# Draft Application for a New License
# Major Project – Existing Dam

## Our House and Log Cabin Diversion Dams Sediment Removal Plan

## Security Level: Public

Yuba River Development Project
FERC Project No. 2246

Draft – December 2013

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None.

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None.

# GLOSSARY - DEFINITION OF TERMS, ACRONYMS AND ABBREVIATIONS

| Term | Definition |
|---|---|
| CVRWQCB | Central Valley Regional Water Quality Control Board |
| cfs | cubic feet per second |
| FERC | Federal Energy Regulatory Commission |
| Forest Service | United States Department of Agriculture, Forest Service |
| ft | foot or feet |
| invert | an arch constructed in an upside-down postion to provide lateral support |
| mi | mile |
| NFS | National Forest System |
| Plan | Erosion and Sediment Control on National Forest System Land Plan |
| PNF | Plumas National Forest |
| Project | Yuba River Development Project, FERC Project No. 2246 |
| SWRCB | State Water Resources Control Board |
| TNF | Tahoe National Forest |
| USACE | United States Army Corps of Engineers |
| YCWA | Yuba County Water Agency |

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**SECTION 1.0**

# INTRODUCTION

In April 2014, the Yuba County Water Agency (YCWA), pursuant to Section (§) 5.18 of Title 18 of the Code of Federal Regulations, filed with the Federal Energy Regulatory Commission (FERC or Commission) an Application for a New License for Major Project – Existing Dam – for YCWA's 361.9 megawatt Yuba River Development Project (Project), FERC Project Number 2246. The initial license for the Project was issued by the Federal Power Commission (FERC's predecessor) to YCWA on May 16, 1963, effective on May 1, 1963. The Federal Power Commission's May 6, 1966, Order Amending License changed the license's effective date to May 1, 1966, for a term ending on April 30, 2016.

YCWA included in its Application for New License this Our House and Log Cabin Diversion Dams Sediment Removal Plan (Plan).

The United States Department of Agriculture, Forest Service's (Forest Service) Federal Power Act (FPA) § 4(e) authority only applies in this Plan to Project facilities on National Forest System (NFS) land. The Forest Service administers the Plumas National Forest (PNF) in conformance with the PNF Land and Resource Management Plan (USDA 1988), and administers the Tahoe National Forest (TNF) in conformance with TNF Land and Resource Management Plan (USDA 1990).

## 1.1 Background

### 1.1.1 Yuba River Development Project

The Project is located in Yuba, Sierra and Nevada counties, California, on the main stems of the Yuba River, the North Yuba River and the Middle Yuba River, and on Oregon Creek, a tributary to the Middle Yuba River. Major Project facilities, which range in elevation from 280 feet (ft) to 2,049 ft, include: 1) New Bullards Bar Dam and Reservoir; 2) Our House and Log Cabin diversion dams; 3) Lohman Ridge and Camptonville diversion tunnels; 4) New Colgate and Narrows 2 power tunnels and penstocks; 5) New Colgate, New Bullards Minimum Flow and Narrows 2 powerhouses; and 6) appurtenant facilities and features (e.g., administrative buildings, switchyards, roads, trails and gages). The existing Project does not include any aboveground open water conduits (e.g., canals or flumes) or any transmission lines.

In addition, The Project includes 16 developed recreation facilities. These include: 1) Hornswoggle Group Campground; 2) Schoolhouse Campground; 3) Dark Day Campground; 4) Cottage Creek Campground;[1] 5) Garden Point Boat-in Campground; 6) Madrone Cove Boat-in Campground; 7) Frenchy Point Boat-in Campground; 8) Dark Day Picnic Area; 9) Sunset Vista

[1] Cottage Creek Campground was burned in 2011 and has not been rebuilt. YCWA is in discussions with the Forest Service regarding rebuilding the burned campground.

Point; 10) Dam Overlook; 11) Moran Road Day Use Area; 12) Cottage Creek Boat Launch;[2] 13) Dark Day Boat Launch, including the Overflow Parking Area; 14) Schoolhouse Trail; 15) Bullards Bar Trail; and 16) floating comfort stations.[3] All of the recreation facilities are located on NFS land, with the exception of the Dam Overlook, Cottage Creek Boat Launch and small portions of the Bullards Bar Trail, which are located on land owned by YCWA. All of the developed recreation facilities are located within the existing FERC Project Boundary, except for a few short segments of the Bullards Bar Trail to the east of the Dark Day Boat Launch. In addition, the Project includes two undeveloped recreation sites at Our House and Log Cabin diversion dams, both located on NFS land and within the existing FERC Project Boundary.

Figure 1.1-1 shows the Project Vicinity,[4] proposed Project, and proposed FERC Project Boundary.[5]

[2] Emerald Cove Marina provides visitor services at Cottage Creek Boat Launch, including houseboat and boat rentals, boat slips and moorings, fuel and a general store. The marina is operated under a lease from YCWA by a private company.

[3] The Project recreation facilities included one campground that is no longer part of the Project. Burnt Bridge Campground was closed initially by the Forest Service in 1979 due to low use levels. FERC, in an August 19, 1993 Order, which approved YCWA's Revised Recreation Plan, directed YCWA to remove all improvements and restore the Burnt Bridge Campground to the condition it was in prior to development of the facility. YCWA consulted with the Forest Service and all that remains of Burnt Bridge Campground today is the circulation road and vehicle spurs; all other facilities were removed.

[4] For the purpose of this Plan, "Project Vicinity" refers to the area surrounding the proposed Project on the order of United States Geological Survey 1:24,000 quadrangles.

[5] The FERC Project Boundary is the area that YCWA uses for normal Project operations and maintenance. The Boundary is shown in Exhibit G of YCWA's Application for New License, and may be changed by FERC with cause from time to time during the term of the new license.

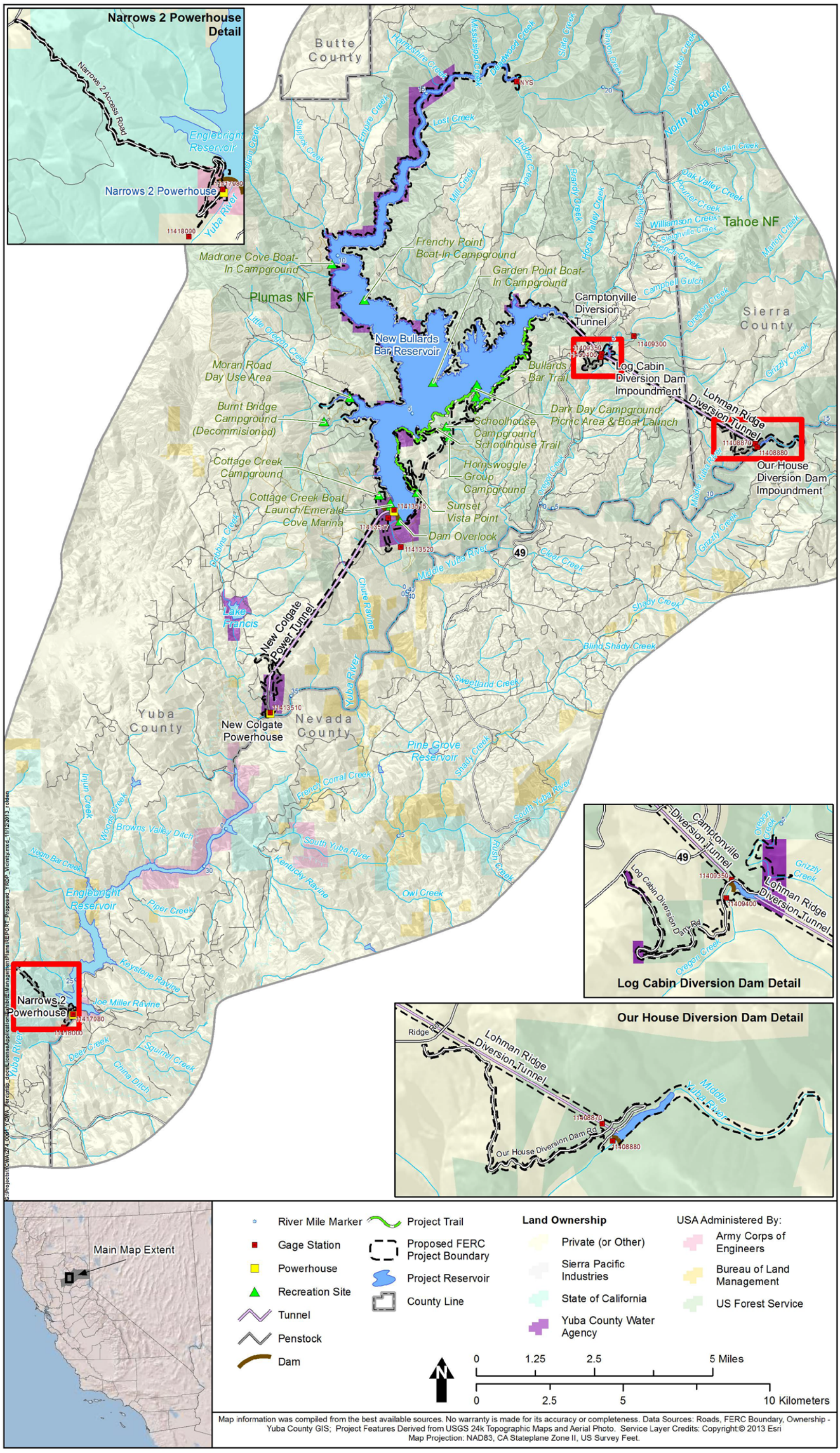


**Figure 1.1-1. Yuba County Water Agency's Yuba River Development Project and Vicinity.**

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## 1.2 Purpose of the Our House and Log Cabin Diversion Dams Sediment Removal Plan

The purpose of this Plan is to prescribe procedures and guidelines for the removal of sediment that will occur over time behind Our House Diversion Dam and Log Cabin Diversion Dam. The objectives of the sediment management are twofold: 1) to provide for dam safety and proper functioning of Project facilities, especially the fish release and low level outlet valves; and 2) to maintain the health of the aquatic environment downstream of the dams by allowing the passage of sediments that occur behind the dams.

YCWA will coordinate, to the extent appropriate, the efforts required under this Plan with other Project resource efforts, including implementation of other resource management plans and measures included in the new license.

## 1.3 Goals and Objectives of the Our House and Log Cabin Diversion Dams Sediment Removal Plan

The goal of the Plan is to ensure that YCWA's removal of sediment from Our House and Log Cabin diversion dams is fully protective of environmental resources.

The objective of the Plan is to provide necessary guidelines to meet the Plan goal.

## 1.4 Contents of the Our House and Log Cabin Diversion Dams Sediment Removal Plan

This Plan includes the following:

- Section 1. Introduction. This section includes introductory information, including the purpose and objectives of the Plan.
- Section 2. Description of Our House and Log Cabin Diversion Dams. This section describes Our House and Log Cabin diversion dams, access to the dams and recent sediment removal activities at each dam.
- Section 3. Methods for Sediment Management. This section describes the methods for managing sediment which will occur behind the dams over the course of their operation under the Project license.
- Section 4. Reporting, Consultation and Plan Revisions. This section describes reporting, consultation, and Plan revisions.
- Section 5. References Cited. This section lists references cited in this Plan.

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**SECTION 2.0**

# DESCRIPTION OF OUR HOUSE AND LOG CABIN DIVERSION DAMS

This section describes Our House and Log Cabin diversion dams, access to the dams and recent sediment removal activities at each dam.

## 2.1 Our House Diversion Dam

### 2.1.1 Vehicular Access

Access to Our House Diversion Dam is from State Route 49 via Ridge Road (approximately 2 miles (mi) south of the intersection of State Route 49 and Marysville Road), east on Ridge Road, approximately 4.5 mi to Our House Diversion Dam Road, and south and east on Our House Diversion Dam Road, approximately 1.5 mi to the dam. Our House Diversion Dam Road is not gated.

### 2.1.2 Facility Description

Our House Diversion Dam, which is located on NFS land within the TNF, is a 130-ft radius, double curvature, concrete arch dam straddling the border between Sierra County and Nevada County on the Middle Yuba River, 12.6 mi upstream of its confluence with the North Yuba River. The dam is 70 ft high with a crest length of 368 ft and a crest elevation of 2,030 ft, and has a drainage area of 144.8 square miles (sq mi). The dam has a spillway, a fish release outlet valve used for releasing minimum flow requirements in the existing FERC license, and a low level (5-foot diameter) outlet valve.[6] The spillway, with an invert elevation of 2,030 ft is ungated and has a maximum capacity of 60,000 cubic feet per second (cfs). The fish release outlet valve has an invert elevation of 1,990 ft, and an engineer's estimated maximum capacity of 59 cfs[7] when the pool is at the invert (2,015 ft) of the Lohman Ridge Diversion Tunnel. The fish release outlet is controlled by a hand-operated 24-inch (in) valve on the downstream end of the outlet. The low level outlet has an invert elevation of 1,987 ft, and an engineer's estimated maximum capacity of 463 cfs[8] when the pool is at the invert of the Lohman Ridge Diversion Tunnel. The low level outlet is controlled by a slide gate, which is operated by a two-person mobile gasoline powered engine, on the upstream face of the dam.

[6] For the purpose of this Plan, the slide gate that controls the Our House Diversion Dam low level outlet is referred to as a "valve."
[7] YCWA plans to rate the Our House Diversion Dam fish release valve in spring 2015.
[8] YCWA plans to rate the Our House Diversion Dam low level outlet valve in spring 2015.

Figures 2.1-1 and 2.1-2 show the downstream and upstream faces, respectively, of Our House Diversion Dam.


**Figure 2.1-1. View to east of downstream face of Our House Diversion Dam. The majority of discharge is through the fish release valve. A minor amount of gate leakage is occurring through the low level outlet valve, which is below the minimum flow release valve.**

**Figure 2.1-2. View to the south of upstream face of Our House Diversion Dam. The inlets for the low level valve and the fish release valve are located below the operator for the Low Level Valve, as indicated by the arrow in Figure 2.1-2.**

YCWA maintains a pool throughout the year at Our House Diversion Dam. When Our House Diversion Dam is being operated to release inflow to the Our House Diversion Dam impoundment, the fish release outlet valve is adjusted once per day to maintain the impoundment water surface elevation at a constant level, ensuring outflows are the same as inflows. Allowing the water surface elevation to drop too low would induce additional accumulation of sediment and debris at the dam; maintaining the pool elevation keeps most of the sediment and debris at the upstream end of the impoundment, away from the dam.

### 2.1.3 Past Sediment Removal

YCWA has records of four sediment removal operations at Our House Diversion Dam.

In 1986, following the floods in February, YCWA implemented a two-phased dredging project in Our House Diversion Dam. Phase I dredging began sediment removal on August 1, 1986; an unquantified amount was removed and location of disposal was not specified. Necessary permits and approvals were obtained for sediment disposal. On August 20, 1986, between 7,333 and

15,000 cubic yards ($yd^3$) was estimated to have been passed downstream through the release valve due to erosion of material in the reservoir, along with an additional unknown amount about a month later. YCWA discontinued removal in the fall of 1986, though an additional 15,000 $yd^3$ remained to be removed. Nine-thousand $yd^3$ were removed from downstream of Our House Diversion Dam in 1986 (EBASCO Environmental 1989).

In 1992, dredging removed 27,595 $yd^3$ of sediment between August 3 and September 5. Sediments were disposed of at a site at the Sierra Mountain Mills, approximately 8 mi away from the dam (PG&E 1992). Necessary permits and approvals were obtained for sediment disposal.

In 1997, dredging removed 67,894 $yd^3$ of sediment between September 10 and October 30. Prior to removal, sediments were tested for mercury and found to be at natural background levels. Sediments were sent to a dredging disposal site on NFS land approximately, 18 mi west of Our House Diversion Dam (PG&E 1997). Necessary permits and approvals were obtained for sediment disposal.

On December 31, 2005, an intense storm event carried sediments from the upstream reaches of the Middle Yuba River that partially blocked the low level outlet, tunnel intake structure, and fish release outlet. Dredging removed 80,000 $yd^3$ of sediment between August 10 and September 15, 2006. Sediments were disposed of in an old quarry site on Marysville Road on NFS land, approximately 1 mi south of New Bullards Bar Dam (YCWA 2006). Necessary permits and approvals were obtained for sediment disposal.

## 2.2 Log Cabin Diversion Dam

### 2.2.1 Vehicular Access

Access to Log Cabin Diversion Dam is via a gated, paved road off State Route 49, approximately 0.25 mile northeast of the intersection with Marysville Road.

### 2.2.2 Facility Description

Log Cabin Diversion Dam is a 105-ft radius, concrete arch dam located in Yuba County on Oregon Creek 4.3 mi upstream of the confluence with the Middle Yuba River. The dam is 42.5 ft high with a crest length of 300 ft, a crest elevation of 1,970 ft, and a drainage area of 29.1 square miles. The dam has a spillway, a fish release outlet valve used for releasing minimum flow requirements in the existing FERC license, and a low level (5-ft diameter) outlet valve.[9] The spillway, with an invert elevation of 1,970 ft is ungated and has a maximum capacity of 12,000 cfs. The fish release outlet valve has an invert elevation of 1,947 ft and an engineer's estimated maximum capacity of 18 cfs[10] when the pool is at the invert (1,952 ft) of the Camptonville Diversion Tunnel. The outlet is controlled by a hand-operated valve on the

[9] For the purpose of the application, the slide gate that controls the Log Cabin Diversion Dam low level (5-foot diameter) outlet is referred to as a "valve."
[10] YCWA plans to rate the Log Cabin Diversion Dam fish release valve in spring 2015.

downstream end of the outlet. The low level outlet has an invert elevation of 1,935 ft, and an engineer's estimated maximum capacity of 348 cfs[11] when the pool is at the invert of the Camptonville Diversion Tunnel. The low level outlet is controlled by a slide gate, which is operated by a two-person mobile gasoline powered engine, on the upstream face of the dam.

Figures 2.2-1 and 2.2-2 show the downstream and upstream faces, respectively, of Log Cabin Diversion Dam.


**Figure 2.2-1. View to the east of the downstream face of Log Cabin Diversion Dam. The majority of discharge is through the fish release valve. The low level outlet valve is to the right of the fish release valve.**

[11] YCWA plans to rate the Log Cabin Diversion Dam low level outlet valve in spring 2015.


**Figure 2.2-2. View to southwest of the upstream face of Log Cabin Diversion Dam. The intake for the fish release valve is marked by an "A;" the intake for the low level valve is marked with a "B."**

YCWA currently does not maintain a pool throughout the year at Log Cabin Diversion Dam, due to the limited flow into Log Cabin Diversion Dam impoundment during portions of the year.

### 2.2.3 Past Sediment Removal

YCWA has no records of sediment removal at Log Cabin Diversion Dam.

**SECTION 3.0**

# METHODS FOR SEDIMENT MANAGEMENT

## 3.1 Our House Diversion Dam

Sediment removal, when needed, at Our House Diversion Dam will occur in summer/early fall when inflow from the Middle Yuba River is low. The impoundment will be allowed to drain (i.e., inflow equal to outflow without holding the impoundment pond up). This will facilitate work to be accomplished to the extent possible in the dry months.

The work will include eight steps: 1) obtain all necessary permits and approvals; 2) mobilization; 3) diversion/control of water; 4) removal of material; 5) stockpiling of sediment; 6) stabilization of the stockpile; 7) demobilization; and 8) report. Each step is described below.

### 3.1.1 Permits

YCWA anticipates that sediment removal at Our House Diversion Dam will require YCWA to obtain the following permits and approvals:

- FERC authorization
- United States Army Corps of Engineers (USACE), Clean Water Act Section 404 Permit
- Central Valley Regional Water Quality Control Board (CVRWQB), Clean Water Act Section 401 Permit and Waste Discharge Requirement[12]
- California Department of Fish and Wildlife (Cal Fish and Wildlife), Section 1601 Streambed Alteration Permit
- State Water Resources Control Board (SWRCB), Storm Water Pollution Prevention Plan
- YCWA, California Environmental Quality Act compliance
- County permits

The work will not require consultation with the State Historic Preservation Officer under § 106 of the National Historic Properties Act or with the United States Department of Interior, Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA), unless this Plan is modified. YCWA's relicensing studies did not find any species listed as endangered or threatened under the ESA in the vicinity of the work described in this Plan.

YCWA shall obtain the necessary permits and approvals prior to any ground-disturbing activities, and adhere to the conditions in the permits and approvals. Prior to initiating work, YCWA anticipates holding a site visit for interested agency staff.

[12] YCWA may apply under Order No. R5-2009-0085 for a longer term permit for Waste Discharge.

### 3.1.2 Mobilization

Mobilization will include delivery of equipment to the site, and establishing laydown areas.

Mobilization will also include collecting three to five bulk samples of the material to be removed from the impoundment and transporting to a laboratory for determination of metals[13] content. To support selection of an appropriate disposal method, sediments will be characterized as hazardous[14] or non-hazardous. Sampling and handling procedures will be in accordance with United States Environmental Protection Agency's *Test Methods for Evaluating Solid Waste - Physical/Chemical Methods* (SW-846; current revision). Soil samples will be transferred to laboratory-quality sample containers and preserved by in accordance with SW-846. Each sediment sample will be recorded and transported using an approved chain-of-custody form. The results of the testing will be forwarded to the Forest Service, SWRCB, CVRWQCB and Cal Fish and Wildlife.

Prior to entering the impoundment, YCWA will inspect the equipment to be used in the impoundment for aquatic invasive species and, if any signs of aquatic invasive species are found, the equipment shall be cleaned to remove those species.

### 3.1.3 Diversion/Control or Water

Diversion and control of water will consist of channeling natural inflow into the impoundment around the planned work area and through the dam via the existing fish release valve to maintain minimum flows in the Middle Yuba River per the FERC license and to control water from entering the excavation.

The diversion will consist of installation of temporary piping to deliver the required flow of water continuously to the fish release valve. Flow will be intercepted upstream of the planned excavation and diverted into a pipe. The pipe will be routed away from the planned excavation. The pipe will be installed in a buried trench and/or protected by steel plates to allow for movement of equipment in the impoundment without damage to the pipe.

Other options to the flow diversion approach described above, including pumping water past the work site into the stream below the dam, will be considered on a case-by-case basis.

### 3.1.4 Removal of Sediment

The amount of material to be excavated from the impoundment will vary from event to event.

The excavation will be accomplished with one or two track-mounted excavators located within the impoundment. The excavator will load material onto conventional, rubber-tired, street-legal,

[13] CCR Title 22 section 66261.24 specifies the 17 metals that can qualify waste as hazardous.
[14] Soil or liquid characterized as a RCRA hazardous waste, per 40 CFR Parts 260 – 265, a Toxic Substances Control Act (TSCA) Polychlorinated Biphenyl (PCB) hazardous waste, per 40 CFR Part 761, or a non-RCRA, California hazardous waste Section 25117 of the California Health and Safety Code, pursuant to Section 25141 of the California Health and Safety Code.

dump trucks. During the work, the excavators may be left in the impoundment over night, but trucks will be removed from the impoundment at the end of each shift.

Water quality monitoring will be performed, as prescribed by the CVRWQCB 401 Certification and/or CDFW 1600 permits. If monitoring is not specified, turbidity of the water in the Middle Yuba River will be monitored thrice daily during the excavation: before work starts, at noon, and at the end of the day. Turbidity will be monitored at a point where water enters the impoundment and at a point immediately downstream of the dam. If measured turbidity between the two points exceeds 15 Nephelometric Turbidity Units, work will cease and the Forest Service, SWRCB and Cal Fish and Wildlife will be contacted.

Standard fire equipment will be kept readily available and an emergency contact will be established between the contractor and the TNF to prevent the start and spread of fires.

During the work period, any known sensitive resources within or near the proposed Project's work area will be flagged to ensure that no activities are conducted in those areas.

Other options to the removal of sediment by excavators, including dredging, will be considered on a case-by-case basis.

### 3.1.5 Dredged Sediment Fate

Dredged sediments will be managed and disposed of in accordance with applicable local, state, and federal regulations.

Small amounts of sediment deemed to be non-hazardous (See Section 3.1.2) will be moved in the dump trucks to a sediment stockpile location on YCWA property near New Bullards Bar Dam, approximately 14 mi from Our House Diversion Dam, unless otherwise approved.[15]

The haul route from the impoundment to the stockpile area will consist of the following: 1) a paved road, consisting of the Our House Diversion Dam access road, from the dam to Ridge Road; 2) continue on Ridge Road to State Route 49; 3) north on State Route 49 to Marysville Road; 4) west on Marysville Road to a point east of New Bullard Bar Dam; and 5) south on an unpaved road to the stockpile area on YCWA property. Figure 3.1-1 shows the location of Our House Diversion Dam, the route that will be used to carry the sediment, and the area where the sediment will be deposited.

The number of round trips between the impoundment and the stockpile area will depend on the amount of material to be excavated. During hauling, YCWA shall provide traffic control on the haul route at the gates at the intersection of Ridge Road and the dam access road, and at the intersection of Marysville Road and the unpaved road to the stockpile area. Traffic control personnel will also be responsible for keeping the general public from getting past the gates during work hours.

[15] Large quantities of dredged material may require the use of other areas for stockpiling.

Although vehicular access to the site by the general public is restricted by a gate at the top of the access road off State Route 49, signs will be posted during the work at the gate warning the general public about the work underway and the associated dangers, and that they may access the site by means other than a vehicle.

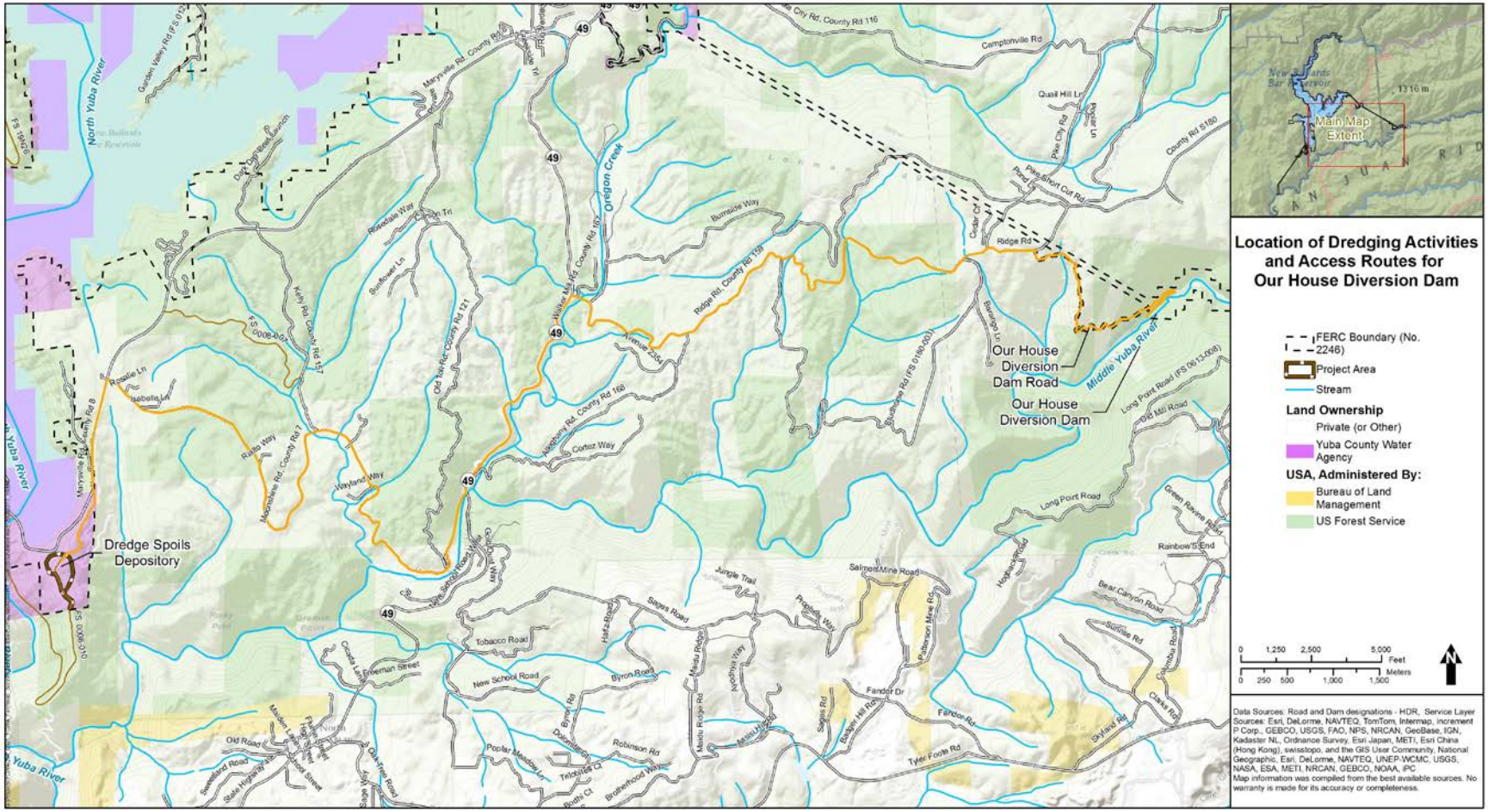


**Figure 3.1-1. Location of Our House Diversion Dam and haul route to sediment stockpile.**

### 3.1.6 Stabilizing Stockpile

The stockpile area for small amounts of discharge is an existing, partially cleared area of several acres on YCWA land southeast of the left abutment of New Bullards Bar Dam at an elevation of approximately 2,200 ft.[16] The excavated material will be placed as engineered fill in accordance with generally accepted geotechnical engineering practices; it will be dumped and spread out in loose lifts not exceeding 12 inches and compacted to a minimum relative compaction of 90 percent based on ASTM D698. The need for ground surface preparation prior to material placement, such as excavation of benches into sloping ground and subsurface drainage, will be determined after the material volume is known as well as the specific area on the YCWA property is selected for stockpiling. The final stockpile dimensions will also be dependent on the volume of material excavated. The stockpile slope inclinations will not exceed 2 to 1 (horizontal to vertical).

Erosion and stormwater control practices will be followed as prescribed by CVRWQCB 401 Certification and/or CDFW 1600 permits. At a minimum, silt fencing will be installed at the perimeter of the stockpile area to mitigate the potential for migration of sediment. At the completion of the stockpiling, the surface of the stockpile will be compacted and hydro seeded for long term erosion control.

### 3.1.7 Demobilization

Once removal of sediment is complete, the project will demobilize by removing all equipment from the site; restoring minimum flow by gravity through impoundment to minimum flow release valve inlet; removing sediment control measures within the impoundment; and removing all water control (diversion) measures. The site will essentially be returned to its original state.

YCWA will invite interested agency staff to inspect the work area when the work is complete.

### 3.1.8 Report

Within 3 months of completing the removal of the sediment, YCWA shall provide to FERC, the Forest Service, SWRCB and Cal Fish and Wildlife a report that summarizes the excavation work; including the amount of material excavated.

## 3.2 Log Cabin Diversion Dam

Sediment removal, when needed, at Log Cabin Diversion Dam will occur in summer/early fall when inflow from Oregon Creek is low. This will facilitate work to be accomplished to the extent possible in the dry months.

[16] Large quantities of dredged material may require the use of other areas for stockpiling.

The work will include eight steps: 1) obtain all necessary permits and approvals; 2) mobilization; 3) diversion/control of water; 4) removal of material; 5) stockpiling of sediment; 6) stabilization of the stockpile; 7) demobilization; and 8) report. Each step is described below.

### 3.2.1 Permits

YCWA anticipates that sediment removal at Log Cabin Diversion Dam will require YCWA the following permits and approvals:

- FERC authorization
- USACE, Clean Water Act Section 404 Permit
- CVRWQCB, Clean Water Act Section 401 Permit and Waste Discharge Requirement[17]
- SWRCB, Storm Water Pollution Prevention Plan
- Cal Fish and Wildlife, Section 1601 Streambed Alteration Permit
- YCWA, California Environmental Quality Act compliance
- County permits

The work will not require consultation with the State Historic Preservation Officer under § 106 of the National Historic Preservation Act or with USFWS under the ESA, unless this Plan is modified. YCWA's relicensing studies did not find any cultural resources or species listed as endangered or threatened under the ESA in the vicinity of the work described in the this Plan.

YCWA shall obtain the necessary permits and approvals prior to any ground-disturbing activities, and adhere to the conditions in the permits and approvals. Prior to initiating work, YCWA anticipates holding a site visit for interested agency staff.

### 3.2.2 Mobilization

Mobilization will include delivery of equipment to the site and establishing laydown areas.

Mobilization will also include collecting three to five bulk samples of the material to be removed from the impoundment and transporting to a laboratory for determination of metals[18] content. To support selection of an appropriate disposal method, sediments will be characterized as hazardous[19] or non-hazardous. Sampling and handling procedures shall be in accordance with USEPA's *Test Methods for Evaluating Solid Waste - Physical/Chemical Methods* (SW-846; current revision). Soil samples shall be transferred to laboratory-quality sample containers and preserved by in accordance with SW-846. Each sediment sample shall be recorded and

[17] YCWA may apply under Order No. R5-2009-0085 for a longer term permit for Waste Discharge.
[18] CCR Title 22 section 66261.24 specifies the 17 metals that can qualify waste as hazardous.
[19] Soil or liquid characterized as a RCRA hazardous waste, per 40 CFR Parts 260 – 265, a Toxic Substances Control Act (TSCA) Polychlorinated Biphenyl (PCB) hazardous waste, per 40 CFR Part 761, or a non-RCRA, California hazardous waste Section 25117 of the California Health and Safety Code, pursuant to Section 25141 of the California Health and Safety Code.

transported using an approved chain-of-custody form. The results of the testing will be forwarded to the Forest Service, CVRWQCB and Cal Fish and Wildlife.

Prior to entering the impoundment, YCWA shall inspect the equipment to be used in the impoundment for aquatic invasive species and, if any signs of aquatic invasive species are found, the equipment shall be cleaned to remove those species.

### 3.2.3 Diversion/Control or Water

Diversion and control of water will consist of channeling natural inflow into the impoundment around the planned work area and through the dam via the existing fish release valve to maintain minimum flows in Oregon Creek per the FERC license and to control water from entering the excavation.

The diversion will consist of installation of temporary piping to deliver the required flow of water continuously to the fish release valve. Flow will be intercepted upstream of the planned excavation and diverted into a pipe. The pipe will be routed away from the planned excavation. The pipe will be installed in a buried trench and/or protected by steel plates to allow for movement of equipment in the impoundment without damage to the pipe.

### 3.2.4 Removal of Sediment

The amount of material to be excavated from the impoundment will vary from event to event.

The excavation will be accomplished with one or two track-mounted excavators located within the impoundment. The excavator will load material onto conventional, rubber-tired, street-legal, dump trucks. During the work, the excavators may be left in the impoundment over night, but trucks will be removed from the impoundment at the end of each shift.

Water quality monitoring will be performed, as prescribed by the CVRWQCB 401 Certification and/or CDFW 1600 permits. If monitoring is not specified, turbidity of the water in Oregon Creek will be monitored thrice daily during the excavation: before work starts, at noon, and at the end of the day. Turbidity will be monitored at a point where water enters the impoundment and at a point immediately downstream of the dam. If measured turbidity between the two points exceeds 15 Nephelometric Turbidity Units, work will cease and the Forest Service, SWRCB and Cal Fish and Wildlife will be contacted.

Standard fire equipment will be kept readily available and an emergency contact will be established between the contractor and the TNF to prevent the start and spread of fires.

During the work period, any known sensitive resources within or near the proposed Project's work area will be flagged to ensure that no activities are conducted in those areas.

Other options to the removal of sediment by excavators, including dredging, will be considered on a case-by-case basis.

### 3.2.5 Dredged Sediment Fate

Dredged sediments will be managed and disposed of in accordance with applicable local, state, and federal regulations

Small amounts of sediment deemed to be non-hazardous (See 3.2.2) will be moved in the dump trucks to a sediment stockpile location on YCWA property near New Bullards Bar Dam, approximately 7 mi from Log Cabin Diversion Dam, unless otherwise approved.[20]

The haul route from the impoundment to the stockpile area will consist of the following: 1) an existing unimproved ramp from the impoundment up to the northern edge (see Figure 3.2-1); 2) a gravel road along the northern edge of the impoundment to the right dam abutment; 3) a paved road, consisting of the dam access road, from the dam to State Route 49; 4) south on State Route 49 to Marysville Road; 5) west on Marysville Road to a point east of New Bullard Bar Dam; and 6) south on an unpaved road to the stockpile area on YCWA property. Figure 3.2-1 shows the location of Log Cabin Diversion Dam, the route that will be used to carry the sediment, and the area where the sediment will be deposited.

The number of round trips between the impoundment and the stockpile area will depend on the amount of material to be excavated. During hauling, YCWA shall provide traffic control on the haul route at the gates at the intersection of State Route 49 and the dam access road, and at the intersection of Marysville Road and the unpaved road to the stockpile area. Traffic control personnel will also be responsible for keeping the general public from getting past the gates during work hours.

Although vehicular access to the site by the general public is restricted by a gate at the top of the access road off State Route 49, signs will be posted during the work at the gate warning the general public about the work underway and the associated dangers, and that they may access the site by means other than a vehicle.

[20] Large quantities of dredged material may require the use of other areas for stockpiling.

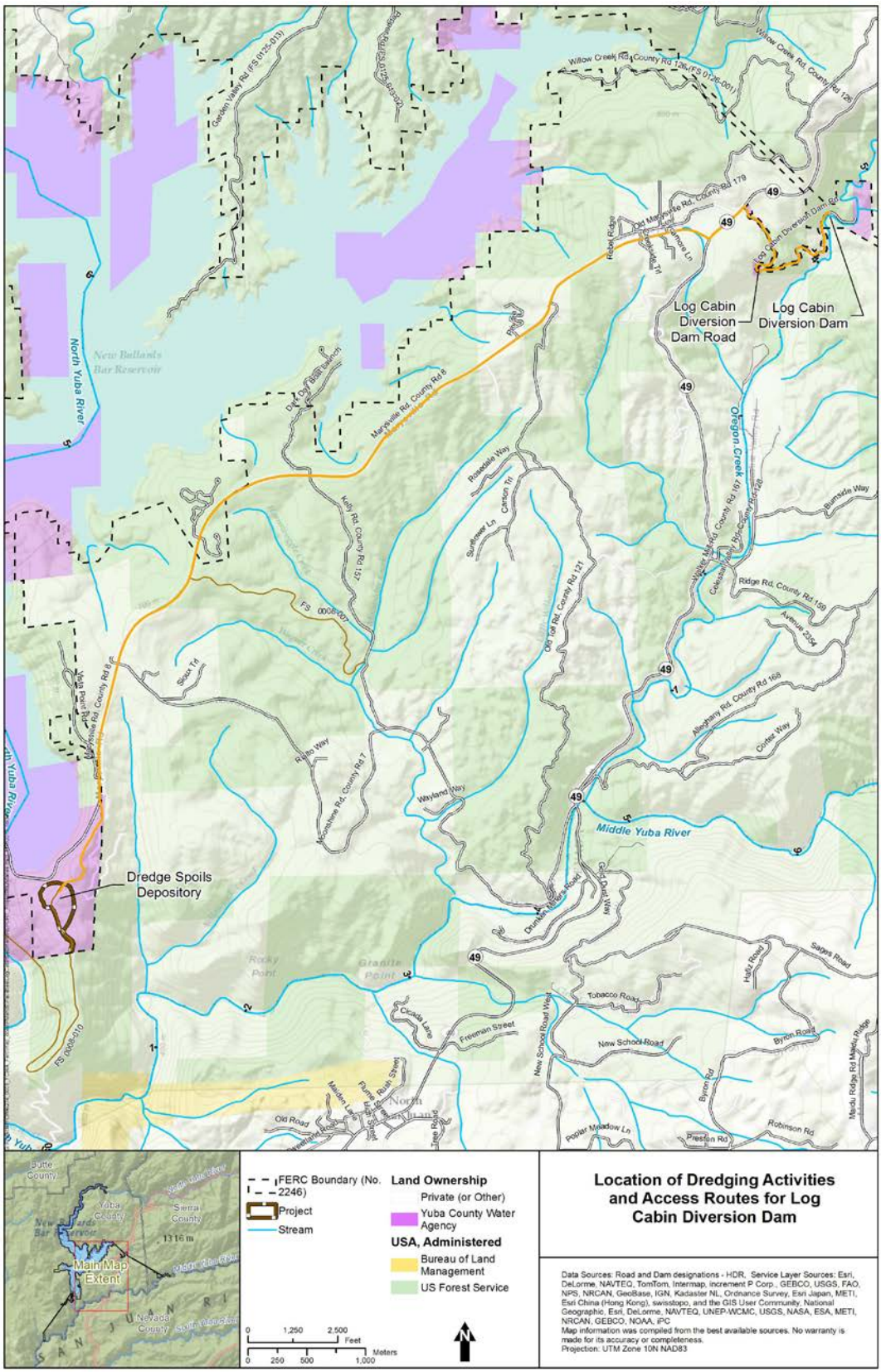


**Figure 3.2-1. Location of Log Cabin Diversion Dam and haul route to sediment stockpile.**

### 3.2.6 Stabilizing Stockpile

The stockpile area to be used for small amounts of sediment is an existing, partially cleared area of several acres on YCWA land southeast of the left abutment of New Bullards Bar Dam at an elevation of approximately 2,200 ft.[21] The excavated material will be placed as engineered fill in accordance with generally accepted geotechnical engineering practices; it will be dumped and spread out in loose lifts not exceeding 12 inches and compacted to a minimum relative compaction of 90 percent based on ASTM D698. The need for ground surface preparation prior to material placement, such as excavation of benches into sloping ground, and subsurface drainage, will be determined after the material volume is known as well as the specific area on the YCWA property is selected for stockpiling. The final stockpile dimensions will also be dependent on the volume of material excavated. The stockpile slope inclinations will not exceed 2 to 1 (horizontal to vertical).

Erosion and stormwater control practices will be followed as prescribed by CVRWQCB 401 Certification and/or CDFW 1600 permits. At a minimum, silt fencing will be installed at the perimeter of the stockpile area to mitigate the potential for migration of sediment. At the completion of the stockpiling, the surface of the stockpile will be compacted and hydro seeded for long term erosion control.

### 3.2.7 Demobilization

Once removal of sediment is complete, the project will demobilize by removing all equipment from the site; restoring minimum flow by gravity through impoundment to minimum flow release valve inlet; removing sediment control measures within the impoundment; and removing all water control (diversion) measures. The site will essentially be returned to its original state.

YCWA will invite interested agency staff to inspect the work area when the work is complete.

### 3.2.8 Report

Within 3 months of completing the excavation, YCWA shall provide to FERC, the Forest Service, SWRCB and Cal Fish and Wildlife a report that summarizes the excavation work; including the amount of material excavated.

## 3.3 Emergency Activities

In the event of the need for emergency activities,[22] YCWA will apply for and follow the terms of the appropriate permits and approvals from the responsible agencies. These may include the USACE Regional General Permit Number 60, which includes a 401 certification as part of its parameters (USACE 2009). A Streambed Alteration Agreement from Cal Fish and Wildlife is

[21] Large quantities of dredged material may require the use of other areas for stockpiling.
[22] Defined by the USACE (2009) and Cal Fish and Wildlife (CDFW n.d.) as "*clear, sudden, unexpected, and imminent threat to life or property demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property or essential public services*." This definition may be subject to change.

not necessary before emergency work that is immediately necessary to protect life or property. Although notification is not required before beginning emergency work, notification of the emergency work must be submitted within 14 days after beginning the work (CDFW n.d.). The Forest Service will be notified in writing of the emergency activities.

Where possible, the nature of the emergency activities, with the exception of permitting, will follow those described in the Plan.

**SECTION 4.0**

# REPORTING, CONSULTATION AND PLAN REVISIONS

## 4.1 Annual Consultation Meeting

Each year during the term of the License, YCWA shall arrange to meet with the Forest Service, for an annual meeting to discuss sediment excavation work planned in Our House or Log Cabin diversion dams in that calendar year. The date of the meeting will be mutually agreed to by YCWA and the Forest Service, but in general, will be held in spring of each calendar year. It is the intent that this meeting will occur as part of the Annual Consultation Meeting, described in YCWA's proposed Condition GEN1.

## 4.2 Plan Revisions

YCWA, in consultation with the Forest Service, SWRCB and Cal Fish and Wildlife will review, update, and/or revise the Plan, as needed, when significant changes in existing conditions occur. Any updates to the Plan will be prepared in coordination and consultation with the Forest Service, SWRCB and Cal Fish and Wildlife. A minimum of 60 days will be allowed for the Forest Service, SWRCB and Cal Fish and Wildlife to comment and make recommendations before YCWA files the updated plan with FERC, including relevant documentation of coordination and consultation with the Forest Service, SWRCB and Cal Fish and Wildlife for FERC's approval. If YCWA does not adopt a particular recommendation by the Forest Service, SWRCB and Cal Fish and Wildlife, the filing will include the reasons for not doing so. YCWA will implement the Plan as approved by the Commission.

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**SECTION 5.0**

# REFERENCES CITED

California Department of Fish and Wildlife (CDFW). n.d. Lake and Streambed Alteration Program: Question and Answers. Available online: <http://www.dfg.ca.gov/habcon/1600/qa.html#qa6>. Accessed on November 8, 2013.

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