

## **1.0 RECREATION FACILITIES CONDITION AND DEMAND ASSESSMENT STUDY APPROACH**

*This preliminary draft study approach is provided to inform of the general methods DWR followed during the study phase under FERC's Traditional Licensing Process.*

### **1.1 PROJECT NEXUS**

Recreation is an important benefit of most hydroelectric projects, and the Federal Energy Regulatory Commission (FERC) regulations require consideration for provision of recreational opportunities. This *Recreation Facilities Condition and Demand Assessment Study Approach* will assist the California Department of Water Resources (DWR), to plan for future needs for recreation within the Devil Canyon Project, FERC Project No. 14797.

#### **1.1.1 Existing Information and Need for Additional Information**

Existing, relevant, and reasonably available information regarding recreational resources within the proposed Project boundary is provided in Section 4.9 of DWR's Pre-Application Document filed with FERC on August 1, 2016. Existing data includes a basic inventory of Project recreation facilities, maps showing locations of existing recreational trails, statistics on visitor use, and management guidelines and regional needs assessments from relevant regional resource management plans, including the Statewide Comprehensive Outdoor Recreation Plan, and the San Bernardino National Forest's (SBNF) Land Resource Management Plan. The DWR also has historical attendance (i.e., day use recreation) information for the Silverwood Lake State Recreation Area (SRA). Recreation use information for Project day use areas and dispersed use areas is collected every six years for FERC Form 80 reporting; the most recent reporting year was 2014. Recreation user data is continuously collected every year. DWR also filed an updated recreation plan in May 2016.

In addition, DWR has been continuously working with the California Department of Parks and Recreation (DPR) to rehabilitate and improve existing Project recreation facilities and has information on several projects, but not a comprehensive analysis of how the improvements and facilities rate with regard to infrastructure condition, maintenance serviceability, and adequacy in terms of current state guidelines and policies. While many facilities have been upgraded, additional opportunities for providing accessibility at Project facilities may exist and can be assessed in this study. Information, which will be provided by this *Recreation Facilities Condition and Demand Assessment Study Approach*, will include a detailed condition assessment and inventory of Project recreation facilities.

#### **1.1.2 Study Goals and Objectives**

The goal of this study approach is to develop a detailed condition assessment and inventory of Project-related recreation facilities in order to evaluate the facility offerings,

configurations, and conditions to help establish whether recreation needs are being met within the proposed FERC Project boundary and to identify the areas with barrier free access. A review of relevant published recreation needs and demand reports will contribute to this *Recreation Study Approach* and be compared to the condition assessment and inventory to further evaluate existing and projected recreation needs within the Project area. This *Recreation Study Approach* will comprise the following elements: (1) Project Existing Recreational Facility Inventory, Condition, and Carrying Capacity Assessment; (2) Project Existing Recreational Facilities Accessibility Assessment; and (3) Recreation Use and Demand Assessment. The information from the condition assessment, accessibility assessment, and demand assessment will be evaluated to determine potential future improvements to or expansion of recreation facilities within the proposed Project boundary. Additional information, which will be provided by this *Recreation Study Approach*, will include an inventory and comprehensive assessment of Project-related recreation facilities. The objective of this study is to gather sufficient data necessary to fill recognized gaps in existing information about the existing recreational facilities. This information will be used to inform the recreation plan for the project and to determine if recreation facilities and management actions are meeting current and future needs.

### **1.1.3 Study Methods**

#### **1.1.3.1 *Study Area***

The study area consists of Project recreation facilities at Silverwood Lake. The study area will not include Devil Canyon Afterbay and Devil Canyon Second Afterbay, since these areas are closed to the public and no recreational use occurs there. The study area will not include lands overlying the San Bernardino Tunnel on which DWR does not perform any Project activities. The study area is shown in Figure 1.1-1.

Silverwood Lake SRA is an important regional recreation resource. The area surrounding Silverwood Lake SRA includes National Forest System (NFS) lands within the boundaries of the SBNF. There are many amenities in the Silverwood Lake SRA, including campgrounds, picnic areas with restrooms, boating facilities, viewpoints with parking areas, paved and unpaved multiuse trails, and a nature center. Dependable water levels at Silverwood Lake make it an attractive destination for boaters and other visitors. The Pacific Crest Trail, while not a Project facility, is an important recreational resource because of its national significance; the trail traverses just to the north of Cedar Springs Dam and along the western shore line of the lake.

#### **1.1.3.2 *Study Sites***

The following recreation-related facilities at Silverwood Lake SRA will be examined under this *Recreation Study Approach* (see map in Figure 1.1-2). Existing inventory, condition, capacity, and accessibility assessments will be conducted for each facility listed below.

- Black Oak Picnic Areas (4 total picnic areas)
- Chamise Day Use Area
- Cleghorn Day Use Area (picnic area, swim area, hand boat launch, trail)
- Overlook viewing areas (Jamajab Point, Lynx Point, Devil's Pit, Garces Overlook)
- Live Oak Day Use Area (picnic)
- Mesa Campground (campsites, interpretive display, trail)
- Miller Canyon Group Camp Area
- Miller Canyon Picnic Area
- Nature Center (visitor center, interpretive display)
- New Mesa Campground (campsites, interpretive display)
- Sawpit Canyon Marina and Boat Launch
- Sawpit Canyon swim area and picnic areas (3)
- Serrano Landing (picnic, boat dock, trail)
- Silverwood hike and bike trail network
- Sycamore Landing (picnic)
- West Fork Group Campgrounds (Baranca, Rio, Valle)
- DWR signage or co-located trail heads for the Pacific Crest Trail (trailheads, signs, etc.)
- Various restroom and parking facilities

#### **1.1.3.3 General Concepts and Procedures**

- Personal safety is the most important consideration of each fieldwork team. Fieldwork will only occur in safely accessible areas and under conditions deemed safe by the field crews. Locations within the study area that cannot be accessed in a safe manner (e.g., locations containing dense vegetation or unsafe slopes) and areas inundated when the surveys are performed, will not be surveyed; these areas will be identified in the data summary and an explanation for survey exclusion will be provided.

- The *Recreation Study Approach* may begin as early as June 2017.
- The *Recreation Study Approach* does not include the development of requirements for the new license, which will be addressed outside of the Study.
- The *Recreation Study Approach* focuses specifically on the recreation resources within the proposed Project boundary at Silverwood Lake SRA and the study area is specific to that resource.
- If required for the performance of the *Recreation Study Approach*, DWR will make a good faith effort to obtain permission to access private property well in advance of initiating the Study. DWR will only enter private property if permission has been provided by the landowner.
- DWR will acquire all necessary agency permits and approvals prior to beginning fieldwork for the Study.
- Field crews may make variances to the *Recreation Study* in the field to accommodate actual field conditions and unforeseen problems. Deviations from the *Recreation Study Approach* will be noted in the report of the results and data resulting from the *Recreation Study Approach*.
- To prevent the introduction and transmittal of amphibian chytrid fungus and invasive aquatic species (e.g., quagga mussels, zebra mussel, and Asian clams), field crews will be trained on, provided with, and use materials (e.g., Quat) for decontaminating their boots, waders, and other equipment when leaving or traveling between water-based study sites. Field crews will follow DWR's Quagga and Zebra Mussel Rapid Response Plan and California Department of Fish and Wildlife's Aquatic Invasive Species Decontamination Protocol which can be found at the following link:  
(<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=43333>). All boats used during the study will follow cleaning protocols, including inspections before and after use. All decontamination requirements in place at Project reservoirs including those of DWR's *Quagga and Zebra Mussel Rapid Response Plan* for the State Water Project will be strictly followed (DWR 2010).

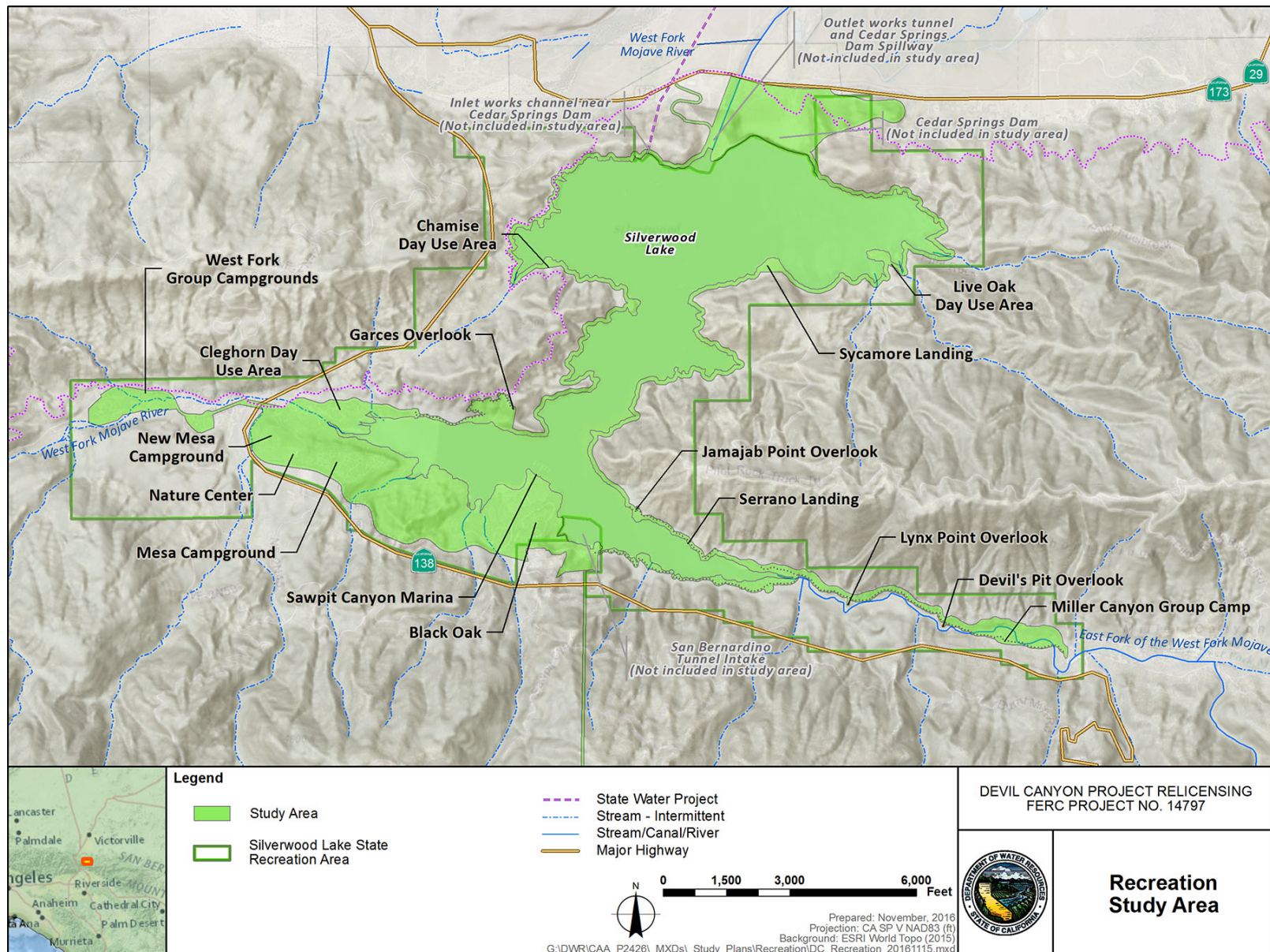


Figure 1.1-1. Project Boundary and Recreation Facilities



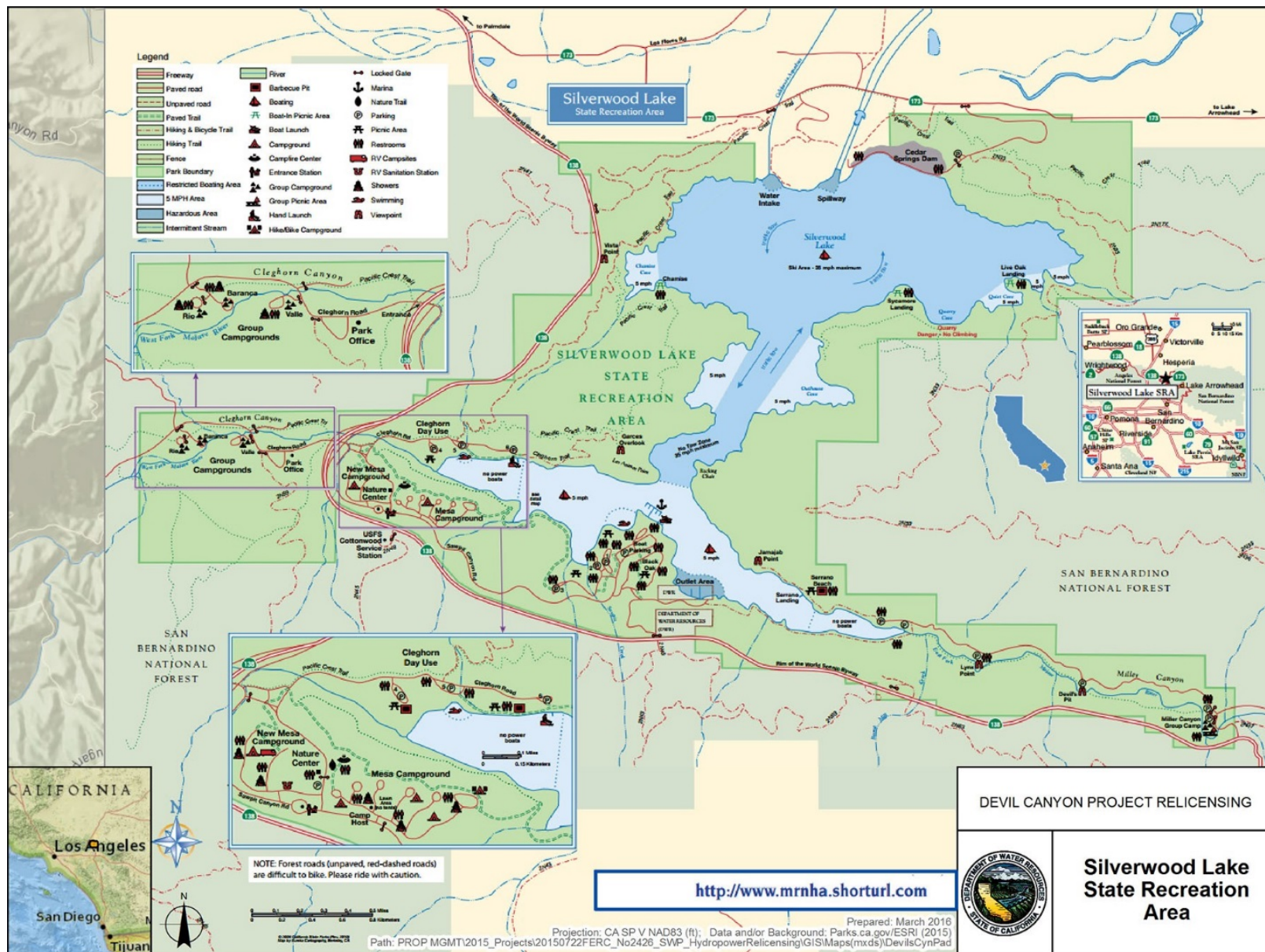


Figure 1.1-2 Silverwood Lake State Recreation Area Map

#### **1.1.3.4 Methods**

This *Recreation Study Approach* has three components: (a) existing facility inventory, condition assessment, and carrying capacity analysis; (b) recreational facilities accessibility assessment; and (c) a recreation use and demand assessment.

#### **Existing Facility Inventory, Condition Assessment, and Carrying Capacity Analysis**

Step 1 – Conduct Site Condition Assessments. This study will inventory the number and type of components that are provided at the recreation facilities listed in Section 1.1.3.2, Study Sites, and will provide updated information with respect to what is described in the Project's *Updated Recreation Plan* (May 2016). The study will also evaluate the condition of each of the listed facilities. The facility inventory and carrying capacity analysis will inform the demand analysis and will also evaluate the condition of each of the listed facilities.

The existing facility inventory will include assessments of parking areas, and the location and number of parking spaces, picnic and camping units, boat and trailer parking spaces, accessible parking spaces, and facility components. Trailheads and trails will be inventoried for signage, types of improvements, general widths, and general trail conditions. Trails will be mapped at 1:24,000-scale using National Map Accuracy Standard of +/- 40 feet based on aerial imagery and existing GIS datasets.

Step 2 – Field Reconnaissance. The field reconnaissance will include a physical condition inspection of existing Project recreation facilities, designated Project trails, user-created trails, and general trail conditions. A qualitative assessment of the condition of developed recreation facilities will be conducted. The assessment can identify facilities as to condition, such as poor, fair, or good condition. This assessment will include information on whether the facilities are in working order. During the reconnaissance, field teams will identify observable use patterns and field verify if recreation amenities are constructed and in a condition that serves user needs with common access points and travel routes. Observable resource impacts at developed and dispersed user created Project recreational sites will be noted.

Field reconnaissance surveys to gather facility information at each of the recreation sites in the Silverwood Lake SRA will take several days. User created sites (sites that are frequented by recreation users but not identified as an established facility) will be identified for observable use and wear patterns.

The following steps will be taken to complete the facilities inventory:

1. Gather background data: compile and map current facilities and upload data to global positioning system (GPS) unit or GPS enabled application. Develop a data dictionary template for data collection to streamline collection methods, and create organization and consistency of collected data. Prepare field maps.

2. Orient field crew with study area for the *Recreation Study Approach*, review field research techniques to ensure consistent inventory methods and coordinate logistics and field crew mobilization.
3. Complete reconnaissance level field research: conduct fieldwork to create a detailed inventory on the conditions of existing recreation facilities and other user created sites within the study area with observable wear patterns.
4. Assemble results and create maps of data collected in the field.
5. Prepare data and perform quality assurance.

Step 3 – Carrying Capacity Analysis. A component of the *Recreation Study Approach* provides an overall assessment of the types and levels of recreational use in the study area to determine if use levels are compatible with the capacity of existing Project recreation facilities. Maintaining use levels within a recreation site's capacity is important in terms of protecting natural, cultural, and recreation resources, as well as helping to assure public safety, providing predictability and helping to assess management alternatives.

Recreation carrying capacity can be evaluated by considering several factors together to estimate a level of use beyond which impacts exceed common recreation industry and U.S. Forest Service standards. Three types of capacity will be evaluated: (1) biophysical/ecological; (2) social; and (3) physical/spatial aspects including management components. These primarily qualitative analyses focus on the capacity of existing developed recreation facilities in the study area for the *Recreation Study Approach*. To develop capacity conclusions, this assessment will evaluate each developed site with respect to:

- Biophysical/Ecological Capacity – Relative impacts on the ecosystem, such as impacts to wetlands or riparian communities, observed soil erosion, vegetation damage, and observed trash accumulation and sanitary problems, among others. By design, developed/hardened recreation sites typically have fewer ecological concerns compared to dispersed use areas. The relative level of this factor can be noted and elaborated on in the condition assessment component.
- Social Capacity – Reported social impacts of recent and past visitor's recreation experience, such as perceived crowding, actual and/or perceived conflict, and overall satisfaction.
- Physical/Spatial Capacity – Identification of the number of units from the inventory component combined with recreation management considerations (including law enforcement) that will inform physical capacity (the number of people who can typically use a site at one time), and include a spatial capacity component that accounts for periodic problems, parking, traffic flow or backups at entrances. The Licensees will evaluate the general ability to enhance a site



through new amenities or enlarge the site beyond its existing boundaries, including aspects related to law enforcement, visitor safety, and others.

The concept of recreation carrying capacity was originally developed out of biological models that attempted to determine the capability of a given environment (e.g., range, pasture) to sustain a specific number of animals over time. While density-related information is an important factor in capacity, in actuality, many management issues regarding recreation carrying capacity decision-making are not necessarily density dependent. Rather, recreation carrying capacity issues are also related to the ecological, social, and managerial aspects of recreational opportunities.

The full suite of recreation carrying capacity types will be assessed at each developed recreation site in the Study. For each developed site in the study area for the *Recreation Study Approach*, qualitative and quantitative data will be used to identify ecological, social, and/or management capacity impacts and establish an existing capacity parameter (expressed in qualitative terms including “below,” “approaching,” “at,” or “exceeding” capacity). Additionally, where appropriate, any primary limiting factors for each site will be noted.

The carrying capacity analysis methods will include:

- Utilizing physical information from the site assessments and field reconnaissance
- Gathering FERC Form 80 data
- Gathering visitation data from DPR and DPR’s Concessionaire
- Interviewing recreation providers, managers and law enforcement officials to gather information about use levels, user patterns, and issues related to law enforcement and road traffic considerations including parking, traffic management and periodic road backups outside entry points. Concerns related to existing levels of peak use will be documented during these interviews as well as information about social capacity and crowding
- Using information developed by other studies to understand other potential constraints around the immediate area (e.g. biological, cultural, etc.)
- Combining quantitative information on physical capacity, user data with management information and more qualitative information regarding user needs to establish an existing capacity parameter for each developed facility

#### **1.1.3.5 Existing Facility Accessibility Assessment**

Project recreation facilities (see Section 1.1.3.2) and signs at Project recreation facilities will be assessed for further opportunities for compliance with applicable accessibility requirements. Evaluating outdoor recreation facilities per the Architectural Barriers Act

Accessibility Guidelines is a common technique to establish the level of accessibility at outdoor recreation areas, parks, and recreation facilities.

The facility inventory assessment and facility accessibility assessment field work will be completed concurrently. Information will be collected using digital technology. A GPS unit or tablet GPS application will be used to gather facility information that has been pre-loaded with all known existing features. A data dictionary designed to provide an inventory on existing conditions of all recreation facilities within the project area will be created and used to maintain consistency and organization of data collected. The condition assessment will be qualitative based on a range of repair/replacement/maintenance needs to acceptable appearance and function to evaluate the condition of recreation facilities. Photos will be taken of facilities, signs, trailheads, etc. and cataloged based on feature type or location. Other user created sites with observable wear patterns within the Project area will also be cataloged for further evaluation within the *Recreation Study*.

### **Recreation Use and Demand Assessment**

The Recreation Use and Demand Assessment of this *Recreation Study Approach* will consist of 4 steps: (1) observational survey; (2) review of research publications and existing information; (3) interviews with recreation providers and managers; and (4) a regional demand assessment. The steps are described in more detail below.

**Step 1 – Observational Survey.** Observed recreation use occurring in the Project area based on observational surveys that serve as a sampling to help estimate existing use and identify recreation activities. The observational surveys will be undertaken during at least three different use periods (weekday, weekend and holiday weekend/or opening of fishing season) with each facility being visited twice in a survey day, morning and afternoon. Surveys will be conducted the following facilities:

- Black Oak Picnic Areas (4 total picnic areas)
- Chamise Day Use Area
- Cleghorn Day Use Area (picnic area, swim area, hand boat launch, trail)
- Overlook viewing areas (Jamajab Point, Lynx Point, Devil's Pit, Garces Overlook)
- Live Oak Day Use Area (picnic)
- Mesa Campground (campsites, interpretive display, trail)
- Miller Canyon Group Camp Area
- Miller Canyon Picnic Area

- Nature Center (visitor center, interpretive display)
- New Mesa Campground (campsites, interpretive display)
- Sawpit Canyon Marina and Boat Launch
- Sawpit Canyon swim area and picnic areas
- Serrano Landing (picnic, boat dock, trail)
- Silverwood hike and bike trail network
- Sycamore Landing (picnic)
- West Fork Group Campgrounds (Baranca, Rio, Valle)
- DWR signage or co-located trail heads for the Pacific Crest Trail (trailheads, signs, etc.)
- Various restroom and parking facilities

The observation data that will be recorded includes vehicle counts, vehicle, boat ramp or other observed facility crowding or line ups, angler counts, boat counts, trail user counts, campground usage, and day use area usage.

Step 2 – Review of Research Publications and Existing Information. Recent relevant California-based user preference surveys and other outdoor recreation surveys about recreation demand will be gathered and reviewed. These reviews include but are not limited to the 2007 California Outdoor Recreation Survey and 2012 *Survey of Public Opinions and Attitudes on Outdoor Recreation in California*, as well as more current surveys that analyze the project outdoor recreation participation rates and growth trends in the greater Los Angeles area to help address how the Project recreation facilities are helping to meet demands of the greater area. Demand and user preference studies at various scales, covering California, but especially those addressing southern California, will be reviewed for their applicability to the Project area. Recreation activity and participation trends information will be examined from the existing demand studies and reports, as well as USFS reports, FERC Form 80 filings, and data collected by the Licensees.

Existing use data of recreation occurring in the Project area from DPR will be collected for use in the regional demand assessment.

Step 3 – Interviews with Recreation Providers and Managers. Interviews will be conducted with DPR staff and managers, DPR's recreation concessionaire staff, sheriff office representatives or DPR's security staff, and DWR southern field division staff to gather additional information on current use, user preferences and needs, perceived regional uniqueness and significance of recreation opportunities within the Project area,

existing data, and observations in the Project area for both existing and potential future recreation needs.

The interviews will provide an opportunity for representatives to provide any additional information on current or projected future recreational use within the Project area.

**Step 4 – Regional Demand Assessment.** The recreation demand assessment will compare demand with the existing supply of recreation opportunities and use patterns. This study will attempt to project recreation use and demand within the Project Area through the term of the new license. This projection will be made using projected growth rates of the Project Area's primary activities, projected growth rates of populations of the Southern California counties from which Project Area visitors originate, and historical trends of existing Project area recreation use. By comparing this information to a detailed inventory of existing recreation opportunities and utilizing information gathered in the observational surveys, carrying capacity assessment, and structured interviews, it will be possible to determine whether there is a need for modifications to existing facilities or for the development of additional facilities and recreation amenities.

#### **1.1.3.6 Quality Assurance and Quality Control**

Field data will be collected in a manner that promotes high quality results and will be subject to appropriate quality assurance and quality control (QA/QC) procedures. Utilizing a small field crew (approximately 4 people each day) will reduce the potential for errors in data collection. All Geographic Information System (GIS) data used in the field will be verified prior to the start of the field survey and field checked for accuracy and completeness. Existing recreation facilities that will be included in the reconnaissance field survey are sourced from Table 2a of the *Updated Recreation Plan* (May 2016). This table is comprised of recreation amenities within the Project area as defined in the FERC issued document, *Project Recreation Facilities Tables, and As-Built Site Plan Drawing Guidance* (July 2014).

#### **1.1.3.7 Analysis**

The information gathered by the *Recreation Study Approach* will be evaluated and compared to what is described in the *Updated Recreation Plan* (May 2016). The information will assess the suitability of facilities in terms of meeting the changing needs of recreation users in the Project area. The analysis will include developing existing and projected visitor-use estimates, along with existing and projected demand (including unmet demand) for recreational opportunities and the *Recreation Study Approach* sites listed above. The facility inventory assessment data collected will be analyzed to inform the identification of possible short- and long-term improvement needs over the term of the new license. For example, the Existing Facility Accessibility Assessment will be analyzed to determine if potential improvements to existing facilities are needed to improve barrier-free opportunities and if there are opportunities to better conform to current accessibility standards. The Recreation Demand Assessment will provide

relevant information about user preferences and needs as related to recreation facilities provided by the Project.

#### **1.1.3.8 Reporting**

*Recreation Study Approach* results, as well as other existing and relevant information will be included, to the extent completed in DWR's DLA, and FLA.

#### **1.1.4 Consistency of Methodology with Generally Accepted Scientific Practices**

An inventory of recreation opportunities and facilities, and using existing and collected information during a site visit, is consistent with generally accepted practices employed during hydropower relicensing proceedings in California, including Bucks Creek (FERC No. 619) and Southern California Edison's Big Creek Hydroelectric Project (FERC No. 2175). Evaluating outdoor recreation facilities per the Architectural Barriers Act Accessibility Guidelines is, as discussed above, a common technique to establish the level of accessibility at outdoor recreation areas, parks, and recreation facilities.

#### **1.1.5 Schedule**

This study may begin as early as June 2017. DWR anticipates the schedule below will be followed to complete the study.

Fieldwork Preparation	January 2017 – May 2017
Fieldwork	June 2017 – September 2017
Data QA/QC	September 2017 – October 2017
Data Analysis & Reporting	October 2017 – December 2017

#### **1.1.6 Level of Effort and Cost**

Based on the work effort described above, DWR estimates the current cost to complete this study will range between \$275,000 and \$325,000.

#### **1.1.7 References**

DWR. August 2016. Devil Canyon Project Relicensing Final Pre-Application Document. FERC Project No. 14797.

DWR. May 2016. Updated Recreation Plan. South State Water Project. FERC Project No. 2426.

FERC. 2014. Project Recreation Facilities Tables, and As-Built Site Plan Drawing Guidance.

United States Access Board. ABA Standards Chapter 10: Recreation Facilities.  
<<https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/aba-standards/chapter-10-recreation-facilities>>