SECTION 3

EXISTING ENVIRONMENT

In addition to this introductory information, this section is divided into two subsections. Section 3.1 provides a general description of the river basin in which the Project occurs. Section 3.2 provides existing, relevant and reasonably available information regarding the resources.

3.1 General Description of the River Basin

3.1.1 Existing Water Projects in the Yuba River Basin

Sixteen existing water projects occur in the Yuba River Basin. Eight of the water projects are licensed or exempt from licensing by FERC. Together, these eight projects have a combined FERC-authorized capacity of 782.1 MW, of which the Narrows Hydroelectric Project has approximately 1.5 percent of the total capacity. The remaining eight non-FERC-licensed projects do not contain generating facilities. Each of these water projects is described briefly below.

3.1.1.1 Narrows Hydroelectric Project

The existing Narrows Hydroelectric Project is described in detail in Section 2 of this PAD.

3.1.1.2 Upstream of the Narrows Hydroelectric Project

3.1.1.2.1 South Feather Power Project

The 117.5-MW South Feather Power Project, FERC Project No. 2088, is a water supply/power project constructed in the late 1950s/early 1960s and is owned and operated by the South Feather Water and Power Agency (SFWPA). None of the project facilities or features is located in the Yuba River watershed except for the Slate Creek Diversion Dam, which is located on a tributary to the North Yuba River. Slate Creek Diversion Dam and the associated tunnel have the capacity to divert up to 848 cfs of water out of Slate Creek, and to convey it to Sly Creek Reservoir on Lost Creek, a tributary to the South Fork Feather River. SFWPA's water rights limit its Slate Creek diversions to 600 cfs during January 1 through July 1 and to 300 cfs during July 2 through December 31. At times, diversions are limited to 500 cfs due to high water elevations in Sly Creek Reservoir. In anticipation of the expiration of the initial license on March 31, 2009, SFWPA filed with FERC an application for a new license on March 6, 2007, and FERC issued a Final Environmental Impact Statement (FEIS) in June 2009. Since the initial license expired, SFWPA has operated the project under annual licenses from FERC and is expected to continue to do so until a new license is issued.

3.1.1.2.2 Deadwood Creek Project

The 19.6-MW Deadwood Creek Project, FERC Project No. 6780, is a power project currently owned and operated by and licensed to Hydro Sierra. The project includes two diversion dams, one on Deadwood Creek, a tributary to the North Yuba River that enters the river near the upstream end of New Bullards Bar Reservoir, and the other on Owl Gulch, a tributary to Deadwood Creek, and one powerhouse located on the shore of New Bullards Bar Reservoir. The project does not include any storage reservoirs or out-of-basin transfers. The initial license for the project expires on August 31, 2038.

3.1.1.2.3 Yuba-Bear Hydroelectric Project

The 79.3-MW Yuba-Bear Hydroelectric Project, FERC Project No. 2266, is owned and operated by the Nevada Irrigation District (NID). It is a water supply/power project constructed in the mid-1960s, though some project facilities were initially constructed in the late 1800s. The project includes a storage reservoir on the Middle Yuba River (Jackson Meadows Reservoir) with a gross storage capacity of 69,205 ac-ft, and five storage reservoirs on Canyon Creek (i.e., Jackson, French, Faucherie, Sawmill and Bowman reservoirs) with a combined gross storage capacity of 90,790 ac-ft. The project also includes a diversion with a maximum capacity of about 450 cfs via the Milton-Bowman Diversion Dam from the Middle Yuba River to Bowman Lake on Canyon Creek, and a diversion with a maximum capacity of about 300 cfs via the Bowman-Spaulding Canal from Bowman Lake on Canyon Creek to PG&E's Fuller Lake on the South Yuba River. In anticipation of the expiration of the initial license on April 30, 2013, NID filed with FERC an application for a new license on April 15, 2011, and FERC issued an FEIS in December 2014. Since the initial license expired, NID has operated the project under annual licenses from FERC and is expected to continue to do so until a new license is issued.

3.1.1.2.4 Drum-Spaulding Project

PG&E's 190-MW Drum-Spaulding Project, FERC Project No. 2310, is located on the South Yuba River, Bear River, North Fork of the North Fork American River and tributaries to the Sacramento River Basin in Nevada and Placer counties, California. Major reservoirs of the project include Lake Spaulding (74,773 ac-ft) on the South Yuba River and Fordyce Lake (49,903 ac-ft) on Fordyce Creek upstream of Lake Spaulding. In addition, the project includes numerous smaller reservoirs on tributaries to the South Yuba River, and diversions from the South Yuba River to Deer Creek via the South Yuba Canal (maximum capacity of ~126 cfs) and to the Bear River via the Drum Canal (maximum capacity of ~840 cfs). In anticipation of the expiration of the initial license on April 30, 2013, PG&E filed with FERC an application for a new license on April 12, 2011, and FERC issued a FEIS in December 2014. In its application, PG&E proposed to split the existing Drum-Spaulding Project license into three projects under new licenses: Upper Drum-Spaulding, which would retain Project No. 2310; Deer Creek, to which FERC assigned Project No. 14530; and Lower Drum, to which FERC assigned Project No. 14531. On January 22, 2019, PG&E filed with FERC a request to transfer the Deer Creek Project to NID, and the request is pending. Since the initial license expired, PG&E has operated the project under annual licenses from FERC and is expected to continue to do so until a new license is issued.

3.1.1.2.5 Yuba River Development Project

The 361.9 MW Yuba River Development Project, FERC Project No. 2246, is owned and operated by YCWA. It is a water supply/power project, with important flood control capabilities, constructed in the late-1960s / early 1970s, though some project facilities were initially constructed in the late 1800s. The Project includes one main storage reservoir, the 966,103 ac-ft New Bullards Bar Reservoir on the North Yuba River. In addition, the project includes Our House Diversion Dam on the Middle Yuba River; Log Cabin Diversion Dam on Oregon Creek; Lohman Ridge and Camptonville diversion tunnels; New Colgate and Narrows 2 power tunnels and penstocks; New Colgate, New Bullards Minimum Flow and Narrows 2 powerhouses; and Narrows 2 Powerhouse Full Bypass (Full Bypass). In anticipation of the expiration of the initial license on April 30, 2016, YCWA filed with FERC an application for a new license on April 27, 2014, and FERC issued an FEIS in January 2014. Since the initial license expired, YCWA has operated the project under annual licenses from FERC and is expected to continue to do so until a new license is issued.

3.1.1.2.6 Lake Francis Dam

Lake Francis Dam is located on Dobbins Creek, a tributary to the Yuba River, in Yuba County and forms Lake Francis. This dam and lake are operated by YCWA for consumptive uses and recreation, and they also provide backup water supplies and water for fire suppression. The dam does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.2.7 Englebright Dam

Englebright Dam is a high variable radius concrete arch dam approximately 1,142 ft wide and 260 ft high that forms Englebright Reservoir, which was constructed by the California Debris Commission in 1941. When the California Debris Commission was decommissioned in 1986, administration of Englebright Dam and Reservoir passed to the USACE. The primary purpose of the dam is to trap and contain sediment derived from extensive historic hydraulic mining operations in the Yuba River watershed. Englebright Reservoir is about 9 miles long and has a shoreline length and surface area of about 24 miles and 815 ac, respectively, at its normal maximum water surface elevation of 527 ft (i.e., spillway crest elevation). Englebright Reservoir when first constructed had a gross storage capacity of 70,000 ac-ft; however, due to sediment capture, the gross storage capacity is approximately 50,000 ac-ft (Childs et al. 2003). The dam and its associated facilities, including the USACE's tunnel, do not include hydropower facilities and, as federal facilities, are not under FERC's jurisdiction.

3.1.1.3 Downstream of the Narrows Hydroelectric Project

3.1.1.3.1 Wildwood Dam

Wildwood Dam is located on Deer Creek upstream of the Yuba River and is operated by NID. This dam forms Lake Wildwood, which is operated for consumptive uses and recreation. The dam does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.3.2 Scotts Flat Project

NID's 0.8-MW Scotts Flat Project, FERC Project No. 5930, is composed of Scotts Flat Dam and Reservoir and Scotts Flat Powerhouse on Deer Creek. The project is exempt from the FPA's license requirements.

3.1.1.3.3 Los Verjeles Dam

Los Verjeles Dam is located on Dry Creek upstream of Collins Lake. This dam forms Lake Mildred, which is owned and operated by Thousand Trails for consumptive uses and recreation. Consumptive water from the lake is transported via a 7.5-mile long ditch. The dam does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.3.4 Virginia Ranch Dam Project

Virginia Ranch Dam Project is a 152-foot high dam with a crest length of 2,800 ft located on Dry Creek. This dam was completed and put into service in 1963 by the Browns Valley Irrigation District (BVID) as part of the 1-MW Virginia Ranch Dam Project (FERC Project No. 3075), which is exempt from the FPA's license requirements.. This dam forms Collins Lake, which has a surface area of 975 ac and a gross storage capacity of 57,000 ac-ft. The NMWSE at Collins Lake is 1,183 ft. The outlet works consist of a 42-inch diameter Howell-Bunger valve and a 3,800-ft long tunnel to the west of the dam. This tunnel is used to deliver water to the lands within BVID. Dry Creek flows south from the dam and into the Yuba River at a point about 8 miles downstream from the dam.

3.1.1.3.5 Hallwood-Cordua Diversion

The Hallwood-Cordua Diversion, a gravity flow diversion facility located on the north bank of the Yuba River just upstream of Daguerre Point Dam, has a diversion capacity of 625 cfs. The diversion is operated by the Cordua Irrigation District (CID). The diversion does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.3.6 South Yuba-Brophy Diversion

The South Yuba-Brophy Irrigation Diversion is located approximately 1,000 ft upstream of Daguerre Point Dam on the south side of the lower Yuba River. The diversion is operated by YCWA for the purpose of supplying water to YCWA's South Member Units for deliveries to their customers to irrigate approximately 103,000 ac of land in western Yuba County. The diversion does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.3.7 Browns Valley Diversion

BVID maintains a screened diversion on the northern bank of the lower Yuba River, upstream of the other Daguerre Point Dam diversion facilities (USACE 2001). The facility is rated for diverting up to 65 cfs and BVID may divert up to 9,500 ac-ft per year of water during the months

of April to August. The diversion does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.1.3.8 Daguerre Point Dam

Daguerre Point Dam, which is about 25 ft high and 575 ft wide, was constructed by the California Debris Commission and has no storage capacity. The dam was constructed in 1906 and rebuilt in the 1964-1965 period. The original purpose of the dam was to retain hydraulic mining debris. The dam is owned by the United States, and is not part of the Project. When the California Debris Commission was decommissioned in 1986, administration of Daguerre Point Dam passed to the USACE. The dam does not include hydropower facilities and is not under FERC's jurisdiction.

3.1.2 The Yuba River Basin

This section provides a description of the Yuba River Basin, focusing on the basin near and downstream of the Project. A general description of the Feather River downstream of the lower Yuba River confluence and the Sacramento River is also provided for reference.

The Yuba River drains approximately 1,339 square miles of the western Sierra Nevada, including portions of Sierra, Placer, Yuba and Nevada counties, and is supplied by water from the North Yuba, the Middle Yuba and the South Yuba rivers.

The average annual unimpaired flow of the Yuba River[1] from 1901 to 2019 at the USGS Smartsville Gage at RM[2] 24.0 is 2,359,000 ac-ft, and the annual unimpaired flow has ranged from a maximum of approximately 5,604,000 ac-ft in 2017 to a minimum of approximately 369,000 ac-ft in 1977.

Figure 3.1-1 is a gradient profile of the Yuba River downstream of the Project to the Yuba River's confluence with the Feather River, and Figure 3.1-2 shows sub-basins (i.e., drainage areas) in the Yuba River Basin.

[1] Unimpaired flow is computed by the California Department of Water Resources (DWR) and reported on the California Data Exchange Center (CDEC) for the Yuba River-Smartsville (YRS) station.

[2] In this document, River Miles, or "RM", are provided in tenths of a mile moving upstream on the mainstem Yuba River from the Yuba River's confluence with the Feather River at RM 0.0 to the base of Englebright Dam at RM 24.3, and are based on YCWA's relicensing Geographic Information System (GIS) database.

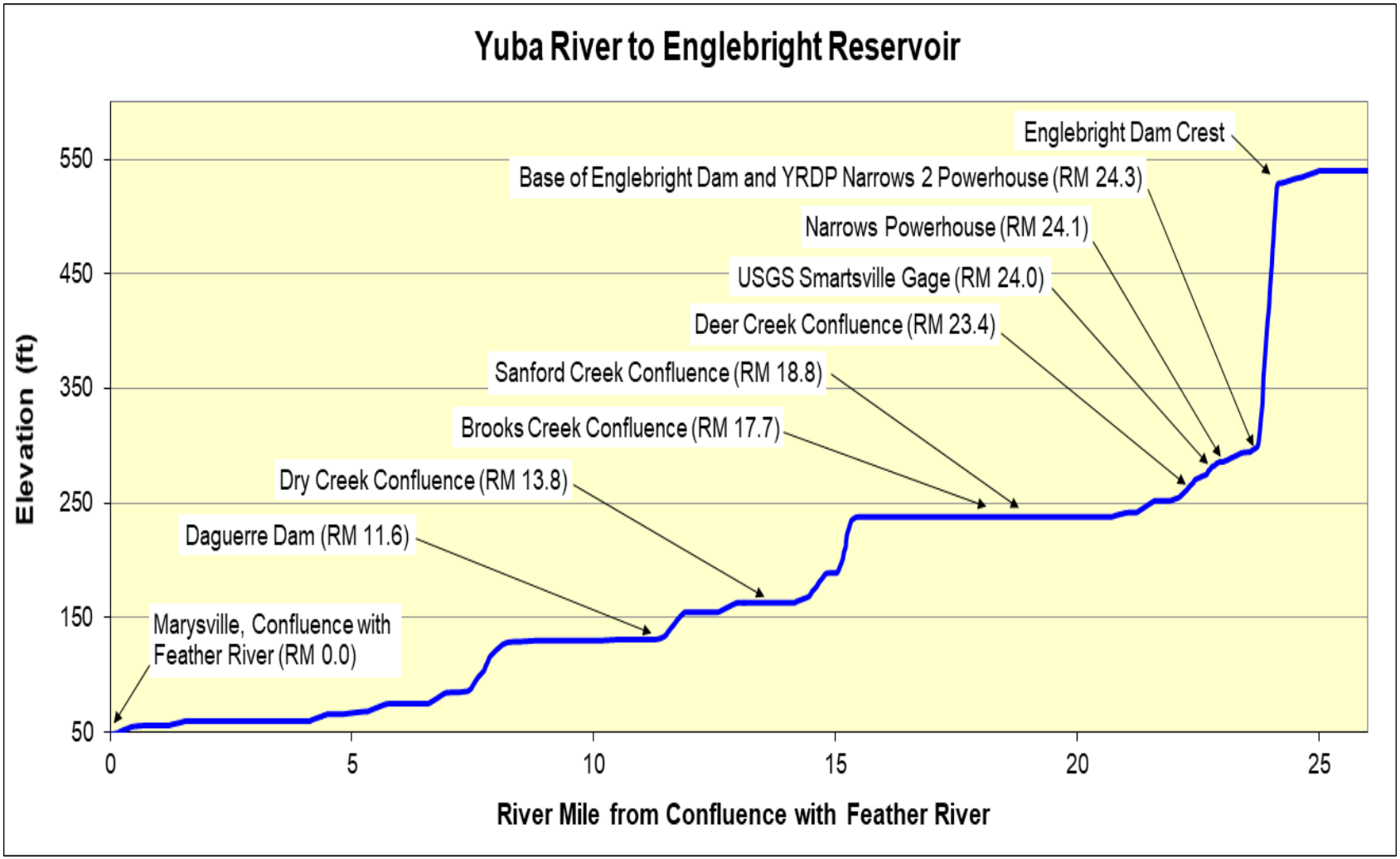

Figure 3.1-1. Streambed gradient of the Yuba River from Englebright Dam to the Yuba River confluence with the Feather River.

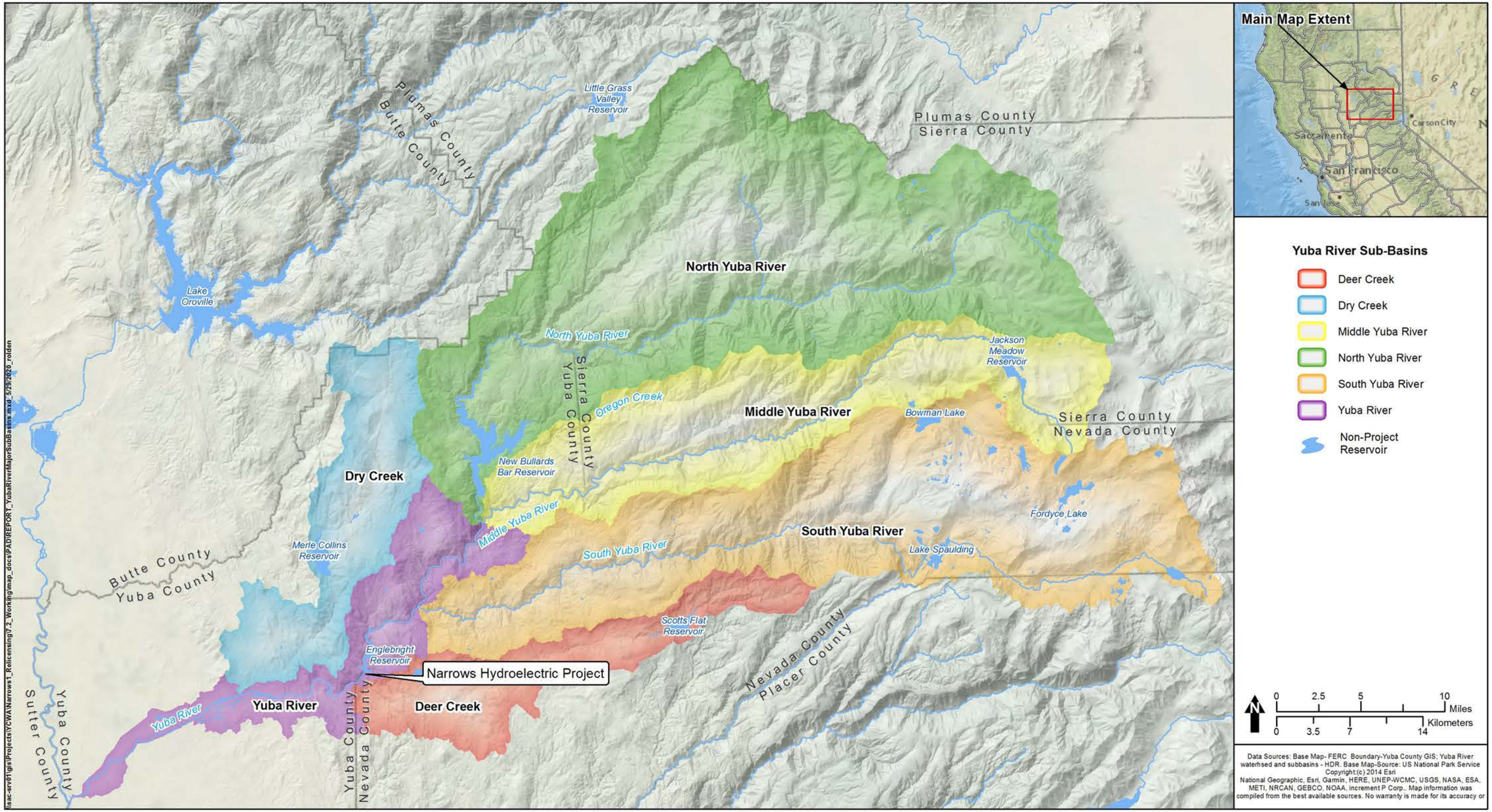

Figure 3.1-2. Yuba River sub-basins.

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3.1.2.1 North Yuba River Sub-basin

The North Yuba River originates at Yuba Pass at an elevation of 6,701 ft near State Highway 49 in Sierra County. The highway follows the river downstream from the community of Downieville for about 14 mi, where the river departs from Highway 49 and flows westward to where it enters the Project's New Bullards Bar Reservoir. From New Bullards Bar Dam, the North Yuba River flows southwest another 2.4 miles to where it converges with the Middle Yuba River to form the main stem of the Yuba River. This confluence is at an elevation of about 1,350 ft near the unincorporated town of North San Juan. The sub-basin is steep, rugged, sparsely populated, and mostly vegetated with coniferous forests. In total, the North Yuba River is about 43.3 miles long and has a total drainage area of 491 square miles.

3.1.2.2 Middle Yuba River Sub-basin

The Middle Yuba River originates at an elevation of approximately 7,200 ft along the northern side of Meadow Lake Hill, and flows westerly for about 41.4 miles to where it converges with the North Yuba River at elevation 1,350 ft. The total drainage area of the Middle Yuba River is 210 square miles.

3.1.2.3 South Yuba River Sub-basin

The South Yuba River originates at an elevation of about 7,200 ft near Castle Peak and Donner Lake, and flows southwest to its confluence with the main stem of the Yuba River (RM 31.0) near the community of Bridgeport at Englebright Reservoir at an elevation of about 527 ft. Like the North and Middle forks, the South Fork Yuba sub-basin is steep, rugged, sparsely populated, and mostly vegetated with coniferous forests. The total drainage area of the South Yuba River is 352 square miles.

3.1.2.4 Yuba River Sub-basin

From the confluence of the North Yuba River and the Middle Yuba River, the Yuba River flows southwest about 40 miles to its confluence with the Feather River in Marysville, California, at an elevation of approximately 60 ft. The total drainage area of the Yuba River downstream of the confluence of the North Yuba River and Middle Yuba River is 95 square miles.

Rural agricultural areas and semi-rural agricultural communities flank the mainstem Yuba River as it leaves the Sierra foothills and enters the Central Valley (YCIT 2004). The area is primarily used for annual field and vegetable crops, tree crops, and livestock grazing (YCDA 2005). To the south of the Yuba River downstream of Englebright Dam is a feature known as the Yuba Goldfields – an area of over 8,000 ac of hydraulic mine tailings (CDWR 1999). At one time, as many as 12 large bucket-type dredges worked in the Goldfields, unearthing riches and leaving behind mountains of aggregate. At times, some water flows in this area become sub-surface, flowing through and within the aggregate field of hydraulic mining deposits.

The "lower Yuba River", or "LYR", is sometimes used to refer to the 24.3-mi section of the river between Englebright Dam and the confluence with the Feather River southwest of Marysville. Instream flow requirements are specified for the LYR at the Smartsville Gage, located approximately 2,000 ft downstream of Englebright Dam, and at the USGS Marysville Gage (RM 6.2). Below the Smartsville Gage, accretions, local inflow and runoff contribute, on average, approximately 200,000 ac-ft per year to the lower Yuba River. Much of the accretion flows are contributed by Deer and Dry creeks. The total drainage area of Deer Creek is 89 square miles and the total drainage area of Dry Creek is 108 square miles. Deer Creek flows into the Yuba River at approximately RM 23.4. Dry Creek flows into the Yuba River at RM 13.9, approximately 2.3 miles upstream of Daguerre Point Dam. The flow in Dry Creek is regulated by BVID's operation of Collins Lake, located on Dry Creek about 8 miles upstream from its confluence with the Yuba River. Notably, 15 miles of 20 to 75 ft high gravel training berms were constructed between 1910 and 1935 to promote the scouring and formation of a permanent, stable channel (Adler 1980). In recent years, irrigation diversions from the Yuba River at Daguerre Point Dam and upstream at BVID's Pumpline Diversion Facility have totaled approximately 262,000 ac-ft per year.

3.1.2.5 Feather River, Sacramento River and Delta

The Yuba River discharges into the Feather River, whose basin encompasses a broad variety of terrain, climate, historic use, and flora and fauna. Over 80 percent of the upper Feather River watershed is federally-owned land managed by the U.S. Department of Agriculture, Forest Service as part of the Plumas National Forest. Approximately 11 percent of the upper Feather River watershed is alluvial valleys that are predominantly privately-owned and used for livestock grazing. The rest of the land is used for other agricultural purposes, urban development and wildlife habitat.

Water originating from the Feather River drainages provides significant amounts of water to California's SWP, which provides water to meet urban and agricultural demands. The Feather River Basin also produces significant forest and agricultural outputs. Flow in the lower Feather River is controlled mainly by releases from Lake Oroville, the second largest reservoir in the Sacramento River basin and part of DWR's Oroville Project (FERC Project No. 2100), and by flows from the Yuba and Bear rivers. As with many Sierra Nevada foothill streams and rivers, the Feather River Basin has historically been influenced by large-scale gold mining operations. To a lesser degree, gold mining operations still continue within the western slope watersheds.

The Feather River drains into the Sacramento River, which provides water for municipal, agricultural, recreational, and environmental purposes throughout northern and southern California. The Sacramento River is the largest river system in California, yielding 35 percent of the state's water supply. Most of the Sacramento River flow is controlled by the United States Department of Interior, Bureau of Reclamation (Reclamation) Shasta Dam and Reservoir, and river flow is augmented by imports of Trinity River water through Clear and Spring Creek tunnels to the Reclamation's Keswick Reservoir. Immediately below Keswick Dam, the river is deeply incised in bedrock with very limited riparian vegetation.

The upper Sacramento River is often defined as the portion of the river from Princeton (i.e., RM 163; downstream extent of salmonid spawning in the Sacramento River) to Keswick Dam (i.e., the upstream extent of anadromous fish migration and spawning). The Sacramento River is an important corridor for anadromous fishes moving between the ocean and the Delta and upstream river and tributary spawning and rearing habitats. The upper Sacramento River is differentiated from the river's "headwaters," which lie upstream of Shasta Reservoir. The upper Sacramento River provides a diversity of aquatic habitats, including fast-water riffles and shallow glides, slow-water deep glides and pools, and off-channel backwater habitats (Reclamation 2004).

The lower Sacramento River is generally defined as the portion of the river from Princeton, CA, to the Delta at approximately Chipps Island near Pittsburg, California. The lower Sacramento River is predominantly channelized, leveed and bordered by agricultural lands. Aquatic habitat in the lower Sacramento River is characterized primarily by slow water glides and pools, is depositional in nature, and has lower water clarity and habitat diversity, relative to the upper portion of the river.

The Delta is a vast, low-lying inland region located east of the San Francisco Bay area, at the confluence of the Sacramento and San Joaquin rivers. Geographically, this region forms the eastern portion of the San Francisco estuary, which includes San Francisco, San Pablo and Suisun bays. An interconnected network of water channels and man-made islands, the Delta stretches nearly 50 miles from Sacramento south to the City of Tracy, and spans almost 25 miles from Antioch east to Stockton (Public Policy Institute of California 2007). The Delta is a complex area for both anadromous fisheries production and distribution of California water resources for numerous beneficial uses. Approximately 42 percent of the state's annual runoff flows through the Delta's maze of channels and sloughs, which surround 57 major reclaimed islands and nearly 800 un-leveed islands (WEF Website 2006). The Delta also includes the federal Central Valley Project Jones Pumping Plant and the SWP's Banks Pumping Plant (i.e., export pumps) in the south Delta. Water withdrawn from the Delta provides for much of California's water needs, including both drinking water and water for agricultural irrigation purposes.

3.1.2.6 Potentially-Affected Yuba River Stream Reaches

The Project potentially affects two stream reaches:

- the 0.2-mile-long section of the Yuba River from Englebright Dam to the Narrows 1 Powerhouse. Existing Project facilities have no ability to release water into this section of river.
- the 24.1-mile-long section of the Yuba River from the Narrows 1 Powerhouse to the Feather River.

3.1.2.7 Yuba River Basin Streams and Tributaries

Based on USGS's National Hydrology Dataset (USGS n.d.), four named tributaries occur on the Yuba River downstream of the Project. These are listed below and their confluences with the Yuba River are shown in Figure 3.1-1:

- Wood Creek
- Deer Creek
- Sanford Creek
- Dry Creek

3.1.2.8 Yuba River Basin Dams

There are approximately 46 major dams and diversions in the Yuba River Basin, with a combined storage capacity of 1,358,113 ac-ft of water (Table 3.1-1). Forty of these dams are upstream of the Project and account for about 91.9 percent of the total storage capacity. Six dams, which can store about 8.1 percent of the combined storage capacity of the basin, are downstream of the Project. The Project does not include a storage reservoir.

Table 3.1-1. Owners and capacities of dams and diversions in the Yuba River Basin.

Owner	FERC Project No.	River / Tributary	Dam / Diversion	Reservoir Gross Storage Capacity (ac-ft)
UPSTREAM OF THE PROJECT				
North Yuba River				
SFWPA	2088	Slate Creek	Slate Creek Diversion Dam	none
YCWA	2246	North Yuba River	New Bullards Bar Dam	966,103
Middle Yuba River				
NID	2266	Middle Yuba River	Jackson Meadows Dam	67,435
NID	2266	Middle Yuba River	Milton Main and South Dam	295
NID	2266	Wilson Creek	Wilson Creek Diversion Dam	none
YCWA	2246	Middle Yuba River	Our House Diversion Dam	none
YCWA	2246	Oregon Creek	Log Cabin Diversion Dam	none
South Yuba River				
NID	2266	Jackson Creek	Jackson Lake Dam	1,330
NID	2266	Canyon Creek	French Lake Dam	13,940
NID	2266	Canyon Creek	Faucherie Lake Dam	3,980
NID	2266	Canyon Creek	Sawmill Lake Dam	3,034
NID	2266	Canyon Creek	Bowman-Spaulding Conduit Diversion Dam	none
NID	2266	Canyon Creek	Bowman Lake Dam	68,383
NID	2266	Texas Creek	Texas Creek Diversion Dam	none
PG&E	2310	Texas Creek	Upper Rock Lake Dam	207
PG&E	2310	Texas Creek	Lower Rock Lake Dam	48
PG&E	2310	Texas Creek	Culbertson Lake Dam	3,150
PG&E	2310	Texas Creek	Upper Lindsey Lake Dam	180
PG&E	2310	Texas Creek	Middle Lindsey Lake Dam	1,100
PG&E	2310	Texas Creek	Lower Lindsey Lake Dam	293
PG&E	2310	Fall Creek	Feeley Lake Dam	739
PG&E	2310	Fall Creek	Carr Lake Dam	150
NID	2266	Clear Creek	Clear Creek Diversion	none
NID	2266	Fall Creek	Fall Creek Diversion Dam	none
NID	2266	Trap Creek	Trap Creek Diversion	none
PG&E	2310	Rucker Creek	Blue Lake Dam	1,163

Table 3.1-1. (continued)

South Yuba River (cont'd)				
PG&E	2310	Rucker Creek	Rucker Lake Dam	648
NID	2266	Rucker Creek	Rucker Creek Diversion	none
PG&E	2310	Unnamed Creek	Fuller Lake Dam	1,127
PG&E	2310	Fordyce Creek	Meadow Lake Dam	4,935
PG&E	2310	Fordyce Creek	White Rock Lake Dam	570
PG&E	2310	Fordyce Creek	Lake Sterling Dam	1,764
PG&E	2310	Fordyce Creek	Fordyce Lake Dam	49,903
PG&E	2310	South Yuba River	Kidd Lake Dam	1,505
PG&E	2310	South Yuba River	Upper Peak Lake Dam	1,736
PG&E	2310	South Yuba River	Lower Peak Lake Dam	484
PG&E	2310	South Yuba River	Lake Spaulding Dam	75,912
YCWA	--	Dobbins Creek	Lake Francis Dam	1,905
Yuba River				
USACE	--	Yuba River	Englebright Dam	70,000
DOWNSTREAM OF THE PROJECT				
Yuba River				
NID	--	South Fork Deer Creek	Cascade Canal Diversion Dam	none
NID	--	Deer Creek	Scotts Flat Dam	49,000
NID	--	Deer Creek	Deer Creek Diversion Dam	none
Lake Wildwood Assoc.	--	Deer Creek	Anthony House Dam	3,840
BVID	3075	Dry Creek	Virginia Ranch Dam	57,000
USACE	--	Yuba River	Daguerre Point Dam	none

Figure 3.1-3 depicts the general location of each of the dams in Table 3.1-1.

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Key Number	Dam/Diversion
1	Upper Rock Lake Dam
2	Meadow Lake Dam
3	Peak Lake Upper Dam
4	Upper Feeley Lake Dam
5	Peak Lake Lower Dam
6	Lake Fordyce Dam
7	Blue Lake Dam
8	Culbertson Lake Dam
9	White Rock Lake Dam
10	Upper Lindsey Lake Dam
11	Lake Spaulding No. 3 Dam
12	Lake Spaulding No. 2 Dam
13	Kidd Lake Dam South
14	Lake Sterling Dam
15	Fuller Lake Dam
16	Lower Lindsey Lake Dam
17	Deer Creek Diversion Dam
18	Middle Lindsey Lake Dam
19	Sawmill Lake Dam
20	Lower Rock Lake Dam
21	Kidd Lake Dam
22	Lake Spaulding No. 1 Dam
23	Carr Lake Dam
24	French Lake Dam
25	Faucherie Dam
26	Bowman Lake Dam
27	Jackson Lake Dam
28	Jackson Meadows Dam
29	Milton Diversion Dam
30	Texas Creek Diversion Dam
31	Fall Creek Diversion Dam
32	Bowman-Spaulding Diversion Dam
33	Trap Creek Diversion Dam
34	Rucker Lake Dam
35	Clear Creek Diversion Dam
36	Rucker Creek Diversion Dam
37	Wilson Creek Diversion Dam
38	Cascade Canal Diversion Dam
39	Anthony House Dam
40	Scotts Flat Dam
41	Virginia Ranch Dam
42	Lake Francis Dam
43	Slate Creek Diversion Dam
44	Our House Diversion Dam
45	Log Cabin Diversion Dam
46	New Bullards Bar Dam
47	Englebright Dam
48	Daguerre Point Dam
49	Los Verjeles Dam

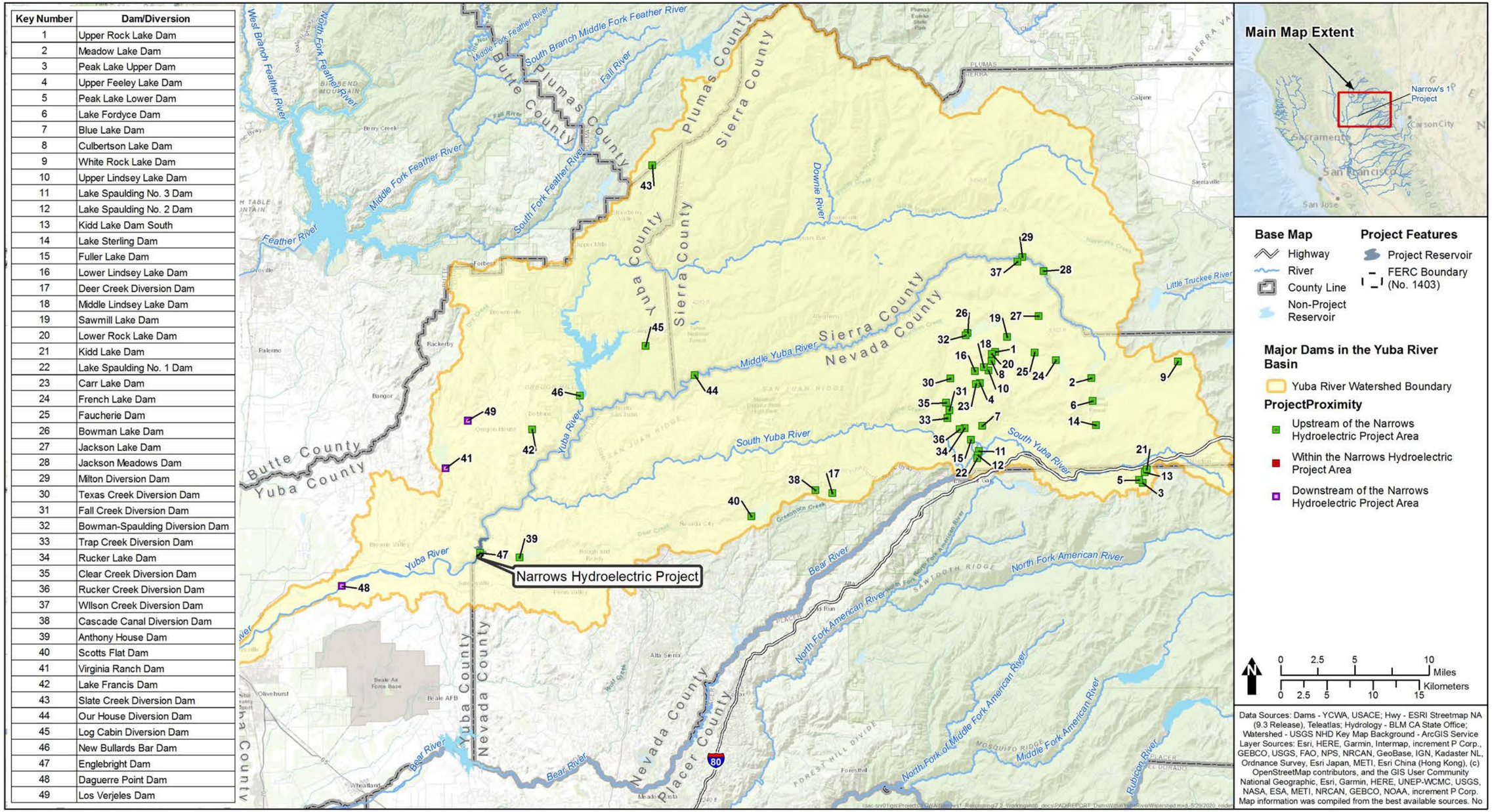

Figure 3.1-3. General location of dams within the Yuba River watershed.

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3.1.3 Climate

Overall, the climate within at the Project is typical of a mixed-elevation Mediterranean climate. The National Weather Service monitoring station at Marysville (Number 045385) provides a climate history representative of the Project area. These areas occupy the eastern Central Valley and rolling, western Sierra foothills, and can experience high summer temperatures, mostly unmitigated by the "Delta breezes" that are present further south and west in California's Central Valley. July air temperatures at Marysville average a high of 96.4°F, and a low of 62.0°F. Average January high and low temperatures are 54.1°F and 38.0°F, respectively. Annual average precipitation totals 21.8 inches, and falls exclusively as rain, with 69 percent falling during the winter months from December through March. June through August precipitation averages only 0.1 of an inch, generally resulting from rare summer thunderstorms (WRCC 2017).

3.1.4 Major Land Use

In California, counties are the primary agencies for establishing land use polices for private land within their jurisdiction. Major land uses in the vicinity of the Project include private land for agriculture and cattle grazing, University of California land for agricultural education and training, and federal land surrounding Englebright Reservoir for USACE project operations and recreational facilities.

3.1.5 Major Water Uses

The Central Valley Regional Water Quality Control Board (RWQCB), in its Water Quality Control Plan Report (Basin Plan) (Central Valley RWQCB 2018) identifies streams and watersheds with unique Hydro Unit (HU) numbers[3]. The Project and the area downstream fall within a single Basin Plan unit HU 515.3 that includes the Yuba River from the USACE's Englebright Dam to the Feather River. Designated beneficial uses of surface water in this unit are shown in Table 3.1-2.

[3] Basin Plan Hydro Unit (HU) codes do not correspond to Hydrologic Unit Code (HUC) numbers as defined by the Water Resources Council; the Regional Water Quality Control Boards use the HU codes primarily for state-level water quality purposes.

Table 3.1-2. Beneficial Uses of Surface Water in the Yuba River at the Project.

Designated Beneficial Use Description from Basin Plan, Section II		Designated Beneficial Use by HU from Basin Plan, Table II-1	
		Use	USACE's Englebright Dam to the Feather River
			HU 515.3
Agricultural Supply (AGR)	Farming, horticulture, or ranching, including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing	IRRIGATION	Existing
		STOCK WATERING	Existing
Industry	Hydropower generation	HYDROPOWER (POW)	Existing
Water Contact Recreation (REC-1)	Recreational activities involving body contact with water, where ingestion of water is reasonably possible; these uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs	CONTACT	Existing
		CANOEING AND RAFTING	Existing
Non-Contact Water Recreation (REC-2)	Recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water; these uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide-pool and marine life study, hunting, sightseeing or aesthetic enjoyment in conjunction with the above activities	OTHER NON-CONTACT	Existing
Freshwater Habitat[1]	Warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates	WARM[1]	Existing
	Cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates	COLD[1]	Existing
Migration of Aquatic Organisms (MGR)	Habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish[2]	WARM[2]	Existing
		COLD[3]	Existing
Spawning (SPWN)	High-quality aquatic habitats suitable for reproduction and early development of fish	WARM[2]	Existing
		COLD[3]	Existing
Wildlife Habitat (WILD)	Terrestrial or wetland ecosystems including, but not limited to, preservation or enhancement of terrestrial habitats or wetlands, vegetation, wildlife (*e.g.*, mammals, birds, reptiles, amphibians, invertebrates) or wildlife water and food sources	WILDLIFE HABITAT	Existing

Source: Central Valley RWQCB 2018

[1] Anadromous does not include resident. Any hydrologic unit with both WARM and COLD beneficial use designations is considered a COLD waterbody for the application of Basin Plan water quality objectives.

[2] Striped bass, sturgeon, and shad

[3] Salmon and steelhead

3.2 Existing Environment

Section 3.2 is divided into 11 sub-sections, by major resource areas:

- Geology and Soils (Section 3.2.1)
- Water Resources (Section 3.2.2)
- Aquatic Resources (Section 3.2.3)
- Terrestrial Resources (Section 3.2.4)
- Endangered Species Act-Listed Species (Section 3.2.5)
- Recreation Resources and Land Use (Section 3.2.6)
- Aesthetic Resources (Section 3.2.7)
- Socioeconomic Resources (Section 3.2.8)
- Cultural Resources (Section 3.2.9)
- Tribal Interests (Section 3.2.10)

Where appropriate, existing information is noted as either a source document (i.e., contains original data collected by the author) or anecdotal information. The amount of detail included in the description of each existing resource and known Project effect is commensurate with the importance of the resource and effect in the relicensing.

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