

Revised March 11, 2015

Distributed to the Board and Posted to Website on March 12, 2015

**ITEM: CONSENT CALENDAR**

**2. CONSIDER AUTHORIZATION OF EXPENDITURE OF FUNDS FOR DESIGN OF SLEEPY HOLLOW STEELHEAD REARING FACILITY INTAKE UPGRADE**

<b>Meeting Date:</b>	<b>March 16, 2015</b>	<b>Budgeted:</b>	<b>Yes</b>
<b>From:</b>	<b>David J. Stoldt General Manager</b>	<b>Program/</b>	<b>Protect Environmental Quality</b>
		<b>Line Item No.:</b>	<b>2-3-1-F</b>
		<b>Account No.</b>	<b>24-04-785812</b>
<b>Prepared By:</b>	<b>Larry Hampson</b>	<b>Cost Estimate:</b>	<b><u>\$400,000 to be provided</u> <b>-(100% reimbursable)</b></b>

**General Counsel Review:** N/A  
**Committee Recommendation:** N/A  
**CEQA Compliance:** Exempt under §15262

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**SUMMARY:** Staff recently received several proposals to design an upgrade to the Sleepy Hollow Steelhead Rearing Facility (SHSRF), complete environmental compliance documents, and acquire permits to construct the upgrade. A technical review committee composed of District staff and representatives of the State Coastal Conservancy (SCC) and National Marine Fisheries Service reviewed the proposals on March 11, 2015 and have unanimously recommended that Tetra Tech be selected based on their proposal (**Exhibit 2-A - to be provided under separate cover to at or prior the Board membersmeeting**).

The SHSRF is in need of an upgrade in order to be able to operate at a wider range of Carmel River flows and with potential future changes in water quality conditions. A new or modified raw water intake would be designed to make it more accessible for maintenance and less susceptible to clogging. To improve system reliability and increase the periods when the facility can operate, a recirculating aquaculture system (RAS) would be designed that would allow the facility to switch from once-through flow mode (existing) to partial or full recirculating system during periods when river flow is not suitable for once-through mode. This design project has been selected for funding from Cal-Am Settlement Agreement funds administered by SCC. District expenses, including staff time, are eligible for reimbursement of up to \$450,000. Design and permit acquisition is expected to take about 18 months to complete.

**RECOMMENDATION:** Staff recommends approval of the expenditure of District funds to complete the Sleepy Hollow Steelhead Rearing Facility Raw Water Intake and Water Supply System Upgrade. If this item is adopted with the Consent Calendar, the General Manager would be authorized to enter into an agreement for services with Tetra Tech for a not-to-exceed (NTE) amount of \$400,000. The District would seek

reimbursement of expenses for this work from the State Coastal Conservancy under grant agreement 14-018.

**IMPACTS TO STAFF/RESOURCES:** Funds for work in this fiscal year are identified in the mid-year FY 2014-15 Budget Adjustment, Program Line Item 2-3-1-F, Design and permitting for new intake system. Grant Agreement 14-018 between the District and the State Coastal Conservancy allows the District to recover 100% of the District's costs. The actual amount of the proposal for services from Tetra Tech was \$373,000; however, the requested funding limit of \$400,000 is to account for a proposed \$8,000 optional item to update the sediment transport model for the Carmel River and a small amount for contingencies (\$19,000).

**BACKGROUND:** The Sleepy Hollow Steelhead Rearing Facility (SHSRF or facility) is located at approximately river mile 17.5 on the west bank of the Carmel River (latitude: 36.443508, longitude: 121.715974), about one mile downstream of San Clemente Dam (see Figures 1 and 2). MPWMD has operated the facility since 1996 to raise young-of-the-year and juvenile steelhead rescued from portions of the Carmel River that dry up nearly every year due to stream diversions for municipal and private use. An average of about 16,000 steelhead are rescued each year, with a portion placed in the facility; however, up to about 40,000 steelhead have been reared during the dry season in a 900-foot long simulated natural channel consisting of riffle/pool sequences separated by weirs. An important operational feature of the facility is to replicate as closely as possible the natural conditions under which steelhead exist in the channel of the Carmel River.

Steelhead rescued from drying reaches of the river in spring and summer are transported to the facility where they are placed in quarantine before being transferred to the rearing channel. Although fish are initially sized, due to the difficulty of re-capturing fish when the channel is full and flowing, no additional sizing occurs. This can lead to predation because these fish are wild and can grow at significantly different rates. Steelhead are normally released back into the river and at the Carmel River lagoon in late fall or early winter after the river reconnects to the lagoon. The facility is then shut down for the winter.

Situated on a seven-acre site adjacent to the river, the facility consists of an enclosed river intake, pump system, cooling tower, channel, miscellaneous treatment tanks, and an administrative office. A horizontal drum screen in the channel bottom and pump system deliver continuous flow of about 900 gallons per minute (gpm) or about two cubic feet per second (cfs). Flow can be delivered directly to the channel or processed through a cooling tower for oxygenation and cooling. Additional off-channel systems are also fed from the raw water intake. There is no potable or domestic water supply available to the site; however, office facilities (sinks and toilet) use untreated river water. The intake and pump system were designed with three key assumptions: 1) that clear water (i.e., water free of sediment and debris) would be available from Carmel River flow; and 2) that a minimum of five cfs would be available at all times at the intake; and 3) that the flow rate would be a constant 900 gpm. The system cannot be operated during river flows below about four cfs or when sediment and debris is transported past the intake structure. Flow from the rearing channel is returned to the river in a pool about 200 feet downstream of the intake location.

Because reservoir storage capacity upstream at Los Padres Reservoir (RM 24.8) is limited, during dry and critically dry periods flow at the intake can drop below four cfs – a level at which pump cavitation can occur and cause failure in a matter of hours. In addition, organic material or

sediment can clog the rearing channel and the drum screen in the bottom of the river channel at low flows. Even with frequent cleaning, reduced flow through the clogged screen can cause pump failure (due to cavitation). This problem will be exacerbated once San Clemente Dam is removed and more sediment and organic material begins to flow downstream. Furthermore, the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Services (NMFS) have requested that MPWMD release steelhead held in the facility later in the rainy season in order to provide more time for the re-watered downstream reaches to recover. Under current conditions, operating into the winter storm season would increase the possibility of system failure due to a clogged intake structure. In addition, at high flows, the intake structure is not accessible from the streambank and vehicular access into the facility can be restricted by heavy rains (the road condition has recently been improved greatly as a result of construction activities associated with the San Clemente Dam Removal Project).

MPWMD has previously carried out preliminary assessments of the facility and has reviewed several options for a new intake and pump system; however, the basic premise for these options was to modify the existing intake and pump system to operate at higher organic and sediment loads and at flows above five cfs (see the previous assessments available on the District's RFP web site). In 2013 and 2014, it became clear that operating at flows below five cfs would need to be considered. A partial or full recirculation system would be needed in order to operate during periods of low Carmel River flows.

The highest priorities for an upgrade at this facility are:

- 1) Improved access to the intake pumps and controls;
- 2) An improved fish screen that requires less maintenance (i.e., does not clog with leaves, sediment, or debris);
- 3) Reduce sediment input to river pumps and all other equipment downstream of the pumps;
- 4) Maintain a minimum of 2 cfs (900 gpm) flow to the rearing channel during operations, with the ability to deliver a peak flow of 3 cfs (1,350 gpm) for short periods;
- 5) Prevent degradation in the water quality of return flow to the Carmel River channel;
- 6) Allow more flexibility to operate the facility both at extreme low flows and during winter season high flows;
- 7) Operate the facility during any period for as long as it takes for suitable conditions to develop in the Carmel River in order to release reared fish back into Carmel River or lagoon.

With input from representatives of NMFS, SCC, and CDFW, the District developed a detailed scope of work to improve and/or relocate the existing raw water intake, design a recirculating aquaculture system, and acquire permits to construct the project. The District advertised for proposals beginning January 16, 2015. The initial deadline for proposal submittal was February 27, 2015. However, after a field visit, two groups requested a one-week extension to this deadline to March 6. The proposal review was then re-scheduled to March 11, 2015.

## **EXHIBIT**

**2-A** Proposal by [Tetra Tech \(provided to Board members under separate cover\)](#)