LAND-1 ROAD CONDITION ASSESSMENT TECHNICAL MEMORANDUM

KERN RIVER NO. 3 HYDROELECTRIC PROJECT
FERC PROJECT NO. 2290

PREPARED FOR:

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead®

KERNVILLE, CALIFORNIA

July 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

FERC	Federal Energy Regulatory Commission
GIS	geographic information system
KR3	Kern River No. 3
O&M	operation and maintenance
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)
SCE	Southern California Edison
SQF	Sequoia National Forest

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1.0 INTRODUCTION

This Technical Memorandum provides the methods and findings of the desktop review and field survey associated with the Land-1 Road Condition Assessment Study (LAND-1 Study) in support of Southern California Edison's (SCE) Kern River No. 3 (KR3) Hydroelectric Project (Project) relicensing, Federal Energy Regulatory Commission (FERC) Project No. 2290. The *LAND-1 Road Condition Assessment Study Plan* was included in SCE's Revised Study Plan submitted on July 1, 2022 (SCE, 2022). In the October 12, 2022, Study Plan Determination, FERC approved the LAND-1 Study without modifications (FERC, 2022).

Data collection efforts associated with the reconnaissance level road inventory were initiated in June 2023 and completed in May 2024. Road use methodology and data collected have been updated and presented below in Section 4.4, *Characterization of Use and Section*, and Section 5.7, *Characterization of Use*, respectively. No other data or results have presented in this Technical Memorandum have changed since the data presented and filed with FERC as part of SCE's Initial Study Report in October 2023 (SCE 2023).

2.0 STUDY GOALS AND OBJECTIVES

The objectives of the study, as outlined in the LAND-1 Study Plan (SCE, 2022), are as follows:

- Reconnaissance level inventory of Project and Shared Access Roads within the FERC Project Boundary to document current road conditions.
- Characterize SCE's current maintenance practices and frequency of use along Project and Shared Access Roads.
- Characterize the frequency and type of use along Project and Shared Access Roads.

3.0 STUDY AREA AND STUDY SITES

The study area includes 36 roads totaling 19.33[1] miles within the FERC Project Boundary in addition to areas adjacent to, or in the proximity of, the FERC Project Boundary along the North Fork Kern River and Salmon, Corral, and Cannell Creeks for the purposes of characterization and data collection relevant to understanding Project operation and maintenance (O&M) activities.

Project and Shared Access Roads included in this study are summarized in Table 3-1 and shown on Figure 3-1.

[1] The FERC Project includes 33 roads (18.26 miles); 3 additional roads outside of the FERC Project Boundary (1.07 miles) were also included in this analysis. See Section 5.1, *Desktop Analysis*, for more information.

Table 3-1. Project and Shared Access Roads

Road ID	SCE Road Name	SQF Road ID/Name	Road Start/End	Land Ownership	Gate
Fairview Dam/North Road Segments					
1	Sandbox Access Road	--	Mountain Road 99/Sandbox	SQF	Yes
2	Tunnel 1/4 Flume Access Road	23S20 –Roads End G.S.	Mountain Road 99/Tunnel 1/4 Flume	SQF	No
3	Tunnels 5-8A Access Road	--	Mountain Road 99/Tunnel 8B Access Road	SQF	No
4	Tunnel 8A/8B Flume Access Road	--	Rincon Access Road/Tunnel 8A/8B Flume, Tunnel 8B Portal	SQF	No
Non-FERC Road A	Mtn Hwy to Tunnel 8A/8B	--	Sierra Highway to Tunnel 8A/8B Flume Access road	SQF	No
Salmon Creek and Rincon Trail Road Segments					
5	Salmon Creek Diversion Access Road	--	Rincon Access Road/Salmon Creek Diversion	SQF	No
6	Rincon Access Road	24S89-Rincon (portion)	Mountain Road 99/Tunnels 10–12 Access Road	SQF	No
7	Tunnel 9A/9B Flume Access Road	--	Rincon Access Road/Tunnel 9A/9B Flume	SQF	No
8	Tunnel 9B Spur Road	24S89-Rincon (portion)	Rincon Access Road/end	SQF	No
9	Tunnels 10–12 Access Road	--	Rincon Access Road/Tunnel 11/12 Flume	SQF	No
Non-FERC Road B	4WD Road to access Tunnels 10–12	--	Rincon Trail Access Road/Tunnel 10/11 Flumes Access Road	SQF	No
10	Tunnel 10/11 Flumes Access Road	--	Tunnels 10–12 Access Road/Tunnel 10/11 Flumes	SQF	No
11	Rincon Trail Access Road	33E23	Mountain Road 99/Rincon Access Road	SQF	No

Road ID	SCE Road Name	SQF Road ID/Name	Road Start/End	Land Ownership	Gate
12	Rincon Trail Access Road Spur	--	Mountain Road 99/Rincon Access Road	SQF	No
Goldledge Road Segments					
13	Tunnel 12/13 Flume Access Road	--	Gold Ledge Access Road/Tunnel 12/13 Flume, portals	SQF	No
14	Gold Ledge Access Road	--	Mountain Road 99/Tunnel 13/15 Flumes, portal	SQF	No
15	Tunnel 14/15 Flume Access Road	--	Gold Ledge Access Road/Tunnel 14/15 Flume, portals	SQF	No
Corral Creek Road Segments					
16	Tunnel 16/17 Flume Access Road	--	Corral Creek Flumes Access Road/Tunnel 16/17 Flume, portal	SQF	No
17	Corral Creek Flumes North Access Road	--	Corral Creek Diversion Access Road/Corral Creek Flumes	SQF	No
18	Corral Creek Diversion Access Road	--	Mountain Road 99/Corral Creek Diversion	SQF	No
19	Corral Creek Flumes South Access Road	--	Corral Creek Diversion Access Road/Corral Creek Flumes	SQF	No
20	Tunnel 18/19 Flume Access Road	--	Mountain Road 99/Tunnel 18/19 Flume, portal	SQF	No
21	Tunnel 19/20 Flumes Access Road	--	Tunnel 18/19 Flume Access Road/Tunnel 19/20 Flumes, portal	SQF	No
Cannell Creek Road Segments					
22	Cannell Creek Siphon Spillway Access Road	--	Cannell Creek Access Road/Cannel Creek Siphon Spillway	SQF	Gate on lower road segment
23	Cannell Creek Access Road	--	Mountain Road 99/Cannell Creek Siphon-Siphon Spillway Access Road	SQF	Yes [a]

Road ID	SCE Road Name	SQF Road ID/Name	Road Start/End	Land Ownership	Gate
24	Cannell Creek Siphon Access Road	--	Cannell Creek Access Road/Cannell Creek Siphon	SQF	Gate on lower road segment
Powerhouse Road Segments					
25	Kern River No. 3 Forebay Access Road	--	Mountain Road 99/Kern River No. 3 Forebay	SQF	No
26	Kern River No. 3 Machine Shop Access Road	--	Mountain Road 99/Kern River No. 3 Powerhouse	SQF SCE	Yes
27	Kern River No. 3 Penstocks North Access Road	--	Mountain Road 99/Kern River No. 3 Penstocks	SQF	No
Non-FERC Road C	Upper Spillway Channel Access (from Road 27)	--	Sierra Highway/Kern River No. 3 Penstock Access	SQF	No
28	Kern River No. 3 Penstocks South Access Road	--	Mountain Road 99/Kern River No. 3 Penstocks	SQF	Yes
29	Chlorinator House Access Road	--	Mountain Road 99/Chlorinator House and Water Tanks	SQF	Yes
30	Kern River No. 3 Powerhouse Access Road	--	Mountain Road 99/Kern River No. 3 Powerhouse	SQF SCE	Yes
31	Kern River No. 3 Warehouse Access Road	--	Kern River No. 3 Powerhouse Access Road/Kern River No. 3 Warehouse	SCE	Yes
32	Kern River No. 3 Campus Access Road	--	Mountain Road 99/Kern River No. 3 Powerhouse	SQF	Yes
33	Kern River South Garage Access Road	--	Mountain Road 99/Kern River South Garage	SQF	Yes

FERC = Federal Energy Regulatory Commission; SCE = Southern California Edison Company; SQF = Sequoia National Forest

[a] A Forest Service gate was installed along this road segment in April 2024 to prevent vehicular access.

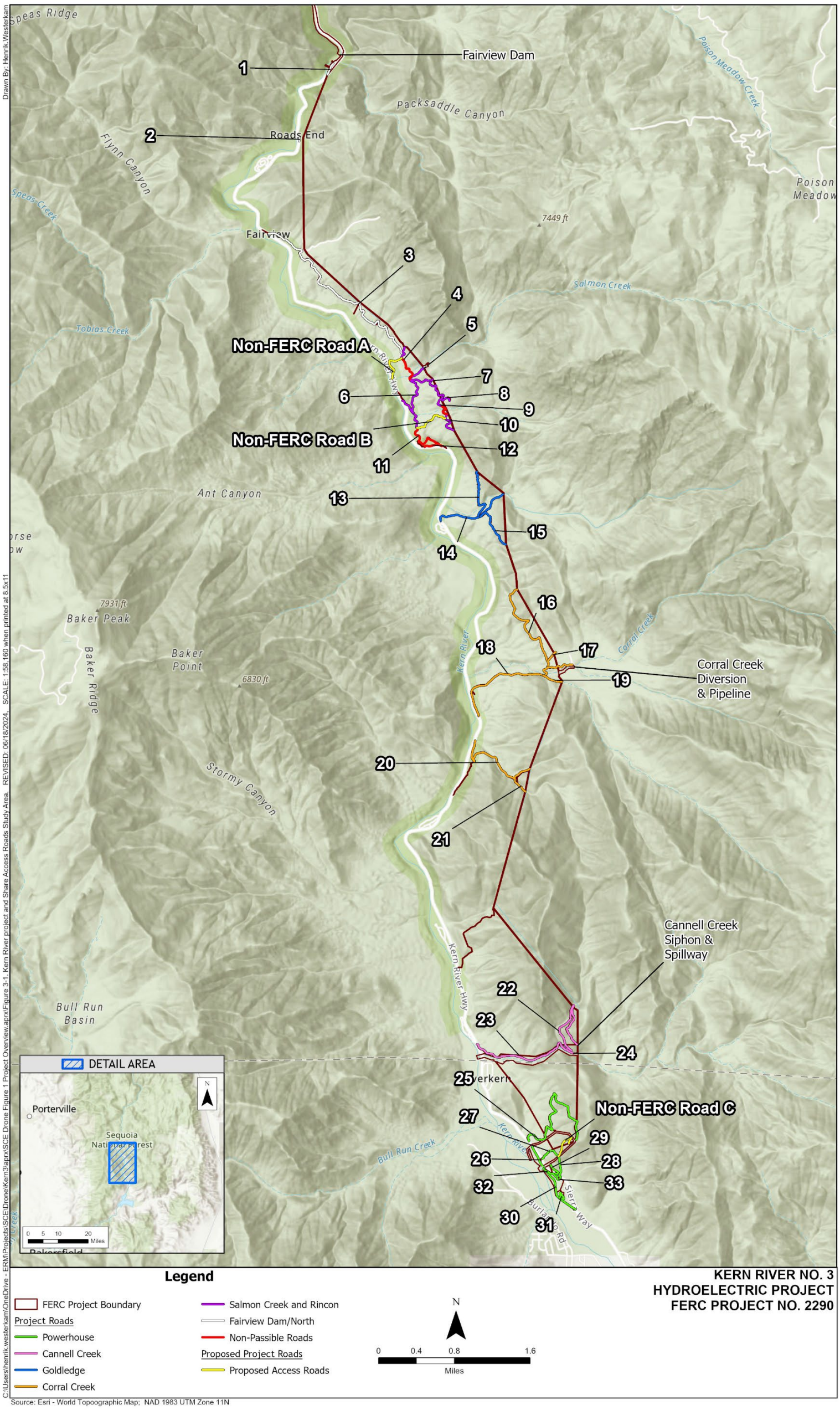

Figure 3-1. Kern River Project and Shared Access Roads Study Area.

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4.0 METHODS

Study implementation generally followed the methods described in SCE's Revised Study Plan Package (SCE, 2022) with the exception noted below.

4.1. STUDY PLAN VARIANCES

Due to the large storm event that occurred in the Project Area in March 2023, impacting many roads in the area, the start date of the monthly road use spot count survey was delayed until June 2023. The spot counts will occur over 1 full year, through May 2024, for a total of 12 weekend days, as outlined in the LAND-1 Study Plan.

During the year-long study, observations made by SCE employees of public use along Project and Shared Access Roads were not formally recorded; however, incidental observations were occasionally noted in SCE maintenance logs.

4.2. DESKTOP ANALYSIS

The Project and Shared Access Roads that SCE uses for Project O&M were identified and mapped as part of the KR3 Pre-Application Document (SCE, 2021). Following consultation with SCE operations, three additional road segments outside of the FERC Project Boundary were identified and may be considered for future Project access (Non-FERC Roads A, B, and C as depicted in Table 3-1 and on Figure 3-1). SCE met with the Sequoia National Forest (SQF) regarding the inclusion of these road segments for further analysis as part of this LAND-1 Study Plan. Refer to Section 6.0, *Study-Specific Consultation*, for additional consultation information.

A desktop analysis using publicly available geographic information system (GIS) data was conducted in May 2023 to compile Project road information for the list of roads identified in Table 3-1, including:

- Land ownership/jurisdiction
- Route, road, or spur number (and common name, if applicable)
- Beginning and end points and overall length
- Surface type (e.g., paved, gravel, dirt)
- Areas of concern, including road sections that were damaged from recent flooding
- Average road width
- U.S. Forest Service (Forest Service) Road Maintenance Level

4.3. RECONNAISSANCE LEVEL CONDITION ASSESSMENT

A field assessment to characterize existing road conditions, including drainage and erosion features, in addition to verifying data collected during the desktop analysis was conducted in June 2023. Assessment methodology was based on the Forest Service (2005 and 2014) criteria for assigned maintenance levels (to assess current road conditions.

The following information was field-verified and/or collected during the June 2023 field assessment:

- Beginning and end points and overall length
- Average width
- Surface type (e.g., paved, gravel, dirt)
- Overall road condition (e.g., active erosion, potholes, ruts, loose aggregate, missing aggregate, cracking, debris, and excessive vegetation)
- Location, size, and condition of culverts, erosion control features (e.g., water bars), and other drainage features
- Delineation of natural resource features that may occur along Project roads (e.g., stream crossings and riparian areas)
- Location and condition of signs (i.e., safety, traffic control, or informational)
- Location of access control features (e.g., gates and other closure methods)
- Location of informal trailheads located adjacent to Project or Shared Use Roads
- All road features and evidence of active erosion or sediment sources[2]
- Any notable indicators of culvert capacity in relation to stream flow (e.g., signs of plugging, condition of drainage structures)
- Condition and road features for four proposed Project Access Roads

All roads identified in the desktop review were surveyed by field personnel by walking and/or slowly driving along each road segment and periodically stopping to record general road conditions and document the condition of observed features. Features surveyed included culverts and other drainage features (i.e., water bars), erosion features, signs, riparian areas, and gates. All features identified in the field were assigned a feature ID, photographed, and georeferenced using the ArcGIS application Field Maps. The location

[2] These features and evidence were photographed and located using a sub-meter Global Positioning System (GPS) unit, and the data will be incorporated into the Project GIS database for tabulation, analysis, and mapping.

of each feature is provided in Universal Transverse Mercator projection coordinates. Condition and general observations were also recorded for each feature.

Based on conditions observed in the field, all drainage features were placed in one of the following categories:

- **No Apparent Concern**—Drainage feature appears to be functioning as designed; no major concerns with water conveyance due to sediment/detritus build-up or overgrown vegetation; no signs of erosion concerns including scouring; and no signs of structural issues including major rusting, holes, or other observed issues that would impact functioning of drainage feature.

- **Potential Concern**—Drainage feature shows some signs of not functioning as designed and warrants further monitoring and potential maintenance due to sediment/detritus build-up, overgrown vegetation, erosion concerns, and other observable structural issues.

- **Concern Likely**—Drainage feature is not functioning as designed and needs major maintenance or possible replacement due to sediment/detritus blockage, erosion concerns that are directing run-off away from drainage, and other observable structural issues.

Following the field visit, all feature data collected with ArcMap GIS Field Maps were imported to Microsoft Excel and organized for reporting purposes. All data fields and photographs collected for each feature were reviewed for data quality assurance. Road conditions were categorized as “Good,” “Fair,” or “Poor” based on field observations including erosion features, potholes, ruts, loose aggregate, missing aggregate, cracking debris, and excessive vegetation. These are defined as follows:

- **Good**—Most drainage features are designated as “No Apparent Concern” and functional; road has adequate width to drive safely; few erosion features may be present but are minor (small rills); little sign of surface deformation, including potholes, ruts, and wash boarding; no loose aggregate; sparce established vegetation in road; road is well-graded and does not need any maintenance/construction repairs.

- **Fair**—Most drainage features are designated as “No Apparent Concern” or “Potential Concern;” road has adequate width to drive safely; erosion features are present but consist of rills or minor drainage ditch erosion; some instances of surface deformation; sparse loose aggregate; vegetation may be present in some sections; road may need some minor maintenance/construction repair; further monitoring may be necessary.

- **Poor**—Drainage features are in not functioning as intended (standing water may be present) and need maintenance; sections of road do not have adequate width for safe passage; major erosion concerns, including gully formation; road surface deformation features are present and impact passage; loose aggregate is present; vegetation is established within roadway; road may have grading issues and needs maintenance/construction repairs; further monitoring is necessary.

4.4. CHARACTERIZATION OF USE

4.4.1. SCE USE

To document SCE's frequency of use on Project and Shared Access Roads, Project inspection and maintenance records/logs were reviewed to describe the location and frequency of use on each road segment that has occurred along the road segments over the past year.

4.4.2. PUBLIC USE

One weekend day (Saturday or Sunday) per month from June 2023 through May 2024, field staff were deployed to drive the open access (i.e., not gated) Project and Shared Access Roads during daylight hours (between 8:00 a.m. and 3:00 p.m.) (Table 3-1). SCE Project roads that are gated were visited and any vehicles observed parked outside the gate were recorded. If roads were determined not safe to drive by the field staff, a note about the road condition was documented on the field form.

For months that included holidays, weekend spot counts were conducted on 1 of the 3 days over the holiday weekend and included the following:

- Saturday, June 10, 2023 (holiday)
- Monday, July 3, 2023 (holiday)
- Sunday, August 6, 2023
- Monday, September 4, 2023 (holiday)
- Saturday, October 7, 2023
- Saturday, November 11, 2023
- Saturday, December 9, 2023
- Saturday, January 27, 2024
- Saturday, February 10, 2024
- Sunday, March 17, 2024
- Sunday, April 14, 2024
- Monday, May 27, 2024 (holiday)

The field crew drove each road segment and noted any vehicles, the approximate location, and type of recreation activities (if observed) (Attachment D, KR3 Vehicle Spot Count Data Form).

Refer to the *REC-2 Recreation Facilities Use Assessment* Technical Memorandum (Appendix E.2 of this Draft License Application) for a summary of additional recreation uses (i.e., spot counts) that occurred between April 2023 and May 2024 at the Rincon Trail Recreation Site (accessed via the Rincon Access Road and Tunnel 9B Spur Road Shared Access Roads) and the KR3 Powerhouse Put-in/Take-Out Recreation Facility (accessed via the Kern River No. 3 Powerhouse Access Road).

5.0 DATA SUMMARY

5.1. DESKTOP ANALYSIS

The FERC Project Boundary and adjacent roads within proximity to the FERC Project Boundary in the study area includes 33 roads (18.26 miles) that SCE uses to access Project facilities to conduct ongoing O&M activities. Three additional roads outside of the FERC Project Boundary (1.07 miles) were included with the survey as these roads are under consideration by SCE if needed to access Project facilities and conduct ongoing O&M activities.

The majority of these roads are on SQF lands. A short segment (0.5 mile) of the KR3 Powerhouse Access Road is located on SCE-owned lands. SCE conducts maintenance on all roads within the FERC Project Boundary to sustain access to Project facilities. The SQF Shared Access Roads are accessible by public to access other areas within the SQF (SCE, 2022).

All roads surveyed fall into one of the three following categories:

1. Project Access Roads are gated to restrict public vehicular access. The gate is located at the entrance of the Project access road and use is limited to SCE personnel.

2. Multi-purpose Project and Shared Access Roads primarily extend off the public roadway (i.e., Sierra Highway/Mountain Highway 99) and are not gated, allowing public and residential access, in addition to providing SCE access for O&M activities at Project facilities.

3. Forest Service maintained roads are not within the FERC Project Boundary and are not gated, allowing for public and residential access.

Attachment A summarizes the existing information about Project and Access Road lengths, widths, general condition, and beginning and ending Universal Transverse Mercator coordinates.

5.2. RECONNAISSANCE LEVEL CONDITION ASSESSMENT

Attachment B includes the features identified and documented during the reconnaissance level field assessment, in addition to notes and general conditions of each feature. Attachment C shows the location of Project and Shared Project Access roads in relation to Project facilities, in addition to categorized road and culvert conditions.

5.3. ROAD CONDITIONS

The 19.33 miles of Project and Shared Access Roads as well as non-FERC roads were surveyed during the June 2023 field event. Of the 36 roads surveyed, 25 were categorized as “Good” or “Good/Fair” condition, 7 were categorized as “Fair,” and 4 were categorized as “Poor” or “Poor/Fair.”

All SCE Project roads within proximity of the KR3 Powerhouse were paved and in good condition. Examples of road conditions and their respective categories are shown in Attachment E, Photo Log. A full list of Project and Shared Access Road conditions with descriptions are included in Attachment A.

5.4. CULVERTS AND OTHER DRAINAGE FEATURES

A total of 105 drainage features were identified in the field, including 75 culverts. Other drainage features observed included water bars, broad-based dips, armored crossings, and wing ditches. Of the 75 culverts, 49 were categorized as “No Apparent Concern,” 19 were “Potential Concern,” and 7 had “Concern Likely.” Examples are shown in Attachment E, Photo Log.

The most common concerns were associated with excess vegetation and sediment/detritus in the inlet of the culvert, potentially impacting water conveyance. Two culverts were completely non-functional, one of which was located below a drainage crossing where a previous bridge was located at Tunnels 10–12 Access Road (refer to Section 5.3, *Road Conditions*, for additional discussion). A full list of features identified in the field are shown in Attachment B.

5.5. EROSION CONCERNS AND IMPASSABLE ROAD SECTIONS

A total of 56 erosion features were observed in the field. Most of the erosion features observed in the field were minor, including rills and drainage ditch erosion. Several roads were not passable due to more severe erosion concerns and damage associated from past rain and high flow events (see Attachment E, Photo Log). Three road segments that were identified as impassable were evaluated and later discussed with SCE. These specific segments are shown in Attachment C.

- Tunnel 8A/8B Flume Access Road (#4)
  - Approximately 30 feet off the south end of the road, immediately north of Rincon Access Road, was not passable due to a bridge washout. The rest of the Tunnel 8A/8B road is in good condition.
  - There are no apparent erosion concerns at the bridge washout location as the surviving bridge foundation, and boulders are protecting the stream banks from stream flow (see Attachment E, photograph 11).
- Tunnels 10–12 Access Road (#9)

  - Approximately 100 feet of the road over the stream crossing was not passable due to a bridge washout.

  - Based on historical imagery, a large storm event between 2010 and 2013 caused the road crossing to wash out.

  - Currently, the streambank is not stabilized by vegetation or boulders, making it susceptible to streambank erosion (see Attachment E, photographs 12 and 13). Also refer to Table 5.1-1 of the *GEO-1 Erosion and Sedimentation Technical Memorandum* (Appendix E.2 of this Draft License Application).

- Rincon Trail Access Road (#11)

  - The southeastern portion of Rincon Trail Access Road did not appear to be maintained and was not passable for a vehicle due to erosion gullies and soil sloughing (see Attachment E, photograph 10).

5.6. MAINTENANCE

5.6.1. SCE ROAD MAINTENANCE

Most of the roads in the Project Area are unpaved and may be susceptible to erosion where run-off flows from graded areas to natural slopes. To minimize erosion along the access roads and retain the original drainage to the extent possible, SCE routinely re-grades any disturbed areas to follow the pre-disturbance natural ground contours (SCE, 1997). To reduce erosion and dissipate energy from flowing water, SCE installs water bars constructed from earth, concrete, or sandbags on steep slopes where necessary and applicable. Straw bales and sediment fences may also be installed to slow water flow and filter and capture sediment. Maintenance of dirt/native roads is described in Section 4.0, Project Location, Facilities, and Operations, of the Pre-Application Document and generally occurs annually or as needed (SCE, 2021).

Minor Project maintenance includes:

- Grading approximately within the road prism
- Debris removal and basic repairs including filing of potholes
- Maintenance of erosion control features such as drains, ditches, and water bars
- Repair, replacement, or installation of access control structures such as posts, cables, and barrier rock
- Cleaning and clearing debris and sediment from culverts with a backhoe or hand shovel
- Repair and replacement of signage
- Vegetation management may be conducted concurrently with road maintenance on an as-needed basis

Major Project road maintenance includes:

- Placement or replacement of culverts and other drainage features

5.6.2. U.S. Forest Service Maintenance Levels

The Forest Service classifies maintenance of National Forest System roads into five levels. Maintenance Level 1 roads are closed to motor vehicle use, while Maintenance Level 2 roads are maintained for high-clearance vehicles. Maintenance Levels 3, 4, and 5 roads are maintained for passage by standard passenger cars during the normal season use (Forest Service, 2014). Based on publicly available GIS data and June 2023 field survey, a majority (32) of the 36 roads surveyed fall within Maintenance Level 2.[3] Road Maintenance Level 2 is defined by the Forest Service (2014) as:

> Assigned to roads open for use by high-clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signs, such as W-18-1 "No Traffic Signs" may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving on these roads. Traffic normally is minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level.

The remaining four roads, all of which were located within proximity of the SCE Powerhouse, were classified as Maintenance Level 3. Road Maintenance Level 3 is defined by the Forest Service (2014) as:

> Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. The 'Manual on Uniform Traffic Control Devices' (MUTCD) is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. Roads in this maintenance level are typically low speed with single lanes and turnouts. Appropriate traffic management strategies are either 'encourage' or 'accept.' Discourage or prohibit strategies may be employed for certain classes of vehicles or users.

[3] Based on publicly available Forest Service *National Forest System Road*s data (Forest Service, 2023), three Shared Access Roads (Tunnel 1-4 Flume Access Road, Rincon Access Road, and Tunnel 9B Spur Road) were identified as Maintenance Level 2 roads. Based on this information, the Forest Service *Guidelines for Road Maintenance Levels* (Forest Service, 2005), and conditions observed in the field, Maintenance Levels were determined for the rest of the Project and Shared Access Roads.

5.7. CHARACTERIZATION OF USE

5.7.1. SCE USE

Routine inspections and maintenance logs indicate that most Project roads are used daily or at least once per week (Monday through Friday) to access major Project features such as Fairview Dam and the sandbox, Salmon and Corral Creek diversions, stream gages, above ground flowline segments, and the forebay area. Other road segments leading to Project adits or tunnel muck locations are utilized once per month (during routine inspections), or on an as-needed basis. The number of SCE vehicles also varies depending on the type of activity being conducted. Typically, one or two SCE trucks are utilized during routine inspection and maintenance activities. During routine annual road maintenance work, additional equipment (e.g., a grader) is also on site. A summary of the frequency of use over the past 12 months (June 2023 through May 2024) is provided in Table 5.7-1.

Table 5.7-1. SCE's Project and Shared Access Road Use

Road ID	SCE Road Name	Land Ownership	Gate	Frequency of Use	Public Use Observed	Notes
Fairview Dam/North Road Segments						
1	Sandbox Access Road	SQF	Yes	Daily	Yes (parked next to gate)	
2	Tunnel ¼ Flume Access Road	SQF	No	Monthly	Occasionally	
3	Tunnels 5-8A Access Road	SQF	No	Weekly	Yes	Smaller segments of road are driven daily throughout the week
4	Tunnel 8A/8B Flume Access Road	SQF	No	Monthly	Yes, cars/evidence of camping	Only segment up to the adit is used; the road crossing over Salmon Creek is not passable at this time
Non-FERC Road A	Mtn Hwy to Tunnel 8A/8B	SQF	No	Monthly	Occasionally	Alternative access road to Tunnel 8A/8B
Salmon Creek and Rincon Trail Road Segments						
5	Salmon Creek Diversion Access Road	SQF	No	Weekly; Daily during run-off	Yes	
6	Rincon Access Road	SQF	No	Weekly; Daily during run-off	Yes	Lower segment to Salmon Creek Diversion Access Road driven weekly; remaining segment driven monthly
7	Tunnel 9A/9B Flume Access Road	SQF	No	Monthly	Occasionally	
8	Tunnel 9B Spur Road	SQF	No	Monthly (by foot)	Yes	Road crossing over creek (Road ID 9) is not passible at this time; access to flowline is only on foot
9	Tunnels 10–12 Access Road	SQF	No	Monthly (by foot)	No	Road access over creek (Road ID 9) is not passible at this time; access to flowline is only on foot
Non-FERC Road B	4WD Road to access Tunnels 10–12	SQF	No	None	No	Road improvements needed to accommodate vehicular access

Road ID	SCE Road Name	Land Ownership	Gate	Frequency of Use	Public Use Observed	Notes
10	Tunnel 10/11 Flumes Access Road	SQF	No	Monthly (by foot)	No	Road access over creek (Road ID 9) is not passible at this time; access to flowline is only on foot
11	Rincon Trail Access Road	SQF	No	Not utilized	No	Road maintenance not currently conducted along segment south of Non-FERC Road B
12	Rincon Trail Access Road Spur	SQF	No	Not utilized	No	Road maintenance not currently conducted along segment
Goldledge Road Segments						
13	Tunnel 12/13 Flume Access Road	SQF	No	Monthly	Occasionally	
14	Gold Ledge Access Road	SQF	No	Monthly	Occasionally	
15	Tunnel 14/15 Flume Access Road	SQF	No	Monthly	Occasionally	
Corral Creek Road Segments						
16	Tunnel 16/17 Flume Access Road	SQF	No	Monthly	Occasionally	
17	Corral Creek Flumes North Access Road	SQF	No	Monthly	Occasionally	
18	Corral Creek Diversion Access Road	SQF	No	Weekly; Daily during run-off	Occasionally	
19	Corral Creek Flumes South Access Road	SQF	No	Monthly	Occasionally	
20	Tunnel 18/19 Flume Access Road	SQF	No	Monthly	Occasionally	
21	Tunnel 19/20 Flumes Access Road	SQF	No	Monthly	Occasionally	
Cannell Creek Road Segments						
22	Cannell Creek Siphon Spillway Access Road	SQF	Gate on lower road segment (Road ID 23)	Weekly	Yes	

Road ID	SCE Road Name	Land Ownership	Gate	Frequency of Use	Public Use Observed	Notes
23	Cannell Creek Access Road	SQF	Yes	Weekly	Yes	
24	Cannell Creek Siphon Access Road	SQF	gate on lower road segment (Road ID 23)	Weekly	No	
Powerhouse Area						
25	Kern River No. 3 Forebay Access Road	SQF	No	Weekly	Occasionally, mostly hikers	
26	Kern River No. 3 Machine Shop Access Road	SQF SCE	Yes	Daily	No	
27	Kern River No. 3 Penstocks North Access Road	SQF	No	Monthly	No	
Non-FERC Road C	Upper Spillway Channel Access (from Road 27)	SQF	No	Weekly	No	Access on foot only at this time
28	Kern River No. 3 Penstocks South Access Road	SQF	Yes	Monthly	No	
29	Chlorinator House Access Road	SQF	Yes	Weekly	No	
30	Kern River No. 3 Powerhouse Access Road	SQF SCE	Yes	Daily	Yes, highly traveled	Access road to Project Recreation Facility
31	Kern River No. 3 Warehouse Access Road	SCE	Yes	Daily	No	
32	Kern River No. 3 Campus Access Road	SQF	Yes	Daily	No	
33	Kern River South Garage Access Road	SQF	Yes	Daily	No	

FERC = Federal Energy Regulatory Commission; SCE = Southern California Edison Company; SQF = Sequoia National Forest

5.7.2. PUBLIC USE

Of the 33 Project and Shared Access Road segments surveyed, the highest rate of public use was observed along the Kern River No. 3 Powerhouse Access Road. This road provides access to SCE's Powerhouse Put-in/Take-Out recreation facility. Additionally, public use was noted on the two road segments leading up to the non-Project Rincon Trailhead located in the SQF: the Rincon Trail Access Road and the Tunnel 9B Spur Road. A tally of observed uses (i.e., total number of cars) over the past 12 months (June 2023 through May 2024) is summarized in Table 5.7-2.

Table 5.7-2. Public Use along Shared Access Roads

Road ID	SCE Road Name	Land Ownership	Gate	Number of Cars Observed	Notes (activity if observed)
Fairview Dam/North Road Segments					
1	Sandbox Access Road	SQF	Yes	3	Vehicles were observed parked outside the gate; anglers observed near the water
2	Tunnel ¼ Flume Access Road	SQF	No	2	
3	Tunnels 5-8A Access Road	SQF	No	11	Activities observed include biking and site seeing
4	Tunnel 8A/8B Flume Access Road	SQF	No	9	Road crossing over Salmon Creek not passable; parked cars observed along road leading to creek; activities observed include camping and hiking
Salmon Creek and Rincon Trail Road Segments					
5	Salmon Creek Diversion Access Road	SQF	No	3	
6	Rincon Access Road	SQF	No	17	Primary access road to Rincon Trailhead
7	Tunnel 9A/9B Flume Access Road	SQF	No	0	
8	Tunnel 9B Spur Road	SQF	No	2	Spur road from Rincon Access Road up to Rincon Trailhead; activities observed include hiking and site seeing
9	Tunnels 10–12 Access Road	SQF	No	0	Road crossing over creek is not passible
10	Tunnel 10/11 Flumes Access Road	SQF	No	0	No access to road segment by vehicle

Road ID	SCE Road Name	Land Ownership	Gate	Number of Cars Observed	Notes (activity if observed)
11	Rincon Trail Access Road	SQF	No	0	Road segment not maintained for vehicle access
12	Rincon Trail Access Road Spur	SQF	No	0	Road segment not maintained for vehicle access
Goldledge Road Segments					
13	Tunnel 12/13 Flume Access Road	SQF	No	2	
14	Gold Ledge Access Road	SQF	No	0	
15	Tunnel 14/15 Flume Access Road	SQF	No	0	
Corral Creek Road Segments					
16	Tunnel 16/17 Flume Access Road	SQF	No	0	
17	Corral Creek Flumes North Access Road	SQF	No	0	
18	Corral Creek Diversion Access Road	SQF	No	0	
19	Corral Creek Flumes South Access Road	SQF	No	6	Activities observed include biking and site seeing
20	Tunnel 18/19 Flume Access Road	SQF	No	1	Activities observed include hiking
21	Tunnel 19/20 Flumes Access Road	SQF	No	0	
Cannell Creek Road Segments					
22	Cannell Creek Siphon Spillway Access Road	SQF	Gate on lower road segment (Road ID 23)	2	Vehicles observed prior to installation of gate along Cannell Creek Access Road; activities observed include biking
23	Cannell Creek Access Road	SQF	Yes	0	

Road ID	SCE Road Name	Land Ownership	Gate	Number of Cars Observed	Notes (activity if observed)
24	Cannell Creek Siphon Access Road	SQF	Gate on lower road segment (Road ID 23)	6	Vehicles observed prior to installation of gate along Cannell Creek Access Road; activities observed include hiking, camping, and site seeing
Powerhouse Area					
25	Kern River No. 3 Forebay Access Road	SQF	No	0	
26	Kern River No. 3 Machine Shop Access Road	SQF SCE	Yes	1	Vehicle observed parked outside of gate
27	Kern River No. 3 Penstocks North Access Road	SQF	No	0	
28	Kern River No. 3 Penstocks South Access Road	SQF	Yes	0	
29	Chlorinator House Access Road	SQF	Yes	0	
30	Kern River No. 3 Powerhouse Access Road	SQF SCE	Yes	73	Activities observed include angling, in-water activities and site seeing
31	Kern River No. 3 Warehouse Access Road	SCE	Yes	0	
32	Kern River No. 3 Campus Access Road	SQF	Yes	0	
33	Kern River South Garage Access Road	SQF	Yes	0	

FERC = Federal Energy Regulatory Commission; SCE = Southern California Edison Company; SQF = Sequoia National Forest

6.0 STUDY-SPECIFIC CONSULTATION

- May 8, 2023: SCE met with the SQF (Al Watson, SQF District Ranger) at the Kern River Ranger Station to review the list of non-FERC roads included as part of LAND-1 Study data collection.

7.0 OUTSTANDING STUDY PLAN ELEMENTS

All Study Plan elements have been completed as outlined in SCE's Revised Study Plan (SCE, 2022), and as amended in FERC's Study Plan Determination (FERC 2022), with the exception of the variances described above. This study is now complete.

8.0 REFERENCES

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APPENDIX A
PROJECT AND SHARED ACCESS ROAD CONDITIONS

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SCE Road Name	SQF Road ID	Ownership	Within FERC Boundary?	Gated	Road Start/End	Road Length (feet)	Road Width (feet)	Surface	Road Start	Road Start	Road End	Road End	Characterization of Use	USFS Maintenance Level	Overall Condition	Comments
Fairview Dam/ North																
Sandbox Access Road	Sierra Highway	SQF	Yes	Yes	Mountain Road 99/Sandbox	709	16	Aggregate	366637.1382	3978798.551	366536.1274	3978610.808	Gated, project access road used by SCE employees for SCE operations.	2	Good	Single lane, gated (locked) road used by SCE staff for Fairview Dam Intake operations. Road is made of aggregate material and has adequate turnaround areas. There are signs of erosion on the west side due to run-off of the Sierra Highway.
Tunnel 1/4 Flume Access Road	23S20 –Roads End G.S.	SQF	No	No	Mountain Road 99/Tunnel 1/4 Flume	198	12	Aggregate	366057.6618	3977483.635	366069.6481	3977542.188	Shared access road, off of main highway, not on FERC boundary.	2	Good	Single lane road, very steep (4x4 vehicle recommended). Adequate turnaround area at top of road. Road is beginning to erode in turnaround area (east side).
Tunnels 5-8A Access Road	--	SQF	Yes	No	Mountain Road 99/Tunnel 8B Access Road	12,331	12	Native	367830.152	3973859.393	365538.786	3975914.089	Shared access road, on FERC boundary	2	Good	Single lane, very good condition, appears to be graded recently. Culverts and drainage features are in good condition.
Tunnel 8A/8B Flume Access Road	--	SQF	Yes	No	Rincon Access Road/Tunnel 8A/8B Flume, Tunnel 8B Portal	2,387	12	Native	367945.0398	3973434.859	367854.4413	3973989.316	Shared access road, on FERC boundary	2	Good/Fair	Single lane road, with rills halfway through. In good condition, with exception of bridge blow out, however there are no sediment concerns as water energy is dissipated by vegetation, bridge foundation, and large rocks. Road east of blow out is also in good condition. Observed van camper on north side of bridge. Vegetation (shrubs) slightly overgrown on certain sections.
Salmon Creek and Rincon																
Salmon Creek Diversion Access Road	--	SQF	Yes	No	Rincon Access Road/Salmon Creek Diversion	1,128	12	Native	368158.0374	3973622.39	367940.3794	3973442.996	Shared access road, on FERC boundary	2	Good	Single lane road in good condition, no obvious erosion issues. The one culvert is showing some erosion on the outlet side. Good turnaround at northeast end.
Rincon Access Road	24S89-Rincon (portion)	SQF	Yes	No	Mountain Road 99/Tunnels 10-12 Access Road	6,410	12	Native	368496.7157	3973144.366	367809.0143	3973083.471	Shared access road, on FERC boundary	2	Good	Single lane road in good condition. Culverts/drainage features are in good condition. Some roadside erosion concern on southeast end, right before the Tunnel 9B Spur Road.
Tunnel 9A/9B Flume Access Road	--	SQF	No	No	Rincon Access Road/Tunnel 9A/9B Flume	127	12	Native	368324.398	3973442.193	368293.7448	3973420.214	Shared access road, not on FERC boundary	2	Fair	Unimproved access road to 9A/9B tunnel. Drainage ditches appear to be unmaintained, creating potential erosion concerns. A drainage ditch that runs through the Rincon access road cuts through the start of the Tunnel 9A/9B Flume Access. {ile of garbage (hot tub chemicals) was found on the side of road.
Tunnel 9B Spur Road	24S89-Rincon (portion)	SQF	Yes	No	Rincon Access Road/Ends by Rincon Trailhead	758	12	Native	368612.8073	3973081.504	368496.7157	3973144.366	Shared access road, on FERC boundary, Salmon Rincoln trail head is located here	2	Poor/Fair	Steep, single lane unimproved road used for access to Rincon Trail head. Rills present for most of road. There is a social trail at the end of the road, that connects with established Rincon Trail. Observed tourists in a parked truck watching jets go by. Vegetation observed in rills.
Tunnels 10-12 Access Road	--	SQF	Yes	No	Rincon Access Road/Tunnel 11/12 Flume	3,050	12	Native	368678.4411	3972583.454	368496.7157	3973144.366	Shared access road, on FERC boundary	2	Poor	Road is in poor condition, and not passable south of KR. 37 culvert due to bridge blow out. Downed tree in middle of road at two locations. Erosion concerns from where bridge was blown out, with steep exposed banks.. Erosion in aggregate by tunnel is south side of the road. Signs of erosion (rilling) throughout road. Culvert (KR. 36) that was located below blown out road is destroyed. Good turnaround area at south end of road.
Tunnel 10/11 Flumes Access Road	--	SQF	No	No	Tunnels 10-12 Access Road/Tunnel 10/11 Flumes	175	12	Native	368628.0474	3972746.611	368574.6898	3972750.053	Shared access road, not witihin FERC boundary	2	Fair	Single lane road in fair condition. Road has rills, and vegetation is overgrown in some sections. Good turnaround area at end of road.
Rincon Trail Access Road	24S89-Rincon	SQF	Yes	No	Mountain Road 99/Rincon Access Road	3,644	12	Native	368481.3534	3972310.716	368011.4231	3972857.588	Shared access road, on FERC boundary	2	Poor	Single lane road in poor condition. Not passable in several sections, due to major erosion features, including the formation of gullys and roadside erosion. A non-funcitonal culvert was located halfway up the road, which originally drained the sub-basin. Major erosion and sediment concern (road is collapsed) near Rincon Trail Access Road Spur.
Rincon Trail Access Road Spur	--	SQF	Yes	No	Mountain Road 99/Rincon Access Road	829	12	Native/Asphalt	368423.3567	3972351.144	368191.7091	3972295.093	Shared access road, on FERC boundary	2	Fair	Road in fair condition, sections of native and asphault. Observed woman hiking on road.
Tunnel 12/13 Flume Access Road	--	SQF	Yes	No	Gold Ledge Access Road/Tunnel 12/13 Flume, portals	3,351	12	Native	369079.8745	3971876.279	369083.5195	3971098.484	Shared access road, on FERC boundary	2	Good/Fair	Single lange access road in mostly good condition, there are 4-6" rills found intermittently throughout. Drainage features are in good condition.
Goldledge																
Gold Ledge Access Road	--	SQF	Yes	No	Mountain Road 99/Tunnel 13/15 Flumes, portal	4,436	12	Native	369521.6673	3971494.231	368463.2479	3971044.067	Shared access road, on FERC boundary	2	Good	Single lane access road, rills found intermittently. Good turnaround at northeast end of road.
Tunnel 14/15 Flume Access Road	--	SQF	Yes	No	Gold Ledge Access Road/Tunnel 14/15 Flume, portals	2,693	10-12	Native/Aggregate	369567.4502	3970643.981	369130.2666	3971114.833	Shared access road, on FERC boundary	2	Fair	Road in fair condition, very narrow at sections, rills. Sections of aggregate.
Tunnel 16/17 Flume Access Road	--	SQF	Yes	No	Corral Creek Flumes Access Road/Tunnel 16/17 Flume, portal	5,818	12	Native	369761.0773	3969879.755	370279.7469	3968658.686	Shared access road, on FERC boundary	2	Good	Single land road in good condition, minor rills throughout.
Corral Creek																
Corral Creek Flumes North Access Road	--	SQF	Yes	No	Corral Creek Diversion Access Road/Corral Creek Flumes	1,082	12	Native/Aggregate	370420.276	3968812.883	370268.906	3968553.018	Shared access road, on FERC boundary	2	Good	Single lane road, mix of native and aggregate, in good condition.
Corral Creek Diversion Access Road	--	SQF	Yes	No	Mountain Road 99/Corral Creek Diversion	8,207	12	Native	370698.4584	3968603.503	369104.882	3967733.047	Shared access road, on FERC boundary	2	Good	Single lane road in good condition. Culvert is fortified with concrete at stream crossing. Informal mountain bike trail at south end of road.
Corral Creek Flumes South Access Road	--	SQF	Yes	No	Corral Creek Diversion Access Road/Corral Creek Flumes	1,165	12	Native	370519.1262	3968310.87	370196.9883	3968422.447	Shared access road, on FERC boundary	2	Good	Single lane road in good condition. Adequate turnaround on east end of road.
Tunnel 18/19 Flume Access Road	--	SQF	Yes	No	Mountain Road 99/Tunnel 18/19 Flume, portal	5,908	12	Native/Aggregate	369977.1094	3966837.995	369047.2144	3967317.995	Shared access road, on FERC boundary	2	Good	Single lane road changes from native to aggregate. Good condition with exception of erosion concern at inlet side of KR. 58. Adequate turnaround at tunnel access.
Tunnel 19/20 Flumes Access Road	--	SQF	Yes	No	Tunnel 18/19 Flume Access Road/Tunnel 19/20 Flumes, portal	883	12	Aggregate	369902.0871	3966447.941	369720.898	3966636.285	Shared access road, on FERC boundary	2	Fair	Single lane access road, leads to flume. Road is steep and bumpy. Erosion concern at beginning of road where road goes over culvert.
Channel Creek																
Cannel "Brush" Creek Siphon Spillway Access Road	--	SQF	Yes	No	Cannel “Brush” Creek Access Road/Cannel “Brush” Creek Siphon Spillway	6,455	8-12	Native/Aggregate	370784.0088	3962157.569	370498.3875	3962172.624	Shared access road, on FERC boundary	2	Good	Single lane road, changes from native to aggregate going east. Road becomes very thin as the spillway is approached, due to exposed bedrock on side of road. Very small area to turnaround, may be a safety concern, it is recommend walking the last quarter mile or so.
Cannel "Brush" Creek Access Road	--	SQF	Yes	No	Mountain Road 99/Brush Creek Siphon-Siphon Spillway Access Road	5,446	12	Native/Aggregate	370498.3875	3962172.624	369077.2423	3962163.419	Shared access road, on FERC boundary	2	Good	Single lane road, good condition. Road turns from dirt to aggregate heading east.

SCE Road Name	SQF Road ID	Ownership	Within FERC Boundary?	Gated	Road Start/End	Road Length (feet)	Road Width (feet)	Surface	Road Start	Road Start	Road End	Road End	Characterization of Use	USFS Maintenance Level	Overall Condition	Comments
Cannel "Brush" Creek Siphon Access Road	--	SQF	Yes	No	Cannel "Brush" Creek Access Road/Cannel "Brush" Creek Siphon	941	12	Native	370717.7926	3962009.285	370498.3875	3962172.624	Shared access road, on FERC boundary	2	Good	Single lane road in good condition. Adequate turnaround at southend of road.
Kern River No. 3 Forebay Access Road	--	SQF	Yes	No	Mountain Road 99/Kern River No. 3 Forebay	8,334	12	Native/Aggregate/Concrete	370758.0664	3960544.116	369956.7457	3960519.103	Shared access road, on FERC boundary	2	Good	Steep road, mix of native/aggregate, section of concrete at top. Very good condition. Observed people driving to top.
Powerhouse																
Kern River No. 3 Machine Shop Access Road	--	SCE/SQF	Yes	Yes	Mountain Road 99/Kern River No. 3 Powerhouse	1,445	16	Paved	370222.6408	3960039.075	370017.7787	3960425.877	Gated project road used by SCE for machine shop access, on FERC boundary	3	Good	Road used by SCE for machine shop access. Good condition. Gated, some sediment build up at west side of road.
Kern River No. 3 Penstocks North Access Road	--	SQF	Yes	No	Mountain Road 99/Kern River No. 3 Penstocks	1,300	12	Native/Aggregate	370454.2807	3960250.947	370183.4693	3960220.857	Shared project access road used by SCE for North side penstock access, on FERC boundary	2	Fair	Single lane aggregate/native road. Several erosion concerns, with rills and gullys forming. Road not passable without 4x4 high clearance vehicle. Scattered aggregate.
Kern River No. 3 Penstocks South Access Road	--	SQF	Yes	Yes	Mountain Road 99/Kern River No. 3 Penstocks	1,157	12	Native/Aggregate	370469.6619	3960243.572	370497.1824	3959907.867	Gated project access road used by SCE to get to Penstocks, on FERC boundary	2	Good	Gated aggregate/gravel road. Good condition. Steep at sections. Rills in some sectons.
Chlorinator House Access Road	--	SQF	Yes	Yes	Mountain Road 99/Chlorinator House and Water Tanks	821	12	Native/Aggregate	370326.3944	3960118.032	370401.9773	3959968.265	Gated project access road used by SCE for chlorinator house access, on FERC boundary	2	Good	Gated native/gravel road. Good condition.
Kern River No. 3 Powerhouse Access Road	--	SCE/SQF	Yes	Yes	Mountain Road 99/Kern River No. 3 Powerhouse	3,053	16	Paved	370202.3163	3960053.921	370747.9315	3959363.553	Shared access road, gated on west end for SCE Powerhouse, on FERC boundary, owned by SCE and USFS, public recreational river access	3	Good	Road used by both SCE and public (access to river). Paved, good condition Slight erosion issue on asphault by public access area. Gate at powerhouse.
Kern River No. 3 Warehouse Access Road	--	SCE	Partial	Yes	Kern River No. 3 Powerhouse Access Road/Kern River No. 3 Warehouse	1,003	16	Paved	370491.9709	3959573.37	370472.3721	3959556.389	Gated project access road, owned by SCE, partially on FERC boundary	3	Good	Gated road use by SCE for warehouse access. Good condition.
Kern River No. 3 Campus Access Road	--	SQF	Yes	Yes (2)	Mountain Road 99/Kern River No. 3 Powerhouse	806	16	Paved	370234.4625	3960021.236	370433.7567	3959937.996	Gated project access road used by SCE for campus access, on FERC boundary	3	Good	Road use by SCE to get to living area. Asphalt, good condition. Gated towards campus.
Kern River South Garage Access Road	--	SQF	Yes	Yes	Mountain Road 99/Kern River South Garage	377	12	Native/Aggregate	370442.422	3959921.928	370491.5365	3959900.338	Gated project access road used by SCE for garagae access, on FERC boundary	2	Good	Gated road to garage access area, good condition.
Proposed Roads																
USFS Road A	--	SQF	No	No	Sierra Highway to Tunnel 8A/8B Flume Access road	1837	12	Native	367639.1847	3973457.288	367799.5507	3973805.175	USFS road, not on FERC boundary	2	Good	Native road with in good condition. Several lead out ditches which are also in good condition.
USFS Road B	--	SQF	No	No	Rincon Trail Access Road/Tunnel 10/11 Flumes Acess Road	2048	12	Native	368055.9068	3972619.686	368539.1266	3972786.267	USFS road, not on FERC boundary	2	Fair	Native road in fair condition. Very steep in sections that would require 4x4 vehicle. Rills observed in several locations.
USFS Road C	--	SQF	No	No	Sierra Highway/Kern River No. 3 Penstock Access	1775	10-12	Native	370458.5421	3960263.596	370689.2934	3960585.84	USFS road, very small portion on FERC boundary	2	Poor-Fair	Single lane steep road, overgrown with vegetation in most areas. Turnaround at top is not adequate.

APPENDIX B
PROJECT AND SHARED ACCESS ROAD FEATURES

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Road Name	OBJECTID	Road Feature	Road Feature Description	Condition	Photo	Comments	UTM_E	UTM_N
1-Sandbox Access Road	179	Gate	Sandbox Access Road gate.	NA	Yes	No comments.	366544.7667	3978643.902
	180	Erosion Feature	Sheet erosion and minor rills	NA	Yes	Water is flowing off Sierra Highway and causing sheet erosion/rills, leading to minor roadside erosion on west side of road.	366556.008	3978654.491
	181	General Observation	Road Condition	NA	Yes	Good dirt access	366611.8039	3978774.321
	182	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	366571.5842	3978689.703
2-Tunnel 1/4 Flume Access Road	107	Sign	SCE Sign "ADIT 1.4"	NA	Yes	No comments.	366056.6933	3977501.69
	110	Erosion Feature	Ditch Erosion	NA	Yes	Minor erosion concern on east side of road, drainage ditch is starting to erode. May consider regrading and re-establishing drainage.	366068.4377	3977545.459
3-Tunnels 5-8A Access Road	73	Culvert	24" CMP	No Apparent Concern	Yes	Large hole 5 feet from inlet.	365757.9585	3975851.622
	74	Culvert	24" CMP	No Apparent Concern	Yes	Some sediment in culvert.	365852.0916	3975804.093
	75	Erosion Feature	Ditch Erosion	NA	Yes	Ditch erosion occurring on inlet side of culvert. Warrants further monitoring.	365845.4417	3975805.333
	76	Culvert	24" CMP	Potential Concern	Yes	Evidence of water running over road.	365934.1013	3975733.936
	78	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	365934.6517	3975726.925
	80	Culvert	36" CMP	No Apparent Concern	Yes	Culvert appears to be slightly bend , some cobbles by inlet.	366102.1446	3975625.749
	81	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	366122.5949	3975489.741
	82	Culvert	12" Steel	No Apparent Concern	Yes	No comments.	366226.311	3975469.913
	83	Culvert	36" CMP	No Apparent Concern	Yes	Inlet side has vegetation in front.	366281.1111	3975417.5
	84	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	366327.3802	3975328.117
	85	Culvert	24" CMP	No Apparent Concern	Yes	Some sediment in culvert.	366417.0515	3975201.041
	86	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	366486.5993	3975030.159
	87	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	366558.1331	3975016.577
	88	Culvert	18" CMP	No Apparent Concern	Yes	No comments.	366641.9369	3974944.677
	89	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	366715.8957	3974867.372
	90	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	366716.6446	3974864.187
	91	Culvert	18" CMP	No Apparent Concern	Yes	No comments.	366960.5297	3974754.706
	92	Culvert	24" CMP	Potential Concern	Yes	Excess detritus 10 feet from inlet, major rain event may move material into inlet and cause clogging issues. Excessive vegetation at outlet.	367087.2266	3974737.482
	93	Culvert	24" CMP	No Apparent Concern	Yes	Minor sediment and debris build up on inlet side.	367158.6157	3974598.741
	94	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	367405.7291	3974430.094
	95	Culvert	12" Steel	Potential Concern	Yes	Culvert is rusted. Vegetation on outlet side needs to be cleared.	367471.3704	3974329.202
	96	Other Drainage Feature	Metal Drain	No Apparent Concern	Yes	No comments.	367293.5297	3974403.841
	97	Culvert	24" CMP	Concern Likely	Yes	Inlet side is clogged with detritus and sediment. Needs to be cleared to ensure proper water conveyance.	367538.0244	3974339.071
	98	Culvert	18" CMP	No Apparent Concern	Yes	No comments.	367647.5519	3974156.846
	99	Culvert	18" CMP	No Apparent Concern	Yes	No comments.	367657.0628	3974129.021
	100	Culvert	18" CMP	Potential Concern	Yes	Inlet and outlet sides have excessive vegetation that may cause future issues.	367755.0895	3973997.507
	101	Culvert	18" CMP	No Apparent Concern	Yes	Slight sediment build up at inlet.	367792.7469	3973933.288
	104	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	367823.5347	3973873.82
	106	Sign	SCE Sign "7B 8A"	NA	Yes	Sign is showing signs of wear and tear, bullet holes. May need to be replaced in near future.	367533.0623	3974340.664
4-Tunnel 8A/8B Flume Access Road	52	Sign	SCE Sign "9A 9C"	NA	Yes	Sign is barely legible, rusting, and multiple bullet holes. Needs to be replaced.	367795.0989	3973809.533
	53	Culvert	12" CMP	Potential Concern	Yes	Unmarked culvert, sediment and detritus, perched outlet.	367838.6003	3973767.391
	54	Other Drainage Feature	Broad-Based Dip	No Apparent Concern	Yes	No comments.	367922.6977	3973623.056
	55	Other Drainage Feature	Broad-Based Dip	No Apparent Concern	Yes	No comments.	367932.7293	3973611.59
	59	General Observation	Bridge is blown out	NA	Yes	Blown out bridge. No erosion/sediment concerns, sides of stream are reinforced by bridge foundation and boulders.	367987.022	3973536.76
		General Observation	Stream Crossing	NA	No	Stream crossing where bridge was located.	367981.044	3973523.198
	102	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	367840.9361	3973960.024
	103	Culvert	24" CMP	No Apparent Concern	Yes	Slight sediment build up on inlet side. Some scouring on outlet side.	367845.4719	3973881.003
	105	Sign	SCE Sign "ADIT 8A-8B"	NA	Yes	No comments	367839.929	3973864.227
	56	Erosion Feature	Erosion on side of roads	NA	Yes	Minor erosion concern on both sides of road. May need to re-establish drainage ditches.	367922.1865	3973601.464
	57	Public Usage of Project Road	Van camping	NA	Yes	Van camping off of road	367915.2385	3973590.899
	58	Other Drainage Feature	Armored fill crossing	No Apparent Concern	Yes	Water flowing through armored crossing, good condition.	367956.4806	3973569.674
5-Salmon Creek Diversion Access Road	26	Sign	33E23 Rincon Trail	NA	Yes	No comments	367946.0535	3973446.552
	27	Sign	SCE Sign "8A-8B"	NA	Yes	Sign needs to be replaced.	367944.4239	3973447.664
	28	Sign	"Salmon 8-9"	NA	Yes	No comments	367945.8847	3973460.749
	29	Culvert	24" CMP	No Apparent Concern	Yes	No comments	367942.2819	3973447.871
	62	Culvert	18" CMP	Potential Concern	Yes	Scouring on outlet side, causing erosion concern.	368029.8104	3973517.325
6-Rincon Access Road	3	Culvert	24" CMP	No Apparent Concern	Yes	No comments	367883.099	3973020.266
	4	Other Drainage Feature	Metal drainage	No Apparent Concern	Yes	No comments.	367869.0964	3973019.196
	5	Culvert	18" CMP	No Apparent Concern	Yes	No comments	367933.3144	3972994.395
	21	Sign	SCE Sign "ADIT 9-12"	NA	Yes	No comments	367997.1633	3972875.665
	22	Culvert	24" CMP	No Apparent Concern	Yes	No comments	367997.3401	3972981.892
	23	Culvert	24" CMP	Potential Concern	Yes	Scour at outlet, plunge pool left of outlet causing embankment erosion	368077.9497	3973205.559
	24	Culvert	24" CMP	No Apparent Concern	Yes	No comments.	368062.5744	3973315.387
	25	Culvert	18" CMP	Potential Concern	Yes	Outlet side of culvert is clogged with silt, excessive vegetation, may impact water convervance.	368043.796	3973377.488
	30	Sign	SCE Sign "ADIT 9-12"	NA	Yes	Sign needs to be replaced.	367965.9894	3973434.932
	31	Culvert	24" CMP	Potential Concern	Yes	Possible pipping (signs of water going under culvert). May consider installing longer culvert, and implenting steeper gradient to avoid plunge pool on outlet side	368108.7078	3973414.621
	32	Culvert	24" CMP	Potential Concern	Yes	Moderate clogging on outlet side	368285.945	3973424.514
	37	Erosion Feature	Rilling	NA	Yes	Minor rills observed, drainage in area could be improved with installation of culvert up gradient.	368382.1925	3973339.575
	38	General Observation	Standing water on road	NA	Yes	Standing water in road. Could install culvert, southwerst downstreamside of road is eroding	368502.3772	3973180.632
	60	Sign	"Salmon 9-12 PS0618"	NA	Yes	Sign showing signs of wear and tear	367813.0413	3973091.003
7-Tunnel 9A/9B Flume Access Road	33	Sign	SCE Sign "ADIT 9-9"	NA	Yes	Signs need to be replaced.	368308.5217	3973421.526
	34	General Observation	Garbage	NA	Yes	Hot tub chemicals were dumped about a foot off of access road.	368313.4512	3973436.254
	35	Erosion Feature	Rilling	NA	Yes	Minor rills observed. Regrade road to redirect surface runoff to existing ditch.	368298.5118	3973424.78
	36	Other Drainage Feature	Drainage ditch	No Apparent Concern	Yes	Drainage ditch is running north of Salmon Creek and Rincon road, running perpendicular through start of tunnel 9A/9B flume access road.	368293.4455	3973420.611
8-Tunnel 9B Spur Road	40	Informal Trail Head	Unmarked Trail Head	NA	Yes	No comments.	368619.4101	3973060.701
	41	Other Drainage Feature	Broad-Based Dip	No Apparent Concern	Yes	No comments.	368565.3156	3973130.628
	42	Erosion Feature	Rillls	NA	Yes	Vegetation growing in rills.	368552.2605	3973124.707
	43	Erosion Feature	Rilll/Gully	NA	Yes	Rills forming gully through middle of road.	368515.1995	3973101.615

Road Name	OBJECTID	Road Feature	Road Feature Description	Condition	Photo	Comments	UTM_E	UTM_N
9-Tunnel 10-12	71	General Observation	Blown out bridge area	NA	Yes	<Null>	368521.2614	3972938.22
	72	Culvert	24" CMP	Concern Likely	Yes	Culvert is destroyed	368525.3736	3972930.176
		General Observation	Stream Crossing	NA	No	Stream crossing where bridge was located.	368436.7111	3972936.03
		Erosion Feature	Gullys	NA	Yes	Large gullys forming downhill towards bridge. Major erosion along stream banks where bridge used to be.		
	39	Sign	Not legible	NA	Yes	Sign needs to be replaced.	368493.3411	3973145.394
	44	General Observation	Downed tree	NA	Yes	<Null>	368447.5704	3973008.21
	45	Culvert	18" CMP	No Apparent Concern	Yes	No comments	368475.5259	3972990.467
	64	Culvert	24" CMP	Potential Concern	Yes	Full of sediment on inlet side	368553.4448	3972664.667
	67	General Observation	Downed tree	NA	Yes	Dead tree in middle of road.	368631.0341	3972607.122
	68	Erosion Feature	Erosion on road in turnout	NA	Yes	Water is draining out of turnaround area onto southside of road, causing roadside erosion.	368679.6496	3972581.884
	69	Erosion Feature	Rills	NA	Yes	Rills forming in middle of road.	368623.7953	3972718.926
10-Tunnel 10/11 Flumes Access Road	65	Sign	SCE Sign "ADIT 10-11"	NA	Yes	Sign needs to be replaced.	368588.1604	3972753.416
	66	Erosion Feature	Rills	NA	Yes	No comment.	368596.5113	3972747.785
11-Rincon Portion Not Passable	10	Erosion Feature	Seep, water on road	NA	Yes	Water is seeping onto road; could install Culvert 30 feet down install swale to connect, or install armored crossing	368239.8329	3972451.298
		Erosion Feature	Gully	NA	Yes	Large gullys, 3 feet deep, 8 feet long, road not passable	368298.9515	3972419.423
	14	Culvert	NA	Potential Concern	Yes	Worth reparing culvert to stop further erosion, as it would drain swale	368160.2695	3972342.939
	6	Culvert	24" CMP	Concern Likely	Yes	Riprap, culvert mangled, debris present, scour hole, sluffing at inlet. Water seeping under road away from culvert	368019.2806	3972849.479
		Erosion Feature	Gully	NA	Yes	Large gully, road impassable	368130.4329	3972368.028
	7	Nature Resources	Water from seep is flowing onto road	NA	Yes	Water flowing over road; future monitoring is recommended, could install culvert or armored crossing.	368037.8781	3972825.237
	8	Erosion Feature	Ditch Erosion	NA	Yes	Gully erosion in drainage ditch	368472.9689	3972319.644
	11	Culvert	Old culvert, non-functional	Concern Likely	Yes	Drainage from both basins are routed down this road. Repairing culvert would potentially alleviate erosion along easterly road	368249.1895	3972455.021
	12	Erosion Feature	Slumping	NA	Yes	Road not passable, needs full repair. Could consider installing culvert upgradient once road is repaired.	368289.4217	3972422.741
	13	Culvert	Old culvert, non-functional	No Apparent Concern	Yes	Non-functioning culvert. Does not appear to be causing any erosion issues in surrounding area.	368215.4963	3972402.736
	15	Erosion Feature	Rilling	NA	Yes	Minor rilling on road	368069.5	3972593.953
12-Rincon Trail Access Road Spur	9	Public Usage of Project Road	Usfs day use, woman hiking	NA	Yes	Woman was hiking on access spur, asked about trail access in area.	368296.2453	3972322.709
13-Tunnel 12/13 Flume Access Road	113	Culvert	24" CMP	Potential Concern	Yes	Sediment and vegetation build up at the inlet side.	369096.1019	3971127.811
	114	Sign	SCE Sign "ADIT 12-13"	NA	Yes	No comments	369090.5733	3971115.764
	115	Other Drainage Feature	Broad-Based Dip/Water bar	No Apparent Concern	Yes	No comments	369142.7287	3971214.587
	116	Erosion Feature	Roadside erosion	NA	Yes	No comments	369134.0502	3971206.264
	117	Other Drainage Feature	Armored Crossing	No Apparent Concern	Yes	No comments	369200.6974	3971285.449
	118	Other Drainage Feature	Armored stream crossing	No Apparent Concern	Yes	No comments.	369220.8447	3971324.353
		General Observation	Stream Crossing	NA	No	Armored crossing goes over small stream.	369220.8447	3971324.353
	119	Erosion Feature	Roadside ditch erosion	NA	Yes	No comments	369194.0018	3971333.061
	120	Sign	"Spot 89" hand-written on aluminum sign	NA	Yes	Sign needs to be replaced.	369112.0292	3971311.238
	121	Erosion Feature	Rills	NA	Yes	Two 6" rills running about 50'	369096.3107	3971677.554
	122	Erosion Feature	Rills	NA	Yes	Two 6" rills running about 30'	369114.372	3971586.245
	123	Erosion Feature	Road side ditch coming on to road	NA	Yes	Water on drainage ditch is flowing on bedrock and coming onto road.	369094.9344	3971469.626
	124	Erosion Feature	Road ditch going on to road	NA	Yes	Water on drainage ditch is flowing on bedrock and coming onto road.	369112.0949	3971369.036
	125	Erosion Feature	Rills	NA	Yes	Multiple 3" rills running down road for 30'	369105.3342	3971156.937
14-Gold Ledge Access Road	111	Erosion Feature	Rills	NA	Yes	No comments.	368469.8967	3971121.134
	112	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	369017.3411	3971087.322
	126	Sign	SCE Sign "Adit 14-15"	NA	Yes	No comments.	369138.4427	3971126.321
	127	Sign	"5B and 5C"	NA	Yes	Sign needs to be replaced.	369140.1072	3971127.427
	128	Sign	"BRYN CYN"	NA	Yes	No comments.	369138.0283	3971127.789
	130	Culvert	24" CMP	No Apparent Concern	Yes	No comments	369208.4388	3971190.229
	131	Culvert	18" CMP	Potential Concern	Yes	Inlet is covered in sediment and vegetation	369282.9304	3971259.377
	133	General Observation	Exposed water tunnel 13-14	NA	Yes	Water level is 18 inches from top of concrete	369532.1719	3971489.988
	134	Erosion Feature	Rill	NA	Yes	4" rill extends about 15'	369322.2254	3971336.702
	135	Erosion Feature	Rill	NA	Yes	No comments	369301.1031	3971288.596
	142	Erosion Feature	Rill	NA	Yes	5" rills	368973.4852	3971089.162
	143	Erosion Feature	Rilling across road	NA	Yes	No comments	368716.9185	3971144.867
	144	Erosion Feature	Minor rilling	NA	Yes	No comments	368530.8231	3971118.964
15-Tunnel 14/15 Flume Access Road	129	Culvert	24" CMP	Potential Concern	Yes	Full of sediment in both inlet and outlet	369140.0067	3971123.103
	136	Culvert	18" CMP	No Apparent Concern	Yes	No comments.	369304.8586	3971057.616
	137	Culvert	18" CMP	No Apparent Concern	Yes	Cobble in inlet.	369343.1884	3970937.02
	138	Erosion Feature	Rill	NA	Yes	No comments.	369341.1769	3970938.314
	139	Culvert	18" CMP	No Apparent Concern	Yes	Remove vegetation at the inlet	369368.0102	3970896.47
	140	Erosion Feature	Rill	NA	Yes	No comments.	369514.937	3970666.657
16-Tunnel 16/17 Flume Access Road	165	Sign	SCE Sign "Adit 15-16"	NA	Yes	No comments.	370266.9349	3968674.158
	166	Culvert	18" CMP	No Apparent Concern	Yes	Buildup of detritus and sediment at the inlet side	369679.384	3969817.027
	167	Erosion Feature	Side of road eroding	NA	Yes	No comments.	369684.3119	3969632.497
	169	Other Drainage Feature	Water Bar	No Apparent Concern	Yes	No comments	369949.8723	3969359.569
	170	Erosion Feature	Roadside erosion	NA	Yes	Road drainage causing side of road to erode.	369942.3711	3969360.561
	171	Erosion Feature	Rills	NA	Yes	No comments.	370160.5648	3968973.48
	172	Erosion Feature	Rill	NA	Yes	8" inch rill	370187.4403	3968869.153
	174	Erosion Feature	Rill	NA	Yes	No comments.	370237.6345	3968753.993
	175	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	370241.0916	3968754.606
	177	Erosion Feature	Lead out ditch	NA	Yes	Upslope area needs work to encourage flow to ditch	370256.6753	3968721.362
17-Corral Creek Flumes North Access Road	158	Sign	Not legible	NA	Yes	Sign needs to be replaced.	370273.6513	3968564.149
	161	Culvert	24" CMP	No Apparent Concern	Yes	No comments	370285.2119	3968624.503
	164	Sign	Not legible	NA	Yes	Sign needs to be replaced.	370321.1469	3968718.933
18-Corral Creek Diversion Access Road	1	Culvert	12" CMP	No Apparent Concern	Yes	No comments	369020.3596	3967971.589
	2	Informal Trail Head	Mountain Bike Trail	NA	Yes	No comments	368991.672	3968152.249
	145	Sign	SCE Sign "Corral 15 18"	NA	Yes	No comments.	369107.0965	3967753.066
	146	Culvert	18" CMP	Potential Concern	Yes	Sediment and vegetation buildup in front of inlet and outlet	369006.1462	3968195.96
	147	Culvert	18" CMP	No Apparent Concern	Yes	Some vegetation buildup in inlet	369219.5172	3968257.475
	148	Culvert	18" CMP	Potential Concern	Yes	Sediment and vegetation buildup in inlet, may cause future water conveyance issues	369234.2375	3968261.836
	149	Erosion Feature	Rills	NA	Yes	Not part of the road we are inventorying, the rill extends to the road that is being inspected	369244.4142	3968254.848
	150	Culvert	18" CMP	No Apparent Concern	Yes	Vegetation on outlet side	369448.6152	3968443.139
	151	Culvert	18" CMP	Potential Concern	Yes	Sediment and excess vegetation on inlet side	369614.669	3968439.658
	152	Erosion Feature	Rills	NA	Yes	Rilling from adjacent road may become an issue in future	369604.3559	3968437.602
	153	Culvert	12" CMP	No Apparent Concern	Yes	Some sediment and vegetation buildup in inlet	369821.3184	3968438.846
	155	Sign	Not legible	NA	Yes	Sign needs to be replaced.	370205.8581	3968425.64
		General Observation	Stream Crossing	NA	No	Concrete road goes over stream.	370256.7505	3968466.202
	156	Culvert	48" CMP	No Apparent Concern	Yes	Section of road is fortified with concrete	370256.7505	3968466.202
	160	Erosion Feature	Rills	NA	Yes	No comments.	370503.1967	3968563.914
	178	Public Usage of Project Road	SUV present	NA	Yes	No comments.	369061.3818	3968225.56

Road Name	OBJECTID	Road Feature	Road Feature Description	Condition	Photo	Comments	UTM_E	UTM_N
19-Corral Creek Flumes South Access Road	154	Other Drainage Feature	Armored road crossing	No Apparent Concern	Yes	No comments.	370243.8663	3968405.45
20-Tunnel 18/19 Flume Access Road	183	Culvert	96" CMP	No Apparent Concern	Yes	No comments	369357.1079	3967035.151
	184	Culvert	24" CMP	No Apparent Concern	Yes	No comments	369567.6944	3966755.44
	185	Culvert	24" CMP	No Apparent Concern	Yes	Sediment buildup in the outlet	369624.7413	3966707.969
	188	Sign	Not legible	NA	Yes	Sign needs to be replaced.	369721.5767	3966635.743
	189	Sign	SCE Sign "Adit 18-19"	NA	Yes	Sign needs to be replaced.	369731.2977	3966644.94
	193	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	369684.0499	3966689.327
	194	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	369440.4969	3966910.415
	261	Sign	Sign not legible	NA	Yes	Cannot read sign, unknown.	369026.142	3966956.158
	262	Other	Road Condition	NA	Yes	Overgrown with vegetation, in good shape otherwise	368963.3825	3966870.774
21-Tunnel 19/20 Flumes Access Road	186	Culvert	24" CMP	Concern Likely	Yes	Inlet side of culvert is exposed due to erosion, rusting	369710.2132	3966619.563
	187	Erosion Feature	Erosion	NA	Yes	Inlet side of culvert on road is beginning to erode	369718.5797	3966626.421
	190	General Observation	Exposed water tunnel	NA	Yes	16 inches from concrete	369902.192	3966439.274
	191	General Observation	Road Condition	NA	Yes	Fair, aggregate, bumpy steep	369865.4429	3966477.418
22-Cannel "Brush" Creek Siphon Spillway Access Road	201	Other Drainage Feature	Metal drainage	No Apparent Concern	Yes	No comments.	370766.9402	3962168.129
	202	Other	Road Condition	NA	Yes	Thin, aggregate and dirt, good condition, can't turnaround	370746.0991	3962190.546
23-Cannel "Brush" Creek Access Road	197	Sign	Not legible	NA	Yes	Sign needs to be replaced.	369090.8594	3962165.817
	198	Other Drainage Feature	Water bar	No Apparent Concern	Yes	No comments	369294.2274	3962010.689
	199	Culvert	36" CMP	Potential Concern	Yes	Sediment and cobble on both inlet and outlet side, may pose water conveyance issues in future	370459.7067	3962183.569
	203	Other	Changes from aggregate to dirt going west	NA	Yes	Changes from aggregate to dirt going west	370052.8186	3961902.752
	204	Other Drainage Feature	Water bar	No Apparent Concern	Yes	No comments.	369930.0416	3961905.709
	205	Erosion Feature	Rill	NA	Yes	Small rill running perpendicular through road	369346.9803	3961997.585
	206	Sign	SCE Sign "KR3 Syphon"	NA	Yes	No comments.	369074.3691	3962167.319
24-Cannel "Brush" Creek Siphon Access Road	200	Erosion Feature	Road side erosion	NA	Yes	Water is draining through rill and creating minor roadside erosion.	370504.3768	3962144.083
25-Kern River No. 3 Forebay Access Road	207	Sign	SCE Sign "KR3 Forebay"	NA	Yes	No comments.	369960.1562	3960526.536
	208	Culvert	8" Steel	Concern Likely	Yes	Clogged with sediment and vegetation on both sides	369978.6456	3960627.38
	209	Culvert	12" Steel	No Apparent Concern	Yes	Outlet side buried in sediment, needs to be cleared	370053.8941	3960607.293
	210	Culvert	12" or 10" CMP	No Apparent Concern	Yes	No comments	370154.2906	3960543.938
	211	Culvert	18" CMP	Concern Likely	Yes	Top of culvert has holes, entire culvert is filled with sediment	370334.8527	3960826.724
	212	Culvert	24" CMP	No Apparent Concern	Yes	Minor vegetation cleanup on the inlet side	370409.1086	3961013.872
	213	Culvert	18" CMP	No Apparent Concern	Yes	Clear vegetation on the inlet side	370383.7444	3961303.703
	214	Culvert	18" CMP	No Apparent Concern	Yes	Sediment and cobbles need to be cleared at the inlet	370419.7707	3961296.532
	215	Other Drainage Feature	Culverts on top of spillway	No Apparent Concern	Yes	No comments.	370756.0054	3960550.618
	216	Other Drainage Feature	Spillway drainage	No Apparent Concern	Yes	No comments.	370786.2949	3960856.918
	217	Other	Road Condition	NA	Yes	Good native material.	370765.9286	3960868.752
	219	Culvert	18" CMP	No Apparent Concern	Yes	Sediment in inlet	370622.2747	3961117.063
	220	Culvert	32" CMP	No Apparent Concern	Yes	No comments.	369934.6943	3960546.178
26-Kern River No. 3 Machine Shop Access Road	250	Other	Other Observation	Sediment from potential flooding	Yes	Sediment deposit on road, likely from flooding	370046.8286	3960352.536
	251	Gate	West gate, coming off of Sierra Highway, access to SCE machine shop and powerhouse.	NA	Yes	No comments.	370130.8186	3960208.545
27-Kern River No. 3 Penstocks North Access Road	240	Erosion Feature	Drainage ditch eroding	NA	Yes	Drainage ditch on eastside of road is eroding (spreading to road).	370220.8491	3960276.105
	241	Erosion Feature	Rills	NA	Yes	Rills running through center of road. 3-4" rills	370291.7857	3960336.736
	242	Erosion Feature	Rills	NA	Yes	Minor rills on road, no clear drainage ditch for water to run along road; 3" rills	370406.8203	3960315.533
	243	Erosion Feature	Rills	NA	Yes	Small rills running down center of road.	370436.9058	3960282.42
28-Kern River No. 3 Penstocks South Access Road	223	Gate	Kern River No.3 Penstocks gate.	NA	Yes	No comments.	370483.0945	3959968.972
	226	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	Ditch used for road drainage, minor rilling upland. Good condition.	370491.9345	3960042.476
29-Chlorinator House Access Road	221	Gate	Chlorinator House Access Road gate.	NA	Yes	No comments.	370450.5793	3960005.749
	222	Other	Road Condition	NA	Yes	Aggregate and gravel on road, single lane, road closed, has a gate.	370404.9898	3959969.671
30-Kern River No. 3 Powerhouse Access Road	233	Gate	East gate to SCE powerhouse.	NA	Yes	No comments.	370221.2783	3960033.001
31-Kern River No. 3 Warehouse Access Road	255	Other	Road Condition	NA	Yes	No Comments	370492.2512	3959586.07
	256	Gate	Gate to maintenance shops.	NA	Yes	No comments.	370487.7616	3959573.622
32-Kern River No. 3 Campus Access Road	235	Sign	SCE sign going up to living area, "Private Road Keep Off"	NA	Yes	No comments.	370280.7145	3960001.708
	236	Gate	North gate to SCE campus, off of Sierra Highway.	NA	Yes	No comments.	370358.1641	3959969.614
	237	Other	Road Condition	NA	Yes	Paved, very good condition.	370244.0704	3960019.861
	259	Gate	West gate to SCE campus.	NA	Yes	No comments.	370428.0868	3959936.007
	260	Other	Road Condition	NA	Yes	No comments.	370423.6651	3959931.978
33-Kern River South Garge Access Road	227	Other	Road Condition	NA	Yes	Road filled with aggregate and gravel, has a closed gate	370481.6178	3959880.448
	228	Other	Road Condition	NA	Yes	Gravel and car equipment, lots of pine cones, fencing at the end on the other side	370440.4771	3959881.431
	229	Gate	South garage access gate.	NA	Yes	No comments.	370485.2476	3959900.555
USFS Road A	46	Erosion Feature	Water draining across road	NA	Yes	Water is draining across road, could cause issues in future; may need to be armored	367673.3147	3973620.158
	47	Culvert	18" CMP	Potential Concern	Yes	Outlet is 2/3 sediment	367585.1121	3973750.064
	48	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	367713.6187	3973751.688
	49	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	367665.0612	3973752.362
	50	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	367758.1194	3973776.201
	51	Other Drainage Feature	Lead out ditch	No Apparent Concern	Yes	No comments.	367791.2486	3973803.619
USFS Road B	16	Public Usage of Project Road	12 people hiking up proposed road	NA	Yes	Observed large group of people hiking on proposed project road	368119.0127	3972629.764
	17	Erosion Feature	Rill	NA	Yes	4" rills extend 20 feet from south end of road	368084.1613	3972620.103
	19	Erosion Feature	Rill	NA	Yes	Minor rills, roughly 10" for about 30'.	368322.7146	3972752.347
	20	Erosion Feature	Rill	NA	Yes	Minor rilling about 6 inches for about 50'	368350.7495	3972820.58
	70	Erosion Feature	Rill	NA	Yes	Rills extend for about 100' towards Tunnels 10-12 Access Road	368529.6816	3972782.385
USFS Road C	244	Other	Road Condition	NA	Yes	No comments	370474.5914	3960273.59
	245	Erosion Feature	Drainage ditch erosion	NA	Yes	East side of road is being eroding by drainage ditc; need to establish drainage	370485.9785	3960313.224
	246	Other	Road Condition	Road Condition	Yes	No Comments	370522.063	3960453.499
	247	Other	Road Condition	Road Condition	Yes	No Comments	370651.7421	3960557.383
	248	Other	Road Condition	Road Condition	Yes	Good A lot of vegetation	370643.9209	3960500.922

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APPENDIX C
PROJECT AND SHARED ACCESS ROAD CONDITIONS FIGURES

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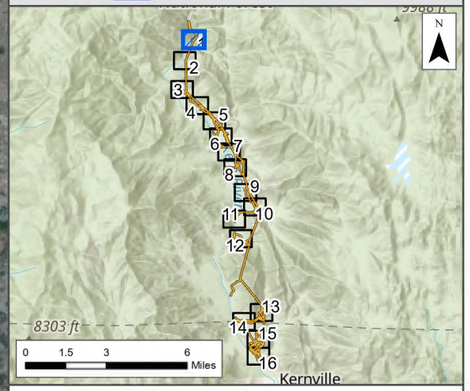
DETAIL AREA



FERC Project Boundary

Vehicle Access Gate

Put-in/Take-out Sites

Facilities

Access Route Condition

Good

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 1 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON

Energy for What's Ahead

DRAWN BY: Henrik.Westerkam

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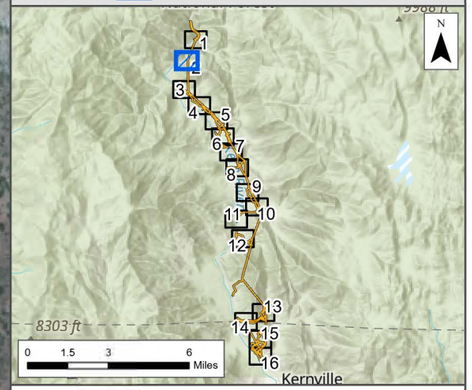


FERC Project Boundary

Sequoia NF Recreation Sites

- Boating - Non-Motorized
- Day Hiking

Access Route Condition

- Good

N

0 160 320 640
Feet

Access Route Conditions

Project:

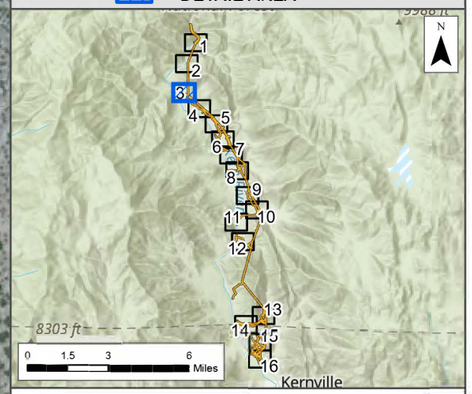
Sheet 2 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

DETAIL AREA



FERC Project Boundary

Put-in/Take-out Sites

Sequoia NF Recreation Sites

Campground Camping

Access Route Condition

Good

Culvert Condition

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 3 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

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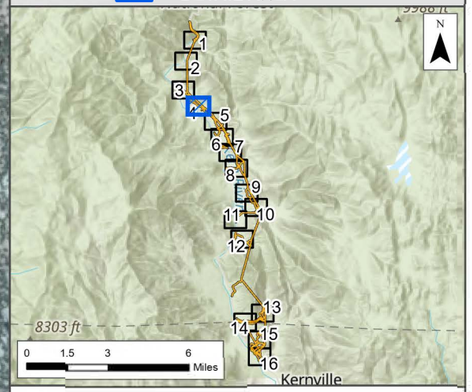

FERC Project Boundary

Facilities

Access Route Condition

Good

Culvert Condition

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 4 of 16

SCE Kern River No. 3

ERM

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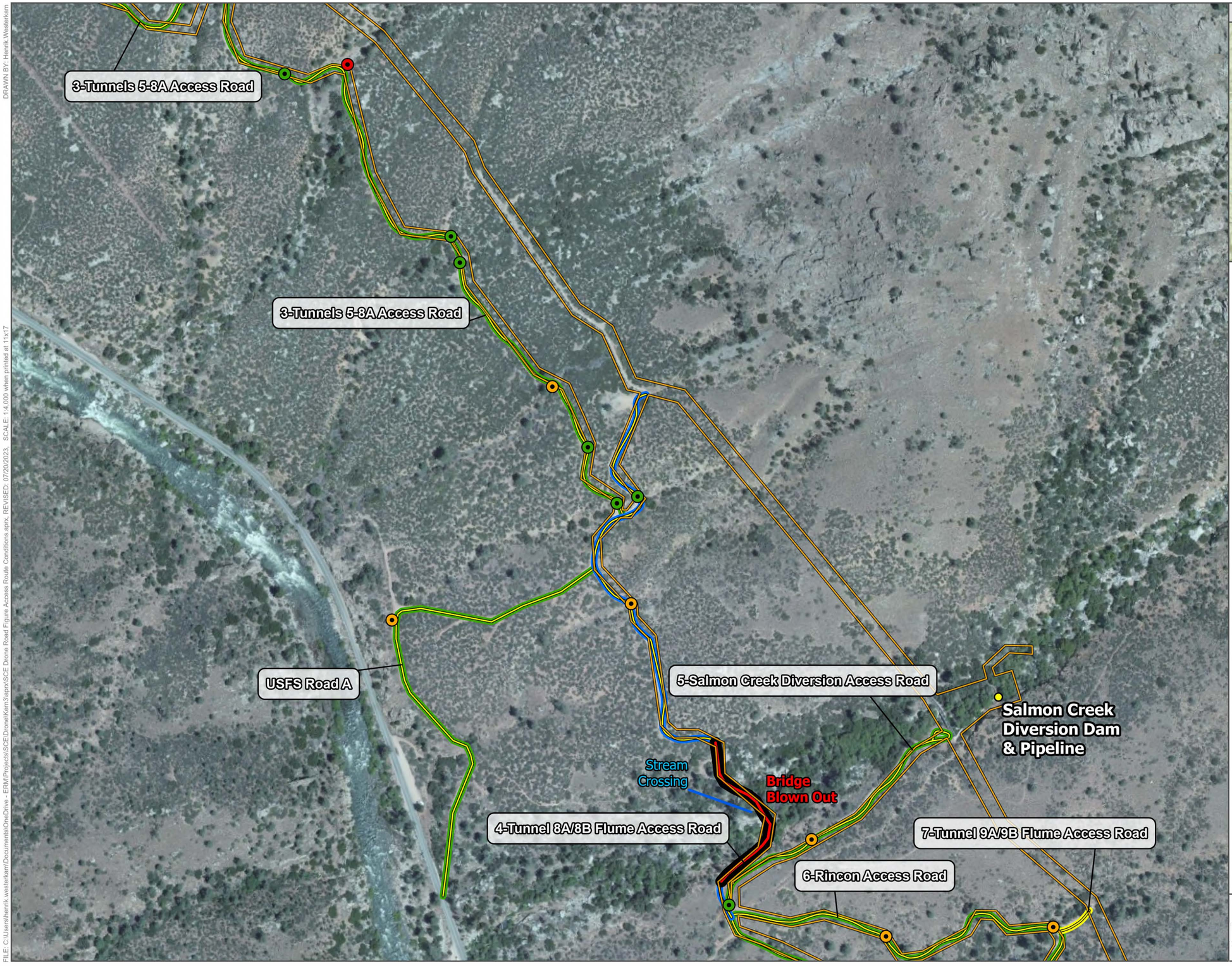

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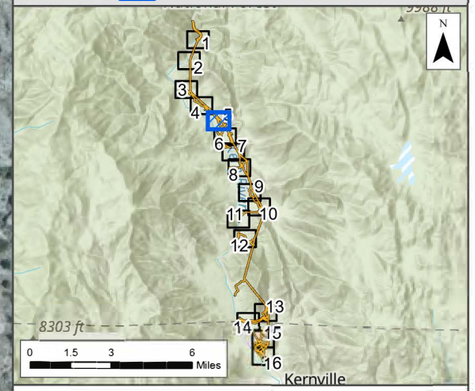

FERC Project Boundary
Facilities
Not Passable Road

Access Route Condition
Good
Good/Fair
Fair

Culvert Condition
Concern Likely
No Apparent Concern
Potential Concern

N
0 160 320 640
Feet

Access Route Conditions

Project:

Sheet 5 of 16

SCE Kern River No. 3

ERM
SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

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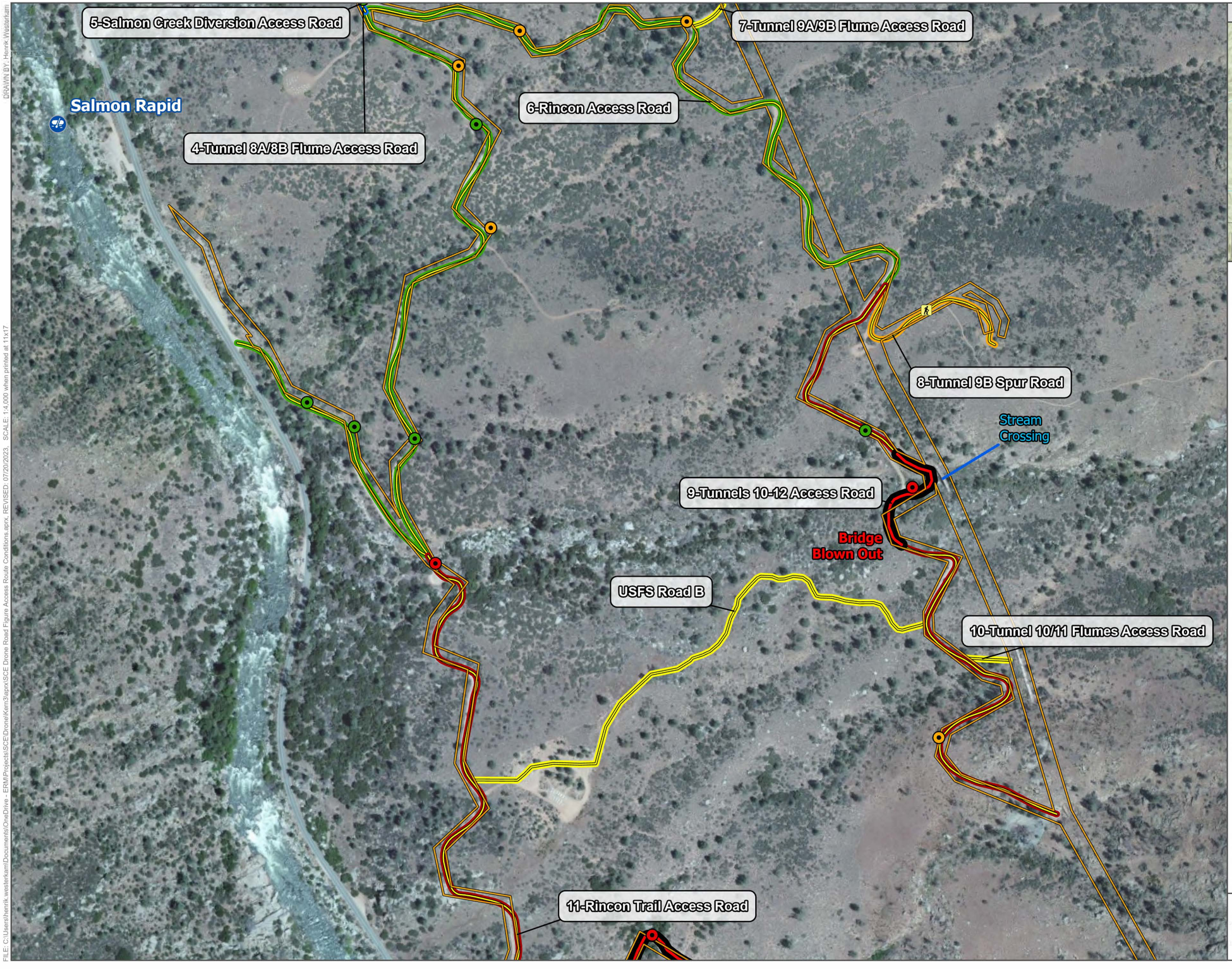

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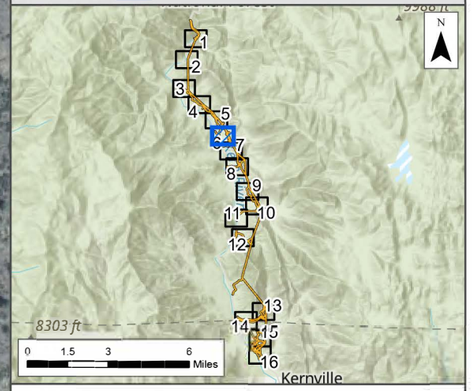

FERC Project Boundary

Put-in/Take-out Sites

Not Passable Road

Sequoia NF Recreation Sites

Day Hiking

Access Route Condition

Good

Good/Fair

Fair

Poor/Fair

Poor

Culvert Condition

Concern Likely

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 6 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON

Energy for What's Ahead

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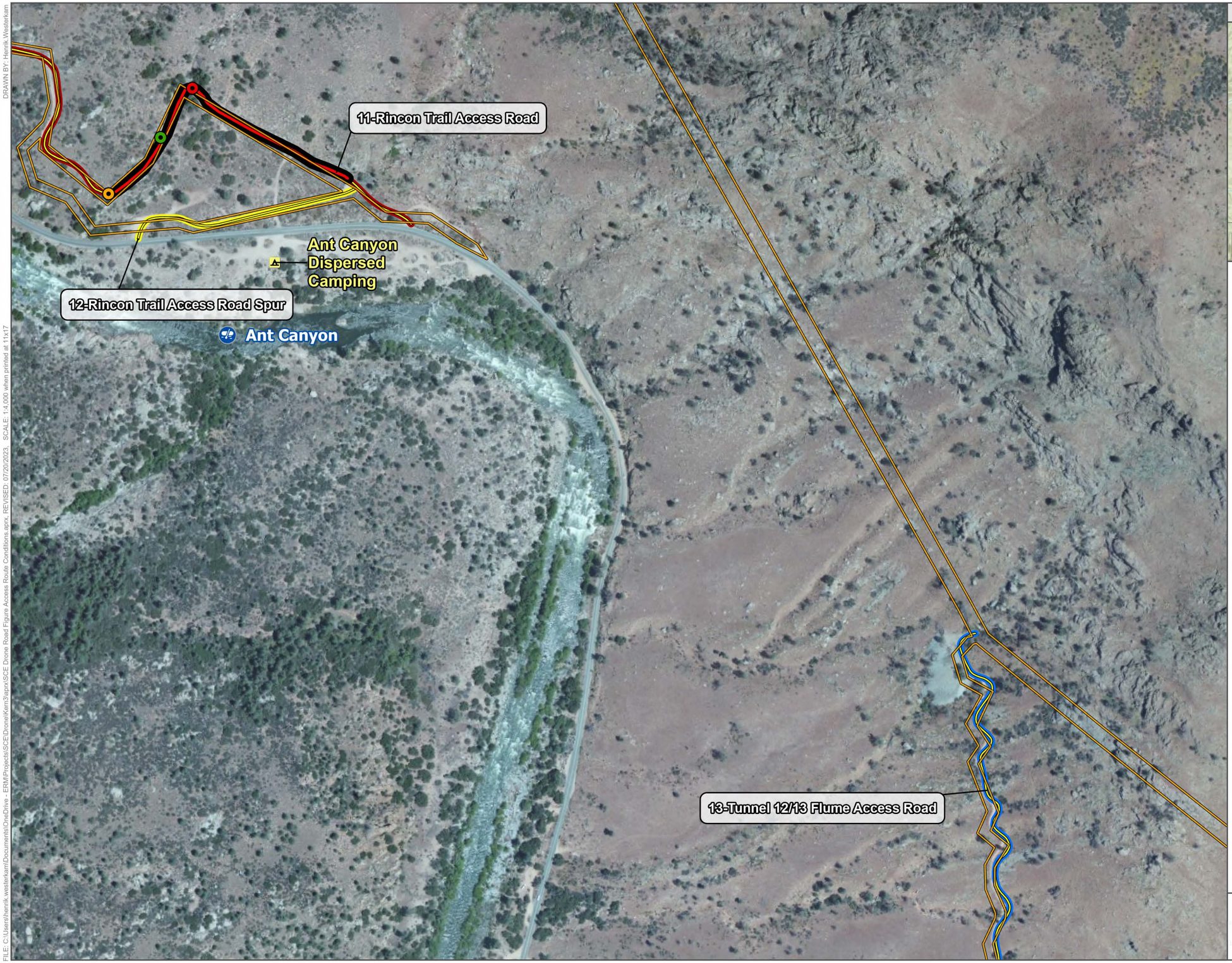

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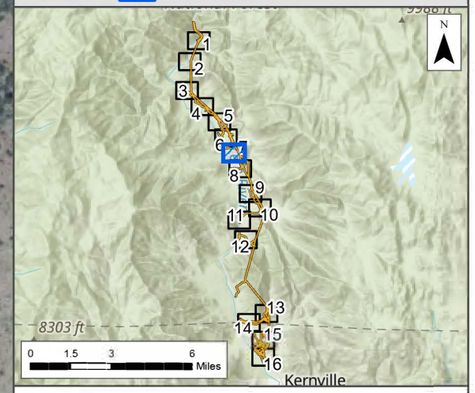

FERC Project Boundary
Put-in/Take-out Sites
Not Passable Road

Sequoia NF Recreation Sites
Campground Camping

Access Route Condition
Good/Fair
Fair
Poor

Culvert Condition
Concern Likely
No Apparent Concern
Potential Concern

N

0 160 320 640
Feet

Access Route Conditions

Project:

Sheet 7 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

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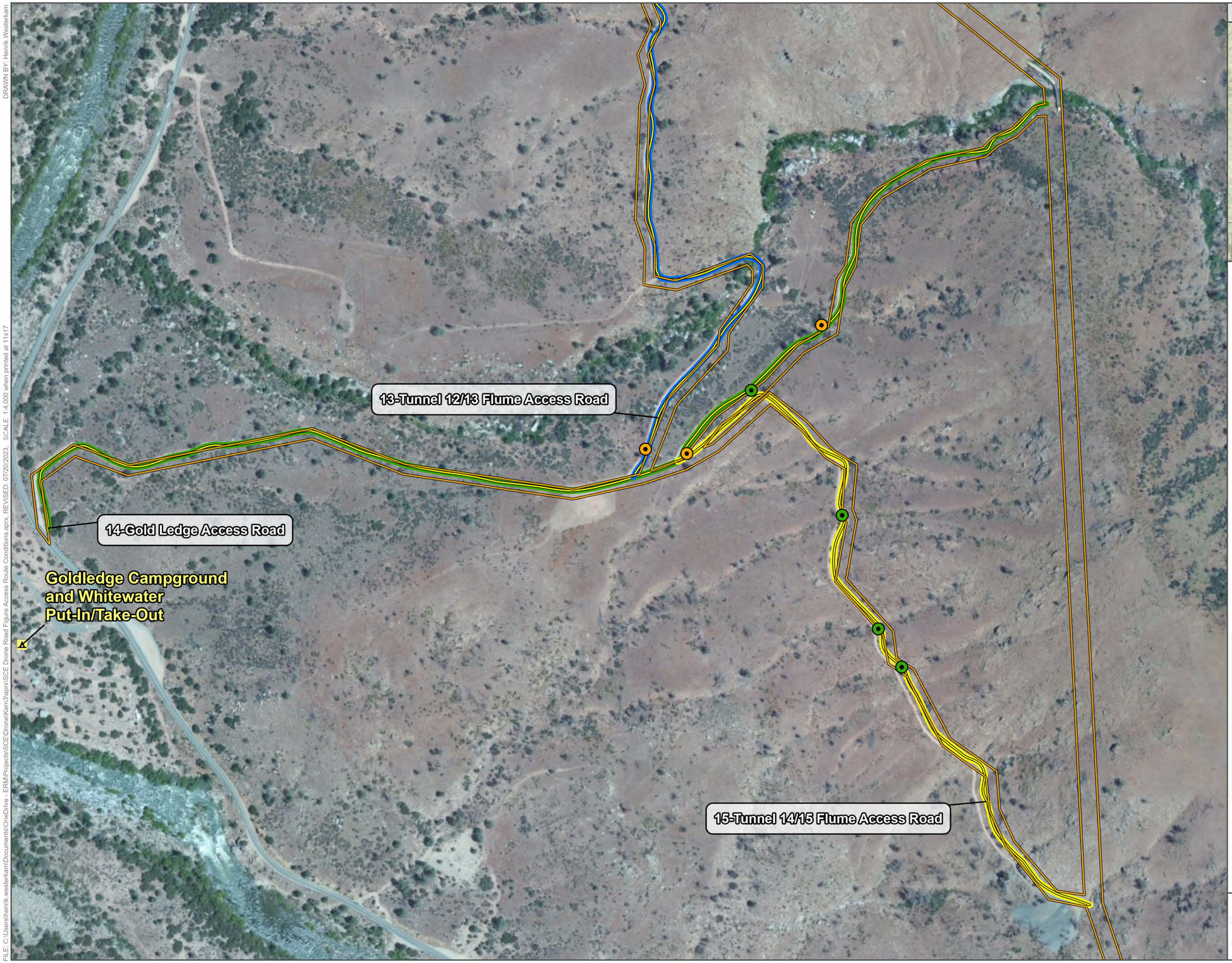

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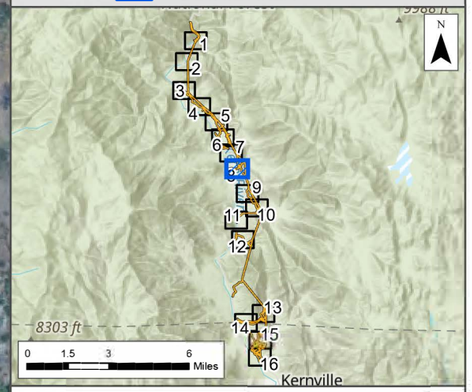

FERC Project Boundary

Sequoia NF Recreation Sites

Campground Camping

Access Route Condition

Good

Good/Fair

Fair

Culvert Condition

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 8 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON Energy for What's Ahead

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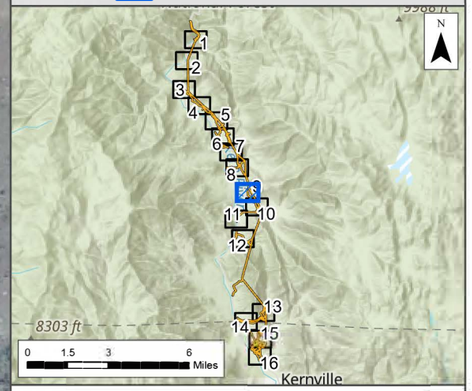

FERC Project Boundary

Sequoia NF Recreation Sites

Campground Camping

Access Route Condition

Good

Culvert Condition

No Apparent Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 9 of 16

SCE Kern River No. 3

ERM

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Energy for What's Ahead

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16-Tunnel 16/17 Flume Access Road

17-Corral Creek Flumes North Access Road

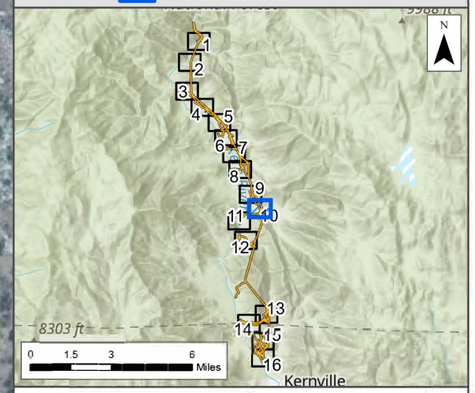
Stream Crossing

Corral Creek Diversion Dam & Pipeline

18-Corral Creek Diversion Access Road

19-Corral Creek Flumes South Access Road

DETAIL AREA



FERC Project Boundary

Facilities

Access Route Condition

Good

Culvert Condition

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

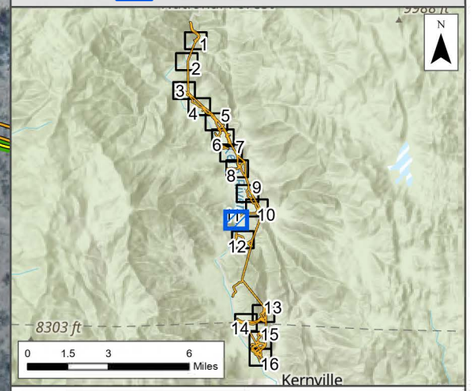
Sheet 10 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

DETAIL AREA



FERC Project Boundary

Put-in/Take-out Sites

Access Route Condition

Good

Culvert Condition

No Apparent Concern

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 11 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

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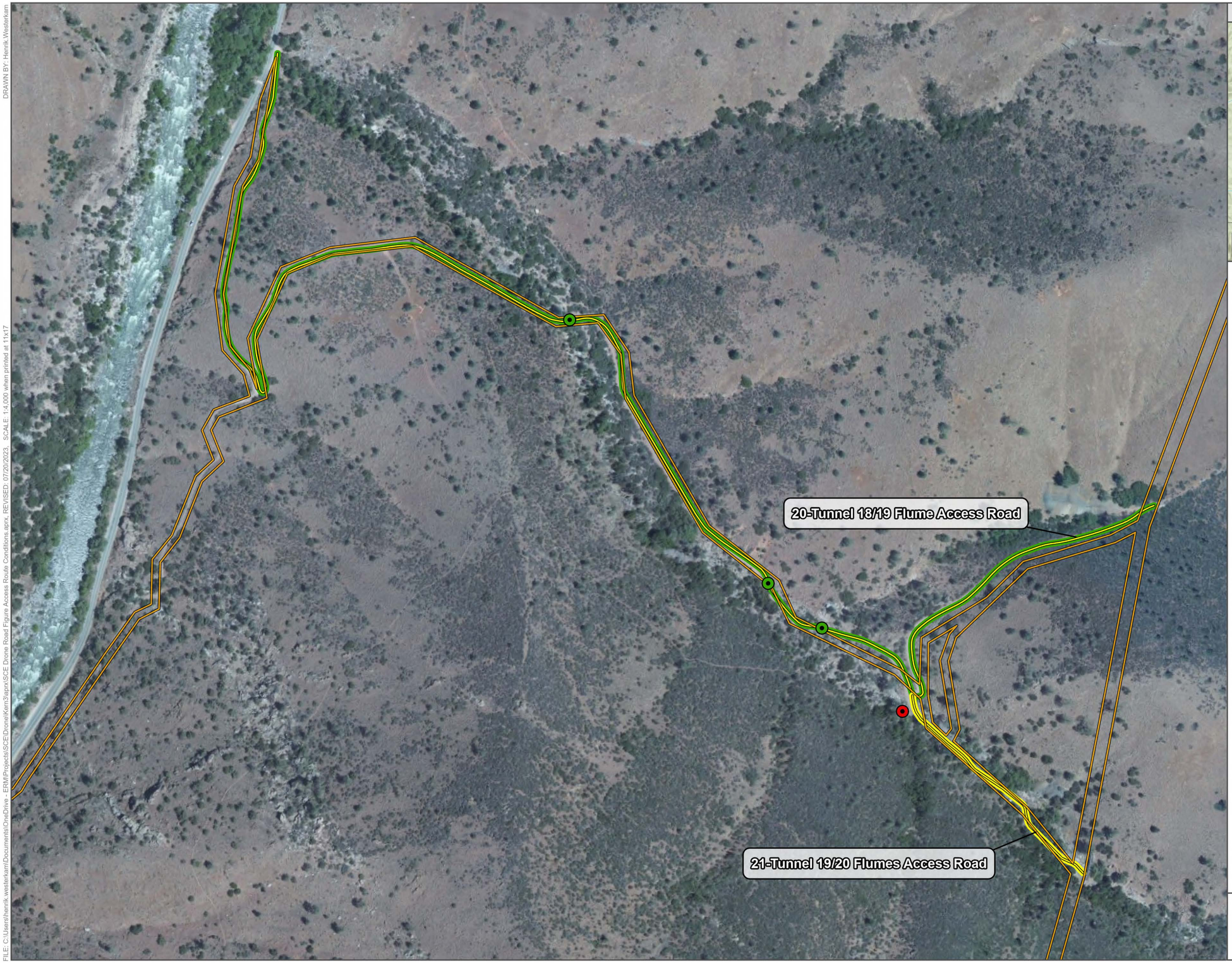

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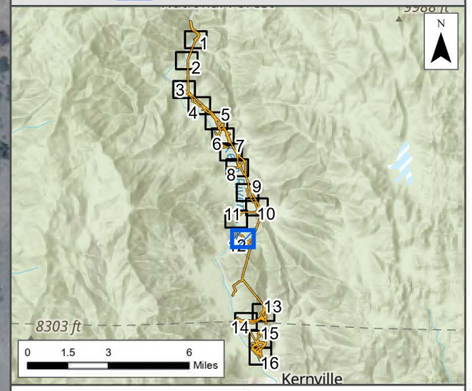

FERC Project Boundary

Access Route Condition

- Good
- Fair

Culvert Condition

- Concern Likely
- No Apparent Concern

N

0 160 320 640
Feet

Access Route Conditions

Project:

Sheet 12 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

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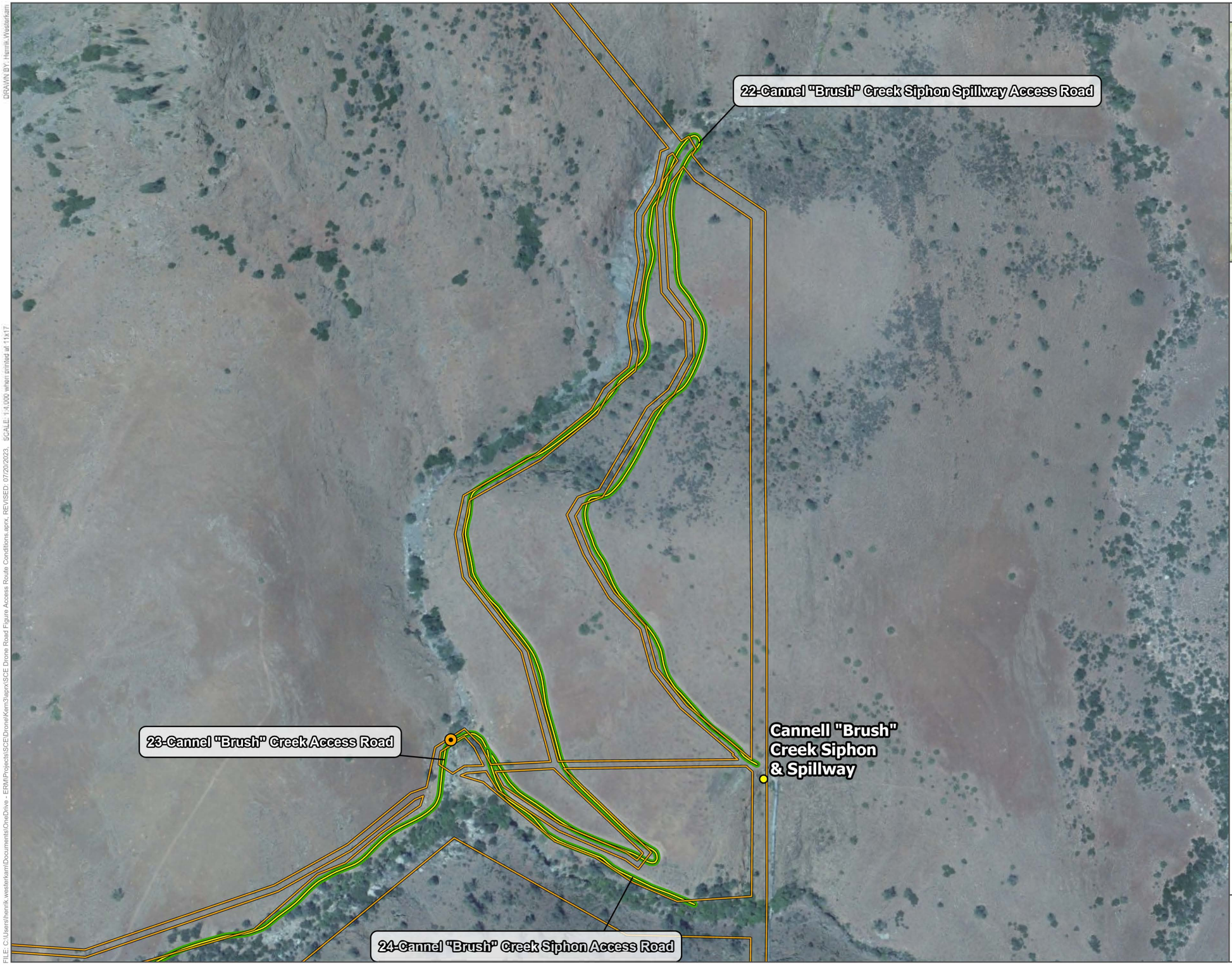

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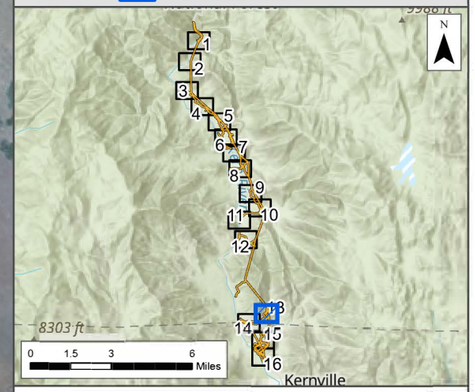

FERC Project Boundary

Facilities

Access Route Condition

Good

Culvert Condition

Potential Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 13 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON Energy for What's Ahead

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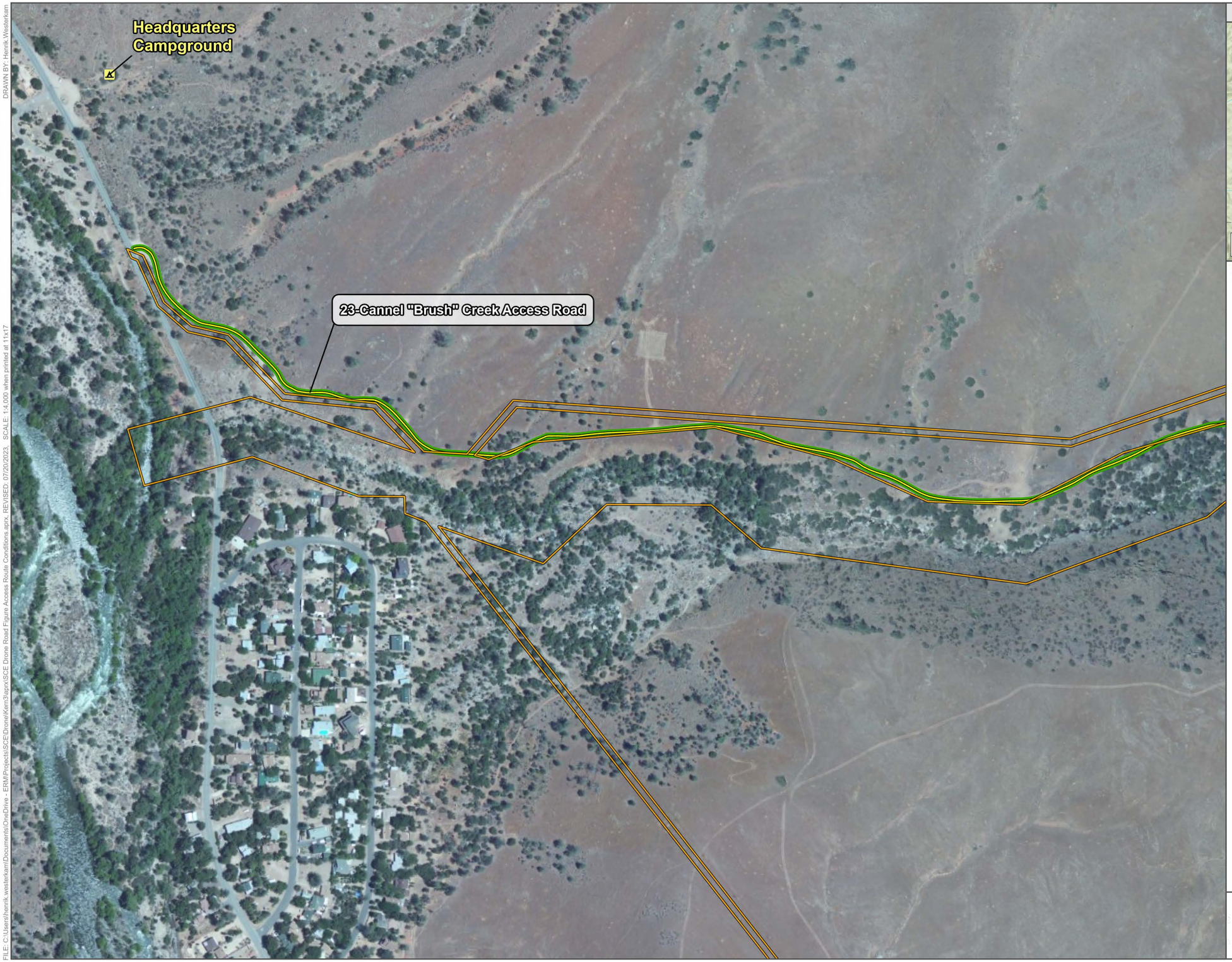

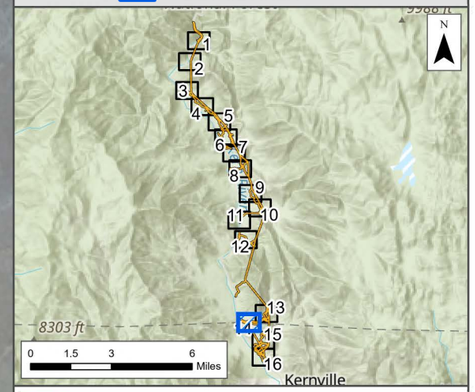

FERC Project Boundary

Sequoia NF Recreation Sites

Campground Camping

Access Route Condition

Good

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 14 of 16

SCE Kern River No. 3

ERM

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Energy for What's Ahead

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25-Kern River No. 3 Forebay Access Road

Spillway

USFS Road C

Forebay & Intake

26-Kern River No. 3 Machine Shop Access Road

27-Kern River No. 3 Penstocks North Access Road

DETAIL AREA

9986 ft

8303 ft

0 1.5 3 6 Miles

Kernville

FERC Project Boundary

Vehicle Access Gate

Facilities

Access Route Condition

Good

Fair

Poor/Fair

Culvert Condition

Concern Likely

No Apparent Concern

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 15 of 16

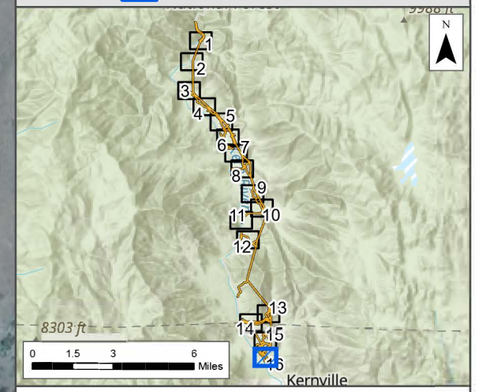
SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON

Energy for What's Ahead

DETAIL AREA



FERC Project Boundary

Vehicle Access Gate

Put-in/Take-out Sites

Facilities

Sequoia NF Recreation Sites

Boating - Non-Motorized

Access Route Condition

Good

Fair

Poor/Fair

N

0 160 320 640

Feet

Access Route Conditions

Project:

Sheet 16 of 16

SCE Kern River No. 3

ERM

SOUTHERN CALIFORNIA EDISON Energy for What's Ahead

DRAWN BY: Henrik.Westerkam

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APPENDIX D
KR3 VEHICLE SPOT COUNT DATA FORM

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Kern River No. 3 Relicensing
Project Road Use Information and Incidental Public Observations

Road ID	SCE Road Name	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs
1	Sandbox Access Road							
2	Tunnel 1/4 Flume Access Road							
3	Tunnels 5-8A Access Road (north of Adit 6/7)							
3	Tunnels 5-8A Access Road (south of Adit 6/7)							
4	Tunnel 8A/8B Flume Access Road							
A	Mtn Hwy to Tunnel 8A/8B (NOT an SCE road, alt access road as Salmon Ck crossing not passable)							
5	Salmon Creek Diversion Access Road							
6	Rincon Access Road (primary public road to trailhead)							
7	Tunnel 9A/9B Flume Access Road							
8	Tunnel 9B Spur Road							
9a	Tunnels 10-12 Access Road (trailhead spur to creek crossing - road not drivable)							
B	4WD Road to access Tunnel 10-12 (NOT an SCE road at this time)							
10	Tunnel 10/11 Flumes Access Road							
9b	Tunnels 10-12 Access Road (south end from proposed road B to Tunnel 12)							
11	Rincon Trail Access Road (turnoff from Rincon Access Rd to proposed Rd B; remainder not drivable)							
12	Tunnel 12/13 Flume Access Road (not drivable)							
13	Gold Ledge Access Road (road to the north)							
14	Tunnel 14/15 Flume Access Road (primary road from Mtn Hwy)							
15	Tunnel 16/17 Flume Access Road (road to the south)							

Kern River No. 3 Relicensing
Project Road Use Information and Incidental Public Observations

Road ID	SCE Road Name	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs	Date/# of Cars Obs
16	Corral Creek Flume North Access Road							
17	Corral Creek Diversion Access Road							
18	Corral Creek Flume South Access Road							
19	Tunnel 18/19 Flume Access Road							
20	Tunnel 19/20 Flume Access Road							
21	Cannel Creek Siphon Spillway Access Road							
22	Cannel Creek Siphon Spillway Access Road (junction to top)							
23	Cannel Creek Siphon Access Road (from Mtn Hwy)							
24	Cannel Creek Siphon Access Road (junction to bottom)							
25	Kern River No. 3 Machine Shop Access Road							
26	Kern River No. 3 Penstocks North Access Road (Gated)							
27	Kern River No. 3 Penstocks South Access Road							
C	Upper Spillway Channel Access (from Road 27)							
28	Chlorinator House Access Road							
29	Kern River No. 3 Powerhouse Access Road							
30	Kern River No. 3 Campus Access Road (main road to access PH rec site)							
31	Kern River South Garage Access Road							

Comments or Notes

APPENDIX E
PHOTO LOG

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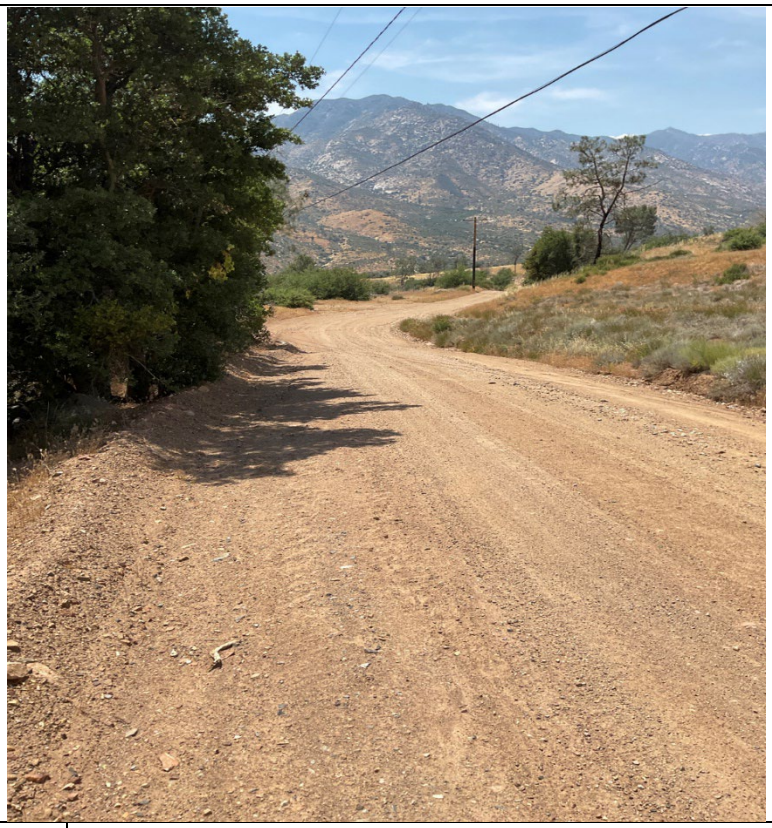


Photograph: 1	Example of Project Access Road in “Good Condition”; no ruts or potholes, no vegetation in the road, drainage features were in good condition. Cannel Brush Creek Access Road, facing south.

Photograph: 2	Example of Project Access Road in “Good Condition”, with very minor vegetation concern. Tunnel 16/17 Access Road, facing south.

Photograph: 3	Example of Project Access Road in “Good Condition”. Kern River No. 3 Powerhouse Access Road, facing east.

Photograph: 4	Example of road in “poor condition”; erosion gullies, vegetation growing in road, multiple rills. West side of Rincon Trail Access Road, facing west.

Photograph: 5	Example of road in “Fair Condition. Note the rills and some overgrown vegetation. North Penstocks Access Road, facing east.

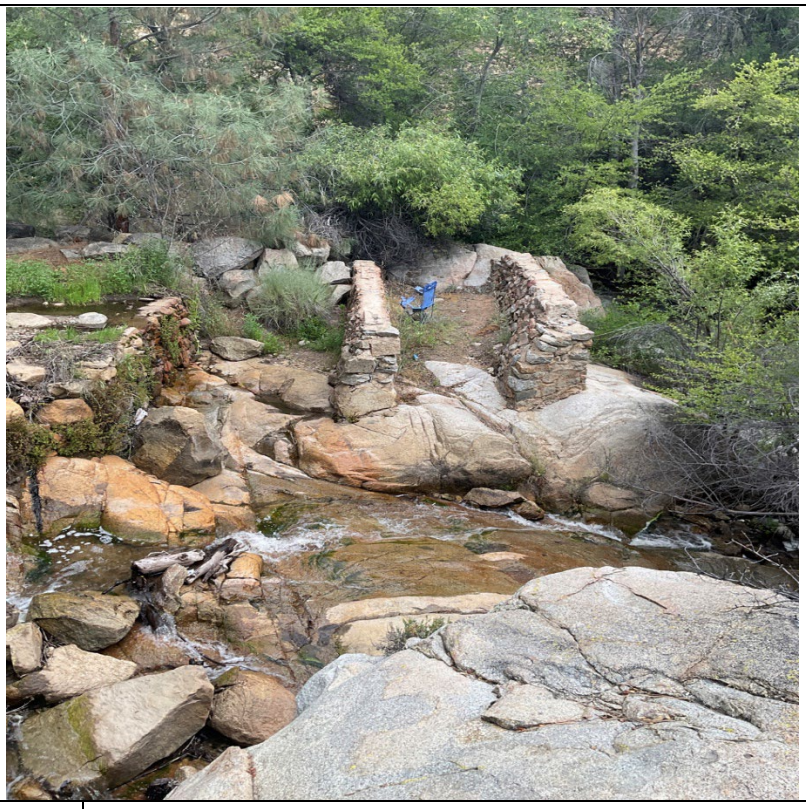
Photograph: 6	Example of culvert categorized as “No Apparent Concern”, inlet side, facing west.

Photograph: 7	Example of culvert categorized as “Potential Concern”, due to blockage inlet side, facing north.

Photograph: 8	Example of culvert categorized as “Concern Likely”, inlet side, facing northeast.

Photograph: 9	Example of unmarked, non-functioning culvert. Rincon Trail Access Road, facing west.

Photograph: 10	Section of Rincon Access Trail Road that is not passable due to erosion concerns. On the east side of Rincon Access Trail road, facing west.



Photograph: 11	Where bridge used to be, Tunnel 8A/8B Flume Access Road, facing south. There are little erosion concerns as stream banks are protected by boulders and vegetation, dissipating the water's energy.

Photograph: 12	Erosion concern, where bridge used to be at Tunnels 10-12 Access Road. Facing northwest.

Photograph: 13	Where bridge used to be at Tunnels 10-12 Access Road. Facing southeast.

Photograph: 14	Example of erosion rill, the most common erosion feature observed in the field.

Photograph: 15	Example of gated SCE Project Road, restricting public access. All SCE gates were locked and in good working condition.

Photograph: 16	Example of SCE sign that will need to be replaced.

Photograph: 17	Example of sheet erosion due to run-off from Sierra Highway. Sandbox Access Road, facing southwest.

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