

POTENTIAL RESOURCE ISSUES:

- Adequate maintenance of Project roads and trails used by Southern California Edison Company (SCE) to access the Kaweah Project (Kaweah Project or Project) facilities; and
- Protection of environmental and cultural resources during maintenance activities.

PROJECT NEXUS:

- SCE is responsible for maintaining Project roads and trails.

POTENTIAL LICENSE CONDITION:

- Develop a Transportation System Management Plan (TSMP) that specifies SCE's responsibilities regarding the management and maintenance of Project roads and trails, including resource protection.

STUDY OBJECTIVES:

- Inventory and assess condition of Project roads and trails.
- Characterize SCE's use of Project roads and trails, including season of use and level of use.
- Characterize SCE's current maintenance practices and responsibilities.
- Identify existing agreements related to Project roads and trails (e.g., maintenance agreements, easements, rights of way, special use permits).
- Identify the location, condition, use, and maintenance of helicopter landing sites utilized for routine operation and maintenance of the Project.

EXTENT OF STUDY AREA:

The Study Area includes:

- All Project roads and trails located within the existing Federal Energy Regulatory Commission (FERC) Project boundary and those outside the existing FERC Project boundary used for operation and/or maintenance of the Project.
- For surveys along Project roads or trails that are located outside of the current FERC Project Boundary and on private land, SCE will take the following steps to obtain approval to survey on private property:
 - Notify the landowner of Project relicensing and request authorization to enter the property to conduct surveys.
 - If authorization is obtained, SCE will complete surveys as described in this technical study plan.
 - If authorization is not obtained, SCE will not complete surveys at these locations.

In cases where SCE has obtained permission to survey on private lands, the survey area will be limited to the immediate area surrounding the road or trail, plus a defined buffer area, depending upon feature type. The Project roads and trails included in the Study Area are identified on Table LAND 1-1 and are shown on Map LAND 1-1a-g.

Note that the Study Area does not include roads and trails located within the boundaries of the Sequoia and Kings Canyon National Park (SKCNP). Roads and trails located within the SKCNP are operated and maintained under a special use permit issued by the National Park Service and are not under FERC jurisdiction.

STUDY APPROACH:

Project Roads and Trails

The Project roads and trails cross private land and land under the jurisdiction of the Bureau of Land Management (BLM). For consistency, SCE will inventory and assess all Project roads and trails in accordance with BLM road and trail assessment protocols (e.g., BLM 2006, 2012, 2015). As part of this effort, SCE will:

- Identify and map all Project roads and trails used by SCE to access Project facilities. All maps will be produced using data maintained in a Geographic Information System (GIS) that meets current BLM mapping standards, and will include land ownership.
- Consult with the BLM to determine if any of the Project roads and trails have been previously inventoried and assessed by the BLM and included in the BLM's asset management system. Updated data and information about roads and trails that is developed as part of this study will be provided to the BLM, as appropriate.
- Conduct an assessment to characterize the current condition of Project roads and trails, and their associated drainage features. The inventory and assessment will include the following information for each asset (road, primitive road, or trail) or asset segment:
 - Asset type (road, primitive road, or trail);
 - Latitude, longitude, meridian, township, range, section, aliquot part;
 - Land ownership/jurisdiction;
 - Functional class;
 - Route, road, or spur number (and common name, if applicable);
 - Beginning and end points, and overall length;
 - Segments, if applicable;
 - Maintenance responsibility;
 - Maintenance level;
 - Condition;
 - Surface type (e.g., paved, gravel, dirt);
 - Average width;
 - Overall road condition, including identification of issues pertaining to condition such as potholes, ruts, loose aggregate, missing aggregate, cracking, debris, and excessive vegetation;
 - Location, size, and condition of culverts and other drainage features;
 - Location of bridge crossings;
 - Location and condition of erosion control features;

- Estimated useful remaining life span of surface treatments and erosion and drainage features;
- Location and condition of safety, traffic control, and informational signs and access control features such as gates and other closure methods;
- Potential natural resource issues that may occur along Project roads and trails, such as stream crossings and riparian areas; and
- Potential traffic safety concerns such as blind spots, poor sight distance, inadequate signage, and hazard trees.
- Characterize SCE’s use of Project roads and trails, including season of use and level of use.
- Characterize other uses of Project roads and trails.
- Characterize SCE’s maintenance practices, responsibilities, and schedules.
- Identify existing agreements (e.g., maintenance agreements, easements, rights of way, special use permits) between SCE, the BLM, Tulare County, and private property owners, as applicable, including associated termination dates.

Helicopter Landing Sites

- Identify and map the location, and document the condition, of helicopter landing sites that are used for routine operation and maintenance of the Project, including sites used for snow surveys and other data gathering activities.
- Characterize the frequency and seasonality of their use, and describe any associated Project-related maintenance activities.

SCHEDULE:

Date	Activity
November 2017–March 2018	Consult with stakeholders and compile existing resource information
April–June 2018	Conduct field surveys
July–October 2018	Analyze data and prepare draft report
November 2018	Distribute draft report to the stakeholders
December 2018–February 2019	Stakeholders review and provide comments on draft report (90 days)
March–May 2019	Resolve comments and prepare final report
August 2019	Distribute final report in Draft License Application

REFERENCES:

U.S. Bureau of Land Management (BLM). 2006. Travel and Transportation Management. Planning and Conducting Route Inventories. Technical Reference 9113-1.

_____. 2012. H-9115-2 – Primitive Roads Inventory and Condition Assessment Guidance and Instructions Handbook. Released March 6, 2012.

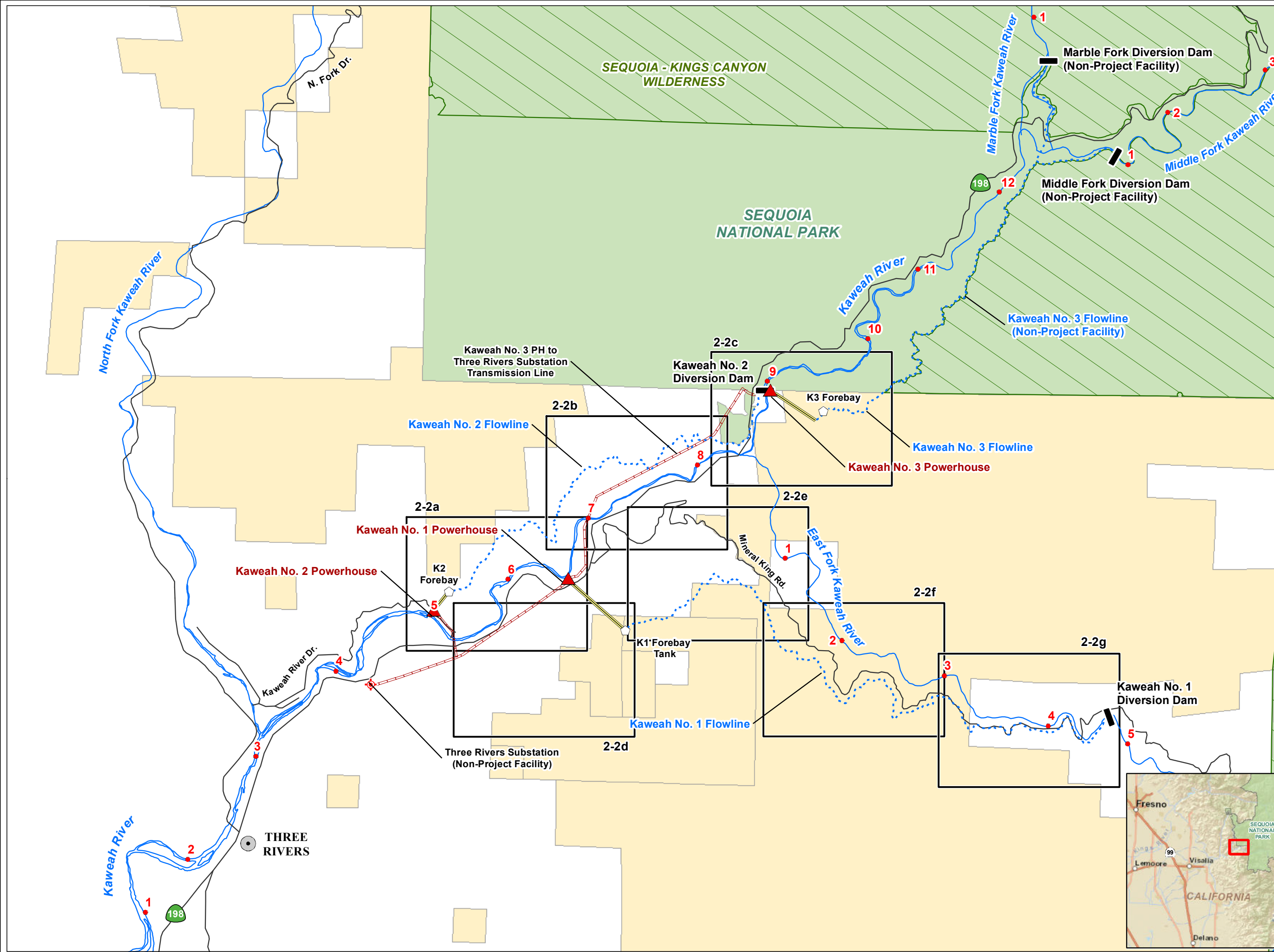
_____. 2015. H-9113-2 – Road Inventory and Condition Assessment Guidance & Instructions. Released May 4, 2015.

TABLE

Table LAND 1-1. Description of Project Access Roads and Trails.


Name	Start	End	Length - Ft (Approximate)	Width - Ft (Approximate)	Surface (Unconfirmed)	Comments
Project Access Roads						
Kaweah No. 1 Development						
Kaweah No. 1 Flowline Access Road - Bear Canyon	Mineral King Road	Kaweah No. 1 Flowline	165	12	Paved	Bear Canyon Road
Kaweah No. 1 Flowline Access Road - Grapevine	Mineral King Road	Kaweah No. 1 Flowline	1,662	12	Aggregate	Grapevine Road
Kaweah No. 1 Flowline Access Road - Lower Pine	Mineral King Road	Kaweah No. 1 Flowline	1,023	16	Aggregate	Lower Pine Road
Kaweah No. 1 Flowline Access Road - Lumberyard	Mineral King Road	Kaweah No. 1 Flowline	300	16	Aggregate	Lumberyard Road
Kaweah No. 1 Flowline Access Road - Slick Rock	Mineral King Road	Kaweah No. 1 Flowline	310	16	Aggregate	Slick Rock Road
Kaweah No. 1 Flowline Access Road - Summit	Mineral King Road	Kaweah No. 1 Flowline	2,554	16	Paved/Aggregate	Summit Road
Kaweah No. 1 Flowline Access Road - Unnamed	Mineral King Road	Kaweah No. 1 Flowline	135	12	Native	Private but used - non-SCE gate
Kaweah No. 1 Flowline Access Road - Upper Pine	Mineral King Road	Kaweah No. 1 Flowline	724	16	Aggregate	Upper Pine Road
Kaweah No. 1 Forebay Road	Craig Ranch Road	Kaweah No. 1 Flowline	6,125	12	Aggregate	
Kaweah No. 1 Intake Road	Mineral King Road	Kaweah No. 1 Flowline	1,155	12	Paved	
Kaweah No. 2 Development						
Kaweah No. 2 Flowline Access Road - Canal 2 Brushout Grid	Canyon View Drive Spur	Kaweah No. 2 Flowline	90	12	Native	Brushout grid access
Kaweah No. 2 Flowline Access Road - Canal 4 East	Kaweah No. 2 Flowline East Access Road	Kaweah No. 2 Flowline	386	12	Native	Canal 4 access
Kaweah No. 2 Flowline Access Road - Canal 4 West	Kaweah No. 2 Flowline East Access Road	Kaweah No. 2 Flowline	688	12	Native	Canal 4 access
Kaweah No. 2 Flowline Access Road - Canal 5	Kaweah No. 2 Flowline East Access Road	Kaweah No. 2 Flowline	1,215	12	Native	Referred to as "Flume 4 Jumpup"
Kaweah No. 2 Flowline Access Road - Canal 6 East	Kaweah No. 2 Flowline East Access Road	Kaweah No. 2 Flowline	341	12	Native	
Kaweah No. 2 Flowline Access Road - Canal 6 West	Kaweah No. 2 Flowline East Access Road	Kaweah No. 2 Flowline	167	12	Native	
Kaweah No. 2 Flowline Access Road - Flume 8	Kaweah No. 2 Flowline Center Access Road	Kaweah No. 2 Flowline	277	12	Native	
Kaweah No. 2 Flowline Access Road - Flume 11	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Flowline	195	16	Native	Split to access Flume 11
Kaweah No. 2 Flowline Access Road - Open Siphon Grids	Kaweah No. 3 Powerhouse Road	Kaweah No. 2 Flowline	301	24	Aggregate	
Kaweah No. 2 Flowline Access Road - Red Barn	Dinely Road	Kaweah No. 2 Flowline	703	20	Paved	
Kaweah No. 2 Flowline Center Access Road	Dinely Road	Dinely Road	4,642	16	Paved/Aggregate/Native	Access Road - Connects to Dinely Road on both ends
Kaweah No. 2 Flowline East Access Road	Dinely Road	Canyon View Drive	5,751	12	Paved/Aggregate	
Kaweah No. 2 Flowline West Access Road	Kaweah River Drive	Kaweah No. 2 Flowline Access Road - Flume 11	6,331	16	Paved/Aggregate/Native	
Kaweah No. 2 Forebay Road	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Forebay	1,561	16	Paved/Aggregate/Native	Split from Kaweah No. 2 West Access Road to Forebay
Kaweah No. 2 Intake Road	Kaweah No. 3 Powerhouse Road	Kaweah No. 2 Intake	603	16	Paved	
Kaweah No. 2 Penstock Road	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Penstock	444	12	Paved/Native	
Kaweah No. 2 Powerhouse Road	Kaweah River Drive	Kaweah No. 2 Powerhouse	1,068	16	Paved	
Kaweah No. 3 Development						
Kaweah No. 3 Forebay Road	Kaweah No. 3 Powerhouse Road	Kaweah No. 3 Forebay	8,704	12	Aggregate	
Kaweah No. 3 Powerhouse Road	State Highway 168	Kaweah No. 3 Powerhouse	1,165	20	Paved	
TOTAL:			48,785			
Project Trails						
Kaweah No. 1 Development						
Kaweah No. 1 Flowline Access Trail - Grand Canyon	Mineral King Road	Kaweah No. 1 Flowline	317	4	Aggregate	Grand Canyon Trail
Kaweah No. 1 Solar Panel Access Trail	Mineral King Road	Kaweah No. 1 Solar Panel	256	4	Native	
Kaweah No. 2 Development						
Kaweah No. 2 Flowline Access Trail - Canal 11	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Flowline	89	4	Native	
Kaweah No. 2 Flowline Access Trail - Canal 13	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Flowline	94	4	Native	
Kaweah No. 2 Flowline Access Trail - Canal 15	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Flowline	114	4	Native	
Kaweah No. 2 Flowline Access Trail - Canal 2	Canyon View Drive Spur	Kaweah No. 2 Flowline	39	4	Native	Canal 2 Footbridge Access Trail
Kaweah No. 2 Flowline Access Trail - Canal 4	Kaweah No. 2 Flowline Access Road - Canal 4 East	Kaweah No. 2 Flowline	52	4	Native	Canal 4 Access Trail
Kaweah No. 2 Flowline Access Trail - Canal 5	Kaweah No. 2 Flowline Access Road - Canal 5	Kaweah No. 2 Flowline	44	4	Native	"Flume 4 Jumpup"
Kaweah No. 2 Flowline Access Trail - Canal 6	Kaweah No. 2 Flowline Access Road - Canal 6 East	Kaweah No. 2 Flowline	40	4	Native	
Kaweah No. 2 Flowline Access Trail - Open Siphon	State Highway 168	Kaweah No. 2 Flowline	86	4	Native	
Kaweah No. 2 Flowline Access Trail - Water User 14	Kaweah No. 2 Flowline West Access Road	Kaweah No. 2 Flowline	49	4	Native	
Kaweah No. 2 Flowline Access Trail - Water User 9	Kaweah No. 2 Flowline Center Access Road	Kaweah No. 2 Flowline	85	4	Native	
Kaweah No. 2 Flowline Access Trail - Wildlife Crossing 2	Kaweah No. 2 Flowline Access Road - Open Siphon Grids	Kaweah No. 2 Flowline	72	4	Native	Wildlife Crossing 2 Access Trail
Kaweah No. 2 Powerhouse River Access Trail	Kaweah No. 2 Powerhouse Road	Kaweah No. 2 Powerhouse River Access	95	4	Native	Kaweah No. 2 Powerhouse River Access
Kaweah No. 3 Development						
Kaweah No. 3 Flowline Access Trail	Kaweah No. 3 Forebay	Sequoia National Park Boundary	2947	4	Native	
TOTAL:			4,379			

MAPS



- ### Facilities
- Powerhouse
 - Diversion
 - Utility
 - Forebay
 - Flowline
 - Penstock
 - Transmission Line
- ### Other Features
- City/Town
 - Highway/Road
 - Watercourse
 - Water Body
 - River Mile
- ### Land Jurisdiction*
- Bureau of Land Management
 - National Park Service
 - Private (Blank)
- *SOURCE: BLM 2012.
Kaweah Project entirely within Tulare County.

- ### Land Management
- National Wilderness Area




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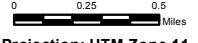
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Map LAND 1-1


Kaweah Project Index Map



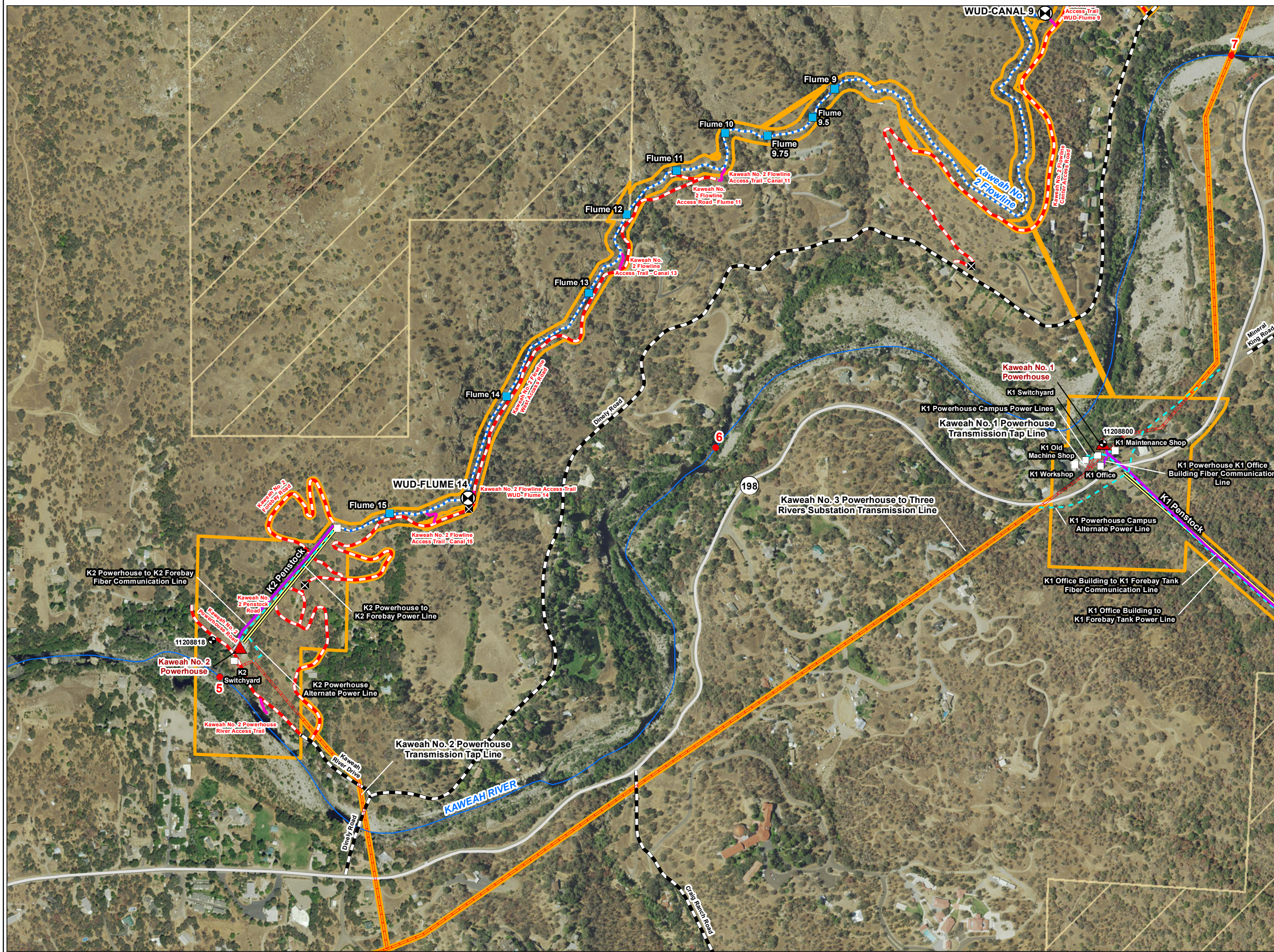
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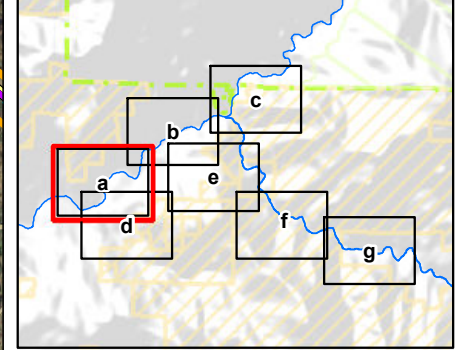
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- ### Facilities
- ▲ Powerhouse
 - Diversion
 - Flowline
 - Penstock
 - Flume Segment
 - Ancillary Facility
 - ⊗ Gage
 - Transmission Line
 - Power Line
 - Communication Line
 - FERC Boundary
- ### Other Features
- Watercourse
 - Water Body
 - ⊗ Water User Diversion
 - River Mile
- ### Transportation
- Project Road
 - Project Trail
 - Non-Project General Access Road
 - ⊗ Gate

- ### Land Jurisdiction*
- Bureau of Land Management
 - Wilderness Area
 - National Park Service

*SOURCE: BLM 2012
Kaweah Project entirely within Tulare County






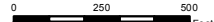
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**Map LAND 1-1a
Kaweah Project**

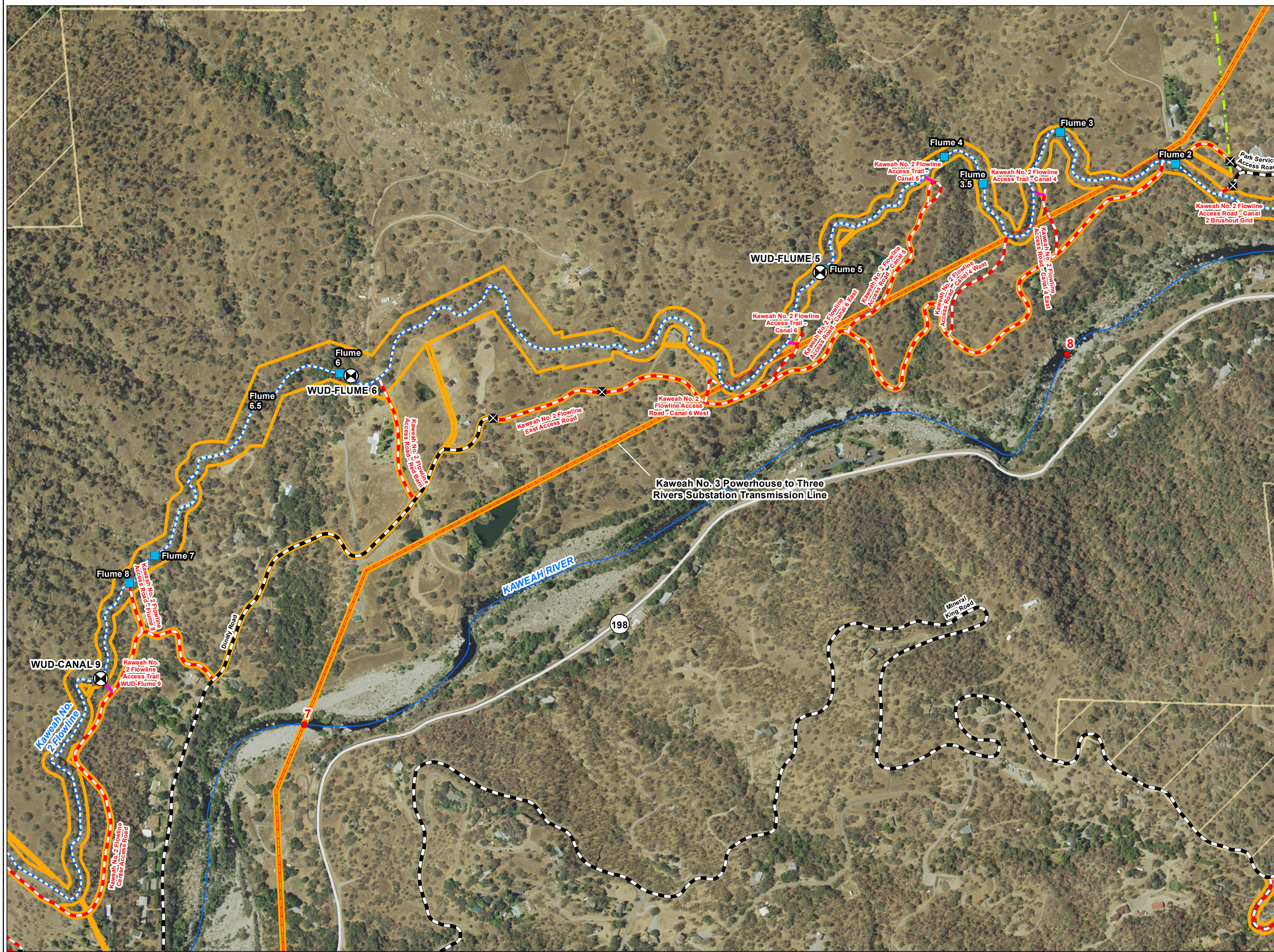


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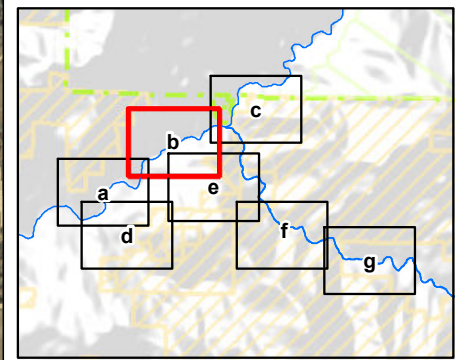
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- Facilities**
- Powerhouse
 - Diversion
 - Flowline
 - Penstock
 - Flume Segment
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 - Gage
 - Transmission Line
 - Power Line
 - Communication Line
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 - Water Body
 - Water User Diversion
 - River Mile
- Transportation**
- Project Road
 - Project Trail
 - Non-Project General Access Road
 - Gate
- Land Jurisdiction***
- Bureau of Land Management
 - Wilderness Area
 - National Park Service

*SOURCE: BLM 2012
Kaweah Project entirely within Tulare County



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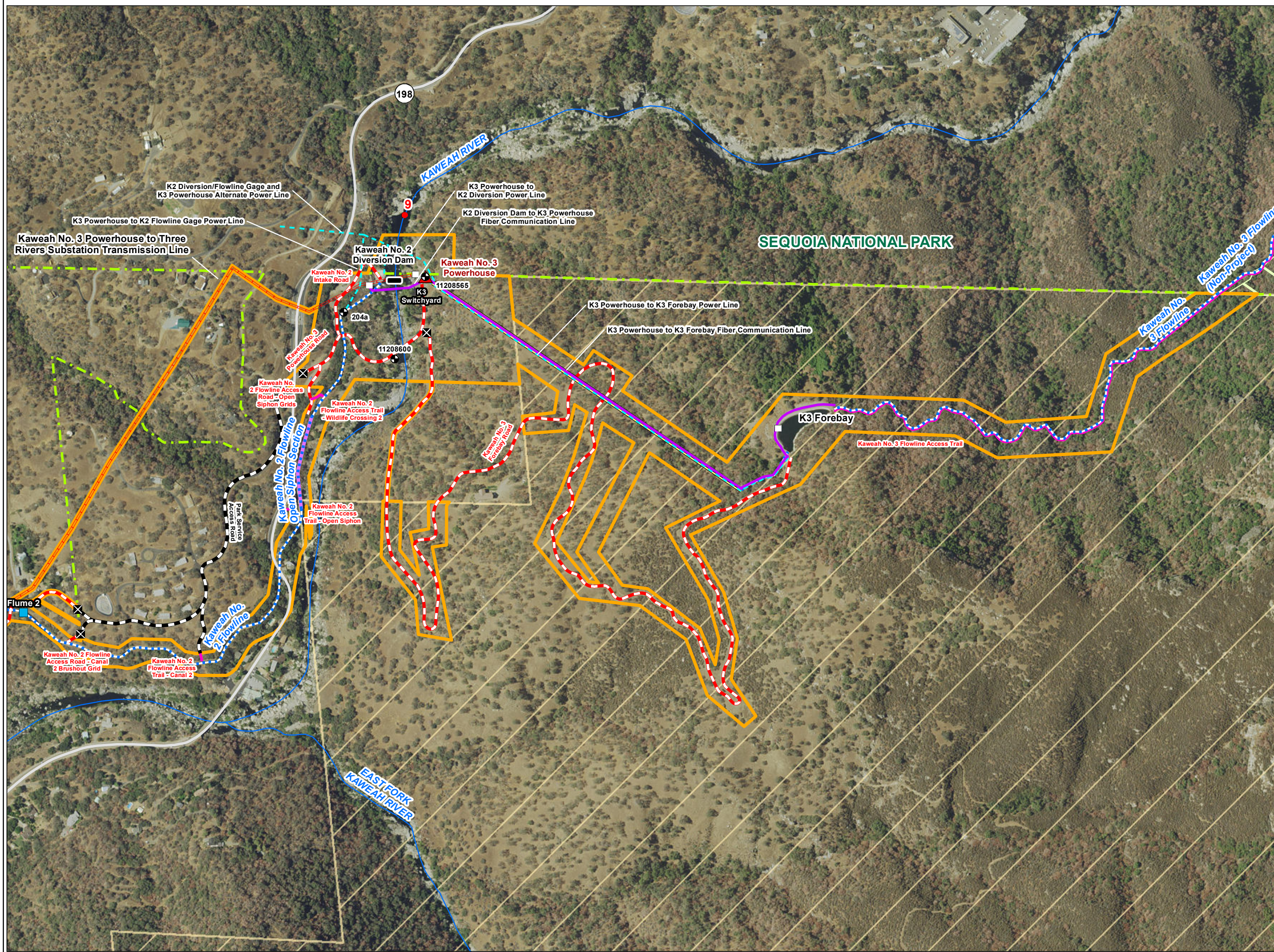
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Map LAND 1-1b
Kaweah Project

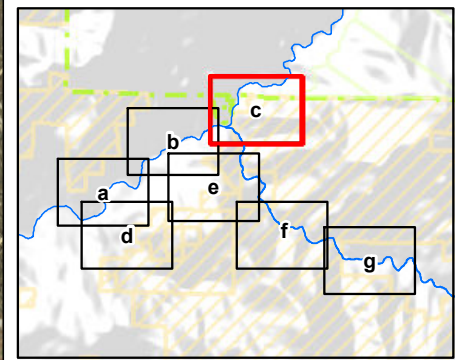
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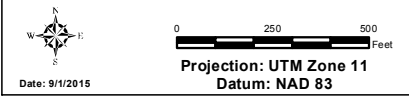
- ### Facilities
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 - ⊗ Gate
- ### Land Jurisdiction*
- Bureau of Land Management
 - Wilderness Area
 - National Park Service

*SOURCE: BLM 2012
Kaweah Project entirely within Tulare County

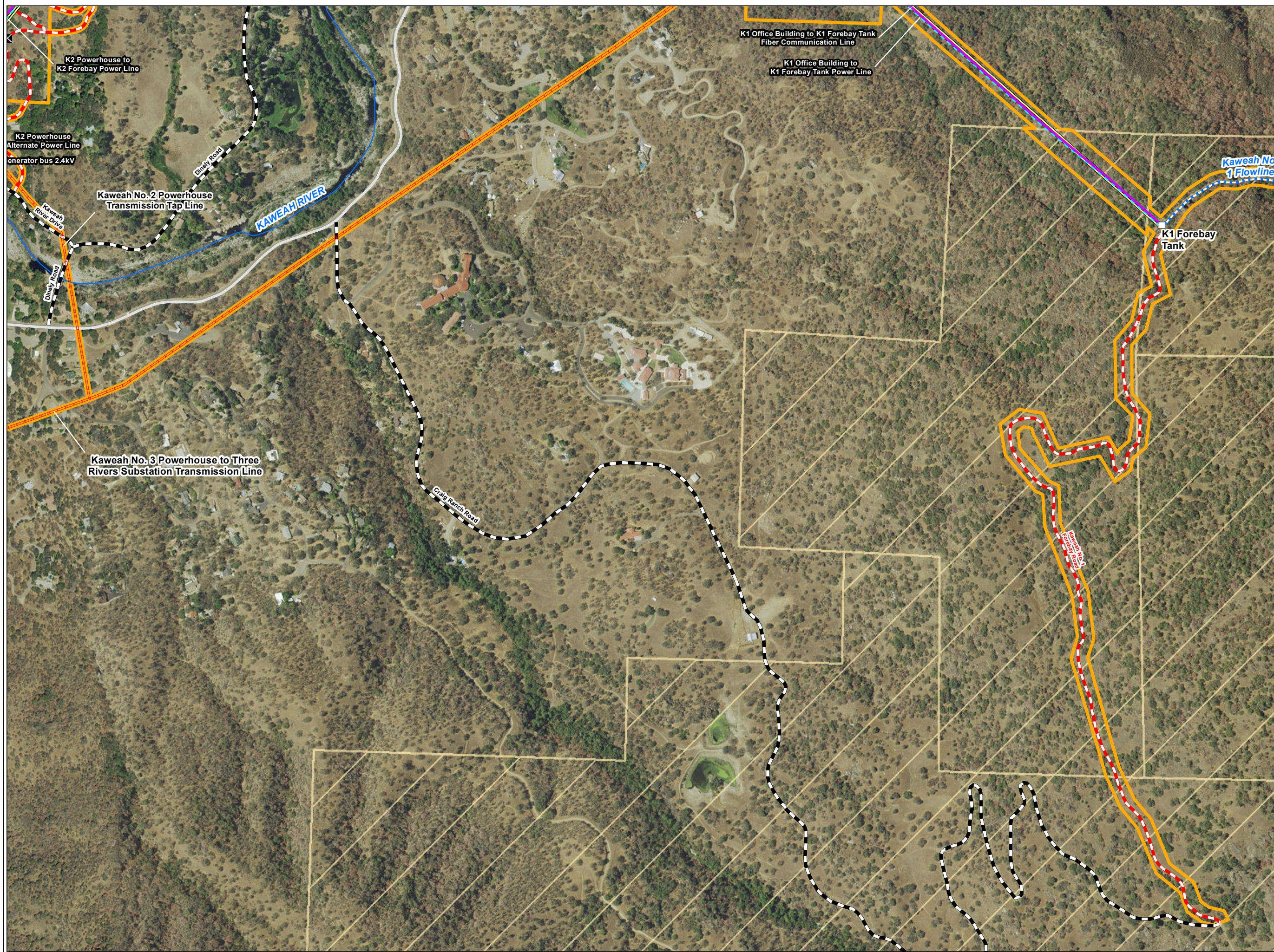


Eastern Hydro Generation

Map LAND 1-1c Kaweah Project

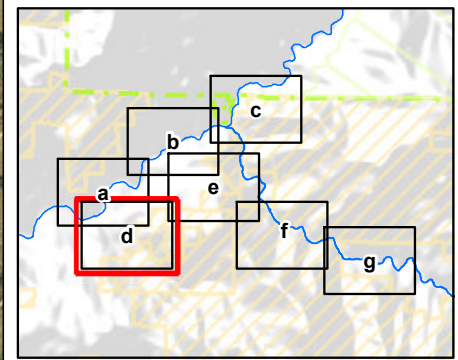



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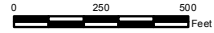
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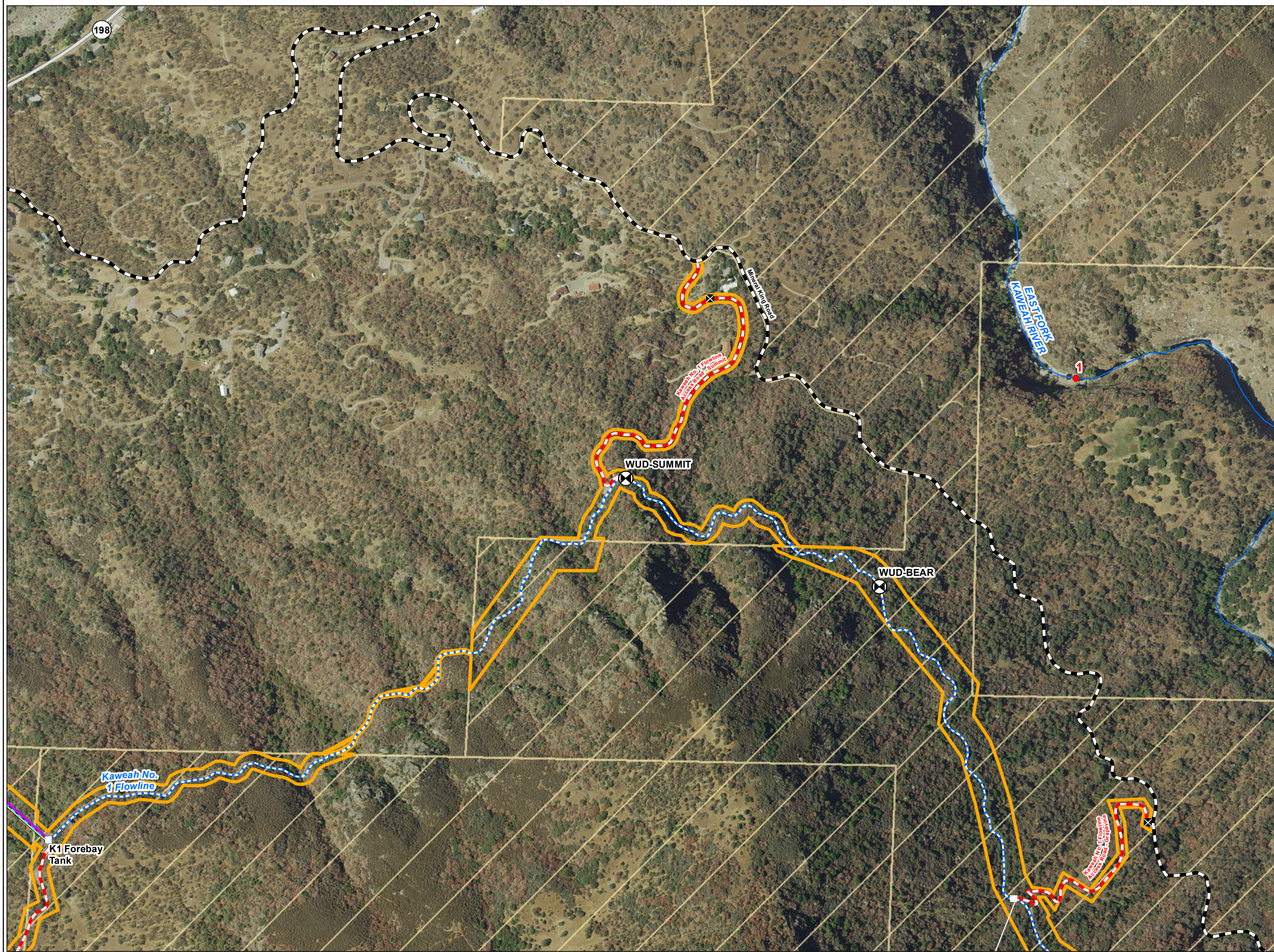
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**Map LAND 1-1d
Kaweah Project**

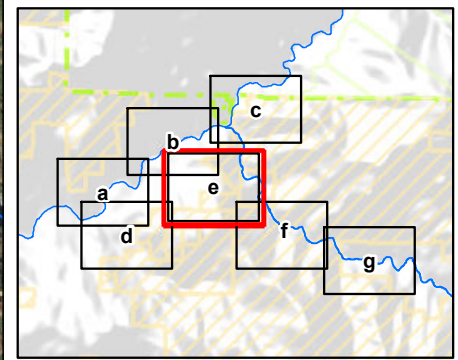
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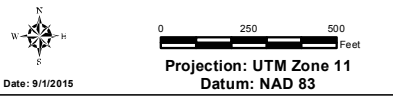
- Facilities**
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*SOURCE: BLM 2012
Kaweah Project entirely within Tulare County

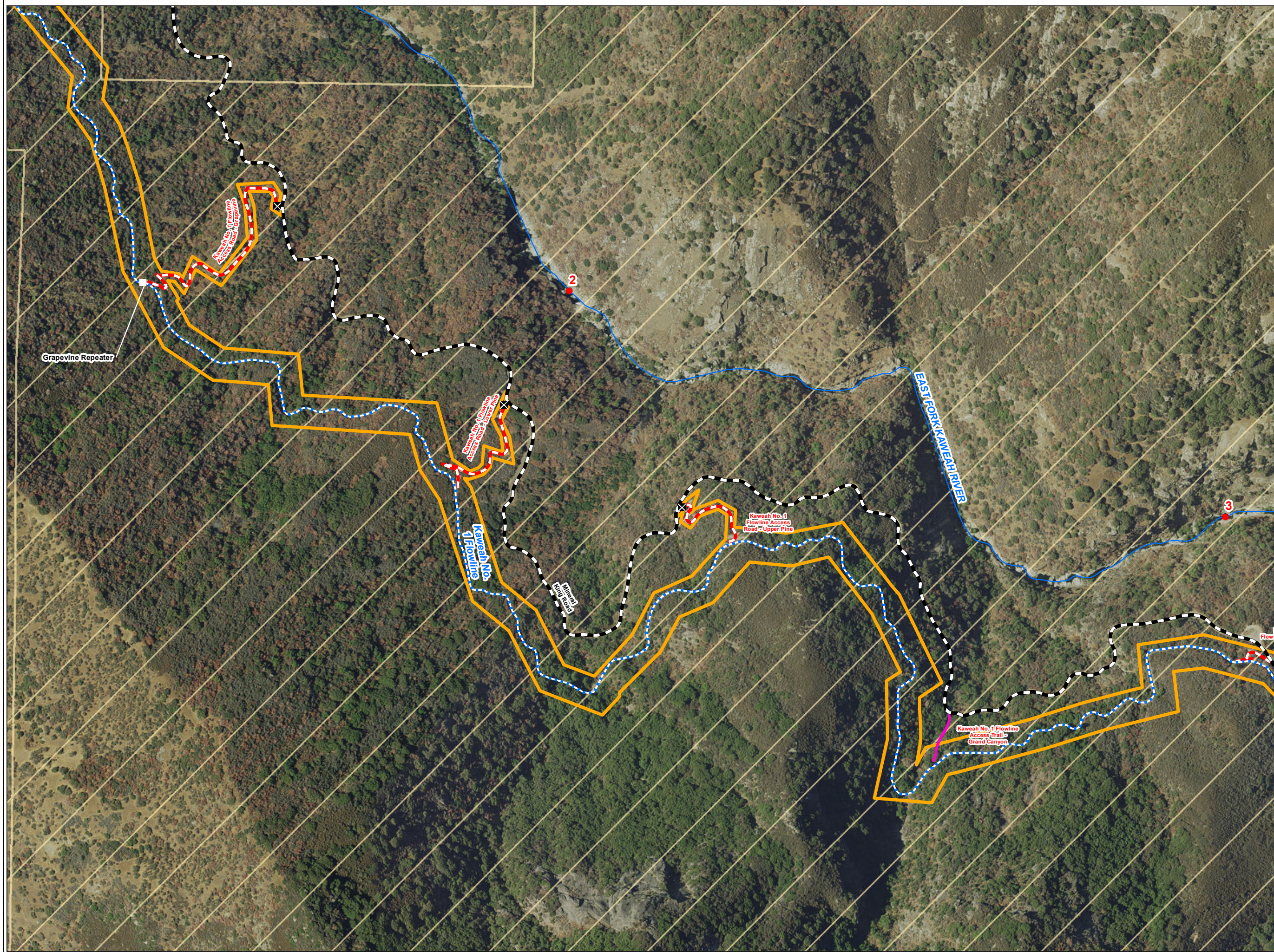


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**Map LAND 1-1e
Kaweah Project**



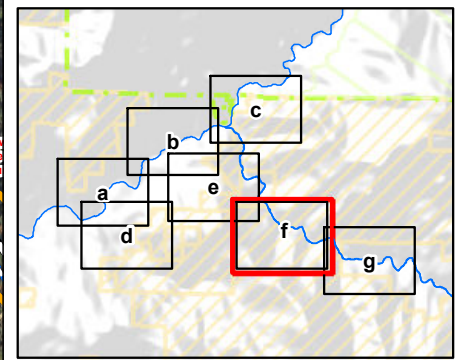
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
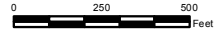
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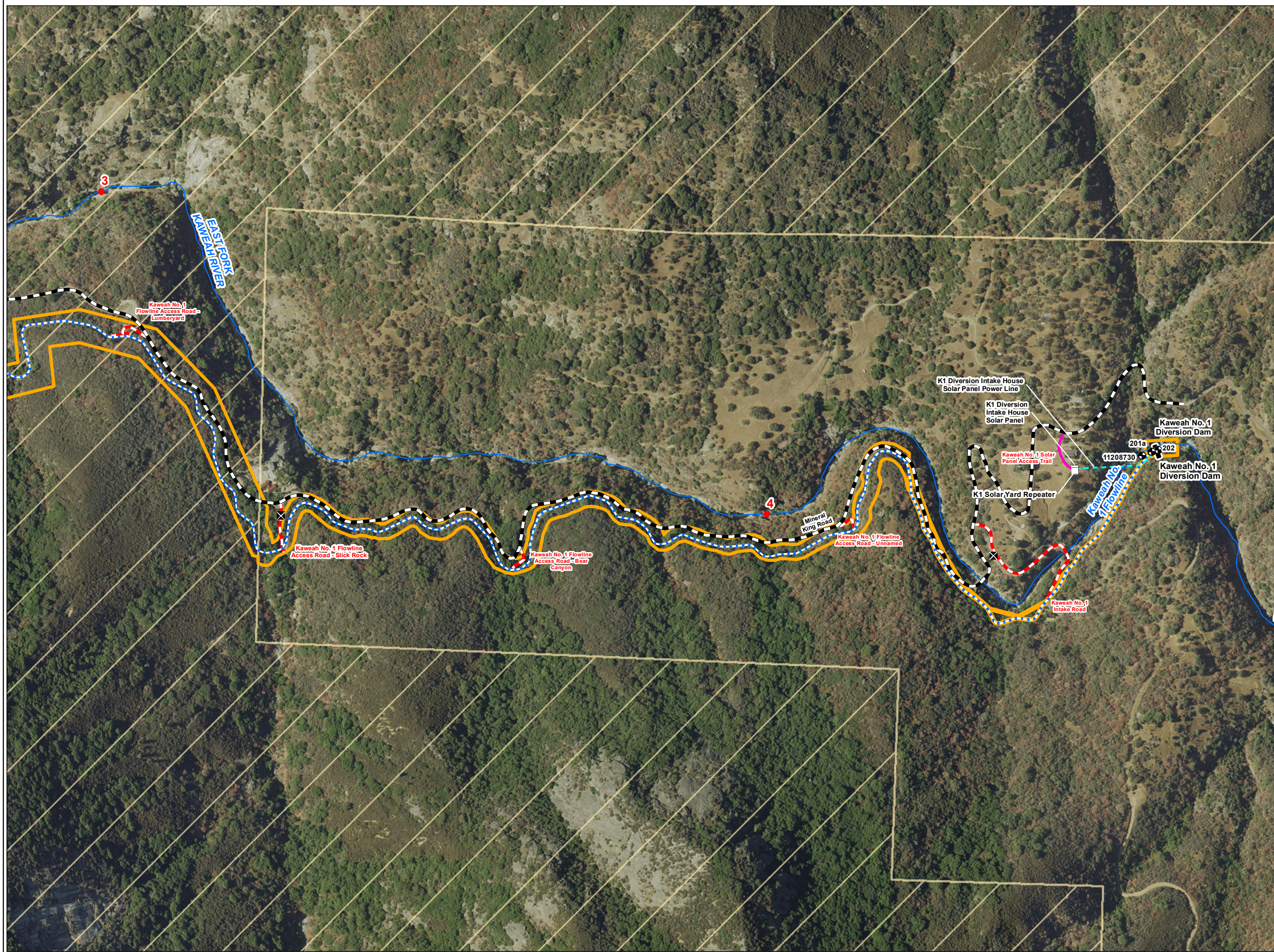
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**Map LAND 1-1f
Kaweah Project**

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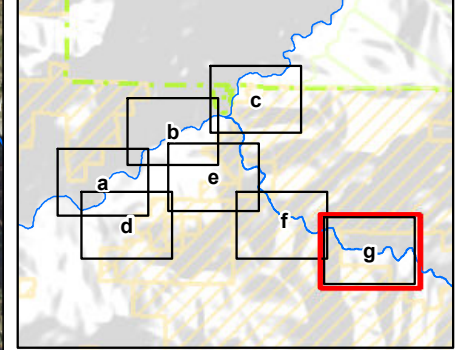



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*SOURCE: BLM 2012
Kaweah Project entirely within Tulare County






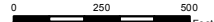
SOUTHERN CALIFORNIA EDISON
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Eastern Hydro Generation

**Map LAND 1-1g
Kaweah Project**



Date: 9/1/2015



Projection: UTM Zone 11
Datum: NAD 83

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