

Study 9.1

PRIMARY PROJECT ROADS AND TRAILS

November 2010

1.0 Project Nexus

Yuba County Water Agency's (YCWA or Licensee) continued use, operation and maintenance (O&M) of Yuba River Development Project's (Project) Primary Project Roads and Trails has a potential to have environmental effects.

For the purpose of this study a "Primary Project Road and Trail" is a road or trail that is used almost exclusively to access the Project by the Licensee and is within the existing FERC Project Boundary.¹

Licensee's routine maintenance of those Primary Project Roads includes periodically inspecting and clearing culverts and drainage ditches, maintenance of the travel surface including asphalt paving, blading dirt road and aggregate surfaces, filling-in pot holes on travel surfaces, minor trimming of vegetation along the travel surface edge to maintain a line-of sight for safety purposes, and repairing/replacing signs and markers. Work may also include maintaining water bars for roads and trails that are infrequently used, and maintaining gates.

2.0 Resource Management Goals of Agencies with Jurisdiction Over the Resource to be Studied

[Relicensing Participants - This section is a placeholder in the Pre-Application Document (PAD). Section 5.11(d)(2) of 18 CFR states that an applicant for a new license must in its proposed study "Address any known resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied." During 2010 study proposal development meetings, agencies advised Licensee that they would provide a brief written description of their jurisdiction over the resource to be addressed in this study. If provided before Licensee files its Proposed Study Plan and Licensee agrees with the description, Licensee will insert the brief description here stating the description was provided by that agency. If not, prior to issuing the Proposed Study Plan, Licensee will describe to the best of its knowledge and understanding the management goals of agencies that have jurisdiction over the resource addressed in this study. Licensee]

3.0 Study Goals and Objectives

The goal of this study is to characterize and evaluate the Primary Project Roads and Trails and determine if continued use, operations and maintenance of Primary Project Roads and Trails

¹ Licensee believes Primary Project Roads and Trails in this study proposal include roads and trails directly connected to Project recreation facilities, but not the roads and trails within the recreation areas. Roads and trails within the FERC Project Boundary that are considered part of the recreation facility are addressed in the Recreation Use and Visitor Surveys Study Proposal.

would result in adverse effects on the environment. The objective of the study is to gather information necessary to meet the study goal.²

4.0 Existing Information and Need for Additional Information

4.1 Primary Project Roads

Each Primary Project Road is described below, and summarized in Table 4.1-1 at the end of this study proposal.

4.1.1 To Our House Diversion Dam and Impoundment

Licensee's primary access to Our House Diversion Dam and Lohman Ridge Diversion Tunnel Intake is from Sierra Pacific Industries (SPI) Ridge Road. Our House Diversion Dam Road, which is entirely within the FERC Project Boundary, extends 1.84 miles from Ridge Road to Our House Diversion Dam. The road is paved, about 12 feet wide, and includes two short segments on NFS land with the remainder of the road on private land. The road is gated by Licensee at the intersection with Ridge Road, but the gate is usually open. Locks on this gate allow access by employees of YCWA and Tahoe National Forest (TNF). Licensee maintains another gate on the road about 500 feet upstream of the dam, and this gate is locked except for Licensee's access, which includes about one 4-wheel-drive vehicle trip each day. Licensee maintains Our House Diversion Dam Road. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

The sections of Our House Diversion Dam Road on NFS land have not been assigned Forest Service road numbers or maintenance levels. The TNF has not issued Licensee a special use permit (SUP) for use of the road.

Licensee considers Our House Diversion Dam Road to be a Primary Project Road. There are no other Primary Project Roads associated with Our House Diversion Dam and Impoundment and Lohman Ridge Diversion Tunnel Intake.

4.1.2 To Log Cabin Diversion Dam and Impoundment

Licensee's primary access to Log Cabin Diversion Dam and Camptonville Diversion Tunnel Intake is from State Highway 49. Log Cabin Diversion Dam Road, which is entirely within the FERC Project Boundary, extends 1.19 miles from Highway 49 to Log Cabin Diversion Dam. The road is paved, about 12 feet wide, and includes two short segments on NFS land with the remainder on Licensee-owned and private land. The road is gated by Licensee at the intersection

² While not a part of this study, Licensee anticipates that the study will develop information necessary for Licensee and Forest Service to develop a Road Management Plan for Primary Project Roads on NFS land. The goal of the plan will be to provide for a safe, convenient, efficient, sustainable and environmentally sound Primary Project Roads and Trails system. Licensee anticipates consulting with the Forest Service to develop this plan prior to Licensee filing its Draft License Application, though as stated above, development of the plan is not part of this study.

with Highway 49, and the gate is locked at all times except for Licensee's access, which includes about one 4-wheel-drive vehicle trip each day. Locks on this gate allow access by employees of YCWA and TNF. Licensee maintains Log Cabin Diversion Dam Road. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

Licensee accesses the Lohman Ridge Diversion Tunnel Outlet, which is located on the south bank of the upstream end of Log Cabin Diversion Dam Impoundment, via a dirt spur road that extends along the north bank of the impoundment about 500 feet from the dam to the tunnel outlet. The unimproved dirt roadway was developed for the construction of the tunnel, but lies on the opposite side of the tunnel outlet. Licensee does not normally use the road for vehicular access to the tunnel (i.e., only as a footpath for inspection) unless needed, which is a rare event. The dirt road is entirely within the FERC Project Boundary and on NFS land.

The sections of Log Cabin Diversion Dam Road and dirt spur road on NFS land have not been assigned Forest Service road numbers or maintenance levels. The TNF has not issued Licensee a SUP for the road use.

Licensee considers Log Cabin Diversion Dam Road and the dirt spur road to be Primary Project Roads. There are no other Primary Project Roads associated with Log Cabin Diversion Dam and Impoundment, the Camptonville Diversion Tunnel Intake and the Lohman Ridge Diversion Tunnel Outlet.

4.1.3 To Garden Point Cove on New Bullards Bar Reservoir

With the permission of the Forest Service, Licensee stacks and burns woody debris collected from the surface of New Bullards Bar Reservoir in Garden Point Cove. Currently, this is the only location at which Licensee disposes of debris collected from the surface of the reservoir. Licensee accesses Garden Point Cove via Garden Valley Road. Garden Valley Road is accessible by Young Hill Road or Pendola Road from State Highway 49. Garden Valley Road is about 3.5 miles long, 12 feet wide, graveled, and improved by Licensee for its use with access through a locked Forest Service gate. Access is granted annually by the Forest Service only for debris disposal for a specific period of time. Public access is restricted by the Forest Service as there are nesting bald eagles in the area. During the two to three weeks each year during debris disposal, Licensee makes about two vehicular trips per day to the site. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

During the limited period when Licensee uses Garden Valley Road for the sole purpose of debris disposal, Licensee considers Garden Valley Road to be a Primary Project Road. Licensee does not consider Garden Valley Road a Primary Project Road for those times of year when the road is not used by Licensee and would not consider the road a Primary Project Road if the Forest Service denied Licensee use of Garden Point Cove for the disposal of debris. There are no other Primary Project Roads associated with New Bullards Bar Reservoir.

4.1.4 To Downstream Face of New Bullards Bar Dam

Licensee's primary access to the downstream face of New Bullards Bar Dam is from Marysville Road.³ The New Bullards Bar Dam Road is 1.08 miles long and on land owned by YCWA with the exception of a switchback which is on private land. About the first 0.9 mile of the road is not within the FERC Project Boundary, but the remainder of the road is within the boundary. The road is steep, paved, about 12 feet wide, and gated by Licensee at the intersection with Marysville Road. The gate is locked at all times except for Licensee's access, which includes about two 4-wheel-drive vehicle trips each day. Licensee maintains New Bullards Bar Dam Road. The road is not plowed for snow, and Licensee does not use snow cats or snowmobiles on the road.

Licensee also maintains a 640 foot long, paved spur road off the New Bullards Bar Dam Road that provides access to the upstream end of the New Colgate Powerhouse Penstock where it exits the dam face. This spur road is entirely on YCWA-owned land, within the FERC Project Boundary and maintained by Licensee.

Licensee considers New Bullards Bar Dam Road and the paved spur road to be Primary Project Roads. There are no other Primary Project Roads associated with New Bullards Bar Dam.

4.1.5 To New Colgate Penstock Guard Valve

Licensee's primary access to the New Colgate Penstock Guard Valve, the location where the New Colgate Power Tunnel daylights and connects with the New Colgate Penstock, is from the Colgate Haul Road off of Lake Francis Road. The Colgate Haul Road has a gravel surface, is about 0.5 mile long and is 12 feet wide. The first 0.3 mile of the road is on private property and the final portion is owned by the YCWA. The road is gated and locked with Licensee's, PG&E's and local landowner's locks at the intersection of Lake Francis Road. The road is accessed twice weekly by a 4-wheel drive vehicle and maintained by the Licensee. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

Licensee considers Colgate Haul Road to be a Primary Project Road. There are no other Primary Project Roads associated with New Colgate Guard Valve.

4.1.6 To New Colgate Penstock

Licensee's primary access to the New Colgate Penstock occurs over five short roads, each of which is described below. Licensee considers each of these roads to be Primary Project Roads.

Penstock Access Road #1

³ A short section of Marysville Road before it reaches New Bullards Bar Dam is included within the FERC Project Boundary. This is not a primary Project Road since it is used by many vehicles, the majority of which are not related to the Project. Licensee intends to propose removal of this section of Marysville Road from the FERC Project Boundary in its Application for New License.

Penstock Access Road #1 accesses the valve turn-out for the Brown's Valley Irrigation District (BVID) ditch. The access is from the south side of Lake Francis Road. Penstock Access Road #1 has a gravel surface, is about 0.22 mile in length, and is 12 feet wide. The road in its entirety is on property owned by YCWA. The road is gated and locked with the Licensee's lock at the intersection of Lake Francis Road. The road is accessed once weekly by a 4-wheel drive vehicle and maintained by Licensee. The road is not plowed for snow nor does the Licensee traverse the road using snow cats or snowmobiles.

Penstock Access Road #2

Access Road #2 accesses the penstock from the south side of Lake Francis Road. Penstock Access Road #2 has a gravel surface, is about 0.08 mile in length, and is 12 feet wide. The road in its entirety is on property owned by YCWA. The road is gated and locked with Licensee's lock at the intersection of Lake Francis Road. The road is accessed once weekly by a 4-wheel drive vehicle and maintained by the Licensee. The road is not plowed for snow nor does the Licensee traverse the road using snow cats or snowmobiles.

Penstock Access Road #3

This road also provides access to the penstock from the south side of Lake Francis Road. Penstock Access Road #3 has a dirt surface, is about 0.10 mile in length, and is 12 feet wide. The road in its entirety is on property owned by YCWA. The road is gated and locked with Licensee's lock at the intersection of Lake Francis Road. The road is accessed twice annually by a 4-wheel drive vehicle and maintained by the Licensee. The road is not plowed for snow nor does the Licensee traverse the road using snow cats or snowmobiles.

Penstock Access Road #4

The access is from the south side of Lake Francis Road. Penstock Access Road #4 has a dirt surface, is about 0.15 mile in length, and is 12 feet wide. The road in its entirety is on property owned by YCWA. The road is gated and locked with Licensee's lock at the intersection of Lake Francis Road. The road is accessed once monthly by a 4-wheel drive vehicle and maintained by the Licensee. The road is not plowed for snow nor does the Licensee traverse the road using snow cats or snowmobiles.

Colgate Tunnel Lane

Licensee's primary access to the New Colgate Tunnel Surge Chamber, the location where the New Colgate Power Tunnel Air Shaft daylights, is off of Lake Francis Road. The Colgate Tunnel Lane has a gravel surface, is about 0.85 mile long and is 14 feet wide. About the first 0.50 mile of the road is on private property and the final portion is owned by the YCWA. The road is gated and locked with Licensee's and local landowner's locks at the property boundaries along Colgate Tunnel Lane. The road is accessed once monthly by a 4-wheel drive vehicle. Portions of the road are maintained by the Licensee and other portions maintained by other property owners. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

4.1.7 To New Colgate Powerhouse

Licensee's access to New Colgate Powerhouse is by the Lake Francis Road, which branches from the Old Dobbins Road, off of Marysville Road. Lake Francis Road is 3.5 miles long, paved, 14 feet wide, and maintained by Yuba County. The final 1.5 miles is paved, 12 feet wide, and maintained by Licensee. Public access to the North Yuba River above and below the New Colgate Powerhouse is available from Lake Francis Road. This road is accessed daily by plant personnel, and may have as many as 30 vehicles per day travel on it, including heavy dump trucks and crane trucks. The road terminates at the fenced yard to the powerhouse. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

Licensee does not consider the Lake Francis Road to be a Primary Project Road because it is used by many parties for various purposes, including PG&E.

4.1.8 To Narrows 2 Powerhouse and Intake

Licensee's primary access to the Narrows 2 Powerhouse is from Scott Forbes Road. Narrows 2 Powerhouse Road, which is entirely within the FERC Project Boundary, extends 2.17 miles from Scott Forbes Road to Narrows 2 Powerhouse. The road is paved, about 12 feet wide, and located on land owned by the State of California, USACE, and YCWA. The road is gated by Licensee at the intersection with Scott Forbes Road, and the gate is locked at all times except for Licensee's access and by other parties with an interest in the land beyond the gate. Licensee accesses the powerhouse about twice per month by 4-wheel-drive vehicles. Licensee maintains the Narrows 2 Powerhouse Road. The road is not plowed for snow nor does Licensee traverse the road using snow cats or snowmobiles.

Licensee also maintains a 0.18-mile-long spur section of gravel road from Narrows 2 Access Road to Narrows 2 Intake, which is located on the north bank of USACE's Englebright Dam near the dam.

The USACE issued Licensee a right-of-way easement in 1975 for the Narrows 2 Powerhouse and Intake access roads. The easement does not have a termination date.

Licensee considers the Narrows 2 Access Road and spur roads to be Primary Project Roads. There are no other Primary Project Roads associated with the Narrows 2 Powerhouse and Intake.

4.2 Primary Project Trails

Each Primary Project Trail is described below.

4.2.1 To New Bullards Bar Dam Compliance Monitoring Stream Flow Gage

Licensee's primary access to the New Bullards Bar Dam compliance monitoring stream flow gage is from New Bullards Bar Dam Road. The access trail, which is partially within the FERC Project Boundary and on YCWA-owned land, extends about 300 yards from New Bullards Bar

Dam Road to the gage located downstream near the old Bullards Bar Dam that was constructed in 1903. The trail is dirt and cobble, about 8 feet wide, and runs along the grade of the road that accessed the old dam. The trail is not maintained. Licensee accesses the stream flow gage by foot about three times each month.

Licensee considers the trail to be a Primary Project Trail.

4.2.2 To Narrows 2 Compliance Monitoring Stream Flow Gage

Licensee's primary access to the Narrows 2 Powerhouse compliance monitoring stream flow gage is from the Narrows 2 Powerhouse Access Road. The access trail, which is partially within the FERC Project Boundary and on YCWA-owned land and public land managed by the USACE, extends downstream about 400 yards from Narrows 2 Powerhouse to the gage. The trail is dirt, about 3 feet wide, and runs along the side of the stream. The trail is not maintained. Licensee accesses the stream flow gage by foot about once each month.

Licensee considers the trail to be a Primary Project Trail.

If existing information is not adequate to meet the goal of the study, additional information will be obtained. Information necessary to address the study goal includes a current assessment of the condition of each Primary Project Roads and Trails.

5.0 Study Methods and Analysis

5.1 Study Area

The study area consists of areas within and adjacent to the existing FERC Project Boundary, and includes an area of influence about 30 feet on either side of the centerline of each Primary Project Road and an area of influence about 15 feet on either side of the centerline of each Primary Project Trail listed above in Section 4.1. Approximate locations of Project Roads and Trails can be seen in Attachment D, Project Maps.

If YCWA proposes an addition to the Project, the study area will be expanded if necessary to include areas potentially affected by the addition.

5.2 General Concepts and Procedures

The following general concepts and practices apply to the study:

- Personal safety is the most important consideration of each fieldwork team.
- Licensee will make a good faith effort to obtain permission to access private property where needed well in advance of entering the property.

- Field crews may make minor variances to the FERC-approved study in the field to accommodate actual field conditions and unforeseen problems. When minor variances are made, Licensee's field crew will follow the protocols in the FERC-approved study.
- When Licensee becomes aware of major variances to the FERC-approved study, Licensee will issue an e-mail to the Relicensing Contact List describing the variance and reason for the variance. Licensee will contact by phone the Forest Service (if the variance is on National Forest System land), USFWS, SWRCB and CDFG to provide an opportunity for input regarding how to address the variance. Licensee will issue an e-mail to the Relicensing Contact List advising them of the resolution of the variance. Licensee will summarize in the final study report all variances and resolutions.
- Licensee's performance of the study does not presume that Licensee is responsible in whole or in part for measures that may arise from the study.
- Global Positioning System (GPS) data will be collected using either a Map Grade Trimble GPS (sub-meter data collection accuracy under ideal conditions), a Recreation Grade Garmin GPS unit (3 meter data collection accuracy under ideal conditions), or similar units. GPS data will be post-processed and exported from the GPS unit into Geographic Information System (GIS) compatible file format in an appropriate coordinate system using desktop software. The resulting GIS file will then be reviewed by both field staff and Licensee's relicensing GIS analyst. Metadata will be developed for deliverable GIS data sets.
- Licensee's field crews will record incidental observations of aquatic and wildlife species observed during the performance of this study. All incidental observations will be reported in the appropriate Licensee report (e.g., incidental observations of special-status fish recorded during fieldwork for the Special-Status Turtles – Western Pond Turtle Study will be reported in Licensee's Stream Fish Populations Study report). The purpose of this effort is not to conduct a focus study (i.e., no effort in addition the specific field tasks identified for the specific study) or to make all field crews experts in identifying all species, but only to opportunistically gather data during the performance of the study.
- Field crews will be trained on and provided with materials (e.g., Quat) for decontaminating their boots, waders, and other equipment between study sites. Major concerns are amphibian chytrid fungus, and invasive invertebrates (e.g., zebra mussel, *Dreissena polymorpha*). This is of primary importance when moving: 1) between tributaries and mainstem reaches; 2) between basins (e.g. Middle Yuba River, Yuba River, and North Yuba River); and 3) between isolated wetlands or ponds and river or stream environments.

5.3 Study Methods

The study will be performed in four steps: 1) assess condition of Primary Project Roads and Trails; 2) consult with Licensee's Operations Staff; 3) assess effects; and 4) prepare report. Each step is described below.

5.3.1 Step 1 – Assess Condition of Primary Project Roads and Trails.

5.3.1.1 Primary Project Roads

A professional engineer and qualified scientist will visit each Primary Project Road described in Section 4.1 to assess the road's condition and identify obvious signs and potential risks of environmental damage. If a road is on land managed by the Forest Service that has an established maintenance level for the road, the engineer will become familiar with those maintenance level requirements prior to the field assessment. Assessments will be made in comparison to those Forest Service Maintenance Levels, Forest Service Traffic Service Levels and industry standards for similar type roads. In addition, if the Forest Service has established a published protocol that Forest Service staff uses in performing similar condition assessments of roads the Forest Service maintains, Licensee will follow that protocol or equivalent. For those roads on NFS land, Licensee will invite the Forest Service's road engineer to participate in the field condition assessment of the road. Items to be assessed in the field condition assessment will include:

- List, map and confirm lengths and widths, traffic levels, traffic classification, seasons of use and Licensee's use of each Primary Project Road. The confirmation will not entail any land survey work, but will utilize field GPS equipment as noted in Section 5.2 above and best estimate by field staff during the condition assessment.
- Assess the condition and confirm travel surface treatment and useful life of all Primary Project Roads (*e.g.*, dirt, gravel, paved, or combination of those). Determine pavement conditions using the industry standard Pavement Management System (PMS), if applicable to the use level of the road.
- Assess the condition and confirm the size and location of culverts and other drainage structures (note location by mile post and GPS).
- List and map bridges or other water crossings (note location by mile post and GPS).
- Assess the condition and confirm the location of traffic control devices, safety features, directional, warning and information signage including Project signs maintained by the Licensee along public roads (photograph each) and compliance of those Licensee-maintained signs with current Manual on Uniform Traffic Control Devices (MUTCD) standards.
- List, map and assess the condition of gates or other man-placed traffic exclusion (*e.g.*, boulders) structures (photograph each).
- Identify size and location of existing hazard trees.
- Identify and map sub-standard, unsafe or hazardous traffic conditions such as site clearing (*e.g.*, blind spots and poor sight distances), inadequate clear zones, using the appropriate American Association of State Highway and Transportation Officials (AASHTO) standards for the speeds and traffic levels.
- Identify and map the location of slope instability along the travel way or that may affect the road. This will not include any geotechnical or ground disturbing activities, but best estimate by field engineer staff during the condition assessment.

- Estimate Licensee’s typical use of the Primary Project Road (*i.e.*, this is an estimate of Licensee’s use, not a traffic count survey).

5.3.1.2 Primary Project Trails

The professional engineer and qualified scientist (and Forest Service staff, should they choose to participate) will visit each Primary Project Trail to assess the trail’s condition and identify obvious signs and potential risks for environmental damage. If a trail is on land managed by the Forest Service and the Forest Service has established a maintenance level for the trail, the engineer will become familiar with those maintenance level requirements prior to the field assessment. In addition, if the Forest Service has established a published protocol that Forest Service staff uses in performing similar condition assessments of trails the Forest Service maintains, Licensee will follow that protocol. Items to be assessed in the field condition assessment of Primary Project Trails will include:

- Length and width of each Primary Project Trail listed above. The confirmation will not entail any land survey work, but will utilize field GPS equipment as noted in Section 5.2 above and best estimate by field staff during the condition assessment.
- Travel surface
- Drainage structures
- Bridges or other water crossings (photograph each)
- Side drainages
- Information signage (photograph each)
- Slope instability along the travel way or that may affect the trail. This will not include any geotechnical or ground disturbing activities, but best estimate by field staff during the condition assessment.

5.3.1.3 Assessments

The engineer will inventory and characterize the conditions and features of each Primary Project Road and Trail using industry standards (e.g., AASHTO, MUTCD, PMS), as appropriate. The condition of features listed above will be categorized as “excellent,” “good” or “poor” and in compliance with applicable established standards as they apply to the level of the road and, for the purpose of roads and trails on NFS land, similar roads and trails (*i.e.*, same Maintenance Level) in the general area and as described in existing agency protocols. The engineers’ report will include criteria used for each of the three categories. Any feature characterized as “poor” or not in compliance with applicable standards will be accompanied in the report by a brief description of the condition or circumstances and illustrative photographs. Features that the engineer considers as in “excellent” or “good” condition will not be described in the report – only the condition will be noted. The location of all culverts, bridges, low water crossings, gates and intersections with other roads or trails will be identified with GPS coordinates, which will be included on Licensee’s Relicensing Geographic Information System (GIS) database. Any obvious signs or imminent risk of environmental degradation (*e.g.*, sediment build up in nearby

watercourses and unusual number of dead or dying trees on road side) will also be described in the report, including the GPS location and illustrative photographs.

5.3.2 Step 2 – Consult with Licensee’s Project Operations Staff

Licensee’s study engineer will meet with Project Operations Staff to prepare a brief description of Licensee’s short- and long-term maintenance procedures for Primary Project Roads and Trails. The discussion will include a general assessment of the current useful remaining life of major features (*i.e.*, not minor features such as waterbars). Where the Primary Project Road or Trail under discussion occurs on NFS land, the Forest Service will be invited to participate in the discussion.

5.3.3 Step 3 – Assess Potential Environmental Effects, Condition and Consistency with Applicable Standards

Based on the above information and in manner consistent with the study criteria described in Section 4.0, Licensee will assess the potential effects of use of Primary Project Roads and Trails on environmental resources. Based on the above information and in a manner consistent with the study criteria described in Section 4.0, Licensee will assess the condition and the consistency of Primary Project Roads and Trails with applicable AASHTO, MUTCD and Forest Service Standards for Licensee’s current traffic uses and traffic levels. Note that at this time, Licensee does not propose any changes to the Project that would change Licensee’s use of Primary Project Roads and Trails. Where the Primary Project Road or Trail under discussion occurs on NFS land, the Forest Service will be invited to participate in the assessment.

5.3.4 Step 5 – Prepare Report

Licensee will prepare a report that includes the following sections: 1) Study Goals and Objectives; 2) Methods and Analysis; 3) Results; 4) Discussion; and 5) Description of Variances from the FERC-approved study proposal, if any.

6.0 Study-Specific Consultation

The study includes the following specific consultation:

- Licensee will invite Forest Service road engineers to accompany Licensee’s engineer and scientist into the field to observe the Primary Project Roads and Trails condition assessment for Primary Project Roads and Trails on NFS land.
- Licensee will invite Forest Service road engineers to participate in the discussion with Project Operations Staff regarding current maintenance activities for Primary Project Roads and Trails on NFS land.
- Licensee will invite Forest Service road engineers to participate in the discussion regarding potential Project effects for Primary Project Roads and Trails on NFS land.

7.0 Schedule

Licensee anticipates the schedule to complete the study as follows assuming the Pre-Application Document (PAD) is filed on November 1, 2010, and FERC issues and approves its Study Determination by October 4, 2011:

Identify Primary Project Roads and Trails (Step 1).....	October 2011
Assess Conditions (Step 2)	November 2011 – June 2012
Consult with Operations Staff (Step 3).....	July 2012
Assess Effects (Step 4)	August 2011
Study Report Preparation (Step 5)	September 2011 - October 2012

8.0 Consistency of Methodology with Generally Accepted Scientific Practices

This study is consistent with the goals, objectives, and methods outlined for recent FERC hydroelectric relicensing efforts in California.

9.0 Level of Effort and Cost

[Relicensing Participants – Licensee will include a cost range estimate for this study in its Proposed Study Plan. Licensee]

10.0 References Cited

Yuba County Water Agency (YCWA). 2009. Yuba River Development Project relicensing Pre-Application Document. <<http://www.ycwa-relicensing.com/default.aspx>>

Table 9.1-1. Summary of Project facility operation and maintenance primary roads and trails.

Project Facilities	Road Description	Trails Description	In FERC Boundary (Yes/No)	Ownership Private/Public/Mixed	Width (feet)	Surface	Gated (Yes/No)	Licensee Trip Frequency	Snowmobile Use, Plowed (Yes/No)	Primary Access Road or Trail (Yes/No)
Our House Diversion Dam and Impoundment and Lohman Ridge Diversion Tunnel Intake	Accessed from Sierra Pacific Industries' Ridge Road. 1.84 miles to Our House Diversion Dam	--	Yes	Mixed, two segments on Forest Service land, no Forest Service number or SUP	12	Paved	Yes at intersection of Ridge Road and 500 feet upstream of Dam	1 RT/ day	No	Yes
Log Cabin Diversion Dam and Impoundment	From State Route 49 via Log Cabin Diversion Dam Road 1.19 miles	--	Yes	Mixed, 2 segments on Forest Service land, no Forest Service number or SUP	12	Paved	Yes, at intersection of State Route 49	1 RT/ day	No	Yes
Lohman Ridge Diversion Tunnel Outlet	Accessed by spur road along the north bank of the Log Cabin Diversions Dam Impoundment about 500 feet from the dam to the tunnel.	--	Yes	Public, on Forest Service land, no Forest Service number or Special Use Permit	NA	Unpaved	No, used as footpath	NA	NA	Yes
Garden Point Cove on New Bullards Bar Reservoir	Garden Point Cove is accessed via Garden Valley Road (approximately 3.5 miles long) from State Route 49 then Young Hill Road (aka Pendola Road) and Garden Point Cove. The site is for seasonal debris disposal.	--	Partially	Public, on Forest Service land	12	Unpaved	Yes controlled by Forest Service	2RT/ day during up to 3 weeks/year per Forest Service requirements.	No	Yes
Downstream Face of New Bullards Bar Reservoir	Accessed from Marysville Road to New Bullards Bar Dam Road 1.08 miles	--	Yes, however the first 0.9 mile of road is not in boundary	Mixed, Licensee and other private landowner	12	Paved	Yes at Marysville Road	2RT/ day	No	Yes
New Colgate Powerhouse Penstock	Accessed from New Bullards Bar Dam Road, 640 ft long	--	Yes	Mixed, private and Licensee	NA	Paved	NA	NA	NA	Yes
New Colgate Penstock Guard Valve	Accessed from Colgate Hall Road off of Lake Francis Road approximately 0.5 mile long	--	Partially	Mixed, Licensee and other private land owner (first 0.3 mile)	12	Unpaved	Yes by Licensee, private property owner and PG&E.	2 RT/ weekly	No	Yes
New Colgate Powerhouse	Accessed from Lake Francis Road (approximately 3.5 miles long) off of Old Dobbins Road via Marysville Road	--	Partially	Public, first 2.0 miles is maintained by Yuba County, and the last 1.5 miles is maintained by Licensee.	14 feet, first 2.0 miles; 12 feet, last 1.5 miles	Paved	No	1RT/ day	No	No
Narrows 2 Powerhouse and Intake	Accessed from Scott Forbes Road 2.17 miles to facility. Also a 0.18 mile long spur section from Narrows 2 Access to Narrows 2 Intake at Englebright Dam	--	Yes	Public, State of California, USACE, and Licensee. USACE issued Licensee a Right of Way Easement in 1975 for the access roads and has no termination date.	12	Paved	Yes, at Scott Forbes Road	2 RT/ month	No	Yes
New Bullards Bar Dam Compliance Monitoring Stream Flow Gage	--	Accessed from New Bullards Bar Dam Road, about 300 yards from the road to the gage station.	Partially	Public, Licensee	8	Unpaved, not maintained	No	3RT/month (by foot)	No	Yes
Narrows 2 Compliance Monitoring Stream Flow Gage	--	Accessed from Narrows 2 Powerhouse Access Road, about 400 yards from the powerhouse.	Partially	Public, USACE and Licensee	3	Unpaved, not maintained	No	1RT/month	No	Yes

-- = not applicable
NA = not available
RT = Round Trip

Page Left Blank