

**Large Woody Material Management Plan
Yuba River Development Project (FERC No. 2246)
Yuba County Water Agency**

*Agency/NGO Outline
DRAFT – 15 January 2015*

- I. Background
 - a) Description of FERC Project
 - 1. Facilities
 - 2. Reservoirs
 - 3. Project-affected Stream Reaches
 - b) Description of Large Woody Material
 - 1. Definition
 - 2. Importance as a habitat element
 - 3. As a resource for habitat enhancement projects
 - c) Discussion of Large Woody Material within Project Area
 - 1. Description of sources of LWM
 - a. Production from tributaries and riparian zones
 - b. Mobility and storage
 - c. Collection in the reservoirs (NBB, Our House, and Log Cabin) following flood events.
 - 2. Inventory of Existing LWM, including amount, types/sizes, and locations, including historic amounts (if known)
 - a. Results of wood surveys from YRDP relicensing studies
 - b. Volume estimates for NBB capture
 - 3. Assessment/Prioritization of LWM needs in Project-affected stream reaches and reservoirs.
 - d) Existing permits pertaining to current LWD management in New Bullards Bar.
- II. Purpose and Goals/Objectives of Plan – To optimize the use of woody material for downstream habitat benefits while ensuring public safety.
- III. Management of LWM within Project Area
 - a) Historic Management Actions
 - b) Current Management Actions
 - 1. No-Action (For LWM that is providing habitat benefit does not create a safety hazard and can be left in place)
 - 2. Modification (For LWM that needs to be repositioned or cut or otherwise modified in place)

3. Passage (For LWM allowed to pass through/over/around Project facilities)
4. Removal and Relocation (For LWM removed from one Project reservoir or stream and used in another for enhancement/restoration)
5. Removal and Storage (For LWM that is removed and stored for use at a later date)
6. Removal and Disposal (For LWM that will not be used within the Project Area and is removed and disposed of offsite)

c) Management Guidelines

1. **Our House/Log Cabin Diversion Dams**

Licensee shall allow, provided conditions permit safe and reasonable access and working conditions, mobile instream large woody material to pass the Our House and Log Cabin diversion dams into downstream reaches. All sizes of large woody material greater than 8 inches in diameter and up to 36 feet in length shall be allowed to pass downstream past the dams. If it is reasonably necessary to decrease the length of large woody material to allow handling to implement this condition, then Licensee may cut such woody material to the minimal extent necessary to allow safe passage over the dam. into shorter lengths. Smaller sized LWM will also be allowed to pass beyond the dams. All root wads will be allowed to pass downstream unless the Licensee determines that a root wad presents a risk to the safety of the dam.

The target number will be 2.4 pieces of stable LWM per 100 yards. If after the fifth year of license issuance, monitoring indicates stable LWM is lacking, Licensee shall distribute LWM at least xx ft. long (Middle Yuba) and xx ft. (Oregon Creek) long with rootwads downstream of the dams to meet the 2.4 pieces of stable LWM per 100 yards. "Stable" LWM is defined as either longer than the channel width or buried at one or both ends.

Notwithstanding this requirement, if the Commission or the California Division of Safety of Dams requires Licensee to remove large woody material from the dams or dam spillways, then Licensee shall do so; and if a federal or state agency or Yuba County expresses a concern about the potential effects of this condition on the safety or maintenance of downstream bridges, then Licensee shall initiate Section III of this Plan and all its requirement to discuss alternatives to this measure that will achieve LWM passage at Project facilities while maintaining the safety of downstream bridges-not implement this condition. Licensee shall not be required to maintain or otherwise fund maintenance of downstream bridges or culverts, or otherwise be responsible for damages to downstream bridges due to passage of large woody material.

2. **New Bullards Bar Reservoir**

- i. Amount and size of LWM

- Move all wood that is feasible, and no less than 50% of wood that is captured in the Reservoir, downstream of the spillway. [Note: an alternative approach would be to describe this amount based on historical inflow and use average over ~5 years].
 - Provide an average of 2.4 pieces of stable LWM per 100 yards.
- ii. If after the fifth year of license issuance, monitoring indicates stable LWM is lacking, Licensee shall “anchor” large woody material using a method approved by California Department of Fish and Wildlife (Cal Fish and Wildlife) and the Bureau of Land Management (BLM) to ensure that at least two stable pieces of the size described below occur in each 100 yards. “Stable” LWM is defined as either longer than the channel width or buried at one or both ends. LWM for anchoring purposes is defined as greater than 15 ft. long and greater than 11 inches in diameter. LWM Cutting Requirements (minimum sizes)
 - Licensee may cut such woody material to the minimal size necessary to allow safe passage over the dam.
 - iii. Removal Requirements, including timing, for removal of LWM deemed a recreational or other safety hazard
 - iv. Storage Requirements/Restrictions – Retention time, identification of storage sites (no storage in designated critical habitat for CRLF)
 - v. Disposal Requirements/Restrictions – Wood will only be burned upon agency approval.
 - vi. Wood will be transported to downstream reaches by one or all of the following means:
 - Passage over the dam spillway
 - Transport by truck or helicopter to river reaches below dam
 - Collected by Army Corps of Engineers or other entities conducting restoration work on the Yuba River. Licensee, with Forest Service approval, shall facilitate access to LWM collected on NBB Reservoir for restoration efforts.
 - vii. All wood disposal will be consistent with the Bald Eagle Conservation Plan developed for the new license to comply with the Bald and Golden Eagle Protection Act. Any mechanical transport of wood within the Project area will follow BMP’s to minimize the spread of aquatic invasive species, (e.g., wood will be held for an appropriate time period on land to dry prior to transport).

3. Emergency provisions

IV. Maintenance and Monitoring

a) Short-term

b) Long-term

c) The potential benefits of the woody debris plan for creating habitat complexity in all the river reaches will be assessed through monitoring and additional steps may be taken if needed (e.g., anchoring of wood along each reach).

V. Consultation and Reporting

VI. Plan Revisions

VII. References

City of Rochester Hills. 2007. A primer on large woody debris management. Prepared for City of Rochester Hills by J.F. New & Associates, Ann Arbor, MI. JFNew Project # 060678. <http://www.rochesterhills.org/DocumentCenter/Home/View/255>.

Pacificorp Energy. 2011. Woody Debris Management Plan. Conduit Hydroelectric Project Decommissioning (FERC Project No. 2342). http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Condit/20110315WoodyDebrisMgmtPlan.pdf

U.S. Army Corps of Engineers (USACE). 2011. Lower Yuba River large woody material management plan. Sacramento District, Sacramento, CA. http://www.spk.usace.army.mil/Portals/12/documents/usace_project_public_notices/Public%20LWMMP%20Signed%20EA%20.pdf