conflicts between these user groups are increasing. The Proposed Action effects on recreation resources in the Sand

Mountain SRMA could further increase conflicts between user groups because of reduced recreation area. This would be a long-term moderate cumulative effect on recreation resources.

5.3.13.4.2 Existing Highway Alternative.

The Existing Highway Alternative would have the same cumulative effects as described for the Proposed Action in Section 5.3.13.4.1.

5.3.13.4.3 Southeast Corner Alternative.

The Southeast Corner Alternative would have the same cumulative effects as described for the Proposed Action in Section 5.3.13.4.1.

5.3.13.4.5 Electrical Transmission Lines System.

The Electrical Transmission Lines System would have no cumulative effects on recreation resources.

5.3.13.4.6 No Lake Powell Water Alternative.

The No Lake Powell Water Alternative would have long-term cumulative effects on recreation resources in the Sand Mountain SRMA from the development of the reverse osmosis treatment facility, Warner Valley Reservoir, and the brine evaporation and management pond system when combined with the increased demand for recreation space by multiple, competing user groups. The No Lake Powell Water Alternative would further increase conflicts between user groups because of reduced recreation area. This would be a significant long-term cumulative effect on recreation resources.

The BLM's 1999 resource management plan states that it may develop up to 50 miles of equestrian trails near Sand Mountain to meeting growing demands. This recreation resource action could conflict with the No Lake Powell Water Alternative features including the reverse osmosis treatment facility, Warner Valley Reservoir, and the brine evaporation and management pond system and have long-term significant cumulative effects on recreation resources in the Sand Mountain SRMA.

5.3.13.4.7 No Action Alternative.

The No Action Alternative would have no cumulative effects on recreation resources.

5.3.13.5 Unavoidable Adverse Effects

5.3.13.5.1 Proposed Action.

5.3.13.5.1.1 Existing and Proposed Recreation Facilities and Use.

Direct Effects

Construction of the Hurricane Cliffs afterbay reservoir would permanently remove about 200 acres of the Sand Mountain Special Recreation Management Area from recreation use. Construction of the penstock from the Hurricane Cliffs afterbay reservoir to the Sand Hollow Hydro Station would temporarily restrict recreational use of 60 acres of the Sand Mountain Special Recreation Management Area for about 3.8 miles along the penstock right-of-way. The permanent removal of 200 acres of the Sand Mountain Special Recreation Management Area from recreational use would be an unavoidable adverse effect on recreation resources.

Recreation access to existing and proposed recreation facilities from Highway 89, Highway 89A, Arizona Route 389, Highway 59 and Highway 9 could be temporarily restricted or closed during pipeline, penstock and facility construction at the access points. Recreation users would be delayed or unable to access specific recreation sites for up to a maximum of 8 hours, which would be an unavoidable adverse effect on recreation resources.

Operation of the Hurricane Cliffs afterbay reservoir and hydropower station would have direct effects on recreational use of the Sand Mountain Special Recreation Management Area. The afterbay reservoir would not be available for recreational use because the water levels would fluctuate rapidly and would be unsafe for public recreation activities. This would be an unavoidable adverse effect on recreation resources. The afterbay reservoir would not be designed for regular water discharge through a spillway; however, the afterbay reservoir would have an emergency spillway that could discharge water during emergency conditions and cause temporary flooding down-gradient (south) of the afterbay and affect recreational use of that portion of the Sand Mountain SRMA. This could be an unavoidable adverse effect on recreation resources.

Indirect Effects

Recreation resource users could experience residual noise, air pollutants from heavy equipment emissions, additional LPP Project construction traffic along highways and roads, and changes in views during recreational activities pursued adjacent to active construction at specific facility sites and along pipeline ROWs. These indirect effects could be unavoidable adverse effects on recreation resource users.

Recreation resource users could experience additional LPP Project construction traffic and changes in views during recreational activities pursued adjacent to Proposed Action pump stations, hydro stations, regulating tanks, the forebay reservoir, and afterbay reservoir during operations. These indirect effects could be unavoidable adverse effects on recreation resource users.

5.3.13.5.2 Existing Highway Alternative.

5.3.13.5.2.1 Existing and Proposed Recreation Facilities and Use.

The unavoidable adverse direct and indirect effects described in Section 5.3.13.5.1 for the Proposed Action would be the same for the Existing Highway Alternative. Additional unavoidable adverse effects of the Existing Highway Alternative on recreation resources are presented in the following subsections.

Direct Effects

Penstock construction adjacent to the Fredonia Welcome Center would temporarily close recreational access to the center. The lost recreational opportunity during closure of the Fredonia Welcome Center would be an unavoidable adverse effect on recreation resources.

Indirect Effects

Recreation resource users at Pipe Spring National Monument could experience residual air pollutants from heavy equipment emissions during penstock construction near the Pipe Spring area. Recreationists accessing Pipe Springs Road from Highway 89 could experience temporary delays during penstock construction across Pipe Springs Road. These indirect effects could be unavoidable adverse effects on recreation resources users.

Recreation resource users could experience a change in views toward HS-2 (Highway) from the Arizona Strip Pull-Off and Highway 389 during operations. This indirect effect would be an unavoidable adverse effect on recreation resource users.

5.3.13.5.3 Southeast Corner Alternative.

Unavoidable adverse effects would be the same as described in Section 5.3.13.5.1.

5.3.13.5.4 Electrical Transmission Lines System.

5.3.13.5.4.1 Existing and Proposed Recreation Facilities and Use.

Direct Effects

Construction of the electrical transmission lines system would result in temporary access delays or closures to recreation resource sites where access roads would be crossed by the transmission lines. These temporary direct effects would be unavoidable adverse effects.

Long-term direct effects on recreation resources would remove approximately 122 acres of recreational use land for transmission line towers, access roads, switching stations, and substations.

Indirect Effects

Recreation resource users could experience residual noise, air pollutants from heavy equipment emissions, additional LPP Project construction traffic along highways and roads, and changes in views during recreational activities pursued adjacent to active construction at specific facility sites and along transmission line ROWs. These indirect effects would be unavoidable adverse effects on recreation resource users.

Recreation resource users of recreation sites along transmission line ROWs would experience indirect effects as they view the transmission lines during operations. These indirect effects would be unavoidable adverse effects on recreation resource users.

5.3.13.5.5 No Lake Powell Water Alternative.

5.3.13.5.5.1 Existing and Proposed Recreation Facilities and Use.

Direct Effects

Construction of the No Lake Powell Water Alternative including the Warner Valley Reservoir, brine evaporation ponds and a reverse osmosis water treatment plant would permanently remove 290 acres of BLM St. George District off-highway vehicle (OHV) area and recreation resource use from the Sand Mountain SRMA. This would be an unavoidable adverse effect on recreation resources.

Operation of the No Lake Powell Water Alternative would permanently remove 290 acres of the Sand Mountain SRMA from recreation resource use, which would be an unavoidable adverse effect. However, the majority of the LPP Project area would experience no unavoidable adverse effects on recreation resources since no facilities would be constructed away from the St. George/Hurricane areas.

Indirect Effects

Temporary indirect effects from construction of the No Lake Powell Water Alternative including noise, air pollutants, additional LPP Project construction traffic and changes in visual resources would occur on recreational resources within the Sand Mountain SRMA, which would be unavoidable adverse effects on recreation resource users.

Recreation resource users within the Sand Mountain SRMA could experience indirect effects as they view the transmission lines, the reverse osmosis water treatment plant, Warner Valley Dam and Reservoir and the brine evaporation ponds during No Lake Powell Water Alternative operations. Recreation resource users of the Sand Mountain SRMA in the vicinity of the brine evaporation ponds would detect odors in the air as the brine evaporates from the ponds. These indirect effects would be unavoidable adverse effects. However, the majority of the LPP Project area would experience no unavoidable adverse effects on recreation resources since no facilities would be constructed away from the St. George/Hurricane areas.

5.3.13.5.6 No Action Alternative.

The No Action Alternative would have no unavoidable adverse effects on recreation resources and their use.

5.3.13.6 References

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