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List of Acronyms

ac-ft	acre-feet
BLM	U.S. Bureau of Land Management
CFR	Code of Federal Regulations
Commission	Federal Energy Regulatory Commission
FERC	Federal Energy Regulatory Commission
Project	Kaweah Project
SCE	Southern California Edison Company
SNP	Sequoia National Park
USACE	U.S. Army Corps of Engineers
VRM	Visual Resource Management

3.12 AESTHETIC RESOURCES

This section describes the aesthetic resources in the vicinity of the Kaweah Project (Project). The Federal Energy Regulatory Commission (FERC or Commission) content requirements for this section are specified in Title 18 of the Code of Federal Regulations (CFR) Chapter I § 5.6(d)(3)(ix).

This section provides a description of the visual characteristics of the lands and waters surrounding the Project, including a description of the Project facilities, natural water features, and other scenic attractions. The discussion is based on existing publically available information. Representative photographs of the Project facilities and surrounding landscape taken in 2015 are provided in Figures 3.12-1a–p.

3.12.1 Information Sources

The information presented in this section was developed using the following information sources:

- Environmental Assessment, Kaweah Project FERC Project No. 298-000 (FERC 1991); and
- Kaweah Hydroelectric Project Visual Resources Report (KEA 1989).

3.12.2 Setting

The Project is situated in the foothills and mountainous uplands of the western slope of the southern Sierra Nevada. All of the facilities under FERC jurisdiction are located along the Kaweah River upstream of the community of Three Rivers, and on the East Fork Kaweah River, a tributary to the Kaweah River, on private lands or on public lands administered by the Bureau of Land Management (BLM). Lake Kaweah, owned and operated by the U.S. Army Corps of Engineers (USACE), is located southwest of the Project, approximately five river miles downstream of the Kaweah No. 2 Powerhouse. The Sequoia National Park (SNP) and Sequoia-Kings Canyon Wilderness Area are located immediately north and east of the Project, and the John Krebs Wilderness Area is located southeast of the Project (refer to Map 3.11-1).

The Project facilities and bypass reaches associated with the Project are accessible via State Highway 198, which parallels the Kaweah River, and the Mineral King Road, which parallels the East Fork Kaweah River. These two roadways also serve as the primary access routes into the SNP and the Sequoia-Kings Canyon and John Krebs Wilderness areas (refer to Map 3.11-1). Although State Highway 198 is eligible for the State Scenic Highway System as designated by the California State Legislature, it is not a scenic highway as defined by the California Department of Transportation (Caltrans 2011).

The land encompassing the Project facilities is rural in nature and sparsely populated, especially along the East Fork Kaweah River. The largest population center in the vicinity of the Project is the community of Three Rivers (population 2,200), located approximately four miles west of the Kaweah No. 2 Powerhouse. The community of Hammond is located

near the confluence of the Kaweah River and the East Fork Kaweah River. The community of Oak Grove is located in the immediate vicinity of the Kaweah No. 1 Diversion and associated structures. Individual homes are scattered throughout the Kaweah River Valley, particularly in the lower foothills.

The landscape is dominated by the Kaweah River and its tributaries. At lower elevations, near Lake Kaweah, the landscape is a relatively level floodplain with well-defined stream terraces, typical of the Sierra Nevada foothills. Vegetation consists primarily of oak and grass communities. Oak species vary from evergreen to deciduous, and on the drier slopes, chamise evergreen shrub dominates. Eastward, the landscape transitions to narrow drainages flanked by steeply sloping hillsides (KEA 1989). Granite outcrops are common. At higher elevations the landscape is characterized by steep canyons and rugged terrain with dense forests and woodlands.

The Kaweah River and its tributaries flow continuously throughout the year and support a wide diversity of riparian vegetation. The scenic quality in the Project vicinity is enhanced with flowing water and wetland vegetation, and in areas where the high snow-capped mountains of the Sierra Nevada are visible. However, aside from rapids and granite outcrops, there are no significant water or other natural features in the immediate vicinity of the Project.

3.12.3 Project Facilities

The following briefly describes the Project facilities under FERC jurisdiction. More detailed information about the Project facilities is available in Section 2.0 Project Description. Representative photographs of the Project facilities and surrounding landscape are provide in Figures 3.12-1a-p.

3.12.3.1 Kaweah No. 1 Development

The Kaweah No. 1 Diversion Dam is located on the East Fork Kaweah River, approximately 4.6 miles upstream of the Kaweah River confluence. The diversion structure is a 6-foot high overflow concrete gravity dam, with a crest length of 20 feet at an elevation of 2,583 feet. The dam forms a small pool with a current capacity of about 0.03 acre-feet (ac-ft). Water is diverted through an intake into an unlined tunnel and empties into a sandbox (sediment trap) at the downstream end. Water leaving the sandbox flows through a trash rack and a 36-inch by 36-inch slide gate into a steel flume. The diversion dam and associated intake structures are located near the community of Oak Grove and are the easternmost facilities visible to the public. Representative photographs of the Kaweah No. 1 Diversion Dam and associated structures are provided in Figures 3.12-1a and 3.12-1b.

The Kaweah No. 1 Flowline is approximately 30,723-feet long and consists of an elevated steel flume supported by a wooden support structure (Figures 3.12-1c and 3.12-1d). The flowline traverses along the south side of East Fork Kaweah River Canyon and generally parallels Mineral King Road. The flowline terminates at the Kaweah No. 1 Forebay Tank, a 24-foot diameter tan-colored tank located at the upper end of the Kaweah No. 1

Penstock. The flowline is visible from various locations along the Mineral King Road. The forebay tank is not readily noticeable due to its color, relatively small size and distance from the roadways. The penstock is buried and, therefore, is not visible to the public.

Kaweah No. 1 Powerhouse is situated along the Kaweah River, approximately two miles south of the SNP. The Kaweah No. 1 Powerhouse is an approximately 22.5-foot by 26.3-foot reinforced concrete structure. The powerhouse is grey-tan in color and approximately 25 feet in height (Figure 3.12-1e). Adjacent to the powerhouse are a switchyard, and office, maintenance, and storage buildings (Figure 3.12-1f). These adjacent facilities are located on the northwest side of State Highway 198, and are at a raised elevation compared to the powerhouse. The Kaweah No. 1 Powerhouse and associated facilities can be seen within the foreground distance zone of State Highway 198.

3.12.3.2 Kaweah No. 2 Development

The Kaweah No. 2 Diversion Dam is located on the Kaweah River, approximately 0.55 mile upstream of the East Fork Kaweah River confluence. The diversion structure is a 7-foot high masonry overflow gravity dam, consisting of three distinct sections. The dam forms a small pool with a current capacity of about 0.2 ac-ft. The Kaweah No. 2 Diversion Dam and associated facilities can be seen within the foreground distance zone of State Highway 198. Representative photographs of the Kaweah No. 2 Diversion Dam and associated structures are provided in Figures 3.12-1g and 3.12-1h.

The Kaweah No. 2 Flowline is approximately 21,607 feet in length, including 16,738 feet of concrete ditch (Figure 3.12-1i); 3,822 feet of steel flume comprised of 19 segments (Figure 3.12-1j); and 1,047 feet of 50-inch diameter steel pipe. The flume section is supported primarily on a steel structure, although some short flume sections are constructed of wood. The flowline terminates at the Kaweah No. 2 Forebay, a small concrete lined structure used to regulate flow into the Kaweah No. 2 Powerhouse (Figure 3.12-1k). The Kaweah No. 2 Penstock is buried and therefore is not visible to the public. The flowline generally parallels the northwest side of the Kaweah River and State Highway 198. Approximately one mile of the Kaweah No. 2 Flowline connecting to the forebay is visible for more than one mile along State Highway 198 (FERC 1991). Otherwise, the flowline is not readily noticeable due to the terrain and screening vegetation.

The Kaweah No. 2 Powerhouse, built in 1904, is located on the northwest bank of the Kaweah River, approximately 1.5 miles north of the community of Hammond. The above-grade portion of the powerhouse is grey in color and includes an approximately 34-foot by 62-foot wood frame structure that is 25-feet high (Figure 3.12-1l). The Kaweah No. 2 Switchyard is located adjacent to the powerhouse. Due to dense vegetation screening, the Kaweah No. 2 Powerhouse is not noticeably visible from public viewing locations, except during the winter months.

3.12.3.3 Kaweah No. 3 Development

The short segment of the Kaweah No. 3 Flowline under FERC jurisdiction consists of a 2,580-foot long concrete box flume (Figure 3.12-1m) that conveys water to the Kaweah No. 3 Forebay, a small concrete-lined structure with a capacity of approximately 11 ac-ft. The Forebay is used to regulate flows into the Kaweah No. 3 Powerhouse. The Kaweah No. 3 Penstock is buried and therefore is not visible to the public (Figure 3.12-1n).

The Kaweah No. 3 Powerhouse, built in 1913, is situated along the Kaweah River, near the Kaweah No. 2 Diversion Dam, just outside the SNP boundary. The Kaweah No. 3 Powerhouse is a 50-foot by 34-foot concrete building that is approximately 25-feet high (Figure 3.12-1o). A switchyard is located adjacent to the powerhouse (Figure 3.12-1n).

The Kaweah No. 3 facilities can be viewed within the foreground to middle ground of State Highway 198 and from dispersed residences located immediately south of the SNP. The Kaweah No. 3 Forebay and Flowline are not readily visible from public viewing locations.

3.12.3.4 Transmission, Power, and Communication Lines

There are three transmission lines associated with the Project—the primary line and two tap lines. The primary Project transmission line extends approximately 4.09 miles from the Kaweah No. 3 Powerhouse to the Three Rivers Substation.[1] The line is a 66 kV, 3-phase, single circuit line construction on a combination of wooden and steel poles with suspension-type insulators. The primary transmission line connects to the Kaweah No. 1 Switchyard via a 66 kV, 120-foot long tap line, and to the Kaweah No. 2 Switchyard via a 66 kV, 0.4-mile long tap line. The transmission lines generally parallel the Kaweah River and State Highway 198 and are readily visible in the foreground and middle ground viewing distances.

The Project also includes various overhead power and communication lines. A complete list of the power and communication lines that are associated with the Project is provided in Table 2-3, along with descriptive information such as length, voltage, and purpose. As indicated on Table 2-3, these lines extend between Project facilities and are used to operate equipment and allow communication between facilities. In general, the Project power and communication lines are situated in the immediate vicinity of other Project facilities. Therefore, although the power and communication lines are visible, they are not readily noticeable because they blend with, and are obscured by, the surrounding facilities.

3.12.4 Previous Visual Resources Assessment

As part of the previous relicensing effort, Southern California Edison Company (SCE) prepared a visual resource assessment in compliance with BLM's Visual Resource Management (VRM) System. The 1989 Visual Resources Report concluded that the

[1] The Three Rivers Substation is not a FERC Project facility.

Project has a very minor effect on the visual quality of the surrounding landscape. Only two Project facilities were identified as moderately adverse: the Kaweah No. 1 maintenance and administration facility and the Kaweah No. 2 Flowline, both adjacent to State Highway 198. Otherwise, the Project facilities are either not seen from public viewing locations due to the vegetation regrowth that has occurred over the past 50 to 100 years, or create only a very weak visual contrast in the visual landscape. Furthermore, the study concluded that several of the facilities that are visible from public viewing locations (e.g., the Kaweah No. 1 Diversion and Flowline) may add, rather than detract, from the visual interest in the landscape (KEA 1989).

3.12.5 References

California Department of Transportation (Caltrans). 2011. California Scenic Highway Mapping System. Updated September 7, 2011. Available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways

Federal Energy Regulatory Commission (FERC) – Office of Hydropower Licensing, Division of Project Review. 1991. Environmental Assessment, Kaweah Project FERC Project No. 298-000.

Keller Environmental Associates, Inc. (KEA). 1989. Kaweah Hydroelectric Project Visual Resources Report. Prepared for Southern California Edison Company (SCE). November 1989.

U.S. Department of the Interior, Bureau of Land Management (BLM). 2012. Visual Resource Management (VRM) System, Updated June 28, 2012. Available at: http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS/2.html.

FIGURES

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities.

Figure 3.12-1a. Overview of the Kaweah No. 1 Diversion Dam and associated structures on the East Fork Kaweah River.

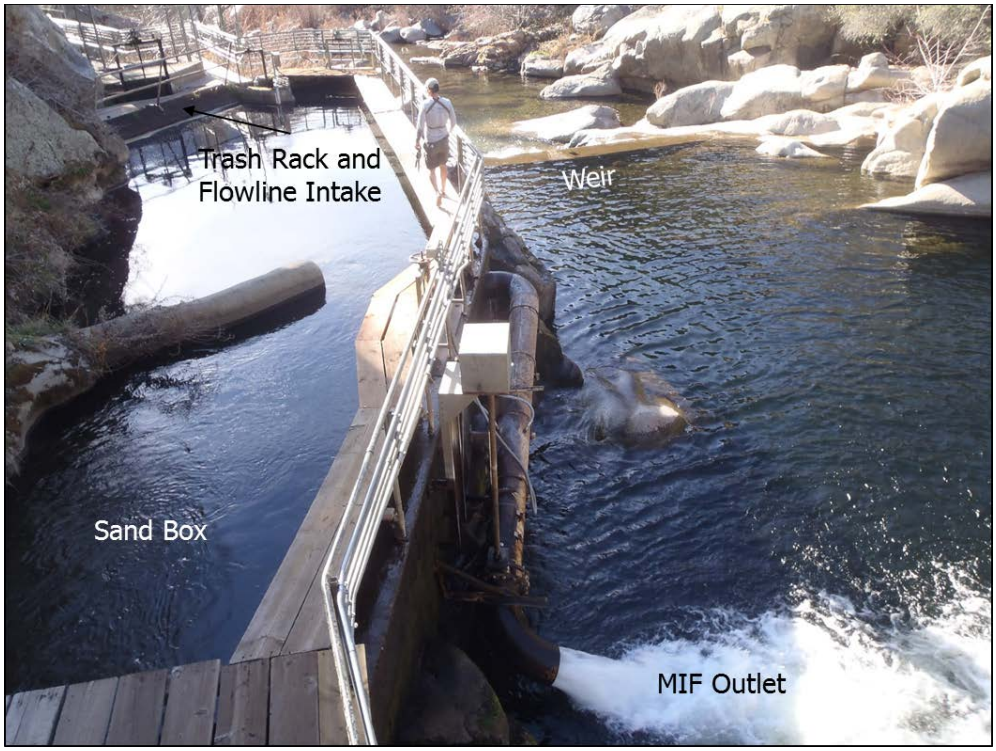

Figure 3.12-1b. Kaweah No.1 Diversion Dam Weir and Sandbox.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1c. Kaweah No. 1 Flowline, typical flume section along East Fork Kaweah River.

Figure 3.12-1d. Kaweah No. 1 Flowline, typical flume section.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1e. Kaweah No. 1 Powerhouse.

Figure 3.12-1f. Kaweah No. 1 Switchyard.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

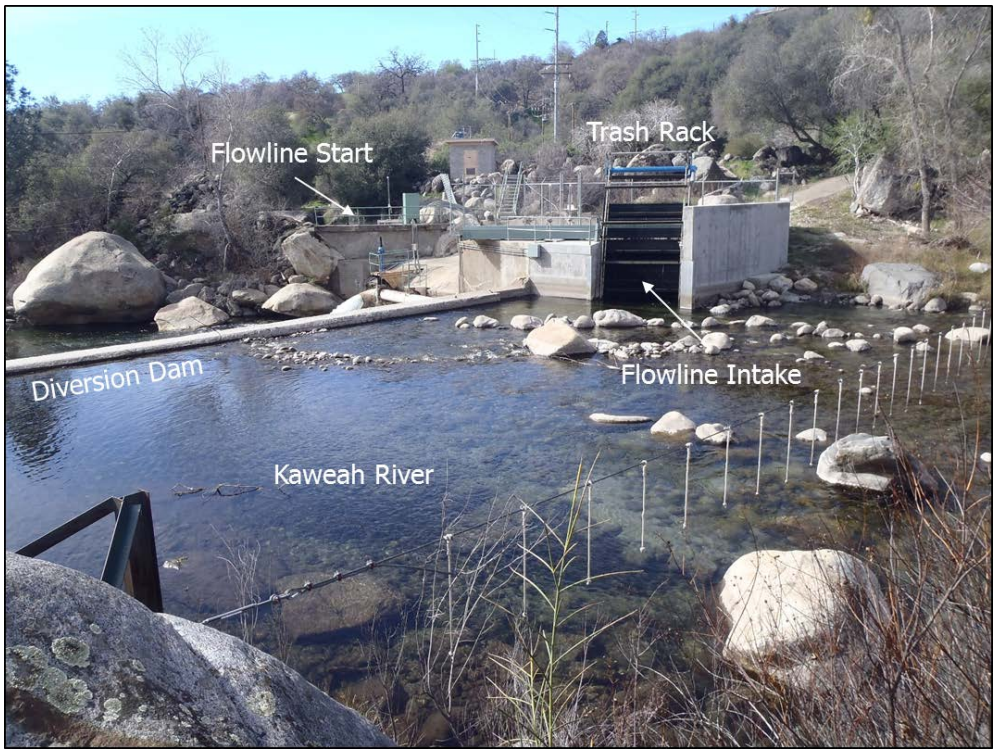

Figure 3.12-1g. Kaweah No. 2 Diversion Dam and associated structures on the Kaweah River.

Figure 3.12-1h. Kaweah No. 2 Diversion Dam and associated structures on the Kaweah River.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1i. Kaweah No. 2 Flowline, typical concrete-lined section.

Figure 3.12-1j. Kaweah No. 2 Flowline, typical flume section.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1k. Kaweah No. 2 Forebay.

Figure 3.12-1l. Kaweah No. 2 Powerhouse.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1m. Kaweah No. 3 Flowline.

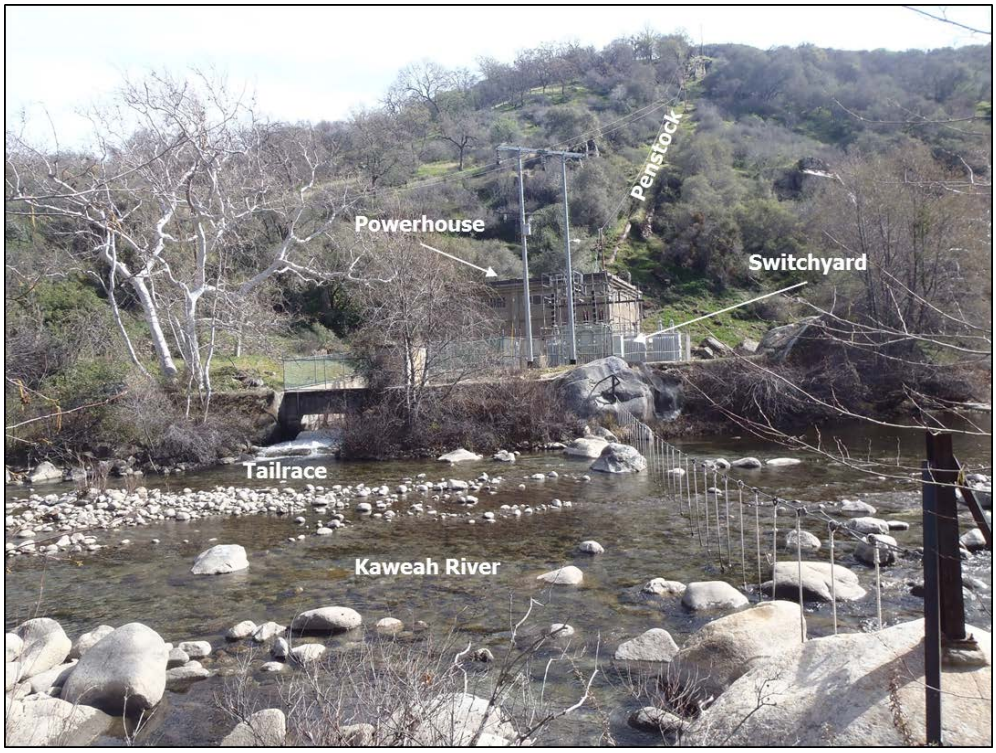

Figure 3.12-1n. Kaweah No. 3 Powerhouse with Kaweah No. 3 Penstock in background.

Figures 3.12-1a-p. Representative Photographs of the Kaweah Project Facilities (continued).

Figure 3.12-1o. Kaweah No. 3 Powerhouse.

Figure 3.12-1p. View of Kaweah River Valley looking west from Kaweah No. 2 Forebay.