

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 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 federal lands administered by 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, include federal lands administered by the USACE, State lands managed by the 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 listed 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.

Project 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%

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 USDOI, 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 3.3.7-1. (continued)

Project Development	Forest Service (ac)	USACE (ac)	State of California (ac)	YCWA (ac)	Other Private (ac)	Total	
						Area (ac)	Percent of Total
Narrows 2	0.0	16.1	23.2	1.2	0.0	40.5	0.5%
Total	4,416.7	16.1	23.2	3,149.3	209.9	7,815.2	100.0%
Percent	56.5%	0.2%	0.3%	40.3%	2.7%	100.0%	

Source: Yuba County 2013b

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 Geographic Information System database.

Project 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 2013b

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 2013b

3.3.7.1.2 Land Use

This section includes a description of land use regulations 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 2010b).

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 2010b

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 the population of Camptonville to be 158 with a median age of 44 years. Median household income is around \$17,000.

Gold was discovered in 1850, and the area became known as Gold Ridge. In 1854, the name was changed to Camptonville when the first post office was opened. Camptonville 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 (U.S. Census 2010a; 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 operation continuously since. No population census data on is 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 (U.S. 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 are in Dobbins (U.S. Census 2010a; 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 Lands 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, as amended, which establish standards and guidelines (Forest Service 1990 and 1988, respectively). The LRMPs, as amended, 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.

Both the TNF and PNF LRMPs were further amended in 2004 by the Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD) (Forest Service 2004). The ROD amends existing national forest LRMPs by establishing, among other things, management goals and strategies for: 1) old forest ecosystems and associated species; 2) aquatic, riparian, and meadow

ecosystems and associated species; 3) fire and fuels management; 4) noxious weeds; and 5) lower westside hardwood ecosystems (Forest Service 2004).

In addition, management direction and guidelines regarding maintenance of Project roads on NFS lands is described in the Forest Service Tahoe National Forest Motorized Travel Management EIS and ROD (Forest Service 2010f), and Plumas National Forest Motorized Travel Management EIS and ROD (Forest Service 2010g).

Tahoe National Forest

The TNF was initially established in 1891 by President Benjamin Harrison as a 136,335-ac 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 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 Lands 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 EPA 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 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. Plumas National Forest (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 Cal Fish and Wildlife 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>Lands: 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 RS.² 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: Forest Service 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. Tahoe National Forest (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	<p>Recreation Opportunity Spectrum: Roaded natural. Visual Quality Objective (VQO) - 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.</p> <p>Transportation Management Policy: Forest wide Standards and Guidelines apply.</p> <p>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.</p> <p>Forest Wide Standards & Guidelines: All apply.</p>
Lohman Ridge Diversion Tunnel	
Camptonville Diversion Tunnel	

Table 3.3.7-6. (continued)

New Colgate Development Facilities	TNF Standards and Guidelines
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.
New Colgate Development Facilities	Transportation Management Policy: Forest wide Standards and Guidelines apply. Off-Highway Vehicle Restrictions: Designated routes only. Forest Wide Standards & Guidelines: All apply.
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.
Camptonville Diversion Tunnel	Forest wide Standards and Guidelines: All apply.
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.	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.

Source: Forest Service 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

Table 3.3.7-7. (continued)

New Colgate Development Facilities	Yuba County Land Use Designation
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 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 Facilities	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 Facilities	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.

- 1965 Memorandum of Understanding (MOU) between YCWA and Forest Service regarding Conduct of Work during Construction and Subsequent Operations of the Project. This MOU specified the understandings, at that time, of YCWA and the Forest Service regarding their respective roles and responsibilities during construction and operations of the Project. The MOU was amended twice, once in June 1966 and once in August 1966.
- 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 to store and release water from Englebright Reservoir, and YCWA pays the United States \$100,000 annually. Although the agreement was signed in 1966, its term began on April 9, 1970, the date on which the Federal Power Commission determined that the Narrows 2 Powerhouse began operations. The term of this agreement is extended during the terms of any annual licenses issued by FERC for the Project, but not past 50 years from the term's beginning date. Thus, if FERC continues to issue annual licenses for the Project, the term of this

agreement will run through April 9, 2020. YCWA and the USACE are beginning to work on an interim agreement that will be in effect from April 9, 2020, until the date FERC issues a new license for the Project.

- 1966 Agreement between YCWA and the California Department of Water Resources for Grants under the Davis Grunsky Act. Among other provisions, this agreement provided funds to YCWA for the construction of various recreation facilities surrounding New Bullards Bar Reservoir. The agreement was amended twice, once in 1973 and once in 2003. The agreement expired on December 31, 2014.
- 1968 Agreement between YCWA and Forest Service for Recreation on NFS Land. Under this agreement, YCWA constructed and gave title to the Forest Service for recreation facilities on NFS land surrounding New Bullards Bar Reservoir, and the Forest Service agreed to maintain, operate, and replace these facilities at its expense. The Forest Service subsequently informed YCWA that it did not have adequate funding to operate and maintain the facilities, and issued a Special Use Permit (SUP) to YCWA for operation and maintenance of the facilities (see SUPs below). YCWA currently retains the camping fees and charges obtained for use of the facilities, maintains a Capital Improvement Fund which is charged along with camping reservation fees, and annually reimburses the Forest Service which acts as concessionaire to YCWA to operate the facilities through an Attachment A, Annual Operating Agreement and Annual Modification, to a 1990 Collection Agreement described below.
- 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 gave YCWA the right to construct, maintain and use the access road for the Narrows 2 Powerhouse. It was to expire on August 13, 2017. However, on March 1, 2012, USACE retracted this easement, stating that it was not necessary because permission to use the land covered by this easement under Army control was ordered by the FERC under Project Numbers 2246 and 2246-047.
- 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 an easement for a right-of-way for the construction, operation and maintenance of the Narrows 2 Powerhouse, intake works and tunnel. Its term expires on August 14, 2017. YCWA contends that it will not need to renew this easement because YCWA's FERC license for the Project authorizes YCWA to conduct the activities that also are authorized by this easement.
- 1984 Amendment 1 to SUP between YCWA and Forest Service - 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 have a termination date.
- 1987 Amendment 2 to SUP between YCWA and Forest Service – Waterless Toilets (total of 8). This SUP was issued pursuant to the above 1968 Agreement between YCWA and Forest Service for recreation on NFS land and for the eight Shasta waterless toilets. The SUP does not have a termination date.

- 1990 Collection Agreement between YCWA and Forest Service for Recreation Facilities. This collection agreement was issued pursuant to the above 1968 Agreement between YCWA and Forest Service. The agreement amended the arrangement described in the 1968 Agreement. It describes the process by which the Forest Service, as YCWA's recreation concessionaire, provides staff and services to maintain and operate the New Bullards Bar Recreation Area and YCWA reimburses the Forest Service for 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 have entered into a series of annual collection agreements. The collection agreement SUP does not have a termination date.
- 1991 Amendment 3 to SUP between YCWA and Forest Service – Addition of Hornswoggle, Schoolhouse and Dark Day Campgrounds. This SUP was issued pursuant to the above 1968 Agreement between YCWA and Forest Service for the addition of Hornswoggle, Schoolhouse and Dark Day campgrounds. The SUP does not have a termination date.
- 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. However, no formal easement has been issued for this project and YCWA contends that it may operate and maintain this project under its FERC license for the Project, which was amended on November 22, 2005 to include this project.
- Annual Operating Agreements between YCWA and Yuba County Sheriff's Department for Law Enforcement Services. Under these agreements, YCWA annually funds the Yuba County Sheriff's Department for law enforcement services at New Bullards Bar Reservoir.

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 12.14 mi of Primary Project Roads, encompassing 28 road segments³ 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 4.07 mi of recreation roads, encompassing 13 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,

³ 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.

including road dimensions and locations of water crossings and road drainage features, gates and signs, hazard trees and erosion features.⁴

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 Refer to Technical Memorandum 9-1, *Primary Project Roads and Trails*, for a full description of the study which can be found on FERC’s eLibrary as referenced by the FERC accession number provided in Table E6-1 of Appendix E6 of this Exhibit E.

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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 Restrictions	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 900 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
Garden Valley (TNF Rd 0125-013)	Roads and Trails	Forest Service gate locked just below intersection with TNF Rd 0125-013-02	2.53	2.53 (Forest Service)	2	Infrequent	20	Gravel, Native Soil	Good	None	Low
Sunset Vista Point Spur	Roads and Trails	No public use beyond the Sunset Vista Point parking area	0.16	0.16 (Forest Service)	3 / 4	Daily to Weekly during 4/15-10/15; and twice a month during 10/16-4/14.	20	Gravel	Excellent	None	Low
Cottage Creek Shoreline Access	Roads and Trails	Gated at intersection with Cottage Creek Campground Access Road	0.08	0.08 (Forest Service)	3	Periodic	16	Asphalt	Good	Landslide	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 Powerhouse	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 Powerhouse Road (gated)	0.21	0.03 (USACE)	N/A	Monthly	3	Native Rock	Poor	Landslides	Moderate (landslides)
Narrows 2 Intake Spur	Roads and Trails	Accessed by Narrows 2 Powerhouse Road (gated)	0.20	0.06 (USACE)	N/A	Three trips weekly	22	Gravel	Good	Erosion	Moderate
RECREATION ROADS											
Dark Day Access Road ¹ (TNF Rd 0008-004)	Roads and Trails	Open year-round	0.23	0.23 (Forest Service)	5	Daily	25	Asphalt, Chip Seal	Good	Signage and AASHTO compliance issues.	Moderate
Dark Day Boat Launch Road	Roads and Trails	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)	Roads and Trails	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)	Roads and Trails	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

Table 3.3.7-11 (continued)

Road Name	FERC-Approved Study	Public Vehicular Access Restrictions	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 (cont'd)											
Hornswoggle Group Campground ¹ Road (TNF Rd 0008-006)	Roads and Trails	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	Roads and Trails	Public access allowed from May through September	0.29	0.20 (Forest Service)	3	Daily	15	Chip Seal, Gravel	Poor	Diversion Potential and AASHTO compliance issues	Moderate
Cottage Creek Campground Road	Roads and Trails	Closed due to fire	0.14	0.12 (Forest Service)	5	Closed due to fire damage	17	Asphalt	Good	None	Low
Cottage Creek Campground Access Road ²	Roads and Trails	Open year-round	1.24	0.43 (Forest Service)	3	Daily	36	Asphalt	Poor to Good	Active landslides, erosion, and Signage and AASHTO compliance issues	High
Cottage Creek Boat Launch Road	Roads and Trails	Gated year-round	0.15	--	N/A	Daily	25	Asphalt	Excellent	Signage and AASHTO compliance issues	Low
Total Length – Roads			16.21								
Total Length – Trails			0.33								

Key:

Forest Service = United States Department of Agriculture, Forest Service

USACE = United States Army Corps of Engineers

¹ YCWA is working on a cost share agreement with Yuba County for maintenance of County Road segments that provide primary access to Project facilities, including “driveway” entrances to Project Recreation Roads that fall within a County Road right-of-way. A Cost Share Agreement with Yuba County would not be 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.

² Yuba County has confirmed the road segment formerly referred to as County Road 169 (i.e., from Marysville Road to Cottage Creek Campground) is not a county road.

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 BMPs 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 1-mi 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 2011,⁵ 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 Vicinity⁶ 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

⁵ Per CALFIRE, data are unavailable for fire incidents occurring after August 2011.

⁶ 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 Boundary⁷ 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	1,307
Total	--	--	1,409.5

GIS Source: CALFIRE 2013

The Garden Fire, which started 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 CALFIRE unit and was contained on August 20, 2009. The Bullards Incident, which started on August 27, 2010 and was contained August 31, 2010, damaged 1,307 ac within the existing FERC Project Boundary, burning lands on both sides of the North Yuba River along New Bullards Bar Reservoir in the TNF and PNF on the Nevada-Yuba-Placer CALFIRE 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 from 2003 through 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.

⁷ Acres burned are within the proposed FERC Project Boundary.

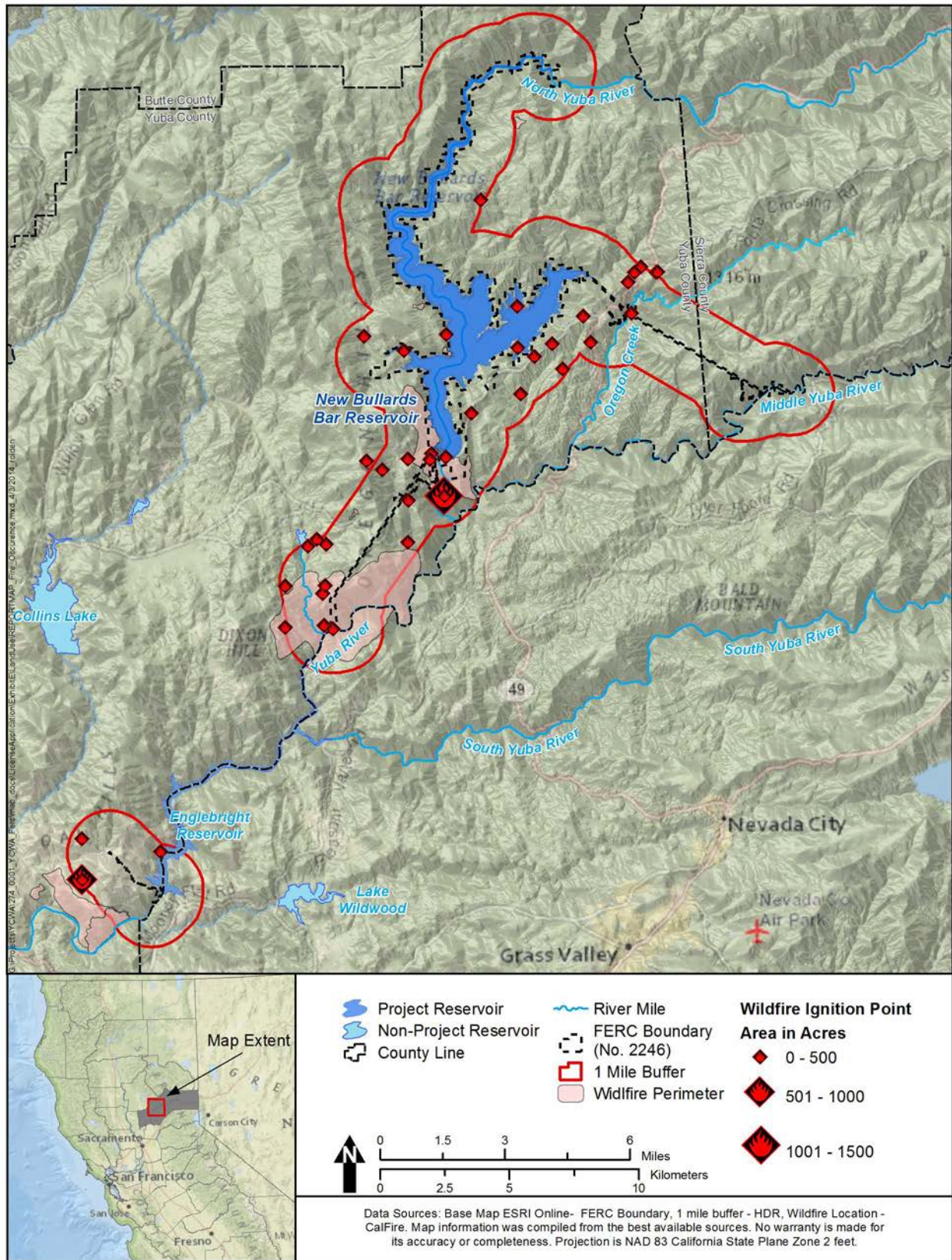


Figure 3.3.7-1. Fire ignitions within the Project Vicinity.

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 from 2003 through 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 ac 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 (Forest Service 2012b).

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 (Forest Service 2009c) 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 E2) on land use. The section is divided into the following areas: 1) effects of construction-related activities; 2) effects of continued Project O&M.

YCWA's proposed Project includes the following conditions related to the protection of land use:

- Proposed Condition GEN1: Organize Ecological Group and Host Meetings
- Proposed Condition GEN6: Review of Improvements on NFS Lands
- Proposed Condition TR1: Implement Integrated Vegetation Management Plan
- Proposed Condition RR1: Implement Recreation Facilities Management Plan
- Proposed Condition LU1: Implement Transportation System Management Plan
- Proposed Condition LU2: Implement Fire Prevention and Response Plan

Refer to Appendix E2 for the full text of the proposed conditions. Each condition is discussed below, including how the condition would protect or enhance land use.

3.3.6.2.1 Effects of Construction-Related Activities

YCWA's proposed Project includes the construction of several facilities, including New Colgate Powerhouse TDS, the New Bullards Bar Dam auxiliary flood control outlet, modifications to Our House Diversion Dam and Log Cabin diversion dams fish release outlets, modification to the gates at Lohman Ridge Diversion Tunnel, and the construction of various recreation facilities. This section provides a general description of the effects of the construction of these facilities on recreation resources.

New Bullards Bar Dam Auxiliary Flood Control Outlet

To mitigate effects to land use resources during construction of the New Bullards Bar Dam Auxiliary Flood Control Outlet, YCWA will obtain and implement all permits required for construction, and YCWA's proposed Project includes three conditions for implementation as needed: GEN1; GS1; and TR1.

Condition GEN1 that would provide YCWA meet with agencies and Indian tribes 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 lands; 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.

Condition GS1 provides a generic erosion and sediment control plan that describes the consultation YCWA will initiate and measures YCWA will employ to control sediment and erosion when stabilizing slopes affected by the Project. The plan would be implemented in coordination with other plans in the license (e.g., Integrated Vegetation Management Plan and Transportation System Management Plan) that address, at least in part, erosion and sediment control actions. This condition does not relieve YCWA of consulting with appropriate agencies for specific work and developing work-specific sediment and erosion control plans, where required, with an agency with jurisdiction over the work. It is anticipated that Condition GS1 provides an adequate plan for most work, but not all work that involves erosion and sediment control. Further, this condition does not relieve YCWA from obtaining all necessary permits and approvals for the work.

Condition TR1 provides an Integrating Vegetation Management Plan that includes activities under one comprehensive plan, which will result in better control of NNIPs, with better communication and coordination. YCWA's proposed Integrated Vegetation Management Plan contains provisions for NNIP management, re-vegetation, routine vegetation management and sensitive resource protection. Project O&M activities, such as road grading and vegetation control, may increase the spread of NNIPs. YCWA believes that the additional components of this condition, including NNIP removal, monitoring, and re-vegetation, will prevent the further spread of NNIPs and improve the overall environment. Implementing revegetation and sensitive resource protection will also help protect and improve the environment, while allowing continued Project O&M throughout the term of the license. Approaching these activities with a coordinated team approach is efficient and reduces risk of unintended environmental impacts. TR1 provides guidance for the rehabilitation and maintenance of Primary Project Roads and Trails.

New Colgate Powerhouse Tailwater Depression System

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.

To mitigate effects to land use resources during construction of the New Colgate Powerhouse TDS, YCWA will obtain and implement all permits required for construction, and YCWA's proposed Project includes three conditions for implementation as needed: GEN1, GS1, and TR1, which are described above.

Modifications to the Fish Release Outlets at Our House Diversion Dam and Log Cabin Diversion Dam

To mitigate construction-related effects to land use resources during modifications to fish release outlets at Our House and Log Cabin diversion dams, YCWA will obtain and implement all permits required for construction, and YCWA's proposed Project includes four conditions for implementation as needed: GEN1, GS1, and TR1, which are described above, and Condition GEN6, *Review of Improvements on NFS Lands*.

Condition GEN6 assures that any proposed new development on NFS lands are reviewed by the Forest Service prior to implementation.

Modifications to Lohman Ridge Diversion Tunnel Intake

The work would occur in late summer when the flow release from the Our House Diversion Dam is generally low and equal to inflow into the impoundment, and the water surface elevation in Our House Diversion Dam Impoundment is below the invert elevation of the Lohman Ridge Diversion Tunnel Intake.

To mitigate construction-related effects to land use resources during modifications to Lohman Ridge diversion tunnel intake, YCWA will obtain and implement all permits required for construction, and YCWA's proposed Project includes four conditions for implementation as needed: GEN1, GEN6, GS1, and TR1, which are described above.

Recreation Facilities Rehabilitation and Enhancements

YCWA's proposed Project provides extensive recreational facilities including developed campgrounds, day-use areas, boat launches, trails and facility access and circulation roads at New Bullards Bar Reservoir; as well as river access facilities at Our House Diversion Dam Impoundment and Colgate Powerhouse. Further, as part of YCWA's Condition RR1, *Implement Recreation Facilities Plan*, the proposed Project includes major rehabilitation and upgrade measures at all the existing Project recreation facilities and the construction of several new Project recreation facilities. All of these facilities lie within the existing Project Boundary

except for the new Kelly Ridge Campground and RV Dump Station.⁸ Rehabilitation of the existing recreation facilities or construction of new facilities has short-term, minor adverse impacts (e.g., noise, ground disturbance including potential vegetation, erosion and water quality effects); however, YCWA has proposed appropriate resource protection measures and plans to minimize the short-term impacts from construction activities. Notably, the specific construction activities and schedule are not known at this time, however, YCWA's proposed Condition RR1 provides a detailed site planning, consultation and implementation process that ensures the construction-related activities addresses all applicable environmental review and required permitting prior to construction.

Effects on land use resources of construction of new or upgraded recreation facilities will be minor and localized. To mitigate the construction-related effects of recreation upgrades to land use resources, YCWA will obtain and implement all permits required for construction, and, besides Condition RR1 described above, YCWA's proposed Project includes four conditions for implementation as needed: GEN1, GEN6, GS1, and TR1, which are described above.

3.3.7.2.2 Effects of Proposed Project Operations and Maintenance

Land Use

Effects on land use resources of operation and maintenance of the proposed auxiliary flood control outlet will be insignificant as it will reduce the ultimate peak flood flows below New Bullards Bar Dam compared to existing operations. It would only be used during high-flow events, and is not planned that this new outlet would be used for routine flood management releases that may be necessary because of relatively small encroachments into the flood reservation.

Effects on land use resources of operation and maintenance of the proposed New Colgate Powerhouse TDS will be insignificant as its operation under the proposed Project will moderate peak flows below New Bullards Bar Dam during flood events compared to existing operations.

Effects on land use resources of operation and maintenance of the proposed modified fish release valves at Our House Diversion Dam and Log Cabin Diversion Dam will be minor and insignificant, with implementation of a greater variation of minimum instream flows as a beneficial condition in the bypass reaches below both diversion dams.

Effects on land use resources of operation and maintenance of the proposed Lohman Ridge Intake Tunnel will be minor and insignificant.

⁸ Since the new Kelly Ridge Campground and the new recreation vehicle (RV) dump station were agreed to very late in the relicensing and, as conceived at this time, would be located on approximately 57 ac of NFS lands outside the existing Project boundary, YCWA's relicensing studies did not include the area where the new Kelly Ridge Campground and the new RV dump station would be located, which are shown in the *Recreation Facilities Plan*. Therefore, YCWA will perform botanical and cultural studies (i.e., water and aquatic studies are not proposed because the area does not include and is not adjacent to any surface water) in these areas in 2017 and will file with FERC the results of the studies when they are available. The additional cultural studies may require that YCWA modify its previously filed HPMP. If so, YCWA anticipates the modified HPMP would be filed with FERC by the end of 2017.

The operation and maintenance 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.

Fire

Over the past 10 years, YCWA's existing Project has not had a significant effect on fire occurrence (Table 3.3.7-15). 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 Condition LU2, *Fire Prevention and Response Plan*. 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, if necessary, by the appropriate parties on a case-by-case basis based on the specifics of the individual situation and the evidence at hand.

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 includes construction of two new recreation-related roads (Dark Day RV Dump Station loop road, and Kelly Ridge Campground loops and spurs) and several existing roads that provide primary access to Project facilities have been added to the FERC Project Boundary. 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 3.3.7-11).

YCWA's proposed Project includes Condition LU1, *Transportation System Management Plan*, which is intended to provide guidance for the rehabilitation and maintenance of Primary Project and Recreation roads on all lands within the Project. Adherence to this guidance will ensure that YCWA maintains Project roads in a condition that avoids negative effects to the roads themselves and to other environmental resources that could be affected by roads in poor condition. YCWA's adherence to the guidance, and coordination with other proposed

Conditions will also ensure that adverse effects to other environmental resources caused by activities involved in creating, maintaining, or rehabilitating the roads under the Transportation System Management Plan are avoided. 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 Measures Recommended by Agencies or Other Relicensing Participants in Comments on DLA That Were Not Adopted by YCWA

Nine comment letters were filed with FERC regarding YCWA's DLA. YCWA reviewed each letter and, comments related to land use are addressed below.

Moran Road Addition to Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Consider developing an extension of Moran Road to provide access to low water for boat launching (p. 51).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan and a Recreation Facilities Plan, which YCWA have included in this Amended FEA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, and Proposed Condition RR1, *Implement Recreation Facilities Plan*, in Appendix E2). YCWA believes the collaborative agreement on these two conditions addresses the above DLA comment.

Include Access to Dark Day as a Project Road to Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Include FS Route 0008-004 also referred to as Yuba County Rd 181, *Access to Dark Day*, as a Project Road. The total length of the route is 0.6270 miles. Forest Service database shows the entire route as FS Jurisdiction only including a note that from the intersection of Marysville Road at MP 0.0 to MP 0.3220 "is in the Yuba County ROW". There is an 'End County Maintenance' sign around MP 0.3 after the Kiosk. The entire route is on National Forest System lands in our data base and should be considered a project road. (p. 51).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FEA (see YCWA Proposed Condition LU1, *Implement Transportation*

System Management Plan, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Kiosk in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Table 2.2-2, and associated appendices: Include the kiosk buildings in the Recreation Facilities Plan (p. 52).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Hazard Tree Treatment Area in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Hazard tree removal should be 200 feet from edge of road.

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on an Integrated Vegetation Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition TR1, *Implement Integrated Vegetation Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Vegetation Clearing Along Edge of Roads in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Clearing should be 4 feet from hinge of road and top of cut, plus sight clearing.

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on an Integrated Vegetation Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition TR1, *Implement Integrated Vegetation Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Change in Recommended Treatments in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Some of the '*Recommended Treatments*' in the Pavement Table indicates that work will be done, '*if road use warrants...*' We would like the phrase '*if road use warrants*' removed. (p. 52).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Recommended Treatment from Updated Tech Memo in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Include in Recommended Treatment Tables for this plan, the recommended treatments that were studied and included in the updated Tech Memo 9-1 for Yuba County Road 157 (also referred to as Yuba County Road 181 on the map in Attachment C *Location of Roads and Engineering Features* of the Transportation Management Plan and also referred to as NFSR 0008-004) (p. 52).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Recommended Treatment for Kiosk from Updated Tech Memo in Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Include in Recommended Treatment Tables for this plan, the recommended treatments that were studied and included in the updated Tech Memo 9-1 for the Project kiosk on NFSR 0008-004 - repairing the pavement and installing curb, etc. to finish the project (p. 52).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

Addition of Kiosks and Surroundings to Transportation System Management Plan

In its February 28, 2014 letter, the Forest Service recommended the following:

Attachment G: *Database of Roads Features* of the Transportation Management Plan: Include the Project kiosks located along route 0008-004 and Yuba County Road 169 and the related signs and Pavement Condition for these routes, including the unfinished area of road near the project kiosk installed on 0008-004 (Dark Day Access Road) (p. 52).

Subsequent to the Forest Service's filing of this comment on the DLA, the Forest Service and YCWA reached agreement on a Transportation System Management Plan, which YCWA has included in this Amended FLA (see YCWA Proposed Condition LU1, *Implement Transportation System Management Plan*, in Appendix E2). YCWA believes the collaborative agreement on this condition addresses the above DLA comment.

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, and part of the Project baseline condition. The addition/upgrade of some recreation facilities and construction of a new Auxiliary 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 effect 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 all lands within the Project 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.

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