

3.3.7 Land Use

The discussion of land use is divided into four sections. The affected environment is discussed in Section 3.3.7.1. Environmental effects of the Project are discussed in Section 3.3.7.2. Proposed measures are discussed in Section 3.3.7.3, and unavoidable adverse effects are addressed in Section 3.3.7.4.

Where existing, relevant and reasonably available, information from YCWA's PAD was not sufficient to determine the potential effects of the Project on land use, YCWA utilized the information obtained from performance of the FERC-approved Study 9.1, *Primary Project Roads and Trails*. The study is complete.

3.3.7.1 Affected Environment

This section describes existing land use conditions and is divided into the following seven areas: 1) land ownership; 2) land use; 3) land management; 4) Project-related land use permits and easements; 5) YCWA's vehicular access routes to Project facilities; 6) known Project-related wildfires and YCWA's policies regarding fire prevention and suppression; and 7) law enforcement in the Project Area.

3.3.7.1.1 Land Ownership

The Project Area is split between land owners. Within the upper elevations of the Project Area (i.e., above 2,000 ft elevation, near Camptonville and New Bullards Bar Reservoir), major landholders include the Forest Service, timber companies (e.g., Sierra Pacific Industries), and other landowners, such as YCWA. Lands around mid to lower elevation Project facilities, along the North Yuba, Middle Yuba River and Yuba River to Englebright Reservoir, contain USACE, State of California, and private lands and are near urban areas.^{1,2} Table 3.3.7-1 summarizes land ownership within the existing FERC Project Boundary by Project Development.

Table 3.3.7-1. Summary of land ownership within the existing FERC Project Boundary by Project Development based on information provided by the County Assessor.

Development	Forest Service (ac)	USACE (ac)	State of California (ac)	YCWA (ac)	Other Private (ac)	Total	
						Area (ac)	Percent of Total
New Colgate	4,416.7	0.0	0.0	3,148.1	209.9	7,774.7	99.5%
New Bullards Minimum Flow	0.0	0.0	0.0	<0.1	0.0	<0.1	0.0%
Narrows 2	0.0	16.1	20.1	1.2	3.1	40.5	0.5%
Total	4,416.7	16.1	20.1	3,149.3	213.0	7,815.2	100.0%
Percent	56.5%	0.2%	0.3%	40.3%	2.7%	100.0%	

Source: Yuba County 2013

¹ YCWA and the Forest Service consulted regarding whether any portions of the North Yuba River downstream of New Bullards Bar Dam are NFS land. After reviewing land ownership maps and the Forest Service's GIS maps, YCWA and the Forest Service agreed that there was no NFS land in the North Yuba River channel downstream of New Bullards Bar Dam and from the North Yuba River and Middle Yuba River confluence downstream (C. Mulder, pers. comm. 2009).

² YCWA's review of County Assessor's files (Yuba County 2010) and USDO, Bureau of Land Management's (BLM) land ownership maps show there is no federal land administered by BLM within the existing or proposed FERC Project boundaries.

Table 3.3.7-2 shows that the majority of the land within the FERC Project Boundary is located within Yuba County.

Table 3.3.7-2. Summary of county land within the existing FERC Project Boundary by Project Development based on the relicensing GIS database.

Development	Yuba County (ac)	Sierra County (ac)	Nevada County (ac)	Total	
				Area (ac)	Percent of Total
New Colgate	7,645.3	97.8	31.6	7,774.7	99.5%
New Bullards Minimum Flow	<0.1	0	0	<0.1	0.0%
Narrows 2	40.4	0	0.1	40.5	0.5%
Total	7,685.7	97.8	31.7	7,815.2	100%
Percent	98.3%	1.3%	0.4%	--	

Source: Yuba County 2013

Since over 98 percent of the Project Boundary is located in Yuba County, the majority of the discussion in this land use section focuses on that county. However, pertinent information about Sierra and Nevada counties is included in relevant sections.

Of the 410,686 ac of land comprising Yuba County, 77 percent is in private ownership and the remaining 23 percent is administered by public agencies (Table 3.3.7-3).

Table 3.3.7-3. Distribution of public and private lands in Yuba County.

Public Agency or Private Ownership	Number of Parcels	Average Acreage of Parcels	Total Acreage per Agency/Owner	Ownership as a Percentage of County
BLM	23	70.7	1,626	0.4%
USACE	11	56.5	621	0.2%
Department of Defense	119	193.5	23,031	5.6%
Forest Service	223	197.1	43,957	10.7%
State of California	118	162.4	19,164	4.7%
YCWA	45	96.9	4,360	1.1%
Private (or other)	30,759	10.2	317,927	77.4%
Total			410,686	100.0%

Source: Yuba County 2013

3.3.7.1.2 Land Use

This section includes a description of land use in the Project Vicinity, including for the three counties mentioned above, the Forest Service, the USACE and FEMA floodplains.

Yuba County

The predominant land uses in Yuba County are agriculture, forested lands, extractive/industrial, commercial/research and development, park, public lands, military installation and urban/communities. Private land use is managed by the County in accordance with the 2030 Yuba County General Plan and County zoning ordinances. In the Project Vicinity, the three zoned land uses are Timberland Preserve, Agricultural/Rural Residential and Recreational (Yuba County 2010).

Table 3.3.7-4. Yuba County Zoning Ordinance land use categories in the Project Vicinity.

Land Use Categories	Description
TPZ – Timberland Preserve Zone	Implement the Forest Taxation Reform Act (1976) and the California Timberland Productivity Act (1982).
A/RR – Agricultural/Rural Residential Zone	Preserves the rural character and amenities of lands best utilized for low-density residential development such as single-family residence, growing and harvesting agricultural crops or products, aquaculture, and game preserves.
RZ - Recreational Zone	Land containing natural or potential park and recreation features, identify areas suitable for passive recreational activities, and identify lake recreation areas to provide for use of these areas.

Source: Yuba County 2010

There are several communities located in Yuba County in the Project Vicinity, which have economic ties to the Project and are thus mentioned here.

Camptonville

Camptonville is a small, unincorporated community located in northeastern Yuba County between the North Fork and Middle Fork of the Yuba River near Bullards Bar Reservoir. Camptonville lies at an elevation of 2,825 ft and covers an area of 0.9 sq mi. The 2010 United States Census reported a population of Camptonville to be 158 with a median age of 44 years. Gold was discovered in 1850, and the area became known as Gold Ridge. Median household income is around \$17,000. In 1854, the name was changed to Camptonville when the first post office was opened. It was a center of the California Gold Rush and a stopping point for travelers on the main route, Henness Pass Road, for the time. After the rush of gold miners slowed, the local economy depended on Camptonville's lumber mill. When the mill shut down, many of those that had not already left then departed (US Census 2010; Durham 1998).

Challenge

Challenge is an unincorporated community in Yuba County. It is located on Dry Creek, 30 mi northeast of Marysville at an elevation of 2,595 ft. The post office in Challenge was established in 1895 and has been in operated continuously since. No census data on population are available for Challenge.

Dobbins

The unincorporated community of Dobbins lies 26 mi northeast of Marysville, CA at an elevation of 1,742 ft in the foothills of the western Sierra Nevada off of Highway 20 and Marysville Road north of Oregon House and south of Bullards Bar Dam. The 2010 United States Census reported the population as 624 and the area covered by the community as 7.8 sq mi. The median age of residents is 48, and the majority (56.4%) of residents have a high school degree or higher. Median household income is around \$76,000 (US Census 2013a). Dobbins was settled in 1849, and named for William M. and Mark D. Dobbins, early settlers to California. The post office has operated continuously since 1887. A general store, the post office, two churches, a grange hall, Lake Francis Resort, a grade school and a charter school make up Dobbins (US Census 2010; Durham 1998).

Oregon House

Oregon House is an unincorporated community in Yuba County. It is located 22 mi northeast of Marysville, CA at an elevation of 1,526 ft. The settlement grew around a travelers' rest stop in

1852. A post office was established in Oregon House in 1854, was closed from 1902 to 1903, when it reopened and is still there today. New Bullards Bar Dam is approximately 6 mi from the community (Durham 1998; USGS 1981). There are no census data on population.

Nevada County

The predominant land uses in Nevada County are forested lands, agriculture, and urban/communities (Nevada County 2006). Private land use is managed by the County in accordance with the 1996 Nevada County General Plan (the Land Use section is currently being updated) and County zoning ordinances. Nevada County land use on Project lands is designated as Agricultural-30 (Nevada County 2006).

Sierra County

The predominant land uses in Sierra County are forested lands, agriculture, and urban/communities (Sierra County 2013). Private land use is managed by the County in accordance with the 2012 Sierra County General Plan and County zoning ordinances. Per the Sierra County Public Land Use map, project lands within Sierra County are designated as Rural/Residential and Rural (Sierra County 2009).

Federal Land Managed by the Forest Service

The Forest Service manages two national forests in the Project region: the TNF and PNF. Each of these forests is described below. The Forest Service manages these forests in accordance with their respective LRMPs, which establish standards and guidelines (USFS 1990 and USFS 1988, respectively). The LRMPs set two levels of management direction: forest-wide and area-specific. With respect to forest-wide management, direction comes from forest-wide goals, objectives, standards, and guidelines. Area-specific direction is set forth in specific management areas that emphasize application of appropriate standards, guidelines and practices.

Tahoe National Forest

The TNF was initially established in 1891 by President Benjamin Harrison as a 136,335-acre area within the Sierra Reserve. With the addition of the Yuba Forest Reserve in 1904 and the Tahoe Forest Reserve in 1905, TNF grew to encompass 800,000 ac (1,250 sq mi) within Yuba, Sierra, Nevada, and Placer counties. The TNF specific management areas in the Project Area are the Oregon, Forty-Niner, and Bullards Management areas, administered by the Yuba River Ranger District.

Plumas National Forest

PNF was established as the Plumas Forest Reserve by the General Land Office (GLO) in 1905. In 1906, the forest was transferred to the Forest Service, and in 1907, it became a national forest. In 1908, a portion of Diamond Mountain National Forest was added. The PNF comprises 1,146,000 ac (1,791 sq mi) of which 62,402 ac (97.5 sq mi) are found in northern Sierra and northeastern Yuba counties. The PNF specific management area in the Project Area is the Challenge Management Area, administered by the Feather River Ranger District.

Federal Land Administered by the USACE

The USACE owns, operates and administers the Englebright Dam Area. The dam, which is about 260 ft high and forms Englebright Reservoir, was constructed by the California Debris Commission in 1941. The dam is owned by the United States. 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 mi long with a surface area of 815 ac. Englebright Reservoir when first constructed had a gross storage capacity of 70,000 ac-ft; however, due to sediment capture, the gross storage capacity today is approximately 50,000 ac-ft (USGS 2003). The dam does not include hydropower facilities and is not under FERC's jurisdiction.

USACE-Jurisdictional Wetlands

Wetlands that meet the criteria of "waters of the United States" are managed under the jurisdiction of the USACE and the USEPA pursuant to Section 404 of the CWA. The definition developed by the USACE considers those areas which *"...are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions"* as wetlands. Under the USACE definition, all three of the following conditions must be present (CWIS 1998):

- A dominance of wetland plants
- Hydric soils, those soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season
- Wetland hydrology

Within the existing FERC Project Boundary, approximately 60 ac of wetland/riparian habitat, 4,635 ac of open-water habitat, and more than 4 mi of linear drainages and perennial and ephemeral streams may qualify as jurisdictional wetlands under Section 404.

FEMA Floodplains

A review of the FEMA flood maps for the Project Vicinity indicates that 3.5 ac near Narrows 2 Powerhouse are within the FEMA 100 year flood plain. The remaining area within the existing FERC Project Boundary either is outside of both the 100- and 500-year flood plains, or is not mapped by FEMA.

3.3.7.1.3 Land Management

Land use management for each Project development is summarized below. The summary contains information regarding standards and guidelines for lands administered by the Forest Service and land use designations for each county in which the Project development occurs.

In general, Forest Service standards and guidelines provide means to mitigate adverse impacts to ensure that Forest Service goals are met for resources, such as recreation, fish and wildlife habitat, minerals, soil, timber, plants, pests, facilities, air quality, cultural resources, wilderness, water and riparian areas. Standards and guidelines are implemented at Forest Service management area levels. Standards and guidelines implemented at the Forest Service level apply to all resources throughout the Forest Service lands. Management area standards and guidelines are applied to specific land areas within NFS land. In many cases, the management standards and guidelines provide specific direction to the management of resources within each management area.

With respect to county land designations, the county designates land within its boundaries to be used in ways that are consistent with the resources found in that area.

New Colgate Development

The New Colgate Development consists of the following: Our House and Log Cabin diversion dams and impoundments; Lohman Ridge and Camptonville diversion tunnels (both of which are below-ground); New Bullards Bar Dam and Reservoir; New Colgate Power Tunnel; New Colgate Penstock and Powerhouse; and some access roads to these facilities. The area within the existing FERC Project Boundary is about 7,815.4 ac, with about 55 percent on NFS land and 45 percent on private land, the majority of which is owned by YCWA (Table 3.3.7-1).

Our House and Log Cabin diversion dams and impoundments are located primarily on NFS land within the TNF. The access roads within the existing FERC Project Boundary to these two facilities are located on both NFS land and private land. The two diversion tunnels are located on NFS land and private land. New Bullards Bar Reservoir is located on NFS land within both the TNF and PNF and other land, much of which is owned by YCWA. New Bullards Bar Dam and access road are located almost entirely on private land owned by YCWA. The New Colgate Penstock and Powerhouse are located on land that is primarily owned by YCWA.

Tables 3.3.7-5 and 3.3.7-6 summarize, by Project facility, the PNF and TNF management areas standards and guidelines as they apply to the New Colgate Development, respectively.

Table 3.3.7-5. PNF management area standards and guidelines for New Colgate Development facilities.

New Colgate Development Facilities	PNF Standards and Guidelines
CHALLENGE MANAGEMENT AREA	
New Bullards Bar Reservoir	<p>Recreation: Rely on the Tahoe National Forest to administer the reservoir and its shoreline. Maintain the Burnt Bridge Campground¹; employ Rx-6. Maintain the Skinner Trail. Ensure adequate access to the Wambo Bar area through project permit requirements.</p> <p>Visual Resources: Apply Rx-10 and Rx-14 to the Bullards Bar Reservoir and Marysville-La Porte Road.</p> <p>Wildlife: Provide suitable habitat for wintering band-tailed pigeons in TC's 306 and 307. Maintain or enhance deer winter range for the Mooretown and Downieville herds in TC's 301, 302, 303, and 343. Maintain or enhance deer summer range habitat and migration corridors for the Mooretown deer herd.</p>
New Colgate Power Tunnel and Penstock	<p>Timber: Continue current designation of Challenge Experimental Forest; employ Rx-4.</p> <p>Water: Rehabilitate the Slate and Canyon Creek watersheds to improve water quality sufficient for the beneficial uses in cooperation with CDFW and other landowners.</p> <p>Minerals and Materials: Recommend withdrawal from mineral entry: Slate Creek, from its junction with the North Fork of the Yuba River, upstream 0.5 mile.</p> <p>Land: Consider making NF lands in T18, R7, sec. 28, 34 except winter deer range, available for exchange.</p> <p>Facilities: Reconstruct the Pike County lookout as a PNF microwave facility. Construct a PNF microwave facility at the Challenge RS². Construct a crossing on Deadwood Creek in association with timber access. Study exchange of the Challenge District Office, or other relocation of office, to reduce forest-wide fixed cost. Develop and implement site improvements at the Challenge Work Center to support program activities.</p>

Source: USFS 1988

¹ The Burnt Bridge campground has been removed.

² The Project does not use a Pike County lookout or Challenge RS for microwave communication.

Table 3.3.7-6. TNF management area standards and guidelines for New Colgate Development facilities.

New Colgate Development Facilities	TNF Standards and Guidelines
OREGON MANAGEMENT AREA	
Our House Diversion Dam	Recreation Opportunity Spectrum: Roaded natural. Visual Quality Objective - Partial retention for the immediate foreground along the Pliocene Ridge Road and middle ground of Highway 49, modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein assigned the modification VQO. Transportation Management Policy: Forest wide Standards and Guidelines apply. Off-Highway Vehicle Restrictions: Designated routes only, except closed in wildlife areas such as Plum Valley, Lohman Ridge, and Studhorse Canyon (November 1 ~ May 1). This restriction can be amended if weather conditions are such that deer are not on the winter range. Forest Wide Standards & Guidelines: All apply.
Lohman Ridge Diversion Tunnel	
Camptonville Diversion Tunnel	
FORTY-NINER MANAGEMENT AREA	
Camptonville Diversion Tunnel	Recreation Opportunity Spectrum: Roaded natural except for a small portion of semi-primitive motorized in the Sierra Buttes area. Visual Quality Objective: Retention, however, partial retention will be allowed for developed recreation sites. Transportation Management Policy: Forest wide Standards and Guidelines apply. Off-Highway Vehicle Restrictions: Designated routes only. Forest Wide Standards & Guidelines: All apply.
New Colgate Development Facilities	
BULLARDS MANAGEMENT AREA	
New Bullards Bar Reservoir	Recreation Opportunity Spectrum: Rural in developed sites, Roaded Natural in all other areas. Visual Quality Objective: Retention in foreground, as viewed from New Bullards Bar Reservoir and recreation sites. Partial retention for remainder of the area, including developed sites. Transportation Management Policy: All roads open Forest wide Standards and Guidelines apply. Off-Highway Vehicle Restrictions: Designated routes only. Forest wide Standards and Guidelines: All apply.
Camptonville Diversion Tunnel	

Table 3.3.7-6. (continued)

New Colgate Development Facilities	TNF Standards and Guidelines
BULLARDS MANAGEMENT AREA (continued)	
Recreation facilities: Hornswoggle Group Campground, Schoolhouse Campground, Dark Day Campground, Garden Point Boat-in Campground, Madrone Boat-in Campground, Frenchy Point Boat-in Campground, Sunset Vista Point, Dam Overlook, Moran Day Use Area, Cottage Creek Boat Launch, Cottage Creek Overflow Campground, Dark Day Picnic Area, Dark Day Boat Launch, Schoolhouse Trail, Bullards Bar Trail, Emerald Cove Marina.	<p>Recreation Opportunity Spectrum: Rural in developed sites, Roded Natural in all other areas.</p> <p>Visual Quality Objective: Retention in foreground, as viewed from New Bullards Bar Reservoir and recreation sites. Partial retention for remainder of the area, including developed sites.</p> <p>Transportation Management Policy: All roads open Forest wide Standards and Guidelines apply.</p> <p>Off-Highway Vehicle Restrictions: Designated routes only.</p> <p>Forest wide Standards and Guidelines: All apply.</p>

Source: USFS 1990

According to the Sierra County Public Land Use map, Our House Diversion Dam is situated in an area designated as Rural/Residential and the Lohman Ridge Diversion Tunnel crosses land that is Rural and Rural/Residential (Sierra County 2009). Nevada County designated land around the New Colgate Powerhouse as Agricultural-30 and land around Our House Diversion Dam as Forest-40 (Nevada County 2006). Table 3.3.7-7 provides a summary of the Yuba County General Plan Land Use Designations within and adjacent to the New Colgate Development.

Table 3.3.7-7. Yuba County Land Use designations for New Colgate Development facilities.

New Colgate Development Facilities	Yuba County Land Use Designation
Lohman Ridge Diversion Tunnel	Agricultural/Rural Residential Zone 20/Timberland Preserve
Log Cabin Diversion Dam	Agricultural/Rural Residential Zone 20/Timberland Preserve
Camptonville Diversion Tunnel	Agricultural/Rural Residential Zone 20
New Bullards Bar Reservoir	Reservoir
New Bullards Bar Dam	Recreational Zone
New Bullards Bar Dam Spillway	Recreational Zone
New Colgate Power Tunnel and Penstock	Recreational Zone, Agricultural/Rural Residential Zone 40, Timberland Preserve
New Colgate Powerhouse	Agricultural/Rural Residential Zone 40
New Colgate Switchyard	Agricultural/Rural Residential Zone 40
Madrone Cove Boat-in Campground	Agricultural/Rural Residential Zone 40
Frenchy Point Boat-in Campground	Agricultural/Rural Residential Zone 20
Garden Point Boat-in Campground	Recreational Zone
Dark Day Campground	Recreation Zone
Dark Day Boat Ramp	Agricultural/Rural Residential Zone 20
Dark Day Picnic Area	Agricultural/Rural Residential Zone 20
Hornswoggle Group Campground	Agricultural/Rural Residential Zone 20
Schoolhouse Campground	Agricultural/Rural Residential Zone 20
Sunset Vista Point	Recreational Zone
Dam Overlook	Recreational Zone
Moran Road Day Use Area	Recreational Zone/Timberland Preserve
Cottage Creek Boat Launch	Recreational Zone
Cottage Creek Campground	Recreational Zone
Schoolhouse Trail	Recreational Zone
Bullards Bar Trail	Recreational Zone
Emerald Cove Marina	Recreational Zone

Source: Yuba County 2011

New Bullards Bar Minimum Flow Development

The New Bullards Bar Minimum Flow Development is comprised of the New Bullards Bar Minimum Flow Powerhouse, a below-ground penstock, and a powerhouse transformer. The area within the existing FERC Project Boundary is about 0.1 ac and located entirely on private land owned by YCWA (Table 3.3.7-1).

Table 3.3.7-8 provides a summary of the Yuba County General Plan Land Use Designations within and adjacent to the New Bullards Bar Minimum Flow Development.

Table 3.3.7-8. Yuba County Land Use Designations for New Bullards Bar Minimum Flow Development facilities.

New Bullards Bar Minimum Flow Development Facilities	Yuba County Land Use Designation
New Bullards Minimum Flow Powerhouse	Recreational Zone
New Bullards Minimum Flow Transformer	Recreational Zone
New Bullards Minimum Flow Powerhouse Penstock	Recreational Zone

Source: Yuba County 2011

Narrows 2 Development

The Narrows 2 Development is comprised of the Narrows 2 Powerhouse, an above-ground penstock, a powerhouse switchyard, and an access road. The area within the existing FERC Project Boundary is about 40 ac and located on a combination of USACE-administered land, State land (University of California Sierra Foothill Research and Extension Center), and private land (Table 3.3.7-1)

Table 3.3.7-9 provides a summary of land management for the Narrows 2 Development area.

Table 3.3.7-9. Property management plans for Narrows 2 Development facilities.

Narrows 2 Development	Landowner	Management Plan
Narrows 2 Powerhouse Penstock	USACE	USACE. 1975. Design Memorandum No. 4 USACE's Harry L. Englebright Reservoir. Yuba River, California. Master Plan.
Narrows 2 Powerhouse	USACE	USACE. 1975. Design Memorandum No. 4 USACE's Harry L. Englebright Reservoir. Yuba River, California. Master Plan.
Narrows 2 Powerhouse Switchyard	USACE	USACE. 1975. Design Memorandum No. 4 USACE's Harry L. Englebright Reservoir. Yuba River, California. Master Plan.
Appurtenant Project facilities and features, including access roads, within the FERC Project Boundary	Univ. of CA SFREC	University of California, Agriculture & Natural Resources. 1994. Strategic Plan. Sierra Foothill Research and Extension Center.
	PG&E	Pacific Forest and Watershed Lands Stewardship Council (Stewardship Council). 2007. Land Conservation Plan. Final. November 2007

Source: USACE 1975; UCANR 1994; Stewardship Council 2007

The Nevada County land in the area of the Narrows 2 Powerhouse is designated as Agricultural-30 (Nevada County 2006). Table 3.3.7-10 provides a summary of the Yuba County General Plan Land Use Designations within and adjacent to the Narrows 2 Development.

Table 3.3.7-10. Yuba County Land Use Designations for Narrows 2 Development facilities.

Narrows 2 Development	Yuba County Land Use Designation
Narrows 2 Powerhouse Penstock	Recreational Zone
Narrows 2 Powerhouse	Recreational Zone
Narrows 2 Powerhouse Switchyard	Recreational Zone

Source: Yuba County 2011

3.3.7.1.4 Project-Related Land Use Permits and Easements

Land use permits and easements obtained by YCWA for the normal Project O&M are listed below. Copies of each of these can be viewed on YCWA's Relicensing Website: www.ycwa-relicensing.com.

- 1966 Agreement between YCWA and United States California Debris Commission for Use of Englebright Reservoir. Under this agreement, YCWA has the right to construct and maintain Project facilities, including the Narrows 2 Intake, and store and release water from Englebright Reservoir, and pays the United States \$100,000 annually. The agreement expires concurrent with the FERC license and can be extended by mutual agreement.
- 1968 Agreement between YCWA and Forest Service for Recreation on NFS Land. Under this agreement, YCWA constructed and gave title to the Forest Service recreation facilities on NFS land surrounding New Bullards Bar Reservoir, and the Forest Service agreed to maintain, operate, and replace the facilities at its expense. If the Forest Service does not have adequate funding to operate and maintain the facilities, it will issue a Special Use Permit (SUP) to YCWA for operation and maintenance of the facilities (see SUPs below). In this case, YCWA will retain the fees and charges obtained for use of the facilities, and Forest Service will not require YCWA to improve the facilities.
- 1975 Easement from USACE to YCWA for Use of Narrows 2 Powerhouse Access Road (Easement No. DACW05-2-75-715). This easement was issued on November 17, 1975, and gives YCWA the right to construct, maintain and use the access road for the Narrows 2 Powerhouse. Its term is August 14, 1967 through August 13, 2017.
- 1975 Easement from USACE to YCWA for Narrows 2 Powerhouse (Easement No. DACW05-2-75-716). This easement was issued on November 17, 1975, and gives YCWA a right of way for the construction, operation and maintenance of the Narrows 2 Powerhouse, intake works and tunnel. Its term is for 50 years from August 14, 1967.
- 1984 SUP between YCWA and Forest Service for Operation and Maintenance of Garden Point, Frenchy Point and Madrone Campgrounds (total of 40 units). This SUP was issued pursuant to the above 1968 Agreement between YCWA and Forest Service for recreation on NFS land and for the three campgrounds described above. The SUP does not include a termination date.³

³ Based on the 2009 Operating Agreement (USFS 2009), the Forest Service has issued to YCWA at least three SUP amendments to the 1968 Forest Service/YCWA Recreation Agreement.

- 2005 Right-of-Way from USACE to YCWA for Narrows 2 Powerhouse Full Bypass (Right-of-Way Entry No. DACW05-9-06-510). This right-of-entry was issued on December 27, 2005. It authorized YCWA to construct the Narrows 2 Bypass project. It states that it will terminate upon the effective date of the formal easement for this project.
- 2009 Agreement between YCWA and Forest Service for Operation and Maintenance of New Bullards Bar Recreation Area. This latest in a series of annual agreements describes the process by which the Forest Service provides staff and services to maintain and operate the New Bullards Bar Recreation Area and YCWA reimburses the Forest Service for 2009 operation and maintenance. The agreement describes the responsibilities and duties of YCWA and Forest Service for providing recreational opportunities at New Bullards Bar Reservoir. Under this agreement, the Forest Service and YCWA entered into an annual Collection Agreement.

3.3.7.1.5 YCWA's Vehicular Access Routes to Project Facilities

YCWA obtains vehicular access to the Project over federal and State of California, county, and private roads. YCWA's use of these roads consists of light and heavy vehicles at varying frequencies.

In 2012 and 2013, YCWA conducted a field inventory and assessment of 9.70 mi of Primary Project Roads, encompassing 30 road segments⁴ and 0.33 mi of trails, encompassing two trail segments, that are used almost exclusively by YCWA to access Project facilities. During the study, YCWA also assessed the condition of 2.78 mi of recreation roads, encompassing 10 road segments. The goals of the study were to determine whether the continued use of Primary Project Roads and trails by YCWA for continued Project O&M would result in adverse effects. YCWA performed a field inventory of specific attributes along each segment of road or trail, including road dimensions and locations of water crossings and road drainage features, gates and signs, hazard trees and erosion features.⁵

Within the inventoried segments, hundreds of discrete features were identified, including 103 water crossings. Systematic analysis of attribute data, including condition, maintenance requirements and erosion potential, was used to establish a ranking process applicable to both discrete features and entire road segments. Each road segment was ranked as "good," "moderate," or "poor."

Table 3.3.7-11 provides details on the Primary Project Roads and Recreation Roads for the Project.

⁴ The number of segments per road is based on the number of land owners for each road. A road with one owner is represented as one road segment, whereas, a road with three different owners is represented as three road segments, as shown in Exhibit A, Table 3.1.4-1.

⁵ Refer to Technical Memorandum 9-1, *Primary Project Roads and Trails*, in Appendix E3, for a full description of the study.

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Table 3.3.7-11. Primary Project Roads and Recreation Roads shown by road ID, length, width, surface treatment, and overall condition.¹

Road Name	FERC-Approved Study	Public Vehicular Access Prohibited	Total Length (mi)	Length on Federal Land (mi)	Road Maintenance Objective (RMO)		Average Road Width (ft)	Road Surface Treatment	Overall Road Condition	Identified Problems	Overall Erosion Risk
					Maintenance Level	YCWA Use					
PRIMARY PROJECT ROADS											
Our House Diversion Dam (TNF Rd 0180-Our House)	Roads and Trails	Ridge Road gate typically unlocked	1.93	0.87 (Forest Service)	3 / 4	Daily	16	Asphalt, Gravel, Native Rock	Poor	Pavement is good, but Diversion Potential, Erosion, Signage, and American Association of State, Highway and Transportation Officials (AASHTO) compliance issues	High
Our House Diversion Dam Spur	Roads and Trails	Gate is locked 500 feet from dam	0.03	0.03 (Forest Service)	3	Periodic	12	Gravel	Good	None	Low
Log Cabin Diversion Dam	Roads and Trails	Gate is locked at Highway 49 intersection	1.37	0.86 (Forest Service)	3 (upper) 4 (lower)	Daily	22	Asphalt, Native Soil	Good	Landslides, Asphalt, Signage, and AASHTO compliance issues	Low
New Bullards Bar Dam	Roads and Trails	YCWA gate at highway	1.09	--	N/A	Daily	28	Asphalt	Good	Diversion Potential, landslides, Signage, and AASHTO compliance issues	High (landslides)
New Bullards Bar Dam Spur	Roads and Trails	YCWA gate at highway	0.11	--	N/A	Infrequent	30	Asphalt	Good	None	Low
New Bullards Bar Dam Compliance Gage Trail	Roads and Trails	YCWA gate at highway	0.12	--	N/A	Weekly	10	Native Rock	Good	Erosion	Moderate
Colgate Tunnel Lane	Roads and Trails	Private landowner gate at road; gate at YCWA property line	0.72	--	N/A	Weekly	11	Gravel	Poor	Erosion, Landslides, and Diversion Potential	High
Colgate Tunnel Muck	Roads and Trails	Accessed by Colgate Tunnel Lane (gated)	0.85	--	N/A	Infrequent	14	Gravel, Native Soil	Poor	Erosion, Landslides, and Diversion Potential	High
Colgate Haul	Roads and Trails	Private landowner gate at road; gate at YCWA property line	0.23	--	N/A	Two trips weekly	20	Gravel	Poor	Erosion, Landslides, and Diversion Potential	High
Colgate Tunnel Penstock	Roads and Trails	Accessed by Colgate Tunnel Lane (gated)	0.15	--	N/A	Infrequent	50	Gravel	Poor	None	Low
Penstock Access 1	Roads and Trails	YCWA gate at Lake Francis Road	0.23	--	N/A	Weekly	17	Gravel	Poor	Erosion	Moderate
Penstock Access 1 Spur	Roads and Trails	Accessed by Penstock Access 1 (gated)	0.04	--	N/A	Weekly	25	Gravel	Good	None	Low
Penstock Access 2	Roads and Trails	YCWA gate at Lake Francis Road	0.10	--	N/A	Weekly	18	Gravel	Good	None	Low
Penstock Access 3	Roads and Trails	YCWA gate at Lake Francis Road	0.10	--	N/A	Two trips per year	30	Gravel	Poor	Fill Failure	Moderate
Penstock Access 4	Roads and Trails	YCWA gate at Lake Francis Road	0.15	--	N/A	Monthly	21	Native Soil	Poor	Diversion Potential and Erosion	High
Narrows 2 Access	Roads and Trails	YCWA gate at Scott Forbes Road	2.07	0.57 (USACE)	N/A	Three trips weekly	22	Asphalt	Good	Erosion, Landslides, Diversion Potential, and AASHTO compliance issues	High
Narrows 2 Compliance Gage Trail	Roads and Trails	Accessed by Narrows 2 Access Road (gated)	0.21	0.03 (USACE)	N/A	Monthly	3	Native Rock	Poor	Landslides	Moderate (landslides)
Narrows 2 Access Spur 1	Roads and Trails	Accessed by Narrows 2 Access Road (gated)	0.19	0.06 (USACE)	N/A	Three trips weekly	22	Gravel	Good	Erosion	Moderate
RECREATION ROADS											
Dark Day Boat Launch Road County Road 157	Recreation	Open year-round	0.28	0.28 (Forest Service)	5	Daily	75	Asphalt	Excellent	Diversion Potential and one localized Landslide	High (landslide)
Dark Day Campground and Picnic Area Road (TNF Rd 0008-004)	Recreation	Public access allowed from April 15 to October 15	0.44	0.44 (Forest Service)	5	Daily (4/15 to 10/15)	25	Asphalt	Excellent	Landslide	High (landslide)
Schoolhouse Campground Loop Rd ¹ (TNF Rd 0008-005, 0008-005-001, 0008-005-002 and 0008-003)	Recreation	Public access allowed from April 15 to October 15	0.97	0.97 (Forest Service)	4	Daily (4/15 to 10/15)	19	Asphalt	Excellent	Asphalt and AASHTO compliance issues	Low
Hornswoggle Group Campground ¹ Road (TNF Rd 0008-006)	Recreation	Public access allowed from April 15 to October 15	0.33	0.33 (Forest Service)	4	Daily (4/15 to 10/15)	20	Asphalt	Good	None	Low
Moran Boat Launch Access Road	Recreation	Open year-round	0.29	0.20 (Forest Service)	3	Daily (4/15 to 10/15)	15	Chip Seal, Gravel	Poor	Diversion Potential and AASHTO compliance issues	Moderate
Cottage Creek Boat Launch Road ¹	Recreation	Gated year-round	0.15	--	N/A	Daily	25	Asphalt	Excellent	Signage and AASHTO compliance issues	Low
Cottage Creek Shoreline Access Road ¹	Recreation	Open year-round	0.08	0.08 (Forest Service)	3	Infrequent	16	Asphalt	Good	Landslide	Low

Table 3.3.7-11 (continued)

Road Name	FERC-Approved Study	Public Vehicular Access Prohibited	Total Length (mi)	Length on Federal Land (mi)	Road Maintenance Objective (RMO)		Average Road Width (ft)	Road Surface Treatment	Overall Road Condition	Identified Problems	Overall Erosion Risk
					Maintenance Level	YCWA Use					
RECREATION ROADS (continued)											
Sunset Vista Point ¹ (TNF Rd 0008-009)	Recreation	No public use beyond the Sunset Vista parking area	0.12	0.12 (Forest Service)	4	Daily	24	Asphalt	Excellent	None	Low
Cottage Creek Campground Road ¹	Recreation	Closed due to fire	0.12	0.12 (Forest Service)	5	Closed due to fire damage	17	Asphalt	Good	None	Low
Total Length – Roads			17.24								
Total Length – Trails			0.33								

¹ County Road right-of-ways at the entrance to Project roads that provide primary access to Project facilities are to be maintained under a Cost Share Agreement between YCWA and Yuba County. The Cost Share Agreement is not jurisdictional to the FERC license and is intended to remain as a separate agreement between YCWA and Yuba County that generally addresses shared responsibilities and funding for road maintenance.

Key:
Forest Service = United States Department of Agriculture, Forest Service
ft = feet
mi = mile
USACE = United States Army Corps of Engineers

3.3.7.1.6 Project-related Wildfires and YCWA's Policies Regarding Fire Prevention and Suppression

YCWA does not have a formal policy regarding fire prevention and suppression on public land. YCWA's staff is not trained in forest fire suppression and not required to fight fires, but notifies appropriate response agencies in the event of such an emergency.

Fire suppression systems and equipment are included in each Project powerhouse and building. In addition, YCWA maintains a vegetation-free defense zone of about 40 ft around each above-ground Project facility, excluding recreation facilities. The Forest Service, which maintains the New Bullards Bar Recreation Area facilities, controls vegetation in these areas to minimize the risk of wildfires, due to recreational activities.

YCWA adheres to local, State and Federal rules and regulations and best management practices during work. For instance, when working in Forest Service-managed land, YCWA's staff has access to axes, saws, and shovels to fight relatively small fires. If work includes burning debris, YCWA obtains necessary permits and approvals from the appropriate agency, which may require YCWA to have specialized equipment on-site and restrict burning to specific times of the year.

Technical Approach to Wildlife Fire Analysis

The period from 2003-2012 was analyzed using available fire occurrence data collected from the TNF and PNF. Fire occurrences were analyzed within a one-mile buffer of the existing FERC Project Boundary, otherwise known as the Project Vicinity, which represents an analysis area that identifies not only those fires that may have occurred in the Project, but also those fires that present a realistic threat to the Project's infrastructure. Fire occurrence data was analyzed for the following:

- Individual ignition by size, cause, date, and access
- Total ignitions within fire occurrence analysis area
- Total percent ignition by cause within fire occurrence analysis area
- Total acres burned by cause within fire occurrence analysis area, where available
- Total percent acres burned by cause within fire occurrence analysis area, where available

Fire incident and statistical records for the TNF and PNF were provided by the Forest Service National Fire and Aviation Management Web (FAMWEB) fire occurrence data archive program (FAMWEB 2012).

GIS databases describing land ownership, land use, vegetation, Project infrastructure, and natural resource values were obtained from the TNF and the PNF. These databases were used to identify, analyze, and evaluate current and historic sources of fire ignition and identify communication processes and protocols to be used in the event of emergency.

Fire Occurrence Analysis Results

From June 2003 through August 2011,⁶ there have been 48 reported fire ignitions that have occurred within the Project Vicinity. Forty-one of the 48 fire ignitions did not have acres reported with the fires (Table 3.3.7-12).

Table 3.3.7-12. Wildfires in the Yuba River Development Project Vicinity⁷ from 2003 through 2011.

Fire Name	Fire Date	Cause
Parks	6/25/2003	Arson
TNF1864	8/24/2003	Lightning
Francis	8/25/2003	Miscellaneous
Pleasant	11/22/2003	Debris burning
Louge	5/20/2004	Undetermined
Wilkinson	6/20/2004	Equipment use
Curry	8/19/2004	Miscellaneous
Scott	8/26/2004	Equipment use
Tyler 2	8/28/2004	Miscellaneous
Pleasant 1	9/28/2004	Arson
--	8/14/2005	Smoking
TNF1617	10/21/2005	Undetermined
--	5/6/2006	Vehicle
49er	6/1/2006	Equipment use
Pleasant valley	6/5/2006	Undetermined
Vista	7/5/2006	Miscellaneous
Pile	7/8/2006	Miscellaneous
Colgate	7/10/2006	Lightning
Bullards	7/15/2006	Miscellaneous
Dobbins assit	7/16/2006	Equipment use
--	2/3/2007	Unknown
--	2/17/2007	Equipment use
Lake IC / TAC 2	3/20/2007	Debris burning
Bullards	7/15/2007	Miscellaneous
--	8/9/2007	Undetermined
--	12/1/2007	Debris burning
--	2/10/2008	Playing with fire
--	4/10/2008	Unknown
--	6/29/2008	Undetermined
Colgate	7/22/2008	Miscellaneous
--	8/22/2008	Playing with fire
--	10/7/2008	Unknown
Scotts	6/20/2010	Smoking
Colgate	7/11/2010	Undetermined
Bullards	8/27/2010	Undetermined
Bullards - TNF 1579	8/27/2010	Miscellaneous
Bullards Bar Dam - Dobbins	9/27/2010	Miscellaneous
--	2/8/2011	Unknown
Lake	4/12/2011	Miscellaneous
--	5/23/2011	Unknown
Colgate	7/9/2011	Power Line

GIS Source: CALFIRE 2013

⁶ Per CALFIRE, data is unavailable for fire incidents occurring after August 2011.

⁷ Point data did not include reported acres burned.

Three of the 48 fire ignitions included acres reported with the fire ignitions were within the proposed FERC Project Boundary (Table 3.3.7-13).

Table 3.3.7-13. Wildfires within the Yuba River Development proposed Project Boundary⁸ from 2003 through 2011.

Fire Name	Fire Date	Cause	Reported Acres
Garden	8/6/2008	Lightning	<0.5
Yuba	8/15/2009	Power Line	102
Bullards Incident	8/27/2010	Unknown	158
Total	--	--	260.5

GIS Source: CALFIRE 2013

The Garden Fire, ignited on August 6, 2008, was contained by August 9, 2008. This fire was caused by lightning and damaged less than 0.5 ac within the existing FERC Project Boundary on NFS land within the PNF. The August 15, 2009 Yuba Fire damaged approximately 102 ac within the existing FERC Project Boundary on the Nevada-Yuba-Placer CDF unit and was contained on August 20, 2009. The Bullards Incident, that ignited August 27, 2010 and was contained August 31, 2010, damaged 1,289 ac within the existing FERC Project Boundary, burning both sides of the North Yuba River along New Bullards Bar Reservoir in the TNF and PNF on the Nevada-Yuba-Placer CDF unit. The ignition source of this fire is unknown. Approximately 260.5 ac of the fire-damaged lands for these three fires were within the existing FERC Project Boundary. YCWA cooperated fully with local fire fighting agencies during the suppression of these fires. None of the fires were caused by the Project.

Table 3.3.7-14. Wildfires outside of the proposed FERC Project Boundary (2003-2011).

Fire Name	Fire Date	Cause	Reported Acres
Bullards	8/6/2008	Lightning	16
Hill	4/20/2009	Miscellaneous	25
Dobbins Incident	8/20/2010	Unknown/Unidentified	11
Krista	7/9/2011	Unknown/Unidentified	342
Total	--	--	394

GIS Source: CALFIRE 2013

Fire ignitions, shown in Figure 3.3.7-1, include all 48 of the reported fire ignitions that have occurred within the Project Vicinity. Ignitions that included acres burned in the report occurred both within and outside of the Project Boundary (Garden, Yuba, Bullards Incident, Bullards, Hill, Dobbins and Krista). There were several fire ignitions that were so close to each other and so small, they are not able to be marked with individual points on the map. It should also be noted that the exact locations of the fire ignition points may not be accurate. Many ignitions that were not large enough and did not have perimeters defined, CALFIRE logged the point into the section/quad that the fire was within.

⁸ Acres burned are within the proposed Project Boundary.

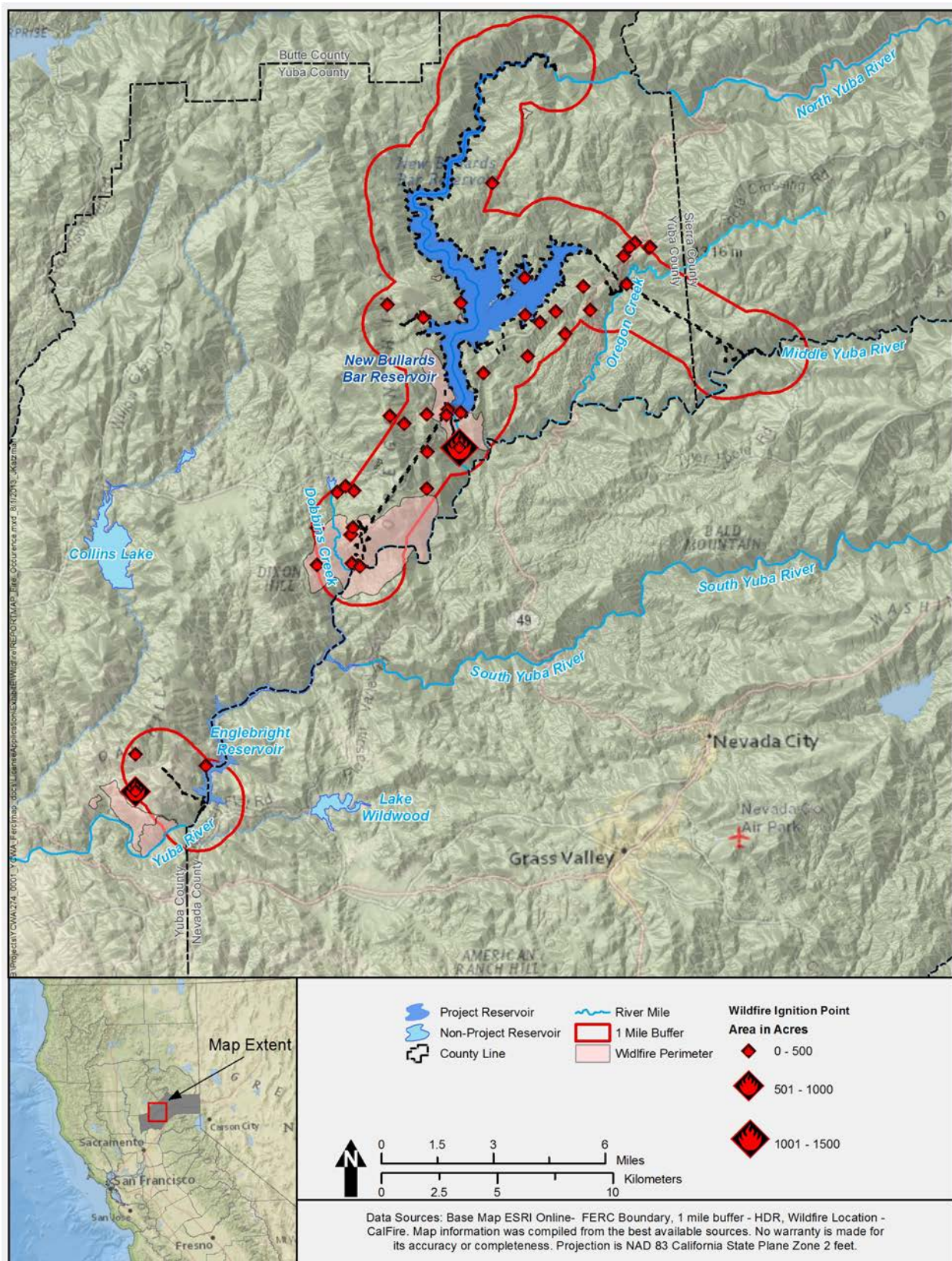


Figure 3.3.7-1. Fire ignitions within the Project Vicinity.

Fire Occurrence Trend Analysis

The Project-specific fire occurrence analysis also included a statistical trend analysis of the fire ignition/fire cause history. This analysis served to ascertain causes for historical fires and occurrence patterns that define the historic presence and impacts of fires, including project-induced fires, within the proposed Project Area. There was no record of any fire ignitions resulting from Project O&M activities.

Table 3.3.7-15 below represents a statistical summary of all fire ignitions identified in the fire occurrence analysis.

Table 3.3.7-15. Fire Occurrence Analysis Statistics by Cause (2003 – 2011)

Cause	Total Ignitions	Percent of Cause
Lightning	4	8.3%
Unknown/Unidentified/ Undetermined	15	31.25%
Power Line	2	4.2%
Miscellaneous	12	25.0%
Arson	2	4.2%
Debris Burning	3	6.25%
Equipment Use	5	10.4%
Smoking	2	4.2%
Vehicle	1	2.1%
Playing With Fire	2	4.2%
Total	48	100%

The Project Area remains at risk from high-intensity wildfires that typically start outside of the proposed Project Area, but can rapidly escalate to threaten Project infrastructure. These high-threat fires typically burn in heavy fuel and steep topography, and resist aggressive fire suppression efforts over prolonged periods of time.

Project Wildfire Risk Analysis

Present wildfire risks are associated primarily with non-Project related activities, such as avian collisions with non-Project power lines, debris burning and lightning. Other activities that tend to have a high risk factor for fire include recreation and vehicle use.

Recreation activities in the Project Area are numerous and include, but are not limited to, camping, fishing, boating, swimming, hiking, picnicking, sightseeing, wildlife viewing, four-wheel driving and hunting. The Project's recreation facilities and opportunities are found primarily at New Bullards Bar Reservoir and consist of campgrounds, day use areas, boat launches and undeveloped camping.

Vehicle access into the proposed Project Area is via Federal and State of California roads, Forest Service roads, as well as private roads. Forest Service roads intersect the Project and are used by off-highway vehicles, hunters, Forest Service personnel, and YCWA O&M personnel.

The Project O&M infrastructure may also represent a degree of wildfire risk. However, as a result of on-going fire prevention and fuel reduction measures, there have been no wildfires resulting from Project-related O&M activities.

Analysis of Current Strategies to Reduce Project Fire Risk

The ignition analysis indicates that wildfire risk reduction strategies and prevention efforts have been effective in minimizing wildfires within the Project. The Forest Service and YCWA should emphasize fire prevention education activities and fire prevention signage programs directed at recreational-based activities in and around developed recreational/camping areas.

YCWA's crews are not trained in forest fire suppression and are not required to fight fires, but instead notify appropriate emergency response agencies in the event of such an emergency. In addition, YCWA adheres to local, State and federal rules and regulations regarding work on the projects. YCWA's crew vehicles and contractor vehicles are required to have a shovel, 5-gallon back pump, and chemical fire extinguisher at all times while in the field to facilitate emergency response preparedness. If such work includes burning debris, YCWA will obtain necessary permits and approvals, which may require YCWA to have specialized equipment on site and restrict burning to specific times of the year and day.

Pendola Fire

One fire outside of the fire analysis time period, which is worth mentioning because of the size of the fire and the ongoing efforts to determine how best to spend settlement funds related to the fire, is the Pendola Fire.

The Pendola Fire started October 16, 1999 on private land near Camptonville just north of Bullards Bar Reservoir when high winds sent a 170-ft rotting Ponderosa pine falling onto a power distribution line owned by PG&E. The fire quickly spread to the TNF and PNF, burning a total of 11,700 ac (Federal Register 1999). This fire burned over 334 ac within the FERC Boundary on both the north and east side of New Bullards Bar Reservoir. Within the 1-mi buffer, approximately 6,524 acres burned. Over 2,500 firefighters and their equipment were mobilized to fight the Pendola Fire as it burned for 11 days at a cost of approximately \$4.2 million dollars. PG&E agreed to pay \$14.75 million to settle claims of damages resulting from this fire. More than \$10 million of the settlement is for compensation to the United States for damages to its natural resources from the fire, including the PNF and TNF to help remedy the resource devastation from the fire (Lundstrom 2009).

As part of this effort, the PNF has engaged the local communities, including Camptonville, Dobbins, and Oregon House, to determine how to spend allotted funding for recreation needs in the area. Based on sensing and public workshops, four main activities were singled out as needing improvement: 1) boating access; 2) hiking trails; 3) swimming; and 4) picnicking. The PNF will use these recommendations as it moves forward in deciding how to spend the allotted funds from the fire damage, some of which occurred within the FERC Project Boundary (USFS 2012).

3.3.7.1.7 Law Enforcement in the Project Area

Law enforcement is a specific responsibility identified in the 2009 Annual Operating Agreement for the New Bullards Bar Recreation Area (USFS 2009) for which YCWA annually reimburses the Forest Service through the Collection Agreement. In addition, YCWA funds local law enforcement for patrolling New Bullards Bar Reservoir during the recreation season.

YCWA is unaware of any unique law enforcement issues that would be unusual for recreation areas similar to those at New Bullards Bar Reservoir, or unusual for the other areas of the Project.

3.3.7.2 Environmental Effects

This section includes a description of the anticipated effects of YCWA's proposed Project, which includes YCWA's proposed PM&E measures (Appendix E3) on land use. The section is divided into the following areas: 1) effects on land use; 2) effects on fires; and 3) effects on roads.

3.3.7.2.1 Effects on Land Use

YCWA proposes to add to the Project a flood control outlet at New Bullards Bar Dam, a TDS at New Colgate Powerhouse, and expansion of some recreation facilities. The new facilities, and anticipated construction, are described in Section 2.2.1.

The primary benefit of the new flood control outlet on New Bullards Bar Dam is increased flood control. As configured at this time, the new outlet would have a discharge capacity at the bottom of the New Bullards Bar flood pool (El. 1,918 ft) and at the NMWSE (El. 1,956 ft) of approximately 66,000 cfs and 45,000 cfs, respectively. Work on all components of the project including the approach channel, intake structure, tunnel, and outlet structure, would be completed with only temporary disruptions of normal traffic patterns along Marysville Road due to movement of heavy construction equipment (e.g., excavators, haul trucks, concrete trucks and cranes). Some short duration (i.e., five- to 15-minute) road closures may be required when setting up or unloading large equipment. The work would require new borrow and storage areas, which are described in Section 2 of Exhibit E.

The TDS introduces compressed air into the turbine discharge chamber to lower the tailwater to a level that does not interfere with turbine operation, thereby allowing continued turbine operation during high flows. The TDS will thus will enhance the ability to regulate flood releases from New Bullards Bar Reservoir and increase the production of energy. The construction labor force and equipment will be transported to the powerhouse via Highway 20, Marysville Road, and Lake Francis Road, all of which are paved and suitable for anticipated loads. No changes in road conditions are anticipated as a result of the work. No borrow areas are anticipated to be required because the work does not entail significant earthwork, therefore no undisturbed areas are anticipated to be disturbed as a result of the work.

The addition of the recreation facilities would have a less than significant effect on land use since the facilities are within or adjacent to existing recreation facilities (i.e., no change in land use).

Maintenance of proposed Project facilities on federal land would have a less than significant effect. Most of the existing Project facilities on federal land have been in place for almost 50 years, and YCWA's studies did not identify any land use impacts related to existing facilities. YCWA does not propose significant changes to existing Project facilities or how they are maintained and operated, other than those changes discussed above.

YCWA's proposed Project includes a condition (YCWA's proposed Condition GEN1) that would provide that YCWA consult with the Forest Service annually. The measure would: 1) assure that YCWA's planned activities are efficiently coordinated to the extent possible with the Forest Service activities; 2) make the Forest Service aware of YCWA's planned O&M activities on NFS land; and 3) make YCWA aware of all pertinent Forest Service orders, rules and policies that might affect the planned activities. YCWA would meet with the Forest Service and other agencies in the first quarter of each year to discuss YCWA's planned Project O&M activities for that calendar year to the extent they are known. An annual meeting early in the year is appropriate, since YCWA normally develops an annual maintenance plan early in each calendar year. YCWA would file documentation of the meeting with FERC, including recommendations by the Forest Service, if requested by FERC. The measure does not imply that YCWA may not proceed with planned Project O&M activities until YCWA has reviewed the planned O&M activity with the Forest Service, or relieve YCWA from obtaining all necessary approvals and permits for the planned maintenance work.

3.3.7.2.2 Effects on Fire

Over the past 10 years, YCWA's existing Project has not had a significant effect on fire occurrence (Table 3.3.1.7-15). YCWA does not propose significant changes to the facilities or how they are maintained and operated, so the proposed Project would not increase the risk of Project-related fires. Nevertheless, YCWA's proposed Project includes a Fire Prevention and Response Plan (YCWA's proposed Condition LU2). The plan, when implemented, would: 1) assure YCWA minimizes, within reason, the risk of wildfires caused by Project O&M on federal land; 2) advise the Forest Service and other interested parties of roads, helispots, and fire fighting equipment within the proposed FERC Project Boundary; 3) provide a mechanism for reporting of wildfires to the Forest Service and other fire-fighting agencies; and 4) provide for cooperation between YCWA and the Forest Service for investigating fires that may be related to Project O&M. The plan would be updated as necessary and provided to the Forest Service and the appropriate fire response agencies. The plan does not imply that YCWA is responsible for patrolling for wildfires, fighting fires, or responding to fires in any manner. YCWA's staff has not received the specialized training necessary for such activities. Nor does inclusion of this measure imply YCWA is *a priori* responsible for the costs of fighting or restoration of a wildfire in the vicinity of the Project. Such a determination will be made by the appropriate parties on a case-by-case basis based on the specifics of the individual situation and the evidence at hand.

3.3.7.2.3 Effects on Roads

Use of roads for Project purposes has a potential to affect the road facilities themselves (e.g., road surfaces and culverts), and associated resource areas from the effects of road-related landslides or erosion. YCWA's proposed Project does not include any new construction of roads

or any changes in how the roads are used, however, several existing roads have been added to the FERC Project Boundary that provide primary access to Project facilities. Some of the existing roads used to access the Project facilities for O&M are on NFS land, and a few of these were rated as in poor condition during YCWA's Primary Roads and Trails Study (Table 3.3.7.1-11).

YCWA's proposed Project includes a Transportation System Management Plan (YCWA's proposed Condition LU1), which is intended to provide guidance for the rehabilitation and maintenance of Primary Project and recreation roads on all lands within the Project. Primary Project Roads are non-general use roads used primarily for the Project and are located within the existing FERC Project Boundary (and therefore, will be under FERC's jurisdiction for the proposed Project). Recreation Roads are considered the roads which exclusively provide access to a Project recreation facility. YCWA has consulted with the Forest Service to determine which roads are Primary Project Roads and which roads are Recreation Roads.

3.3.7.3 Proposed Environmental Conditions

3.3.7.3.1 YCWA Proposed Conditions

YCWA's proposed Project includes three conditions specifically related to the protection of land use resources:

- Proposed Conditions GEN1: Consult with the Forest Service Annually Regarding Project Effects on NFS Land
- Proposed Condition LU1: Implement Transportation System Management Plan
- Proposed Condition LU2: Implement Fire Prevention and Response Plan

Refer to Appendix E3 for the full text of these proposed measures.

3.3.7.3.2 Proposed Measures and Studies Recommended by Agencies or Other Relicensing Participants

[Relicensing Participants – This is a placeholder in the Draft License Application. This section will be completed in the Final License Application. YCWA]

3.3.7.4 Unavoidable Adverse Effects

The proposed Project would have both short- and long-term minor impacts on land use resources. Project facilities will continue to be a long-term, committed land use. Their initial construction represented a major, short-term impact to land use resources, but as most of the facilities have been in place for many years, their impact is now relatively minor. The addition/upgrade of some recreation facilities and construction of a new flood control outlet on New Bullards Bar Dam and TDS on New Colgate Powerhouse will have a minor, short-term

effect in respect to construction, and a no effect in respect to land use since the facilities will be within existing developed areas.⁹

Project O&M activities and associated road use will continue to have a long-term, minor affect on fire risk. In the past 15 years, no Project O&M or road use activities have caused a fire. Additionally, YCWA has developed a Fire Prevention and Response Plan for the FERC Project Boundary, which, when implemented, will further reduce the potential of Project O&M to cause fires.

Use of roads for Project purposes will continue to have a minor, short-term affect on the road facilities themselves (e.g., road surfaces and culverts), and associated resource areas. Only a small proportion of the roads in the general area are Primary Project roads, so their impact, compared to the impact of the roads system as a whole, is relatively insignificant. However, YCWA has developed a Transportation System Management Plan which details road maintenance and rehabilitation for Primary Project roads on federal land to further reduce their adverse impacts.

⁹ See Section 3.3.6.2.4 for a description on the effects of the proposed new recreation facilities.